

## ORIGINAL ARTICLE

# CAUSES AND CONSEQUENCES OF THE DESTRUCTION OF GREEN SPACES IN THE CITY OF KINSHASA, THE DEMOCRATIC REPUBLIC OF CONGO

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Received: 15 Juillet 2024, Accepted: 23 Juillet 2024

## ABSTRACT

**Background and Objective:** The study of the determining causes and consequences of the destruction of the green spaces of the City of Kinshasa has a certain interest by the quality of the results that it makes available to Kinshasa, scientists, researchers, and decision-makers to allow know their situation which prevails in this urban ecosystem. The objective of this work is to obtain scientific data on the causes and consequences of the destruction of green spaces in the city of Kinshasa. **Methods:** We used proven methods such as direct observation of facts in the field, documentary research, analytical, statistical, survey method. Supported by a few techniques such as questionnaire survey, interview, etc. Considering the increased interest in urban ecological problems, it is desirable that green spaces develop considerably over the next decades in the city of Kinshasa. **Results:** The results obtained from these investigations highlight a notorious virtual absence of green spaces in the city of Kinshasa in general and in particular in the four survey municipalities, due to several factors such as anarchic and formal occupation of green spaces (7.4%), non-compliance with the texts regulating easements including green spaces (8.8%), decommissioning of green spaces for residential and other purposes (10.4%) in defiance of their initial vocation (in accordance with local development plan), factual use: domestic, school, commercial, housing, sanitation, dumping ground (93.8%), proliferation and emergence of erosion and flooding (14.2%), disappearance of a formidable number of damage to biodiversity (10.4%), and repercussions on the entire ecosystem (25.8%). **Conclusion:** Finally, for the future and given the virtual absence of green spaces in the study environment, all Congolese in general and Kinshasa in particular must remember that: “any withdrawal requires a return; because, nature abhors a vacuum.

**Key words:** Cause, City of Kinshasa, Consequence, Green space, Spoliation

## INTRODUCTION

The urban plan, for the city of Kinshasa, it has been exactly 53 years, capital of the Democratic Republic of Congo (DRC), the colonizer had, at that from 1960

to 2013, that the Democratic time, planned the green spaces for an urban DRC acceded to and green living environment, allowing to national and international sovereignty, on relax and to beautify the city with species.

Trees from the equatorial forest imported. From 1960 to 1975, the same public town planning policy was followed to the letter [1-3].

Green spaces in African cities were once the pride of urban landscapes. By way of illustration, the city of Brazzaville in the

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Website: <https://www.satagroup.org>

DOI: 10.18644/jiresh-biotech.0000242

E-ISSN: 2413-7669 (Online)

Republic of Congo was nicknamed “Brazzaville-La-Verte” or “Brazza-LaVerte,” because it was developed by a green flora of different species of trees. (Courtyard, garden, park, fence and intraurban planting). Unfortunately, these green spaces are, today, potholes [4]. The green spaces of the old beautiful capital of Kinshasa were erased from the geographical map of the VK, due to their theft, in favor of sumptuous and precarious habitats, under the pretext of eliminating insecurity and insalubrity (case of the spoliation of spaces greens of Limete-Funa, Limete-Socopao, Lemba Sub-Region, Lemba Salongo/SNEL, Lemba Kiyimbi, Eucalyptus of N’djili/districts 1, 8, and 12, Masina Sans Fils.), others have been completely replaced by small trades, markets, car parks, pirate garages, and by private schools, with their processions of daily waste. All these theaters operate under the powerless eye of the public authority (various landlords of the Hôtel de VK, mayors, heads of districts), which are supposed to apply the laws in this area. In addition, these authorities fail to give signs of hope that show that it is, today, difficult to take an interest in the urban management of green spaces and questions of the urban environment without referring to the sustainable development. However, this has been one of the major concerns, over the past few decades, for cities around the world in general, African in particular and Congolese, including Kinshasa in particular [5].

