



## **Urban Open Space Management and Implications on Environmental Quality of Lagos Satellite Towns**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author JAO designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors DOA and MPO managed the analyses of the study. Author MPO managed the literature searches. All authors read and approved the final manuscript.*

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### **ABSTRACT**

Overpopulation has progressively impacted on the quality of urban life especially in developing countries of the world including Nigeria. The constant and arbitrary encroachment on virtually every available land space is a sad phenomenon distorting living patterns in most urban centres and resulting in poor environmental quality. The very building fabrics of architectural structures are seriously affected by overcrowding with negative impacts on the design-worth of the built environment where open spaces are lacking or available but not sustained through appropriate landscape designs. This study examines the causes and implications of open space abuses and the decay of city infrastructure within the satellite towns of Lagos, Nigeria. It reveals that the various abuses are traceable to lack of landscape plan and ineffective plan implementation by the management authorities of the public sector. It noted that while the public estates are left to rot away due to poor management plan and strategy, the private counterparts have better maintenance strategy with effective implementation. The paper concluded that

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overpopulation in the urban centre of Lagos and other emerging cities of developing nations can be better managed if the public sector adopts the more effective implementation and monitoring strategies of the private sector.

*Keywords: Environment; landscape; management; open space; satellite towns.*

## 1. INTRODUCTION

Overpopulation and congestion in Lagos and other major cities of Nigeria have led to the emergence of new satellite towns in the suburbs and urban fringe beyond geographical state boundaries to service the accommodation needs of the soaring population. This rapid and random expansion of urban centres along their peripheries has become a common phenomenon of urban landscape across country and many other developing countries across the globe. It is usually occasioned by the speculative drive of individuals and corporate private sector developers with potent threat to the sustainability of open space and landscape design components of the emerging urban structure [1]. According to [2] open spaces are vulnerable to abuse because of the lack of a sustainable design and landscape that would restrain encroachment as open spaces are considered as “wasted space” when in the real sense urban public space is the backbone of the city. It allows people to live amidst complexity, negotiate differences, and assert their identities and access resources in ways both formal and informal. [3] underscored this by positing that a well designed landscaped and managed open space within the neighbourhood / environment offer play areas for children, communal space, and serene environment which contribute significantly to the quality of life and wellbeing.

There is lack of template and policy for the implementation of satellite town projects to control haphazard undergrowth within satellite estates. Consequently the Satellite towns created to absorb population overflow from the city core are themselves plagued with avoidable congestion resulting from abuse of the various designated open spaces. As rapid urbanization, population pressures, the land squeeze and the unprecedented growth of settlements increasingly define the urban form [4], the need for a trenchant and comprehensive evaluation of satellite schemes becomes imperative.

This paper therefore aims at evaluating the open spaces in Lagos satellite towns in terms of environmental quality and management strategies with a view to inform and engage

policy and decision-makers, and provide them with the evidence needed as basis for a framework to control the design and management of open spaces in satellite schemes. The specific objectives are to:

- i. Identify the existence of the open spaces in the satellite towns.
- ii. Investigate the landscaping and management of available open spaces.
- iii. Evaluate the effect of open spaces in mitigating environmental decay while promoting an economic and healthy population.

## 2. RESEARCH METHODOLOGY

This study adopted the multiple case studies in developing an understanding of the differences among the study areas as suggested by [5] and [6]. Appropriate logical analyses were carried out with existing text books, periodicals, journals and internet surfing to establish availability, absence, abuse and the impact of the landscaped open spaces on the residents in public and private estates of Lagos satellite towns.

## 3. STATEMENT OF THE PROBLEM

The 1991 National Population Census recorded 359 urban settlements of at least 20,000 people in Nigeria according to [7] and estimated the figure to increase to 450 by 2000. Increase in the urban population has resulted in the proliferation of slums and informal peri-urban settlements otherwise known as shanty towns. [8] recorded that 45.9% of the 120.9 million strong population of Nigeria (2002 estimates) resides in urban centers. With urban population growth rate of 4.8% annually, markedly higher than the national annual growth rate of 2.2%, the prognosis is that by 2015, more than half of the nation's population would be urban dwellers. Demographic trend revealed that the Lagos State population growth rate of 8% has resulted in its capturing of 36.8% of Nigeria's urban population. The implication is that whereas the country's population growth is 4/5% and global 2%, Lagos population is growing ten times faster than New York and Los Angeles with grave implication for urban sustainability [9].

