

Full Length Research Paper

Public green spaces and management constraints in the Municipality of Sèmè-Podji South East of Benin

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Received 18 January, 2021; Accepted 29 July, 2021

An increasingly present component in urban architecture, public green spaces is an essential infrastructure that has various functions. The management of these spaces poses enormous difficulties after their establishment. The study has analyzed the uses and management of these spaces in the Municipality of Sèmè-Podji. It was carried out on the basis of a sample of 84 people made up of users and managers of green spaces, heads of neighborhoods or villages, heads of districts and officials of the Technical Services Department of the Town Hall. The thirty-three (33) green spaces still functional in the Municipality were visited. These are unevenly distributed between the districts and that of Agblangandan has the largest number (12). The density of green space in Sèmè-Podji was 0.132 green space/km² in 2018 against 0.02 in 2017, which remains low. Very frequented by young people (58.15%), the green spaces serve as places of leisure, rest, maintenance sports and are home to small shops. They are managed by the town hall, by local elected officials, or entrusted to individuals who, in return, pay royalties to the municipality. Poor infrastructure coverage and maintenance which generates visual and olfactory pollution according to 97.94 and 86.90% of the target population. Besides, the lacks of innovation in the activities offered to the public are the main constraints to the management of green spaces in the Municipality of Sèmè-Podji.

Key words: Sèmè-Podji, public green spaces, management, constraints.

INTRODUCTION

The concept of green space covers a wide variety of facilities. These can be public gardens, children's play areas, animal parks, and botanical gardens, walking circuits, fitness trails, sports stadiums and fields, family gardens, cemeteries (Muret et al., cited by Amireche, 2012:38). These spaces meet the needs of escape, isolation, relaxation, clean air for city dwellers, a growing attraction for nature. They are necessary for the city as a

purifier of the atmosphere, a ventilator of the urban coating and essential for human life, through their beneficial influence on physical and moral health. However, during these decades, cities have developed by ignoring the nature that surrounds them.

More sustainable cities call for the development of public spaces (green spaces, public places, parks, etc.), the management of which is often part of an urban

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forestry program. These infrastructures can be a tool for structuring the urban area according to the density of vegetation and their attractive capacities (Marry and Delabarre, 2011:28). In addition, beyond the scientific issue, knowledge needs are formulated by land managers and planners for optimal and balanced management of green spaces (Pullin and Knigh, 2005:1993).

Several African cities have experienced uncontrolled demographic growth in recent decades and will house 60% of their country's populations in 2025 (UNFPA, cited by Tohozin and Dossou Guèdègbé, 2014:192). This strong human pressure coupled with space constraints is a major concern for these city managers, who are now looking for effective methods to offer city dwellers an ideal living environment while maintaining the city in its main functions (Osseni, 2013:75). This explains the proliferation of public spaces also called green spaces.

Since their creation, these public green spaces have always been privileged leisure places in the daily life of the populations; and are in very high demand. The innumerable activities undertaken in public green spaces include commerce, relaxation, celebration, meetings etc. A strong social unity is thus created within these places which takes into account all social categories and socio-cultural groups (Tchaou, 2014:7). This is indeed where one usually meets strangers, where one expects to meet mostly them (Monnet, 2012:201). Grafmeyer (2004:104), space is only public if it is open and accessible to everyone and is assigned to several functions and uses common to city dwellers. It is a space for meeting, exchange, communication and socialization in the image of the city.

Despite the various benefits of green spaces, their establishment in the Municipality of Sèmè-Podji has not kept up with the evolution of the population and there is a spatial disparity in their distribution. Likewise, the quality of these spaces sometimes leaves much to be desired, thus testifying to inefficient management. The question that arises is therefore to know: what are the uses and management constraints of green spaces in the Municipality of Sèmè-Podji. Therefore, the objective of this study is to highlight some of the uses and management constraints of the said spaces in the Municipality.