In the process of development of these cities, started since colonization, before colonial times, moreover, for some of them, urban public policies in matters of town planning, development of green spaces and protection or environmental management do not coincide with the practices of most city dwellers. Far from being hostile to public action, Kinshasa city dwellers are, for the most part, indifferent to the city’s sanitation services and companies which are run by Kinshasa city hall and its partners (private operators and associations dealing with this management). The efforts that these multiple stakeholders deploy in terms of the development and management of green spaces do not seem to contribute to modifying the harmful and harmful practices of certain Kinshasa people who are characterized by certain casualness in the way they dispose of a public space [6,7].

Very often, in cities, when the population increases, green spaces are often threatened with disappearance. This is what we found during these investigations. Given this situation and given that almost all of the population lives in a quite “cupidospheric” portion, determination and involvement for the improvement of the environmental framework of Kinshasa are imperative, not only by public authorities, nongovernmental organizations (NGOs) and other associations; but also, by the resident population, for a good use of the ground. In this work, we elucidate in particular the determining causes and consequences of the degradation of green spaces in the city of Kinshasa in general and the

districts of the four municipalities surveyed, particularly Gombe, Kalamu, Matete and N’Djili.

## METHODS

The city of Kinshasa served as the setting for this study. Direct observation, factual analysis served as a method of study. In addition to these methods, we used the statistical method to quantify the data collected during the field surveys using the different software; the survey method provided the opportunity to consult those involved in the sustainable management of green spaces and other targeted individuals, in order to collect their opinions and considerations likely to elucidate the hypotheses of the work. The systemic approach or analysis helped, in this study, to integrate the observed facts into the overall understanding of the phenomenon studied in all its complexity.

Techniques used:

- The documentary research was used to gather several useful theoretical information from the pre-existing documents relating to the study. For this work, we first read the linear documents and tools that we consulted in various libraries of the place;
- The pre-survey made it possible to tackle the question before the actual study of this work, on the basis of some verbal testimonies from the populations and observations made in the field. It facilitated familiarization with the geographical space and good knowledge of the area studied;
- The survey itself by questionnaire led to the collection of opinions from samples of green spaces and residents of the four municipalities (Gombe, Kalamu, Matete, and N’Djili) of the VK on the issue of green spaces;
- The interview survey consisted of giving the respondents information and receiving in return appropriate information. This technique made it possible to survey 24 green spaces, four sample municipalities and interview 240 subjects at a rate of 60 per municipality, with the aim of collecting additional information on general knowledge relating to green spaces in the capital.

## RESULTS

Table 1 shows the results of the demographic and spatial development of the VK (Table 1). From a demographic point of view, Kinshasa has successively experienced a clear growing demography since its creation: In 1881: 5,000 inhabitants; 1919: 14,000 inhabitants; 1924: 23,730 inhabitants; 1929: 46,088 inhabitants; 1930: 39,950 inhabitants; 1940: 49,972 inhabitants; 1945: 101,501 inhabitants; 1950: 201,905 inhabitants; 1957: 378,628 inhabitants; 1960: 476,819 inhabitants; 1967: 864,284 inhabitants; 1968: 939,317 inhabitants; 1975: 1,679,091 inhabitants; 1981: 2,567,166 inhabitants;

**Table 1: Results of the demographic and spatial evolution of Kinshasa, from 1881 to 2015**

| Years | Population | Area (ha) |
|-------|------------|-----------|
| 1881  | 5.000      | 115       |
| 1919  | 14.000     | 650       |
| 1924  | 23.730     | -         |
| 1929  | 46.088     | -         |
| 1930  | 39.950     | 1.500     |
| 1940  | 49.972     | -         |
| 1945  | 101.501    | -         |
| 1950  | 201.905    | 2.331     |
| 1957  | 378.628    | 5.512     |
| 1960  | 476.819    | 7.100     |
| 1967  | 864.284    | 9.400     |
| 1968  | 939.317    | 12.863    |
| 1975  | 1.679.091  | 17.922    |
| 1981  | 2.567.166  | 20.160    |
| 1984  | 2.664.309  | -         |
| 1998  | 4.131.845  | 59.000    |
| 2000  | 6.500.000  | 60.000    |
| 2005  | 7.275.511  | 90.000    |
| 2009  | 9.260.777  | 100.000   |
| 2012  | 10.797.220 | -         |
| 2015  | 14.985.998 | -         |