**Table 1. Population of lagos by local government area**

<b>Local government</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Agege	564,239	468,825	1,033,064
Ajeromi-Ifelodun	723,644	711,651	1,435,295
Alimosho	1,099,656	947,370	2,047,026
Amuwo Odofin	301,012	223,959	524,971
Apapa	264,728	257,656	522,384
Badagry	187,427	192,993	380,420
Epe	153,360	170,274	323,634
Eti-Osa	460,124	523,391	983,515
Ibeju-Lekki	49,613	49,927	99,540
Ifako-Ijaiye	380,112	364,211	744,323
Ikeja	328,778	319,942	648,720
Ikorodu	364,207	324,838	689,045
Kosofe	527,539	407,075	934,614
Lagos-Island	461,830	398,019	859,849
Lagos-Mainland	326,433	303,036	629,469
Mushin	684,176	637,341	1,321,517
Ojo	507,693	433,830	941,523
Oshodi-Isolo	514,857	619,691	1,134,548
Somolu	517,210	507,913	1,025,123
Surulere	698,403	575,959	1,274,362
<b>State total</b>	<b>9,115,041</b>	<b>8,437,901</b>	<b>17,552,94</b>

Source: Lagos State Bureau of Statistics 2005

Further implication of these is that the available housing estates and other settlements are bound to be over stretched especially the open spaces.

[10] reported the lack of awareness and interest of people in landscaping their environment and the inability of the government to encourage landscaping of open spaces in city centres. Government interventions in the form of urban renewal and city beautification programmes are hardly sustained because of the lack of effective provisions of maintenance and policy backup for the decisions. Consequently, neglect of landscaping and sustainable maintenance of open spaces to enhance environmental quality of satellite towns are counter-productive.

#### 4. JUSTIFICATION FOR THE STUDY

In his study of public housing in Lagos, [11] posited that tenant's satisfaction level with management of the public estates was below average while [12] opined that in Malaysia, private developers were providing satisfactory levels of housing units as against what is obtainable in Nigeria.

There is a lack of template for the implementation of satellite town projects in order to terminate haphazard undergrowth within such estates. Consequently the consciousness in

urban governance when dealing with satellite town development is low. Satellite towns created to absorb the spillover from the city core are itself plagued by avoidable congestion which is due to the abuse and encroachment of the various designated open spaces. As reported by [13] about Ifako-Ijaiye Local Government area in the border between Lagos and Ogun states, uncontrolled street trading and ramshackle development which encroach on roads, public spaces and setbacks are prominent. There is therefore the need for practical evidences to serve as basis for a comprehensive policy for evaluating existing public and private satellite town schemes and to guide the development of future ones to avoid the consequences of slums. This study will provide this dire need. It will inform and engage policy and decision-makers, and provide them with the evidence needed as basis for a framework to control the design and management of open spaces in satellite schemes. Consequently population control by the use of open space and the environmental quality of Lagos satellite towns would be achieved.

#### 5. LITERATURE REVIEW

##### 5.1 Urban Open Spaces Planning Concept

The evolutionary trend of western city development attaches great importance to the provision of open spaces in human settlements. From medieval agora to renaissance city squares and baroque avenues each civilization evolved urban open space system in response to the prevailing socio cultural needs. One of the dominant issues in formal city planning is planning for beauty, which is rooted in urban open space development. The City Park Movement was conceived as an environmental solution to the decadence and social ill of eighteenth and nineteenth centuries industrial revolution characterized by urban congestion, depressed slums, pollution and embarrassing plagues. The concept introduced nature to the crowded cities and sub urban township of America. Planned open spaces and natural recreational areas were conceived as escape valves for urban dwellers in search of relief from the social, physical and psychological oppression of the vices of industrial centres.

While the city park movement continued to sharpen the form of American cities, Ebenezer Howard in 1902 introduced the "Garden City

Concept" in England on the same philosophy of living with nature [14]. The two concepts, City Park and Garden City Movement, globally influenced urban renewal programmes and new town development programmes of the twentieth century in spite of the advance technological breakthrough and the foundation for the forthcoming information technology dispensation [15].