MATERIALS AND METHODS

Presentation of the study area

Located between the parallels 6 ° 22 'and 6 ° 26' North latitude and the meridians 2 ° 27 'and 2 ° 42' East longitude, the Municipality of Sèmè-Podji is located in the County of Ouémé, in the South-East of the Republic of Benin on the Atlantic coast. It is bounded to the north by the city of Porto-Novo and the Aguégués, to the east by the Federal Republic of Nigeria, to the south by the Atlantic Ocean and to the west by the city of Cotonou (Figure 1).

The Municipality covers an area of 250 km², which is about 0.19% of the area of the Republic of Benin, and includes the Districts of Agblangandan, Aholouyèmè, Djèrègbé, Ekpè, Tohoué,

Sèmè-Podji. In total, it has fifty-five villages and city districts.

Materials

The material used consists of a topographic map of Porto-Novo from 1992. It comprises of sheets NB31XV2c and NB31XV4a at a scale of 1 / 50,000 with shape files and a cadastral plan at 1 / 10,000 from 2010. In addition, Garmin 76csx GPS (Global Positioning System) for taking the geographic coordinates of green spaces in the Municipality of Sèmè-Podji has been used.

Field survey method for a management mode of green spaces

An exploratory visit to the sites in the Municipality revealed that it has around fifty green spaces, of which only 33 are actually in use and under developed. The research focuses on the 33 spaces. A survey on the current management mode of green spaces was carried out among all the concerned stakeholders identified in order to be able to characterize them. A questionnaire is administered to collect information related to the uses and management of green spaces.

A random survey method made it possible to question a sample of fifty-five (55) users of green spaces. In addition, eighteen (18) Neighborhood / Village Heads, two (02) District Heads, seven (07) space managers and two (02) officers from the Technical Services Department of the Sèmè-Podji Town Hall were interviewed.

The examination of the survey sheets was done manually. Special codes have been assigned to each collected data in order to facilitate the groupings and analyses. The diagrams and curves were produced with the Excel spreadsheet to represent the quantitative data. The response rate by type of information was expressed by the following formula:

$$T = \frac{n \times 100}{N} \quad (1)$$

With: T = rate of responses given; n = number of responses obtained in relation to the information sought and N = number of people interviewed.

The density of the Municipality in green spaces is calculated according to the formula:

$$DEv = \frac{nEv}{Scom} \quad (2)$$

With: DEv = density of green spaces in the Municipality; nEv = number of green spaces in the Municipality (33); Scom = total area of the Municipality (250 Km²).

The results of the surveys largely contributed to identifying the weaknesses in the management mode of green spaces, then the sites' attractiveness and sustainability parameters.

RESULTS

The results of the study addressed three different aspects, namely: diversity and density of green spaces in the Municipality of Sèmè-Podji, use, and management of green spaces.

