The Historical Path of the Green Landscape of Kinshasa City: Revelation of a Landscape of Conflict

SAMBENI K R, LELO NZUZI F, OCCHIUTO R, BOGAERT J
1 University of Kinshasa, Regional Training School of Integrated Management of Tropical Forest and Lands
2 University of Liege, Faculty of Architecture, Laboratory Ville-Territoire-Paysage (LabVTP)
3 University of Kinshasa, Faculty of Sciences, Department of Geography
4 University of Liege, Gembloux Agro-Bio Tech

skraoul@gmail.com

ABSTRACT

Built on a geomorphological site of an amphitheater form, the strong population growth of Kinshasa city and its spontaneous urbanization causing several mutations of the urban landscape. Socio-spatial transformations induced were accompanied by degradation of the habitat damaging to the sustainable urban landscape. Socio-spatial transformations of urbanization causing several mutations of the growth of Kinshasa city and its spontaneous urbanization mixed with "villagization" or "ruralization" (Treffen, 2000) where the idea of the habitat is enough to shelter the Kinois. As a result, in the eyes of the "powerless" or "resigning" state and the poor people in loss of marks, the environment is deteriorating and is increasingly struggling to ensure quality habitats (Treffen, 2000).

All in all, the current ecological issues are at the origin of multiple arguments in favor of sustainable urban planning (Chalot, 2015; Da Cunha,2015). The implementation of such urban planning requires a retrospective analysis of urban settlement practices, especially in African cities such as Kinshasa. This analysis, which can be envisaged under multiple thematic and methodological entries, cannot skip the need of the green Landscape perspective. In order to achieve a better quality of life in the urban landscape, vegetation has undeniable importance since the urban environment is subjected to the phenomena of heat islands, various pollutions, climatic changes and its corollaries (floods, erosion ...) (Botkin & Beveridge, 1997). The present study then proposes to carry out a survey of the green landscape evolution in Kinshasa. This study specifically seek to understand how the vegetation cover is described by the populations over the time and how it is described in the existing documentation? The given meaning to the "green landscape" is the plant component of the urban and peri-urban fabric considered its spatiality and its contribution to the quality of the habitats.

INTRODUCTION

A polynomial and polymorphic city with many names and faces in the heart of the African continent. Kinshasa, is the subject of multiple readings through the eyes of science and various arts. The interest in this city stems from its strong peri-urbanization subsequent to its relatively strong demographic and spatial growth (Pain, 1984; Lelo Nzuzi, 2008; Kayembe Wa Kayembe et al., 2009; SOSAK, 2014). It is also a city where the usual reference systems are scrambled and where everything works differently (De Boeck & Jacquemin, 2006).

The various studies dedicated to the Kinshasa territory reveal the image of an unbridled city with rather heterogeneous patchwork of an urban landscape. Built on a large amphitheater-shaped site, Kinshasa is comparable to what Dominique Malvaquis calls "ville-flux": composed of spaces born of complex overlaps, intense, contradictory, each generating others, carriers of multiple realities (Lagae, 2010). It is an atypical urban landscape resulting from an urbanism where the action often preceded the results of the analysis (Mutambai, 1971). This urbanism based on a popular urbanization mixed with "villagization" or "ruralization" (Treffen, 2000) led to a city "of verb architecture" (De Boeck & Jacquemin, 2006) where the idea of the habitat is enough to shelter the Kinois. As a result, in the eyes of the "powerless" or "resigning" state and the poor people in loss of marks, the environment is deteriorating and is increasingly struggling to ensure quality habitats (Treffen, 2000).
Unstructured and informal interviews with 100 people over a one-year period from July 20, 2016 to July 20, 2017. Only people aged 30 or over who had lived the different phases of landscape change. Only one question was asked to the surveyed: «how can you describe the key elements of the green landscape of the city of Kinshasa over the four periods distinguished in the basic hypothesis?» The question was made out like such in order to having the possible elements of major differences to check the starting assumption. Thus, according to the respondents' responses, their agreement with each of the four periods of the basic hypothesis was classified according to three increasing agreement degrees: “I do not know”, “probably true” and “completely true”. The frequencies of the agreement degrees were then computed for each period and tabled graphically.

