

URBAN INFRASTRUCTURE DEVELOPMENT AND SUSTAINABILITY IN NIGERIA

Vincent I. Ogu

Research Fellow, Faculty of the Built Environment, University of New South Wales, Sydney, Australia

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Summary

At the dawn of the twenty-first century, one of the most persistent and challenging problems facing Nigerian cities is inadequacy of urban infrastructure and the subsequent deterioration in the urban environment. In recent decades Nigeria has adopted a few key strategies for urban environmental infrastructure development. These range from a technocratic state-provider model, a poorly developed private provision model, and an international-led stakeholders approach to urban environmental planning and improvement. By far, the state-led conventional infrastructure development is the dominant strategy in Nigerian cities. Using Benin City as an example, the paper illustrates the elusiveness of this approach. The paper further argues in the case of the sustainable city project in Ibadan that despite being well-packaged the United Nations agencies-led program may never make a significant impact in the Nigerian urban environment.

Drawing on the experience of these two important cities and on supporting data on Nigeria, the paper argues for greater emphasis on the development of basic urban infrastructure. It is emphasized that this approach is pertinent if the vast areas of suburban, intermediate, and inner areas of Nigerian cities and the environment inhabited by the low-income majority are to be better serviced. It is stressed that strategies for planning and managing the urban environment should acknowledge social and

economic realities and the dynamics of the spatial expression, and act on this recognition in order to counter the problem of poor services and environmental deterioration.

1. Introduction

One of the daunting challenges facing African countries in the wake of unprecedented urbanization during the last few decades is the planning and management of physical infrastructure and the urban environment. As urbanization gathered pace in most countries in the region, the problem of inadequacy of infrastructure services and deteriorating urban environment became enormous. Meanwhile the appalling conditions in many cities in Africa raises questions concerning the appropriateness of the approaches and strategies for responding to inadequate infrastructure services and a poor urban environment. Faced with dwindling public finance, the inadequacy of the top-down conventional urban planning and development approach became apparent in deteriorating urban fabrics.

Nigeria, like most countries in Africa, is undergoing a period of rapid urbanization. Unlike the European and North American experience, where urbanization was preceded by industrialization and rapid economic development, Nigerian urbanization is taking place against the background of a weak economic base and low rate of industrialization. The growing urban population is mainly absorbed in the low-paid informal sector, while others are essentially unemployed. Many households living in vast urban areas are living below the poverty line and this trend may continue in the near future. This, among other things, is because urban growth and expansion in Nigeria is expected to continue beyond the 1990s due to unabated rural-urban migration and the relative economic backwardness of the rural sector in the country.

The level of urbanization in the country rose from 4.8% in 1921 to an estimated 31.7% in 1985. The 1991 national census provisional results, that put Nigeria's population at 88.5 million, have yet to be disaggregated into urban and rural. The urban population grew from 10.7 million in 1963, to 33.8 million in 1990. As at 2001, the urban population constituted 44.8% of the country's population. The size of the urban population, and the almost certain urban expansion in the next few decades, have huge implications for housing, infrastructure, and the urban environment.

Already, Nigerian cities are characterized by the inadequacy of urban services that do not keep pace with population growth and real expansion. A national profile of the environment among other things identified solid waste disposal as one of the intractable environmental sustainability problems in Nigerian cities. This problem often overwhelms the capacity of city authorities, while the volume of wastes generated keeps increasing (see Table 1).

Urban Areas	Tonnes per year			
	1982	1985	1990	2000
Lagos	625,399	681,394	786,079	998,081
Ibadan	350,823	382,224	440,956	559,882

Kano	319,935	348,580	402,133	535,186
Kaduna	257,837	280,925	324,084	431,314
Onitsha	242,240	263,929	304,477	386,593
Port Harcourt	210,934	229,821	265,129	352,853
Aba	131,903	143,712	169,719	236,703

Source: Adapted from Nigerian Environment Study/Action Team, 1991 - *Nigeria's Threatened Environment: A National Profile*

Table 1. Estimated and projected volumes of solid waste in major Nigerian cities

The implication of this lack of service, poor and inadequate housing provision, and less than adequate planning strategies, among other things, includes the worsening of urban environment conditions. There is already evidence that several Nigerian cities are showing signs of decay. Apart from poor conditions of urban infrastructure, routine maintenance is virtually non-existent. The economic downturn in the 1980s and 1990s and the subsequent structural adjustment program (SAP) did not help matters. Public expenditure on public services generally declined, compounding service provision problems in suburban areas.