Diversity and density of green spaces in the Municipality of Sèmè-Podji

The green spaces in the Municipality of Sèmè-Podji are

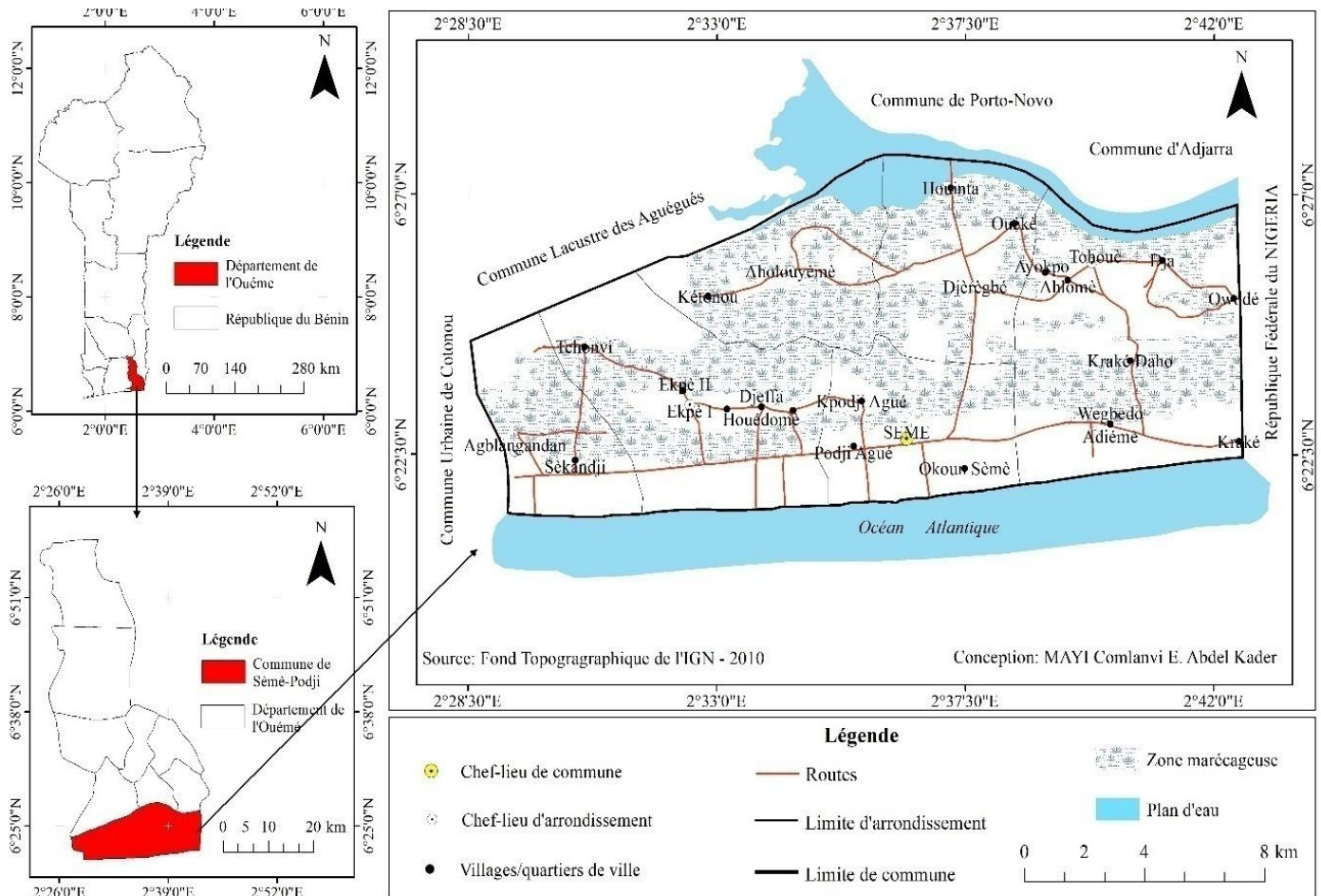


Figure 1. Geographical and administrative situation of the Municipality of Sèmè-Podji.

made up of Youth and Leisure Centers, developed junctions and war memorials. During the surveys, a total of thirty-three functional green spaces were identified in the Municipality and distributed as shown in Table 1.

The districts of the Municipality of Sèmè-Podji have a variable number of public green spaces. Agblangandan with a workforce of 12 mobilizes 36.36% of these spaces, followed by Ekpè (9 spaces, which are 27.27%). On the other hand, the districts of Aholouyèmè (03), Djèrègbé (04), Sèmè-Podji (03) and Tohouè (02) have less green spaces. There is an unequal spatial distribution of the green spaces within the district to which various historical, social, economic, political, recreational and cultural functions are linked. The entire population is also unable to enjoy the benefits of these infrastructures because of the disparity in their spatial distribution. In fact, not all neighborhoods have these spaces in each district. Figure 2 illustrates a spatialisation of some green spaces in the Municipality.

The density of green space in the Municipality of Sèmè-Podji is 0.132 green space / km². The density also varies from one district to another depending on the number of

space available and the area of the district. This low density is explained by the little investment in the development and management of green spaces despite the size of the population and the geographical and strategic position of the Municipality. The green spaces of the Municipality are used for various purposes by the population.

Use of public spaces in the Municipality of Sèmè-Podji

The green spaces of the Municipality do not all have the same configurations and functions. They are spaces of very high demand frequented by the population for various reasons.

Based on the survey, accessible to all, these spaces are frequented by all layers of the population; 58.15% are young people, 36.25% adults and 5.6% senior citizens. They come there for leisure (entertainment, events, games, meetings, etc.), rest, and take advantage of the space to learn lessons or to practice maintenance sports

Table 1. Distribution of public green spaces according to their functions by District in the Municipality of Sèmè-Podji.