1984: 2,664,309 inhabitants; 1998: 4,131,845 inhabitants; 2000: 6,500,000 inhabitants; 2005: 7,275,511 inhabitants; 2009: 9,260,777 inhabitants; 2012: 10,797,220 inhabitants; 2014: 12,946,020 inhabitants; 2015: 14,985,998 inhabitants.

Table 2 summarizes the results of the inventory of the causes of the theft and destruction of green spaces. 100% of the subjects questioned have a perfect knowledge of the causes of the theft and degradation of green spaces in the VK: housing crisis (10%), lack/lack of housing policy (10.4%), demographic explosion (15, 4%), state crisis (5%), greed of the population and the public authority (8.8%), presence of vulgar men in the administration (10.8%), presence of eco-naïve within Congolese/Kinshasa society (4.6%), inversion of moral values (3.3%), weakness of the competent authority (7.5%), search for easy gains (9, 6%), etc. (Table 2).

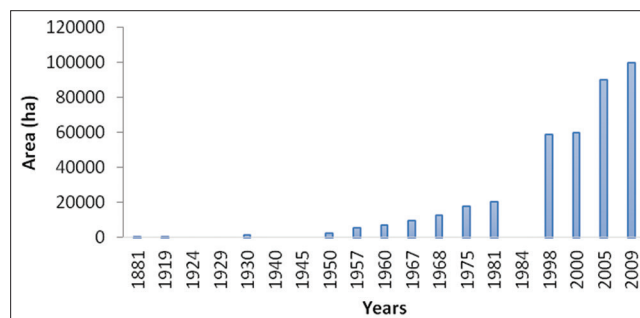
The spatial evolution of the city of Kinshasa from its creation until 2015 goes from 115 ha to more than 10,000 km<sup>2</sup> from 1881 to 2015 (Figure 1).

## DISCUSSION

This study notes the populations of Kinshasa increased from 5000 to 15,000,000 inhabitants from 1881 to 2015 and has

**Table 2: Inventory of the causes of the destruction of green spaces in Kinshasa**

| Cause  | n   | %     |
|--|-----|-------|
| Housing crisis                                       | 24  | 10.0  |
| Lack of housing policy                               | 25  | 10.4  |
| Population explosion                                 | 37  | 15.4  |
| Greed of the population and public authority         | 21  | 8.8   |
| State crisis   | 12  | 5.0   |
| Presence of vulgar men in the public administration  | 26  | 10.8  |
| Presence of eco-naïve in society                     | 11  | 4.6   |
| Anarchic occupation of green spaces and urban spaces | 17  | 7.1   |
| Inversion of moral values                            | 8   | 3.3   |
| Weakness of the competent authority                  | 18  | 7.5   |
| Search for easy wins                                 | 23  | 9.6   |
| Influence of certain authorities in the country      | 18  | 7.5   |
| Total  | 240 | 100.0 |

**Figure 1: Spatial evolution of the city of Kinshasa**

experienced a markedly rampant population growth since 1881 to date. This situation only pushes the Kinshasa populations to put pressure on the anarchic occupation of urban spaces and green spaces in the city of Kinshasa. The uncontrolled and uncontrolled demographic growth has negative repercussions on land reserves. Moreover, the spatial evolution of the city of Kinshasa shows that it has grown from 115 to over 100,000 ha from 1881 to the present day. Looted green spaces are often used for domestic purposes (50%). This phenomenon worries and urgently requires the intervention of the competent authority in the application of the sanctions which are imposed on the right of the spoilers [8-10]. The absence of a demographic and spatial policy appears to be one of the main causes of the spoliation and degradation of green spaces and the urban ecosystem of Kinshasa [11-14].