The foregoing suggests that in order to prevent the urban environment from cascading further into deterioration, there is a need to step back and query existing infrastructure development strategies. There is also a need to re-examine the linkage between urban planning and infrastructure development in view of the prevailing socio-economic reality and urban development dynamics in the country. In the face of post-independence urban development, which has seen a lot of informalization of urban growth and suburbanization, and diminishing economic prospects, the role of planning in the attainment of sustainable urban infrastructure needs to be reconsidered. The conventional wisdom of technocratic urban development processes needs to be questioned. A critical, but often ignored, question is how best to achieve an improved urban environment for the low-income majority of urban residents in the country in suburban and inner city areas. Should the country continue with strategies that, despite the rhetoric of equity, end up providing conventional services for a few medium and high-income housing estates and government reservations? On the other hand, do we adopt models that aim to provide at least basic services to deprived areas? These are important issues, certainly in the Nigerian context, and require a fundamental and realistic response, if poor urban environment and infrastructure sustainability are to be adequately addressed. This paper focuses on these issues.

The sustainability of development process has several facets that range from ecological issues such as the use of renewable and non-renewable resources, to economic and social issues such as access to healthy shelter and environment, adequate livelihood, and human rights. In this paper, urban and infrastructure sustainability refers to a situation or process whereby urban development and services are conceived, implemented, and maintained in such a way that urban stakeholders can afford and sustain them. For instance, infrastructure sustainability, among other things, entails the provision and maintenance of services and the urban environment in a form consistent with public, community, and residents' resources.

The balance of this paper is divided into five sections. Section one gives a synopsis of infrastructure development and sustainability in Nigeria, while the second illustrates the elusiveness of the state provision model with Benin City. The third section focuses on the international urban management initiative in Ibadan with particular emphasis on its prospects and limitations. The imperatives of urban infrastructure development and environmental improvement are identified in the fourth section. The last section is the conclusion. Although in a number of instances the most recent data are not readily available, this in no way detracts from salient arguments of this paper, as the urban and infrastructure development process and factors are not different today.

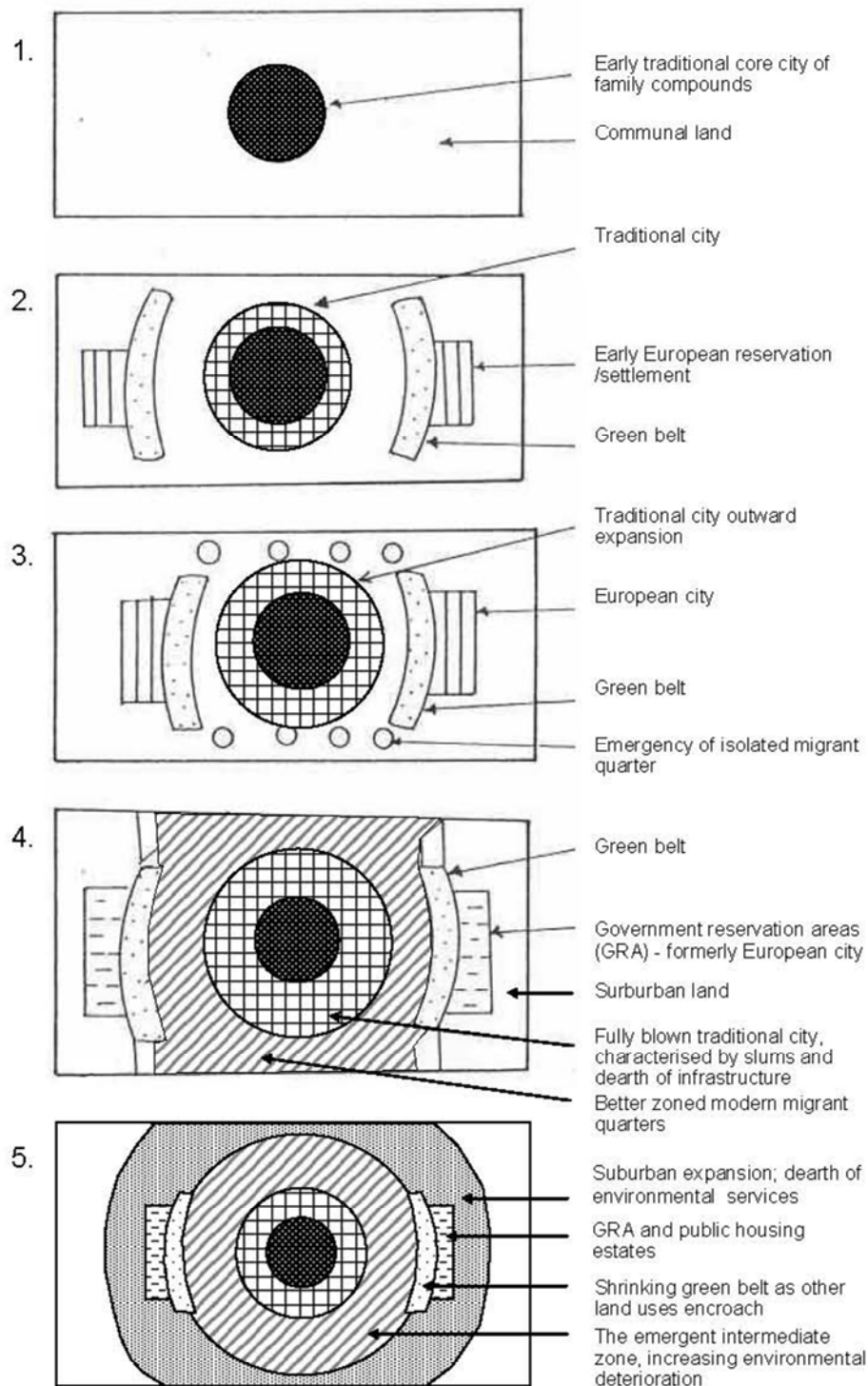
2. Infrastructure Development and the Nigerian Urban Environment

