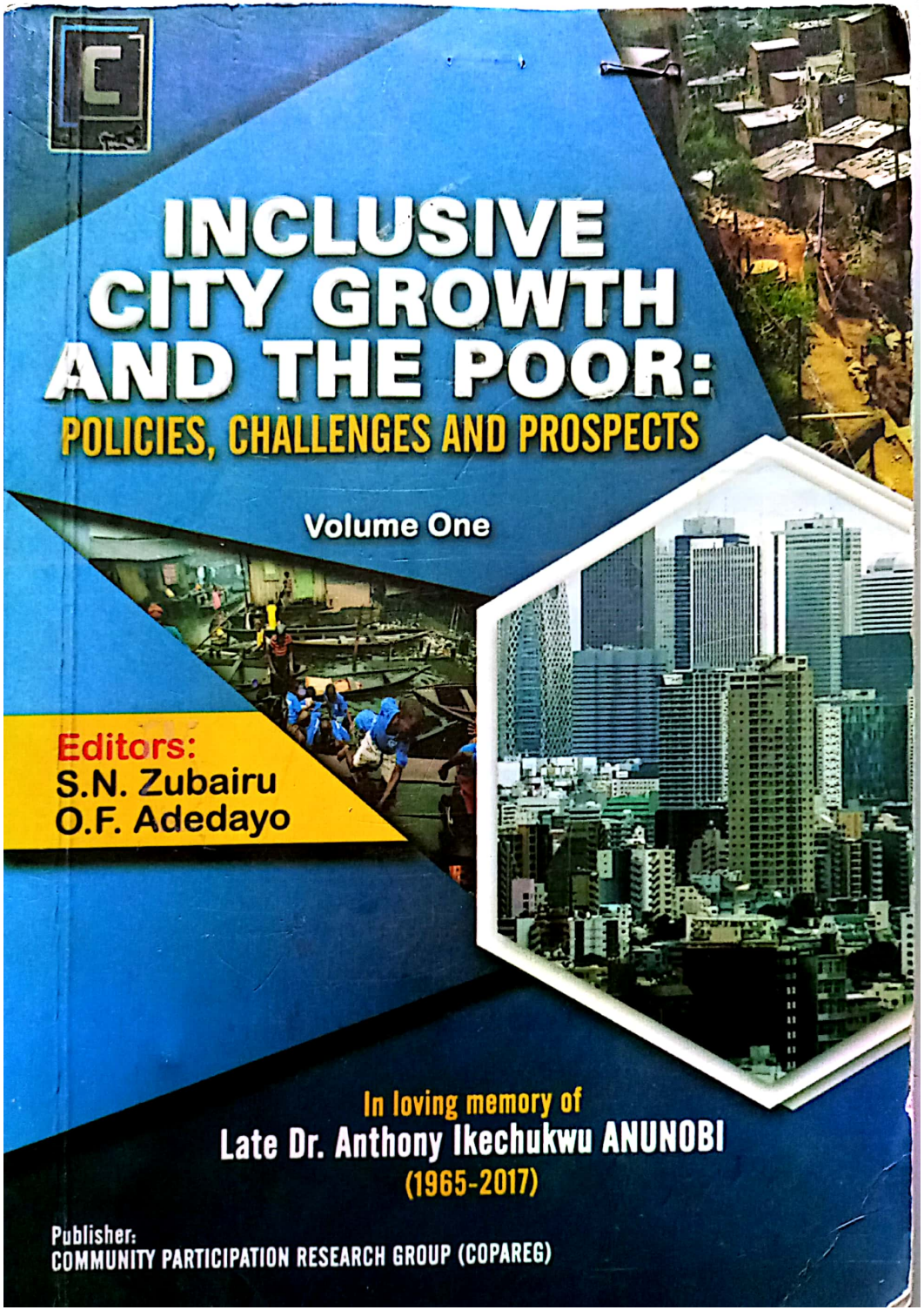

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FUT Minna. 2018/05/10

INCLUSIVE CITY GROWTH AND THE POOR:
Policies, Challenges and Prospects

Volume One

In loving memory of
Dr. Anthony Ikechukwu ANUNOBI
(1965-2017)

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TRIBUTE

This book is dedicated to the memory of Late Dr. Anthony Ikechukwu ANUNOBI who dedicated his working life towards improving the quality of life of the poor.