## 5.2 Factors Responsible for Urban Sprawl in Nigerian Cities

Different factors are responsible for urban sprawl in Nigerian cities. The unprecedented population increase in Nigerian cities continues to put pressure on the existing housing facilities. The inability of housing delivery to cope effectively with housing need culminate in pricing out the majority of the low income-earners from the housing market. Most affected groups are the immigrants from the rural hinterland that prefer to settle at the suburbs of the cities. Often times, this is responsible for the development of squatter's settlement at the peri-urban zones [16].

Cities present unlimited socio-economic opportunities, particularly in the area of landed property development. The operations of the economic forces in the supply of land for commercial development within the city centre are encouraging city suburbs in the direction of residential property development. This has sufficiently propelled the greed for land speculation and hoarding at the suburbs. Hence, most of the layouts are not linked to others for accessibility purposes. Another factor that is responsible for the promotion of urban sprawl is the inability of government to effectively develop their compulsorily acquired parcels of land in some cities. This is predicated on the non readiness of government to pay compensations on un-exhausted resources in the acquired land to the owners. Thus, the unwillingness of the owners to fully release the acquired land to government and their continual disposal of the land to individuals that continues to develop the land without reference to planning authorities to seek planning permission. Ineffectiveness of the development control tool further strengthens this practice. However, in spite of these shortcomings, efforts are being made at different quarters to check the sprawling growth of Nigerian cities. While the undisputed efforts are constantly worked out the rapid rate of growth in city population has meant that Urbanization and its attendant problems have constituted huge

challenges to the received knowledge, (both in theory and in practice) in urban planning and management. The appropriateness of conventional urban planning approach to the improvement of urban environmental conditions in the face of deteriorating urban environment have often been questioned [17].

[18] empirical evidence of the environmental assessment report on Ifako Ijaye in the boundary town of Lagos and Ogun states is captured in the following Table 2.

This is reminiscent and reflective of virtually all urban city centres in Nigeria. Urgent attention is therefore required in terms of public space policy, planning and implementation especially on the highlighted areas of weakness, opportunities, threats and priorities.

## 5.3 Problems of Development Control in Lagos Metropolis

[19] identified the problems of development control in Lagos state as a whole which is as a result of the gradual deviation from the master plan of Lagos and deregulatory authorities on development through distortion, alteration and deviation from planning standards. The main violators include both the public and private sectors aided by the' inefficiency, indiscipline officials and compromises made by government agents in charge of development control. In spite of the government intervention through building regulations in metropolitan centres, and advertorials in the dailies by the regulatory authority, warning the public on the increase "in contravening conduct of property owners, building developers and occupants in Lagos metropolis" are yet to overcome the habit of environmental and open space abuses. Listed among the common contraventions are:

- i. Encroachment on public rights of way and open spaces.
- ii. Buildings spring up under high-tension lines with their roofs a few metres below the lines.
- iii. Urban areas that the building setbacks have been taken over by front shops and a variety unsightly development.
- iv. Conversion of residential property to commercial premises, banks, places of worship, schools etc;
- v. Construction of buildings in violation of building approvals
- vi. General violation of Urban and Regional Planning Laws in Lagos State.

- vii. Corruption by enforcement officers.
- viii. Construction of properties on public utility setback.

corruption, neglect, poor management, inadequate and absence of urban development policy or absence of mechanism for its enforcement [21]. It is obvious therefore that open space abuses in Lagos satellite towns and other cities in Nigeria is as a result of deliberate official compromise and abuse of privilege shrouded in moral decadence.

[20] noted that the persistent contravention of the extant laws is being aided by those who know the planning law and who are incidentally part of the planning of the environment. The stated breaches are the consequences of official

**Table 2. Environmental report on Ifako Ijaiye local government area Ogun state**

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>	<b>Priorities</b>
Existence of national policy and legislation on the environment	Weak institutional capacity	Promoting public private partnerships for resource mobilization and environmental management	Lack of information and coordination within and among the three tiers of government	Improving environmental planning management capacity
Existence of state agencies for environment and land use planning	Uncoordinated institutional working arrangements between federal and state governments on the one hand and between state and local governments on the other	Utilizing the ecological fund and donor resources to develop and implement environmental projects	Lack of capacity at the local government level	Establishing a local urban forum for improved environmental governance
Federal government provides funding for environmental projects through ecological funds	Inadequate disposal of solid and liquid waste	Exploring the opportunities that exist in the structure plans for Ifako-Ijaiye for promoting sound environmental planning, economic growth and social welfare	Lack of or inadequate resources for environmental projects	Developing and implementing urban landscape improvement
	Environmental pollution		Lack of a preparedness plan for managing environmental disasters	Implementing a solid waste management plan for Ifako-Ijaiye
	Poor urban environment			Capacity building
	Inadequate and unqualified staff			Resource mobilization for projects
	Poor promotion of partnerships between communities and the private sector			Focusing the structure plans to achieve the objectives of the economic strategies, the Millennium Development Goals
	Low public awareness of environmental issues			
	Lack of equipment			
	Poor funding of environmental issues			