It is essential to understand the stages of urban development in order to appreciate the spatial dynamics of infrastructure development in Nigeria, as well as the relationship with the environment. Nigeria has three identifiable urban development phases, namely the pre-colonial, the colonial, and the post-colonial phases. All the phases typically left their mark on the Nigerian urban landscape. For instance, while traditional urbanization generally left a legacy of congested and substandard housing conditions in the inner city, rapid urban growth associated with colonial and post independence development has, among other things, given rise to uncontrolled and spontaneous settlements and suburbanization. In order adequately to explain urban development, infrastructure, and the environment in Nigeria, it is important to stress that urban land use theories propounded on the basis of Western societies are not appropriate in explaining the forces that shaped urban spatial processes here. Unlike Western societies, in Nigeria urbanization was not preceded by industrialization; hence market and political processes may not be adequate to fully explain the forces that have shaped urban spatial structure in Nigeria. Similarly, Burgess' Concentric Zonal Theory and the Homer Hoyt's Sector model of urban growth are less relevant to Nigerian urban structure.

A model of stages of urban development in Nigeria is shown in Figure 1. The model seeks to explain the evolution and growth of urban residential land use in Nigerian cities. The first phase illustrates the typical pre-colonial city that consisted of traditional family compounds. Phases two and three are typical of the initial influence of British colonization in the early 1900s on the urban landscape and the later stage before the British relinquished power in 1960, respectively. Initially, there was the emergence of European quarters separated by a green belt from the traditional city. In due course, the traditional city expanded, leading to the infilling of the former open space by initially isolated migrant localities. The isolated dwellings eventually resulted in suburban settlements. Migrants settled mainly in the newer and suburban areas, where parcels of land were more readily obtainable. On the other hand, there was the emergence of slums in the old city areas as a result of increased population and housing density.

The dynamics that largely shaped the spatial structure of many Nigerian cities at this stage can be viewed from the perspective of the combined effects of two growth processes, namely, *growth by fission* and *growth by expansion*. Growth by fission can be explained as the replacement of simple, large compound housing structures by more numerous independent houses. This growth is a result of an increase in urban population and the scarcity of land in the core, and, given the culture of lineages living together,

smaller separate houses began to replace the compound houses and courtyards, creating congested residential developments and slums.



Source: Modified from Chokor (1993)

Figure 1. A model of stages of urban development in Nigeria

Meanwhile, this process and the wave of migrants that poured into the city to take advantage of the urban-skewed economy encouraged an infilling process whereby spaces that had been left out as family courtyards, playgrounds, etc. were utilized to erect residential buildings. This worsened housing and poor environmental service conditions. Growth by expansion, on the other hand, operated in the new, modern parts of the city. The process ranged from such settlements as housing estates and educational institutions to uncontrolled residential developments along major transport arteries and rapid suburbanization that incorporated erstwhile peripheral rural settlements.