District	Public green space	Function
	Sèkandji Youth and Leisure Center	Economic, political and recreational
	Lokokoukoumè public square	Political, recreational and cultural
	Houngakomè public square (Davatin)	Cultural and recreational
	Le Bélier junction	Economic and political
	Sèkandji junction	Economic and political
	Akpokpota	Cultural
	Kpakpakanmè	Cultural
	Kajacomè	Cultural and recreational
	Modokomè	Cultural
	Agbalilamè	Economic and cultural
	Gbakpodji	Cultural and economic
	Agblangandan	Cultural and economic
	Aholouyèmè	Ginsame public square
Sokpanou		Cultural, political and recreational
Aïtchémi-Honto		Cultural, political, recreational and economic
Djèrègbé	Agbodamè public square	Cultural
	Gbehonmè Entertainment Room	Cultural, political and recreational
	Hontogbo public square of Awanou	Cultural, political and recreational
	Djèho	Cultural
Ekpè	PK 10 junction	Cultural and recreational
	Ekpè youth center	Economical and recreational
	Zangbétô-vadji	Political and economic
	Ekpè station	Social and economic
	Djeffa station	Social and economic
	PK 18 or Road Junction	Social
	Fâ-Flé Sagbohanton	Cultural, political and recreational
	Ekpè Youth Center (Agangbo 2)	Cultural, political and recreational
Kanhonou	Cultural, political and recreational	
Sèmè-Podji	Sèmè-Podji Youth and Leisure Center	Cultural, political, recreational and economic
	Memorial	Historical, political, social and recreational
	Sèmè-Podji junction	Economic et social
Tohouè	Kraké Daho public square	Cultural, political and recreational
	Zanhôde Tohouè public square	Cultural

Source: Fieldwork, March 2018.

Some go there to carry on small businesses. These spaces therefore represent places of entertainment, development and socialization for the population of the Municipality and elsewhere. Based on the survey, most of the users (85.45%) are residents of the Municipality and the remaining, in transit to other neighboring Municipalities or the Federal Republic of Nigeria. The pictures on Plate 1a and b show some uses of green spaces.

Green spaces, beyond their recreational functions and

apart from the fact that they offer an ideal setting for rest (Figure 2) are also used for gatherings of public interest such as population censuses (Figure 1).

The choice of frequented space depends on several factors such as distance, the quality of the setting and what you can or want to do there. In terms of period, afternoons, weekends and public holidays are the preferred times of attendance. The crowd is less in the morning, or even zero in some places. The green spaces of the Municipality have different management modes.



Figure 2. Spatial distribution of public green spaces in the Municipality of Sèmè-Podji.

Management of green spaces in the Municipality of Sèmè-Podji

Patrimony of the Municipality, green spaces is managed with difficulties, the main links of which are presented here.

Management modes of green spaces

Since the advent of decentralization and the adoption of Law No. 97-029 of January 15, 1999, on the organization of Municipalities in the Republic of Benin, local authorities have the power to manage the resources at their

municipalities themselves. This is the case, for example, with green spaces which, in the Municipality of Sèmè-Podji, are placed under the authority of the Municipality. However, their management also falls within the prerogatives of the Water and Forests Inspectorate. In practice, the Town Hall has opted for delegated management of all or part of certain spaces by entrusting them to individuals or to privates who have fitted them out. It is the case for example of CIM-BENIN for the Le Bélier junction and Sèkandji, and Houdégbé for the PK 10 junction.

In the case of delegated management, the new manager develops and operates the space, assumes responsibility for the maintenance and pays a monthly fee



Plate 1a. Population in Lokokoukoume square for a census.



Plate 1b. A young man resting on a bench.

of around 30,000 F CFA to the Town Hall. The rentals of youth houses or centers for meetings, ceremonies and

others generate income as do commercial activities (bar, catering, cafeteria and shop, etc.) carried out by



Plate 2a. Rubbish littering the ground.

individuals in these spaces.