Methods
The study uses a mixed approach of historical and descriptive reading of the territory based on the paradigm of “trace-écart” (Occhiuto, 2005). Such an approach has the advantage of allowing a “ladder interlocking” analysis. In addition, it is based on the need to browse, listen, and understand the territory in order to build an image of it (Secchi 2000 quoted by Leloutre & Vigneron, 2015).

The mixed research approach was employed involves:

— Unstructured and informal interviews with 100 people over a one-year period from July 20, 2016 to July 20, 2017. Only people aged 30 or over who had lived the different phases of landscape change. Only one question was asked to the surveyed: «how can you describe the key elements of the green landscape of the city of Kinshasa over the four periods distinguished in the basic hypothesis?» The question was made out like such in order to having the possible elements of major differences to check the starting assumption. Thus, according to the respondents' responses, their agreement with each of the four periods of the basic hypothesis was classified according to three increasing agreement degrees: “I do not know”, “probably true” and “completely true”. The frequencies of the agreement degrees were then computed for each period and tabled graphically.

— Bibliographic research: it consisted in reviewing the historical and present documents about the city in terms of green landscape, in particular the textual documents (monographs, corres.-pondences, ...), cartographic and photographic. The analysis carried out was to identify the distinguishing elements of the four hypothetical periods in order to check if they stand or not.

— Direct observation: it consisted in journeys through the city to understand the current realities of the green landscape.

RESULTS AND DISCUSSION
What the population knows about the evolution of the city green landscape
Among the four hypothetical periods only the last one, corresponding to the present time, is indeed the best known. On the other hand, the first three periods that require retrospection are therefore described with inaccuracies. However, the survey results show a real tendency to confirm the latter with 75-90% of cumulative proportions of confirmatory responses (Figure 1). The respondents are therefore largely tend to confirm the hypothesis of the description in four periods of the evolution of the green landscape of the city.

In the first period, the respondents describe the landscape as a mosaic of forest-savannah with remarkably dominant species such as palm trees (oil palm …) and baobabs. According to the respondents, the landscape in the second period remained abundantly green. In the third period, after Independence, the dual green landscape of the colonial period was maintained for a moment. However, according to the respondents, the maintenance of the vegetation was not well assured. The green device of the city center has regressed sharply. In the last period, the regressive situation of the green landscape which started since Independence has worsened. Indeed, many garden spaces are replaced by buildings. The trees felling has become recurrent, especially in peripheral areas.

The evolution of the Kinshasa green landscape through the existing historical documents
The review of the existing historical documents helps us to distinguish at least four consecutive periods in the history of the green landscape of the city. Although the limits of the periods have proved to be indicative, discriminating elements have been found and are discussed below.

Kinshasa originally (before 1881): malebo landscape
The first writings describing the landscape of Kinshasa are obviously those of its creator Stanley in his letters addressed to the King of the Belgians. In his letters he described a luxurious vegetation that characterizes the Congo Basin. There are few

Kinshasa originally (before 1881): malebo landscape
The first writings describing the landscape of Kinshasa are obviously those of its creator Stanley in his letters addressed to the King of the Belgians. In his letters he described a luxurious vegetation that characterizes the Congo Basin. There are few
Kinshasa in postcolonial period between 1960 and 1980: mimetic and unfinished green landscape

Exceeded by the growth of the city after the Independence, local authorities appealed to the Belgian expertise to produce the regional plan of 1967. This plan (which quickly become obsolete) that aimed to limit the urbanization at the level of the plain, had the merit of promoting agricultural green spaces. In this same logic of the imitation of urbanization in the plain, a Master Plan of Urban Development (MPUD) will be elaborated in 1975 with the support of French experts. Although never applied, its reviewing reveals the importance of green spaces and the natural conditions of the environment (Flouriot et al., 1975). It is certainly under the influence of the MPUD that the rulers of that epoch would continue to maintain for at least a moment, a green landscape similar to that of the European cities to assert their supremacy. Meanwhile, the hills are quickly occupied and their forest cover largely degraded into savannah of Loudetia demeusei or Loudetia simplex. The report is striking on the situation of land cover in 1968 vs. that of 1957 (Pain, 1984).