#### 5.4 Urban Environmental Quality

According to [22] cited in [23] Urbanization as a demographic indicator, describes the concentration of population in urban areas following economic transformation and social modernization. United Nations estimates indicate that the world's urban population increased from 30 percent in 1950 to 54 percent in 2014, and is projected to grow by 2.5 billion people (about 66 percent) by 2050, with 90 percent of the increment concentrated in developing regions of Asia and Africa. In Africa, urban population increased from 15 percent in 1960 to 40 percent in 2010, and a further 60 percent increment is projected for 2050 [24]. This therefore calls for densification and preservation of open spaces for sustainable development.

As a result of built densities, hazards such as noise and air pollution are likely to increase, since many of these problems are caused by transportation [25]. Higher urban densities are also liable to damage open spaces within the cities, as well as the quality of life in overcrowded residential neighborhoods. He further observed that in the event that the urban quality of life does, indeed, deteriorate because of the process of intensifying densities, the attractiveness of the suburbs and pressure on the population to leave the cities will rise. Thus, to avoid the continued process of suburbanization and damage to the open space outside the cities, care must be taken to ensure that higher densities are affected in such a way that does not jeopardize urban quality of life.

#### 6. STUDY AREA

Lagos State lies in the South Western region of the federation. It shares boundaries with Ogun State both in the North and East and is bounded on the West by the republic of Benin. In the South, it stretches for 180 kilometres along the coast of the Atlantic Ocean. It is the smallest state in the federation and occupies an area of 3,577 sqkm 22% with 787 sqkm of which consists of Lagoons and Creeks [26].

Lagos originated as fishing and farming settlement on Lagos Island inhabited by the Aworis. Historical accounts show that Lagos first attracted the Ijebus, who came to trade and were the earliest immigrants. By 1821, Lagos was acclaimed the most important slave port on the West African Coast. Lagos remained the capital

of Federal Republic of Nigeria until 1992 when the capital was relocated to Abuja by the Nigerian Military Government because they considered Abuja centralized. "Lagos is a Portuguese word meaning Lagoon and is believed to be an offshoot of the word Lagos de Curamo". It would appear reasonable to assume that Lagos was so named because it took very much in terms of its physical and geographical features after a small coastal lagoon town in Portugal" [27] Lagos is made up of five divisions namely: Ikeja, Lagos (Eko), Ikorodu, Badagry and Epe (<http://www.lagosstate.gov.ng>)



**Fig. 1. Map of Lagos showing five divisions administrative headquarters**  
 Source: Ministry of Lands and Survey, Akure

#### 7. CREATION OF SATELLITE TOWNS IN LAGOS

[28] described Satellite Town, Lagos, Nigeria as a model community (present population of about 80,000). This model town was conceived by the Federal Government in the late 1970s, to cater for the ever increasing accommodation needs of workers in its various ministries and parastatals. It was patterned in similarity to neighbouring town; Festival Village (Festac Town). According to [29], The Federal Government in a bid to achieve its housing vision offered these companies, which included foremost Petroleum Oil Companies, first generation banks, Private companies and Federal Institutions, land with attractive and flexible incentives in Satellite Town Phase II. Some of these incentives and rebates includes the following: Allocation of large tracts of land free-of-charge, Construction of infrastructures like – tarred and paved roads, drainages, street lighting etc. 40% cost of construction – upon submission of architectural drawings and designs of 2, 3, and 4 bedroom apartments, the Federal Government defrayed the cost of the total completed housing units.