Very often, in cities, when the population increases, green spaces are often threatened with disappearance/spoliation.

This is what we found during the investigations [15-18]. The results obtained above highlight the notorious lack of urban green spaces in the several districts of the municipalities surveyed in the city of Kinshasa. This situation can also be explained by several factors such as causes and consequences. The provisions contained, in fact, in article 20, paragraph 6, of the decree of June 20, 1957, on town planning in the Congo and the interministerial decree of October 29, 1993, the land law in its articles 169–180, 205 and 206... are not respected [19-25].

Thus, we are witnessing an intense spoliation of urban green spaces, diverting them from their initial vocation in favor of residential and other functions, in defiance of town planning regulations. Given this situation and given almost the entire population (Kinshasa) lives in a quite cupidospheric portion, the determination and the implication for the improvement of the environmental framework (of the capital, Kinshasa) prove imperative, not only by the public authority, NGOs and other associations; but also, by the resident population, for a [rational] use of the land [26-29].

## CONCLUSION

The phenomenon of the theft of green spaces is real in the areas studied. Almost all of the looted green spaces are often attributed to unorganized housing use, housing, and other things. The consequences of the destruction of green spaces are ecological, environmental, economic, and health.

## AUTHOR'S CONTRIBUTIONS

MNNJA, BLM, ANN, and AKJ designed and analyzed the statistical data for the study. BKL, LDB, and PJJ supervised the study. All authors have read and approved the final and revised version of the manuscript.

## CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

## KNOWLEDGE

We thank all who participated in the study.