When the space is directly managed by the Town Hall, a manager is appointed. This is the case with animation rooms, youth houses and centers. For neighborhood public squares, they are managed by the neighborhood chiefs assisted by the council of elders and young people.

According to the municipal authorities, the resources collected are reinvested in the development of the Municipality. However, the management of green spaces in the Municipality is not without challenges.

Difficulties in managing green spaces in the Municipality of Sèmè-Podji

Apart from the non-qualification of managers if they exist, the main constraints to the management of green spaces in the Municipality of Sèmè-Podji are the poor infrastructure coverage, the numerous failures in the maintenance of these spaces and the lack of innovation in the activities offered to the public.

Poor infrastructure coverage

Different infrastructures are essential for the viability of green spaces. These include, depending on the case, benches, lighting equipment and hygiene and sanitation infrastructure (garbage cans, runoff drainage pipes and

urinals).

According to 88.09% of respondents, green spaces lack enough benches to accommodate users. They estimate (at 53.57%) that these spaces are poorly lit and not at all lit according to 26.19%. Indeed, the few solar street lights erected by the Municipality on certain spaces have been vandalized and are not replaced. The poor coverage or even the absence of lighting infrastructure forces the population not to visit green spaces beyond a certain time in the evening due to insecurity.

None of the green spaces in the Municipality have garbage cans and only seven (7) out of the thirty-three (33) have urinals, although this is not always necessary as is the case with junctions. Based on the survey, the runoff drainage pipes are non-existent.

All these shortcomings testify to the lack of awareness of the importance of green spaces for the well-being of populations in a rapidly expanding urban environment.

Nuisances in green spaces

The lack of maintenance and especially the resulting insalubrity is one of the main problems facing the green spaces of the Municipality. Due to the lack of sanitation infrastructure (garbage cans, urinals, water drainage pipes) and staff dedicated to maintenance, on the one hand, and inappropriate behavior by users, on the other, the green spaces of the Municipality present an unsanitary appearance (Plate 2a and b).



Plate 2b. Akpokpota green space on the memorial of Sèmè-Podji flooded with water.

Plates 2a and b show respectively the unsanitary conditions of the Sèmè-Podji Memorial and Akpokpota Green Spaces, which are considered cultural spaces.

One of the direct consequences of poor waste management is the visual and odor pollutions. According to 97.94% of the survey respondents, visual pollution is the result of the degradation of the physical environment through the presence, among other things, of waste of various types. This form of pollution denatures the space where cleanliness should normally reign. The unsanitary conditions caused by garbage are manifested by the presence of spontaneous piles of garbage and herbs gathered here and there which become open-air dumps and which keep multiplying. On these dumps, one can observe papers of various origin, dead leaves, and plastic bags sometimes containing remains of food, drinks or water, rotten fruits, and broken bottles. So, many heterogeneous objects that should not be found in such spaces.

Another type pollution is criticized by 86.90% of the targets stems from the presence of decomposing waste on the perimeter or near green spaces, as well as the lack of sanitation infrastructure, especially urinals; which leads users to urinate all over the green spaces. The presence of waste attracts insects (flies, cockroaches) and animals (rats, mice, etc.) and can harbor pathogenic germs and parasites. As they putrefy, they give off bad

odors that indispose and vitiate the atmosphere. Odor pollution is especially repugnant in intense heat. Under these conditions, users can no longer breathe well.

According to 67.86% of users interviewed, poor maintenance is the determining factor in limiting their visits to the spaces. In fact, the unsanitary space no longer meets the expectations of a population in search of healthy places to breathe fresh air, relax or play maintenance sports. It is therefore essential to properly manage the environment in order to improve the living environment and protect oneself from nuisance and disease.

Lack of diversification in the activities offered to the public

One of the strengths of green spaces in creating more attractiveness is that they can offer various fun and educational activities to populations. In the Municipality of Sèmè-Podji, this is not the case. Most of the green spaces managed by privates are exclusively transformed into refreshments or restauration places. Apart from youth houses or centers which host some cultural activities, no initiative has been taken to create attractiveness in these places. Worse, on weekends,

these spaces are occupied for festive events, which prevent some users from having access to them. This phenomenon is also decried by all the respondents. This is why 69.05% of users want these spaces to offer a variety of activities to the public.