On a much smaller scale, it is observed that in this period, planned neighborhoods more or less dense, still preserved a significant vegetation cover. In contrast, the new, less dense neighborhoods had only low vegetation cover (Flouriot et al., 1978) (Figure 6).

Although visibly, the green landscape after the Independence had not yet profoundly changed compared to the colonial period at least in the urban area, it is certain that it was marked by an undergone mimicry. The failure of the successive plans drawn up for the city, reveals that the visions and the green infrastructures remained unfinished.

Kinshasa in contemporary period (after 1980): “unbalanced” green landscape
Today, in many ways, the city is abandoned to itself. As proof, it was only recently (in 2014) that a Strategic Planning Guidelines for Kinshasa (SOSAK) was developed. Focused on large infrastructures, this SOSAK envisions the greening of the city only through the vegetable gardens. It is certainly an answer to the real need to feed the city but an answer that will not favor the establishment of a multifunctional green network.

At the same time in spatial extension and in densification, the territory of Kinshasa presently has a green landscape strongly contrasted between its urban area and that of peri-urban. In its urban area, roads previously lined with trees are lacking. Most important green interstices are replaced by petroleum product sales outlets that leave only symbolic lawns. Urban neighborhoods that were once densely settled have been abandoned to itself. As proof, it was only recently (in 2014) that a Strategic Planning Guidelines for Kinshasa (SOSAK) was developed. Focused on large infrastructures, this SOSAK envisions the greening of the city only through the vegetable gardens. It is certainly an answer to the real need to feed the city but an answer that will not favor the establishment of a multifunctional green network.

CONCLUSION

From a fascinating city to an unbridled city, that is the widely recognized pathway in Kinshasa. The present study confirms and reparts the same regression course for its vegetal cover. From a natural green landscape to a desired green landscape, the green landscape of the city is currently suffering and abandoned in a real imbalance. This reveals a landscape where there is a tension between the natural conditions of the environments, the urban and peri-urban settlements and the socio-spatial needs of the populations. This conflict is becoming more and more acute with the widespread wounds that the territory undergoes. For example, there are many ravines and piles of rubbish visible in the city and the increase of flooding of banks of bare rivers.

On the other hand, in this conflict landscape, there is still a residual green potential that can play the role of reconciler. In a context of impoverishment of populations where the state is “powerless” or “resigning”, reconciliation can only be based on the strength of the people. And, this strength lies in the local practices and the co-participation of the inhabitants to enhance their living environment by the establishment of a landscape, rather a green system adapted to their needs and their socio-cultural and identity context.

ACKNOWLEDGEMENTS

The authors would like to thank the Centre pour le Partenariat et la Coopération au Développement (PCODEL) of the University of Liège and the Wallonie-Bruxelles Internationale through ERAIFT for their financial support. We also would like to thank Mr. Mineze Kwete for his help in the translation of the manuscript into English.

REFERENCES


What Landscape for Kinshasa (Kinshasa, DRC)? Environments and Communities with Natural/Human Interrelations to Reconcile/Reinvent by the Project

Kaleka N’kole1, Alexis Tshiunza1, Rita Occhiuto1

1 LabVTP "Ville Territoire Paysage", Faculty of architecture, Liège, Belgium

Keywords:
Informal Settlements; Erosion Landscape, Geomorphic Agents, Landscape Awareness, Local Knowledge.