## REFERENCES

1. Anonyme. Végétation de la Ville de Kinshasa. Kinshasa: Ministère des Affaires Foncières (MAF), Ministère de l'Environnement, Conservation de la Nature (Pêche - Forêts) et Tourisme (MECNT), RDC; 1999.
2. Anonyme. Plan National de l'Habitat, Rapport Synthèse. Kinshasa: RDC; 2001. p. 60.
3. Anonyme. Monographie de la ville de Kinshasa. Kinshasa: RDC; 2005. p. 171.
4. Anonyme. Rapports Annuels de la Commune de Mont Ngafula. Kinshasa: RDC; 2007.
5. Anonyme. Recueil des Textes Juridiques en Matières Environnementales en. Kinshasa: RDC; 2008.
6. Anonyme. Programme du Gouvernement Provincial de la Ville Province de Kinshasa, Hôtel de Ville de Kinshasa, Kinshasa/Gombe, Kinshasa; 2010.
7. Bamenikio K. Composition Urbaine, Notes de Cours, G1-Urbanisme. Kinshasa: IBTP, Kinshasa/Ngaliema; 2007.
8. BEAU. Rapports Annuels du Bureau d'Etudes d'Urbanisme et d'Habitat (B.E.A.U.). Kinshasa: Centre des Recherches d'Urbanisme et d'Habitat (CRU). RDC; 2000.
9. Binzangi KL. Environnement et Ecologie Urbaine, Cours Inédit, L2 Urbanisme (U)/ISAU, DEA - UNIKIN, Kinshasa/Gombe, Kinshasa II, Kinshasa; 2011.
10. De Saint Moulin L. Villes et organisations de l'espace de la République démocratique du Congo (RDC), éd. Kinshasa: CERDAS; 2009.
11. De Saint Moulin L. Populations de Kinshasa en l'an 2010 Avec Taux D'accroissement de 3%, in Revue Congo Afrique, n 444, éd. Kinshasa: Avril; 2010.
12. Kabamba K. Enquêtes Urbaines, Notes de Cours, G3-Urbanisme. Kinshasa: ISAU, Kinshasa/Gombe; 2011a.
13. Kabamba K. Opérations D'aménagements Urbains, Notes de Cours, G3-Urbanisme. Kinshasa/Gombe, Kinshasa: ISAU; 2011b.
14. Kadima K. Equipements Collectifs, Notes de Cours, G3-Urbanisme. Kinshasa/Gombe, Kinshasa: ISAU; 2011a.
15. Kadima K. Histoire de l'Urbanisme II, Notes de Cours, G3-Urbanisme. Kinshasa/Gombe, Kinshasa: ISAU; 2011b.
16. Kanoepfel P, Larrue C, Varone F. cités par S. Nahrath. Conférence sur la Politique Publique: Cadrage Théorique, éd. Lausane, Suisse: IDHEA; 2005.
17. Kassay N. La Politique de la Gestion Des Espaces Verts par l'Hôtel de Ville de Kinshasa, éd. Kinshasa XI, Kinshasa: CEP, Université de Kinshasa (UNIKIN), RDC; 2008a.
18. Kassay N. L'œil Impuissant de l'Hôtel de Ville de Kinshasa Dans la Prolifération des Déchets en Matière Plastique, in LASK, n 52. Kinshasa: RDC; 2008b.
19. Khonde WN. Contribution à la Problématique des Espaces Verts dans la Ville-Province de Kinshasa: Cas de la Commune de Mont Ngafula, Mémoire L2, Dépt. de l'Environnement, Faculté des Sciences. Kinshasa XI, Kinshasa: Université de Kinshasa (UNIKIN); 2011.
20. Lelo NF, Tshimanga MC. Pauvreté Urbaine à Kinshasa, éd. Cordaid, La Haye, Pays-Bas/Hollande: Cordaid; 2004. p. 166.
21. Lelo NF. Ville et Environnement, éd. Kinshasa, Paris: L'Harmattan; 2008. p. 233.
22. Lelo NF. Croissance Urbaine et Recul de la Ceinture Verte Maraîchère à Kinshasa in Congo-Afrique, n 438. Kinshasa; 2009. p. 406-18.
23. Lelo NF. Kinshasa: Planification et Aménagement, éd. Paris: L'Harmattan; 2011. p. 385.
24. Lubini AC. Ecologie Végétale: Phytocologie ou Phytécologie, Notes de Cours, L1-Environnement, Dépt. des Sciences de l'Environnement, Faculté des Sciences, Kinshasa XI, Kinshasa: UNIKIN; 2010.
25. Mbuyi BM. Droits de Constructions, Notes de Cours, G3-Urbanisme. Kinshasa/Gombe, Kinshasa: ISAU; 2011.
26. Mukumbi M. Problématique des Espaces verts de la ville de Kinshasa: Cas de District de la Funa, Mémoire, L2. Kinshasa XI, Kinshasa: Dépt. de l'Environnement, Faculté des Sciences, Université de Kinshasa (UNIKIN); 2005.
27. Musibono ED. Du Marasme d'un Etat-Squelette au défi du Développement Durable, Gestion de L'environnement au Congo-Kinshasa: Cueillette Chronique, Pauvreté Durable éd. Kinshasa XI, Kinshasa: Chaire-Unesco, Université de Kinshasa (UNIKIN); 2008.
28. Mvumba NJ. Perception des Espaces Verts par les Populations de Kinshasa: Cas des Communes de Gombe, Kalamu, Matete et N'Djili, Mémoire de D.E.S. Kinshasa XI, Kinshasa: Dépt. Des Sciences de l'Environnement, Faculté des Sciences, Université de Kinshasa (UNIKIN); 2012.
29. Onu. "World Urbanization Prospects: The 2005 Revision Population Database éd. Population Division. New York: USA/ONU; 2007.