He was a man that preached and ensured that everyone he had dealings with enjoyed inclusiveness. As a trained architect he ensured that he undertook designs that had minimum negative impact on the environment and the livelihood of the people within the community. He was a typical example of a detribalized individual as evident with the mix of friends and community services he rendered.

Late Dr. Anthony Ikechukwu Anunobi had always been passionate about community integration and inclusiveness which was demonstrated in his leadership style as the Head of Department of Architecture, Federal University of Technology Minna, Nigeria, while he held sway and even in the community. He never discriminated against anybody. He shared the philosophy of COPAREG *that everyone has a role in the community/city and should be involved in the planning process.*

Late Dr. Anunobi will be remembered for his contribution towards the growth of Architecture in Nigeria with his involvement in the training of over 1500 students and graduates who are practicing within and outside Nigeria. His contribution to the Community Participation Research Group (COPAREG) team is what led the team to produce the first Book in its many series of books and conferences to come by the group.

INCLUSIVE CITY GROWTH AND THE POOR: Policies, Challenges and Prospects

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INCLUSIVE CITY GROWTH AND THE POOR: Policies, Challenges and Prospects

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ACKNOWLEDGEMENT

The rapid growth of the urban areas is considered to be at an alarming rate and it has both negative and positive impacts on the balance within the city. It is believed that urban growth within the city is skewed in favour of the rich given the nature of infrastructure and amenities available to them. The poor that make up a large proportion of the city are often forgotten or treated as an after-thought. It is common believe that the developments in the city does not often include the requirements of the poor, hence creating social imbalance and segregation with the city. The issue of inclusiveness has become a major problem that requires the attention of all those involved in the development of the city. This publication on Inclusive City Growth and the Poor: Policies, Challenges and Prospects is hence appropriate and well-timed in examining the issues affecting the city in this century. The book is a collection of extensive work by different scholars, professionals and policy makers from countries such as Nigeria, Ghana, Chad, South-Africa, Turkey, United-Kingdom, United States and Ireland to whom we are appreciative.

The Community Participation Research Group (COPAREG) acknowledges the priceless contributions of Federal University of Technology, Minna, for the avenue to use its platform to setup the research group and make the call for the book chapter contributions. We also acknowledge the School of Environmental Technology (SET), Federal University of Technology for the academic support and reviews of the articles. COPAREG also acknowledges the contributions and roles of Professor A.M. Junaid who supported the project from its inception to conclusion through regular monitoring. It is equally worthy to appreciate Professor Y.A. Sanusi who through a chanced discussion set the tone for this book project. The effort Professor O.O. Morenikeji regarding encouragement and advice on the method adopted for the production of the book is greatly appreciated. I wish to equally thank Professor M. Zubairu for writing the introduction to the book which laid the foundation for the different chapters.The support of Dr. R.A. Jimoh, Dr. L.O. Oyewobi and Dr. T. Lawanson regarding effective distribution of the book call is worthy of special recognition.

Every academic pursuit requires quality and good leadership and this was provided by Professor Stella N. Zubairu who agreed without

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We appreciate the University Management of Federal University of Technology Minna for the opportunity to publish this book.

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On a final note, COPAREG recognises the sacrifices of all the chapter contributors who have made the book a huge success as their various chapters have made the book worth reading and of high quality.

Dr. Olatunde Folaranmi Adedayo
Team Leader
Community Participation Research Group (COPAREG),

FOREWORD

This book titled, "Inclusive City Growth and the Poor: Policies, Challenges and the Prospects" is a publication of the Community Participation Research Group (COPAREG) of Federal University of Technology (FUT) Minna, Nigeria. The book is published in honor of Late Dr. Anthony Ikechukwu Anunobi who was a pioneering staff of the Department of Architecture, FUT Minna. The theme of the book is apt and is of much relevance to the contemporary global debate on how to make the cities habitable for all, irrespective of social, economic or political status.

The Sustainable Development Goal 11 is focused on the building of inclusive, safe, resilient and sustainable cities in all parts of the world. In simple term, an inclusive city is that which provides for the needs of all people equally. "It is one in which all residents—including the most marginalized of poor workers—have a representative voice in governance, planning, and budgeting processes, and have access to sustainable livelihoods, legal housing and affordable basic services such as water/sanitation and an electricity supply" (Rhonda Douglas, 2013).