DISCUSSION

Urban development requires the establishment of a certain number of infrastructures (health, education, social, leisure, etc.). Green spaces are part of leisure infrastructure and therefore occupy an important place. Every man at a given time needs rest, distraction, and leisure. Green spaces to some extent meet these needs.

Quantitatively, the Municipality of Sèmè-Podji has more green space than the city of Porto-Novo, where 13 green spaces are identified by Tohoin and Dossou Guèdègbé (2014:195), but less than Cotonou with its 70 spaces.

The present study and several other authors have shown the disparities in the spatial distribution of green spaces in the different Municipalities.

As explained by Tonde (1994:28), through its definition, the role assigned to a green space is very important. This explains its high attendance. It must contribute to improving the living environment of the populations. As a result, green space necessarily has the following characteristics: recreational, health, educational, social, cultural and economic, contrarily to what Deverin-Kouanda (1990:7) believed that green spaces must contribute to limiting the effect of the desertification rather than establishing recreational spaces, of walking, because going for a walk in the square is a Parisian not a Ouagalese culture. This conception excludes the other functions of green space and, in other words, for the latter author, frequenting green spaces is more a Western than African behavior.

While this may be true at some point, the fact remains that conceptions change and these spaces now feature in all urban development plans (Somadjago and Suka, 2018:268). As it has been demonstrated, green space allows people to find an ideal and healthy and clean place to rest. In addition, it contributes to the awakening of the conscience of the populations for a better management and the safeguard of the environment. Also, it promotes the closeness and the contact between people coming from various horizons. An adequate framework for the organization of various events (music, exhibitions, recreation, education, etc.), the green space also promotes the development of business activities that create jobs and generate income. For these reasons, the development of a green space is necessary because it helps to solve problems of employment, but it still has to be well managed.

In Benin, the law on decentralization confers on the Municipalities a certain prerogative in the management of the territory and its components and therefore green spaces. This management mode does not differ

fundamentally from that described by Osseni et al. (2015: 153) in Porto-Novo in Benin where it is the forest inspectorate, the Town Hall, NGOs and the population that intervenes in the management of green spaces. The management model in force in Benin presents certain differences with that of Lomé in Togo where a fairly large number of actors are responsible for their management (Polorigni, 2012:58; Somadjago and Suka, 2018:271). It also differs from that of Kinshasa where green spaces are managed concurrently by four different ministries (Ngur-Ikone, 2010:16).

In Sèmè-Podji, the local authorities have delegated part of their prerogatives over green spaces to private entities made up of legal and natural persons. These private entities pay a monthly fee and use the spaces for their economic purposes. The green space must be maintained on a regular basis to continue to provide a healthy environment for populations. It must also offer a multitude of activities to its users and have certain infrastructures essential to its viability. These criteria are far from being adopted or implemented in the Municipality because of shortfalls at all levels (infrastructural, sanitation and innovation). These findings are similar to those of Amontcha, Djego, Loubegnon and Sinsin (2017:85) in Nokoue, Hounsou (2018: 42) in Sèmè-Podji in Benin and Bouge (2009:56) in Tourangelle in France. Indeed, the findings show that the maintenance gives more consideration to the refreshments installed on the perimeter of the spaces rather than the infrastructures (benches, lighting, plants, etc.), the sanitation, or the adequacy which the users expect. Within this context, it is first and foremost the responsibility of the municipality to rethink the development of green spaces and to effectively invest in them accordingly, with reference to the municipal development plan.

Conclusion

The Municipality of Sèmè-Podji has long neglected public spaces in its development process in favor of the uncontrolled expansion of buildings. Most of the spaces in the Municipality are functional but do not always meet the expectations of the population who frequent them for entertainment, rest and other activities such as shopping. The management of green spaces faces many challenges which must be addressed to avoid losing them, as they are being less and less visited and neglected by the population. In the face of rampant population growth and urbanization, the municipalities must become effectively involved in the restoration and development of new green spaces to provide an adequate leisure environment for their respective and healthy populations.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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