ABSTRACT

After independence (1960), Kinshasa (DRC) experienced a population explosion leading to massive urbanization of the hilly and sandy suburban area. These unplanned settlements, spread out on a water marked relief, imposing a square mesh urban model on unstable lands. Soon, in the slope of KINDELE appeared erosions. The study of the joint actions, natural and human interacting on this site makes it possible to affirm that the erosions are the visible sign of the existing conflict, and still ongoing, between the way of living and the geometries of the street networks, re adapts to the relief in order to make it possible to envisage urbanization as a factor of landscape coaction to be accompanied over time. The objective of this contribution is not to study modes of new settlements, but rather to bring out methods based on hypotheses-projects that make it possible to reconcile the landscape at the center of the collective level? to state hypotheses guaranteeing a high quality of life at the area concerned by this study is how, for a framework already built, in full transformation and strongly degraded by erosions such as that of KINDELE, recreate housing spaces guaranteeing a high quality of life at the collective level? To state hypotheses of progressive transformation of the territory, based on the revision of progressive transformation of the territory, based on the revision of road and parcel meshes, would make it possible to reconcile the housing with its environment. This urban rehabilitation would provide an opportunity to replace, on the basis of new occupations of hill sites, but above all, in several forms of densification. In the upper city, with sandy soil, low road structure (earth roads) and high risk of erosion, these processes lead to serious environmental problems related in particular to the management of runoff water as a result of increase of impervious surfaces. The study of a good sanitation of runweal begins with the parcels allotment (S.M.U.H., 1977: 35). Adaptation to topography involves preventive control of erosions, a well-designed sanitation network and paths with practicable slopes (Ibid.: 48). In KINDELE, checkerboard developments, devoid of stormwater collection and management structures, receiving water from impervious soils of upstream housing estates and heavily waterproofed plots, have created, with walking, ways for runoff water. These muddy streets turn into real torrents at the time of showers and cause great ravines where the slopes exceed 12.5% (VAN CALLIE, X., 1997, KAYEMBE M. & WOLFF E., 2015: 126).

How, for a framework already built, in full transformation and strongly degraded by erosions such as that of KINDELE, recreate housing spaces guaranteeing a high quality of life at the collective level? To state hypotheses of progressive transformation of the territory, based on the revision of road and parcel meshes, would make it possible to reconcile the housing with its environment. This urban rehabilitation would provide an opportunity to replace, on the basis of the adopted “project-based approach” , the landscape at the center of the development system in these areas.

INTRODUCTION

The current housing situation in Kinshasa is marked by a crisis that continues to result, informally, not only in new occupations of hill sites, but above all, in several forms of densification. In the upper city, with sandy soil, low road structure (earth roads) and high risk of erosion, these processes lead to serious environmental problems related in particular to the management of runoff water as a result of increase of impervious surfaces. The study of a good sanitation of rainwater begins with the parcels allotment (S.M.U.H., 1977: 35). Adaptation to topography involves preventive control of erosions, a well-designed sanitation network and paths with practicable slopes (Ibid.: 48). In KINDELE, checkerboard developments, devoid of stormwater collection and management structures, receiving water from impervious soils of upstream housing estates and heavily waterproofed plots, have created, with walking, ways for runoff water. These muddy streets turn into real torrents at the time of showers and cause great ravines where the slopes exceed 12.5% (VAN CALLIE, X., 1997, KAYEMBE M. & WOLFF E., 2015: 126).

How, for a framework already built, in full transformation and strongly degraded by erosions such as that of KINDELE, recreate housing spaces guaranteeing a high quality of life at the collective level? To state hypotheses of progressive transformation of the territory, based on the revision of road and parcel meshes, would make it possible to reconcile the housing with its environment. This urban rehabilitation would provide an opportunity to replace, on the basis of the adopted “project-based approach” , the landscape at the center of the development system in these areas.

THE URBAN MODEL WITH SQUARE MESH OF THE KINDELE VALLEY: A HISTORICAL RECALL

The area concerned by this study is