The book contains 47 chapters that covered a wide range of issues that bothers on the spatial, social and economic dimensions of urban inclusion. The critical urban inclusion issues considered include urban development and sprawl; affordable housing delivery using local and alternative building materials; provision of health and transport infrastructure; water, sanitation and waste management; eviction and welfare of the urban poor; housing environment and community participation in slum upgrading all of which enhance the principles of inclusion, urban livability and smart city development.

The issues discussed, the findings and recommendations made in this book are valuable contributions to the development of inclusive cities in Nigeria. The effort made by COPAREG in the assemblage and publication of research efforts of several professionals in the built environment is highly commendable.

I hope that the Government and other stakeholders in human settlement development will find the contents of this book useful. The book is therefore recommended for all and sundry.

Prof. A.M. Junaid
Professor of Housing and Urban Planning

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DECLARATION

Peer Review and Scientific Publishing Policy Statement

2nd April 2018

TO WHOM IT MAY CONCERN

We wish to state that all the papers published in Inclusive City Growth and the Poor: Policies, Challenges and Prospects Book have passed through the peer review process which involved an initial review of chapter proposals, blind review of full chapter by minimum of two reviewers, forwarding of reviewers' comments to authors, submission of revised chapter by authors and subsequent evaluation of submitted chapters by the Editors to determine content quality and thematic scope adherence.

All chapters are only published based on the recommendation of the reviewers and the Book editors.

Olatunde Folaranmi ADEDAYO
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Inclusive City Growth and the Poor:
Policies, Challenges and Prospects Book

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CHAPTER 5

Perspectives of Urban Sprawl: The Conflated Issues and Realities

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Introduction

Urbanization is a continuous, universal and inevitable process of urban development. As observed by different scholars, the rapid urbanization of the world is quite alarming both in the developed and developing countries (Ewing, 1997; Sudhira et.al. 2004; Jat et.al. 2008; Olujimi, 2009). Idowu & Olaniyan (2009) considered the increasing world population and stressed that the phases of urban settlements have changed, because most of the semi-urban areas and medium-sized towns have been turned into full urban town. Urban development across the world is translated into stressful urban dynamics, with rapid development of informal households and concentration of poor families at the peri-urban areas.

Urban sprawl has no definite universal definition, but contentiously used to describe a wide variety of the undesirable aspects of urban growth, resulting in a poor environment, uncontrolled development and much unplanned suburbanization (Cillier, 2010; Noor & Rosni, 2013). Urban sprawl is a phenomenon widely discussed, but poorly understood, because it means different things to different people. Several studies have labeled urban sprawl as being obviously popular, contentious and surrounded by controversy (Torrens, 2008; Aljoufie et al., 2013; Aguda & Adegboyega, 2013). The major part of this chapter rely on literature; reviewing the conflated issues regarding urban sprawl and its realities across the world. Purposefully, a study on the changes in the built-up area of Minna between 1972 and 2015 was presented to establish the reality of urban sprawl in the town of Minna. This paper stands to educate on the process and product of urbanization and urban growth in Nigeria, particularly in Minna. Also, exhibits the distinct components that often contribute to theoretical confusion and analytical complexity.

Theories of Urban Structure /Urban Sprawl

Theories are fundamental principles representing the reality. In every research, theories have their own position of relevance in explaining the true urban phenomenon. Idowu (2017) has observed the frequent use of classical descriptive theories: Burgess (1925), Hoyt (1939) and Harris and Ullman (1945) in explaining the urban structure in several urban studies (Figure 1 – 3). Similarly, other relevant theories known as modified descriptive theories of urban structure: Vance's urban-realm theory (1964), Mann's theory of urban structure (1965), Kearsley theory (1983) and White's theory of 21st century city (1987) (Figure 4 – 7) have been explored to explain urban structures in relations to the emergence of urban sprawl (Cellier, 2010).

Furthermore, combination of the efforts of Alonso (1964), Muth (1969) and Mills (1967) have been use to explain the concept of urban residential location and urban sprawl development as shown in Figure 8. In order to have a clear understanding about urban sprawl is, Idowu (2016) highlighted some features promoting it from the aforementioned theories, which simply referred to as urban sprawl wheel (Figure 9).