The population of Satellite Town steadily began to increase from the early 1980s when most of these company estates were completed and their staffers began to move into their houses. That notwithstanding, the splendor and beauty of the town declined thereafter. The town was designed to include open spaces, green areas; as well as, recreational facilities like the Civil Service Club. Educational institutions like Satellite Town Secondary School and Satellite Town primary School were established. Like every well planned town, it had its own institutional facilities like; the Police Station, Post Office and an equipped Federal Fire Station. The Phase One of Satellite Town was therefore a functional, serene, and quiet civil service town. A Government Reserved Area (GRA) for middle and top-level government workers. At the completion of the houses, they were allocated to staffers of federal ministries, parastatals and public government agencies by a ballot system. As with all government programmes during the military era, some of these houses were also allocated to top military personnel. Hitherto, the houses were used as a temporary accommodation for delegates of the constituent assembly (1978) inaugurated by the Gen Olusegun Obasanjo (1976-1979) military administration. This decision was similar to that of FESTAC Town which had been used to accommodate visitors and participants of the 2nd World Festival of Arts and Culture hosted by Nigeria in 1977 before being allocated by ballot to public and private sector workers on long term mortgage. In furtherance to the Federal Government Housing programmes, the 2nd phase of the Satellite Town project was initiated. This stage was predicated on the need to assist the private sector workers ease their accommodation and home ownership needs. The deplorable state of roads and illegal structures in Satellite Town shows that what was once known to be an estate has overtime turned into a slum. There were reports that in May 2009, the Lagos State government awarded contracts to help stop flooding which are a major problem in that area.

In the wake of several distortions of the master plan of most of the satellite town open spaces the recreational facilities or intended infrastructure are continuously eroded. In the views of [30], there is nothing like a recreational centre or a convenient market for residents of satellite towns in Nigeria. What is seen around as market is just a sporadic spread of structures springing up indiscriminately in any open space,

thus rendering the environment unkempt and rowdy. There appears to be no park, garden or pub to add to the aesthetic beauty of the communities. The best form of recreation is football games organized by young people on a shabby pitch filled with grasses and dangerous objects. Of course there are local cinema's for relaxation, but on the condition of cohabitating with smokers of marijuana, hemp etc. Sometimes, men of the police force carry out raid on such cinema thereby authenticating the notion that cinema houses are just mere extension of criminal abode in satellite towns.

### **7.1 The Need for Open Spaces Development in Lagos**

Open space is an essential part of any urban development and serves several functions such as the provision of areas for organised activities (sports, concerts) and unorganised leisure activities where people can meet and interact (play areas, gardens, and walkways) [31]. Most Nigerian cities like Lagos are poorly organised and characterised by inadequate open spaces. Indeed, the available open spaces have been taken over by un-organised and haphazard planning, resulting from weak development control [32]. In the view of [33], the negative effects of the misuse and mismanagement of the urban open spaces in Nigeria is the poor quality of the built Environment. While this is true the private estates are well maintained with security wall fence and a determinant number of residential occupants in contrast to government or public estates. The low income houses and government estates have most of their open spaces converted from football playing fields into solid building structures approved by building approval agencies. The Lagos FESTAC satellite town along Badagry express is long been compromised.

## **8. RECOMMENDATION**

There is the need to create an open space vanguard in primary and secondary schools in Nigeria to raise environmental and open space consciousness among the youths. It is also pertinent to support the establishment of design quality champions within Nigerian cities; and direct urban developments that promote bottom-up and quality driven approaches – both in terms of inclusive and participatory planning and design. More enlightenment programmes should be made a regular feature in media broadcasting.

Regular inspection should be carried out in the satellite towns to checkmate illegal conversions and development of public open spaces. A synergy of management strategy should be worked out through sabbatical and exchange programmes between private personnel and the public estate staff for better corporate and well articulated environmental quality outcome. Settlements irrespective of the age of inception in Nigeria can be made centres of attraction by maintaining an optimum population through the use of well landscaped open spaces. In satellite towns and beyond and these can be sources of revenue to Lagos state and Nigeria in general.

## 9. CONCLUSION

The care of the environment and its life supporting functions can only be guaranteed when little fragments and portions of it emerging as satellite towns and larger urban cities are cared for on their individual merits. The activities of each environmental sector impacts on the whole rapidly and through a gradual process. The health of citizens is equally reflective of the quality of its environment. Therefore government and private managers of newly emerging satellite towns must maintain a standard blue print which will act as a checklist to format new and old satellite towns developmental project.

Inspection and execution of plans should be a tripartite arrangement between investors government and the community development committees. In terms of private concerns the developer, government agencies and community should periodically carry out joint inspection to ensure the strict compliance of the master plan and to ensure that there are no encroachment of any physical development on allotted open space designations. Erring officials who obtain gratification and frustrate the developmental control objectives should be prosecuted and relieved of their appointment.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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