The fourth stage is typical of the early post-independence period up to about the mid-1970s. Local elites moved to the former European estates, now renamed government reservation areas (GRA). At this stage, the former traditional city was surrounded by a fairly distinct intermediate zone that largely evolved from relatively better zoned migrant settlements. The last stage was characterized predominantly by the suburban expansion of cities and the emergence of suburbs without arrangements for infrastructure provision. Meanwhile, green belts were shrinking in size, elite housing estates were constructed, and existing physical infrastructure such as road, drains, water, and waste services in the traditional city and intermediate areas were decaying from lack of maintenance.

2.1. Infrastructure Provision Models

Three broad strategies for urban infrastructure development are identifiable in Nigeria. These include the technocratic conventional state provision, private provision, and international-led participatory approach. Each has its implications for the urban environment. The public or conventional approach is characterized by urban policies in which physical planning, implementation, and maintenance of urban infrastructure services are firmly in the hands of public agencies. The professionals in the town planning, lands and survey departments, often trained in Western institutions, formulated standards and regulations based on conventional standards for such facilities as access roads, water connection, refuse collection, sewage disposal, and storm-water drains.

The second approach is private provision. With the increasing trend towards liberalization of the provision of infrastructure and international agency emphasis on private sector involvement in infrastructure development, several major cities in Nigeria, such as Lagos, Benin City and Ibadan have sought to incorporate private operators in infrastructure development. This approach is still poorly developed both in terms of private firms and the conflicts of interest embedded in government bureaucracy relinquishing their traditional domains.

The third is a participatory approach to infrastructure development. This model heralds an increased role for NGOs (Non-governmental Organizations), CBOs (Community Based Organizations) and international agencies and assistance, as well as increased abandonment of rigid master plans for the planning of urban physical development. For instance, in the last decade, international bodies, including United Nations' agencies, initiated strategies to promote stakeholders' participation in urban management. One of these strategies in Nigeria is the Sustainable Ibadan Project (SIP), a sub-set of the global

Sustainable City Program. SIP seeks to improve infrastructure services through participatory partnerships of communities, and private and public sector groups.

3. State Provision: an Illusion? Reflections on Benin City

Benin City, the regional capital of Edo State is one of the major urban centers in Nigeria. It is a pre-colonial city and its urban history dates back seven centuries. The city has witnessed rapid growth in the last fifty years. From an area size of only 949 hectares in 1952, it grew to 7 414 hectares in 1979. By 1995, Benin City had grown to 25 000 hectares. The population had grown from only 53 753 people in 1952 to over 700 000 in 1991. Being a pre-colonial city, Benin witnessed the three major phases of urban development in Nigeria and its stages of development can be largely explained with the model in Figure 1. A discussion on infrastructure provision in Benin City can be approached from the spatial perspective. It is therefore important to highlight the morphological zones in Benin City.

Benin City has four distinct morphological/residential zones. The zones are the core area, intermediate area, suburban areas, and the planned settlement areas. The core area or inner city is the oldest part of the city. Residential density in the core area was intensified by growth by fission and infilling. On the other hand, the intermediate zone has a lower population and housing density than the core area. It has a substantial migrant population. Though the structural quality of housing is generally higher than the core area of the city, it is equally characterized by inadequate housing and environmental service conditions.

The suburban area was largely undeveloped in the early 1970s and has become part of the city as a result of the urban expansion that has occurred in the last few decades. The oil boom of the 1970s intensified urbanization in Nigeria. In Benin, the peripheral areas experienced urban encroachment and invasion as the suburbanization process continued.

Though the houses in this zone may be structurally fit, they lack basic urban facilities such as drainage, motorable roads, and waste disposal. Some of the localities in this zone were formerly isolated villages incorporated by the rapidly expanding city. Others grew spontaneously through the process of succession and infilling, following the establishment of educational institutions in the suburbs. The last zone, the planned settlement areas, consists of housing localities, estates, and the government reservation area. This zone is associated with low to medium housing and population densities. Housing and environmental conditions in the planned settlement areas in Nigeria are generally better than in the rest of the city.

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Biographical Sketch

Vincent Ogu worked on housing and urban infrastructure development and management at Cambridge University for his doctorate. He has conducted research on international participatory and partnership approaches to urban environmental and infrastructure management. Vincent has in recent years been working on market reforms and the role of the private sector in infrastructure provision, and on international partnership approaches to the management of the urban environment in developing countries, in particular Nigeria and Ghana.

Vincent has held research fellow positions at the Nigerian Institute of Social and Economic Research (NISER), Ibadan and at the University of New South Wales, Sydney. He has also held senior analyst positions and worked on housing and urban development and planning issues in the Australian and South-East Asian contexts.