Figure 1: Burgess Theory (1925)

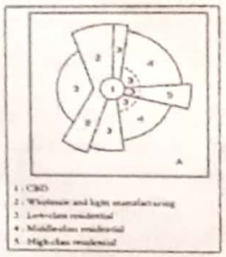

Figure 2: Hoyt's Theory (1939)

Figure 3: Harris and Ullman (1945)

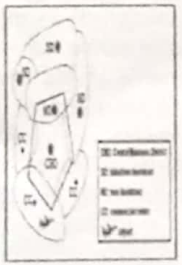

Figure 4: Vance's Urban-realm Theory (1964)

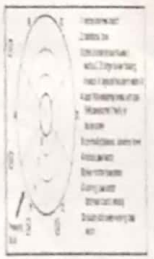

Figure 5: Mann's Theory (1965)

Figure 6: Kearsley modified Burgess Theory (1983)

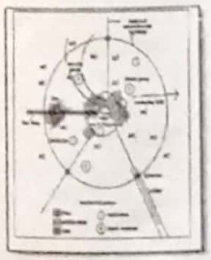

Figure 7: White's Theory of the 21st Century City (1987).

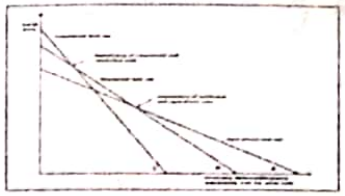

Figure 8: Monocentric and land value theory

Figure 9: Urban Sprawl Wheel

Source: Idowu, 2015

Conflated Issues about Urban Sprawl

The issues that are central to every debate about urban sprawl are: definitions, characteristics, causes, measurements, impact, consequences and the control strategies. However, the divergent of views about what sprawl is or is not, has made the subject a major debatable topic in several urban studies literature. Meanwhile, this section reveals the opinions and the criticisms of different scholars regarding the subject matter.

Definitions

There are divergent of thoughts and opinions on what urban sprawl is all about. Several definitions have been given by different authors and few of these definitions are include:

Richmond (1995) defines it as an act of decentralized land ownership and fragmentation of authority on land use and disparity in fiscal capacities of local government. Ewing, et al., (1997) defines it as the combination of three characteristics: leapfrog or scattered development; commercial strip development; and large expanse of low density of single use development. Sierra Club (1998) considered urban sprawl as the low density development beyond the edge of service and employment, which separates where people live from where they shop, work, recreate and educate, thus requiring cars to move between zones. Pendall (1999) defines urban sprawl as unplanned, uncontrolled, and uncoordinated single-use development that does not provide for an attractive and functional mix of uses and/or is not functionally related to surrounding land uses and which variously appears as low density, ribbon on the strip, scattered, leapfrogs or isolated development. Ewing, et al. (2002) defines sprawl as low density with residential, shopping and office area that are rigidly segregated, a lack of thriving activity centres and limited choices in travel routes. The European Environment Agency (EEA, 2000) opined sprawl as the physical pattern of low-density expansion of large urban areas, under market conditions, mainly in the surrounding agricultural areas. Burchell & Mukheji (2003) admitted that sprawl as a low density occupation phenomenon, a leapfrog

development in which urban growth occurs in a discontinuous manner, leaving urban void and spreading into rural areas or urban fringe.

Characterization

Characterizations of sprawl are not similar across the world. For instance, in the developed countries, the development patterns of low density in Europe and Asia cities are significantly denser than in American cities. While in many developing countries, characterization of sprawl is less useful, because urbanization has its different drivers and appears in different form. Torrens (2008) observed the diversity and some key features distinguishing urban sprawl in urban studies literature (Table 1). These includes; growth; social and aesthetic attributes; decentralization; accessibility; density characteristics; fragmentation; loss of open space; and dynamics. Obviously, these features only serve as the bases to describe the outlook of urban sprawl. Expectedly, several authors have characterized urban sprawl in the best suitable pattern to their environment (Torrens 2008; Olujimi, 2009; Hamidi & Ewing 2014).

Table 1: The Varying Characterization of Sprawl in Urban Studies Literature

	Characterization Indicators									
Name of Author	Growth	Social	Aesthetic	Decentralization	Accessibility	Density	Open Space	Dynamics	Cost	Teeth
Audirac, et al. (1990)		•								
Bae & Richardson (1994)						•				
Bamfield et al. (1999)										•
Burchell et al. (1998)	•		•		•	•			•	
Calthorpe, et al. (2001)			•							
Chalpham Jr. (2003)							•			
Duany, et al. (2000)			•							
El Nasser & Overburg (2001)						•				
Ewing et al., (1997)		•		•	•	•	•	•	•	
Ewing , et al. (2002)		•		•	•	•	•	•	•	
Farley, & Frey (1994)		•								
Galster (1991)		•				•				
Galster, et al. (2001)	•			•						•
Gordon & Richardson (1997a)						•		•		•
Gordon & Richardson (1997b)						•		•		•
Harse & Lathrop (2003a)							•			
Harse & Lathrop (2003b)			•	•	•					
Horse (2004)				•						
HUD (1999)					•					
James Duncan & Associates et al. (1989)									•	
Lang, (2003)						•				
Lindemann (1967)						•				
Lessinger (1962)				•						
Malpezzi (1999)					•					
OTA (1995)				•						
Peiser (1989)						•				
Prendall (1999)						•				
Real Estate Research Corporation (1973)						•			•	
Sierra Club (1998)					•					
Sudhira et al. (2003).							•			

Source: Torrens 2008.

Causes

Urban sprawl has multiple causes (Frank et al., 2000). Several authors have maintained that, urban sprawl cannot be attributed to just a single cause, because the causes are obviously multiple and interrelated. For instance, rapid urbanization and growing population demand for peri-urban land, high income, efficient transportation system and weak physical planning laws and regulations (Franz et al., 2006; Olujimi, 2009). The (9) causes of urban sprawl which are: rent gradient; growing affluence, due to the cheap price of land, the cost of transportation; differences in government services and attitudes; racial discrimination and segregation; easy availability and accessibility to land at the suburban area; tax policy; and land use /town planning regulations. Based on the presentations of different scholars, there are remarkable degrees of agreement concerning the causes of sprawl, unlike the wide divergence of views noticed on the definitions (Frank, et al., 2000; Okewole, 2002; Franz et al., 2006; Olujimi, 2009; Aguda & Adegboyega, 2013).

Measurement

Numerous attempts have been made in measuring urban sprawl, (Ewing et al., 1997; 2002; Franz et al., 2006; Torrens, 2008; Alabi, 2009; Aguda & Adegboyega, 2013). The Smart Growth Movement (SGM) developed one of the earliest methods which involved drawing of pictures of urban sprawl areas from the planning perspective and creating different factors and measure the spread (The Sierra Club, 1998; Ewing et al., 2002). This system of measurement was considered unrefined and characterized with failure, because it neglected the land use interaction (Ewing et al., 2002). Other techniques fashioned by different scholars' involved categorizing approach based on two densities related factors (The Sierra Club, 1998); the approach based on exploring the cost and benefits of urban sprawl (Downs 1999); and by exploring the causes of urban sprawl (Knap et.al, 2005). Apparently, significant progress was recorded when multi-factors and descriptive techniques were implored in measuring sprawl (Galster et al. 2001; Frenkel et al. 2004; Alabi, 2009; Ade & Afolabi, 2013; Aguda & Adegboyega, 2013).

Torrens & Alberti (2000) applied multidimensional approaches in measuring urban sprawl, combining spatial related indices and adopting a broad methodology concept. This methodology accommodates all characteristics of urban sprawl that can be measured and track in the space – time dynamics (Torrens, 2008). Efforts were made in subsequent urban studies, by applying this technique for better results (Ewing et.al.2002). Based on complexity of urban sprawl, the analysis of land use changes

(visual sprawl pattern) gives a better approach to how urban sprawl is being measured. The application of remote sensing and GIS techniques in urban sprawl analysis has become a major field of research all over the world (Sudhira et al. 2004; Aguda & Adegboyega, 2013). Remote sensing and GIS techniques are physical expression methods. which can identify pattern, extent, nature and rates of urban sprawl. The application of Remote Sensing and GIS provide an alternative for urban sprawl to be effectively mapped, measured and monitored.

Impacts

Impacts of urban sprawl are multifaceted, reflecting in all the disciplines. On a broad perspective, impacts of urban sprawl can be classified based on its cost; influence on infrastructure and on the environment (Downs, 1999, Frank et al. 2000; Johnson, 2001). Recent studies have admitted that urban sprawl, has a potential threat against sustainable development, with its range of negative impact on urban landscape (Franz et.al. 2006; Savannan & Ilangoran 2010 Polidoro et.al, 2011). Impact of urban sprawl can be classified into the following:

a. Impact of sprawl on economic efficiency: this focuses on the strong influence of market forces in creating sprawl. Economists expect sprawl to produce economic efficiency in the absence of market failures (Down, 1999, Ewing et.al, 1997). The increase in infrastructure costs is associated with the development of sprawling area.

b. Impacts of sprawl on transportation: the enormous influence of the automobile is widely acknowledged as a cause of sprawl (Ewing et.al, 2002, Galster, 2001). As the travel time increases, the cost of transportation also increases.

c. Impacts of sprawl on the environment: the environmental impacts of urban sprawl are seemingly numerous and well documented. These include; loss of environmentally fragile lands, reduced regional open space, greater higher pollution and energy consumption, decrease the aesthetic appeal of the landscape, reduced diversity of species, increase runoff of storm water and risk of flooding, removal of native vegetation and ecosystem fragmentation (Kahn, 2000; Johnson, 2001). Impact of sprawl on land use, on planning and management of cities and on social cohesion. Also, the impact of sprawl is highly felt on infrastructure.

Consequences

Consequences of urban sprawl have been associated with a host of economic, social and environmental. Urban sprawl may have both positive and negative consequences. As growth is often uncontrolled or uncoordinated, the negative effect include: inflation of infrastructure and public service costs, inefficiency of energy or power supply, disparity of wealth, impacts on wildlife and ecosystem, loss of farmland, increase in temperature, poor air quality, impacts on water quality and quantity, impacts on public and social health and burdens on rural economic/land-use activities. Nevertheless, it has shown that some urban residents have positively benefited from urban sprawl; through enhanced quality living, accessibility to affordable housing accommodation and welfare of few people in the society. Olujimi (2009) rightly observed that since man's quest for change will continue within his dynamic environment, urban sprawl is inevitable.

Controlling Strategies/Policies

Countries around the world have responded to the growing concern about the problem associated with urban sprawl and they have created a series of policy instruments to reduce the spread of sprawled environment (Bengston & Young, 2006). Johnson (2001) presented the overview of the major land use strategies/policies adopted in most of the cities in the developed countries. This strategy is referred to as urban containment policies and these include: green belt, urban growth boundaries and urban service boundaries, while other strategies such as, smart growth and compact city or bound high-density growth originated from the principles of sustainable development (Johnson, 2001; Pendall et.al, 2002).

The Greenbelts policy refers to as a physical area of open space that surrounds a city. This policy instituted barrier to urban expansion and regulates or prohibits development on any areas earmark as greenbelts areas in America. In Europe, urban growth boundary policy is in contrast to the greenbelts policy; zoning system was used to implement this policy. It involved drawing a line around an urban area to separate it from the surrounding rural areas. Areas outside the boundary are zoned for rural use. The urban service boundary policy is considered more flexible than urban growth boundary policy. Urban service boundary policy delineates areas that have urban services from those without services. Development is prohibited in the areas beyond the boundary that lack certain urban services, such as, water and sewer.

Smart growth is an effort to avoid future growth patterns that operate independent of a total community vision and result in inconsistent and

incompatible neighborhoods, business and industrial corridors, transportation options and quality of life resources (Kelsey, 2001). This concept is regarded as urban design approach to regulate the negative impact of urban sprawl and common in America and Europe and some parts in Asia. Compact city strategy is a concept of a city with relatively high-density, mixed-use city, based on an efficient public transport system and dimensions that encourage walking and cycling. This strategy assumed that through intensification of development within the city, many problems related to urban sprawl could be overcome. It was designed primarily to reduce the use of private cars and to minimize the loss of open countryside.

Realities of Urban Sprawl

The global experience of urban sprawl is common, though its characteristics and impacts vary across the world. During the second half of the 20th Century, urban sprawl has become a mass phenomenon throughout the western world. The interest of many on this phenomenon has made it a popular subject of discourse by several researchers. Historically, the use of the term was traceable to Earle Draper of Tennessee Valley Authority in 1937. Earle Draper used the term "Sprawl" in the context of a national conference of planners in America (Wassmer, 2002; Bernhardt, 2007). Several scholars and public commentators through seminars, debates, conferences and symposiums, extensively have discussed the incidence of urban sprawl in the cities across the world.

For instance, several reports on the emergence and the growth of urban sprawl across America cities are well documented (Gordon & Richardson, 1997; Ewing, 1997, Ewing et al., 2002; Downs, 1999; Sierra Club, 2000; Galster et al., 2001). Also, Torrens (2008), acknowledged the continuous growing of the American cities both in sizes and population. The spread of urban sprawl in Washington-Baltimore, Texas, Virginia, New York, New Jersey and other cities have been reported frequently by these authors. Similarly, Europe is one of the world's highest densities of urban agglomeration, with over 75% of the population residing in urban areas (Oueslati et al., 2015). At a much faster rate, the size of cities like London, Madrid and others, in Europe are rapidly increasing than their populations. A study by pan-European organization has observed that the evidences of urban sprawl are the result of the European Union (EU) policies and funding (EEA, 2006).

The Latin-America region is one of the most urbanized continents in the world, with about 84% of its population living in the urban town and cities. According to Torres (2011), this region has experienced a momentum

urbanization process between 1950 and 2000, with about 75% of the people living in the cities. Consequently, most urban areas and large cities in Latin-America are facing three major nature of growth: fast growth, informal households and concentration of poor families. Notable cities experiencing such rapid growth include Chile, Cancun in Mexico, Camisea in Peru, Bolovia and Macae, Mato and Grosso in Brazil. The observations of the scholars in respect to urban sprawl in Asia have identified the severity of urban sprawl in the past decades, forming a scattered development and land fragmentation.

In Africa, Olurin (2003) firmly reported that the effects of population dynamics in African cities have produced miseries that are often difficult to comprehend. Olujimi (2009), Aguda & Adegboyega (2013), Adaku (2014) with several others have reported on urban sprawl in Africa. Most of the authors in this region have attributed urban sprawl to bad governance system and poor planning strategy. For example, urban developments in Africa are characterized by rapid population increase and overcrowding of low-income districts; particularly in places like Lagos, Cairo, Kinshasa, Tunis, Ibadan, Kano and Enugu.

Urbanization and Urban Sprawl in Nigeria

Nigeria is one of the most rapidly urbanizing countries in the tropical Africa (Olorunfemi, 1979). Indeed, the high population recorded in the cities and towns in Nigeria predated the country's independence in 1960 (Olorunfemi, 1979). Primarily in Nigeria, the process of urbanization attributed to the changes in the socio-political, economic improvement and demographic transformation has given rise to urban sprawl.

The sprawling nature of most of the cities and towns in Nigeria has, therefore, received attention from several scholars (Okewole, 2002; Olujimi, 2009; Alabi, 2009; Aguda & Adegboyega, 2013). These studies have to a large extent attributed the unguided and unsystematic urban expansion in many Nigerian cities and medium-size towns across the country to the rapid rate of urbanization. Studies in Lagos, Ibadan, Oshogbo, Akure, Ilorin, Ogbomosho, Enugu, Kano, Kaduna, Abuja, Lokoja, Port-Harcourt, Aba, Onitsha, Calabar, Warri and Benin, and many others have been characterized with rapid peri-urban expansion and urban sprawl (Olujimi, 2009; Aguda & Adegboyega, 2013). The factors encouraging peri-urban expansion and urban sprawl have largely been linked to increase in population of people living in the cities, which has put pressure on the peri-urban space.

The present conditions of cities in Nigeria are products of many forces or factors. The forces or factors that encourage suburban development are the same forces or factors that determined the development within any urban area. A study by Olujimi (2009) confirmed that the result of the economic forces and the innovativeness in the development of the housing facility evidently, influenced self owned residential houses by families, along with the development of shops for commercial purposes in the suburb. Concomitantly, the parcels of land hoarded, are being developed without a layout design or building approval. This, however, promotes haphazard growing of suburbs, which later became compacted and return as slum neighbourhoods. The inability of government to effectively develop the land acquired is another factor encouraging sprawl neighbourhoods in Nigeria. The bottleneck attached to the payment of compensation has necessitated the release of land to individual, groups or association, to develop it without reference to the precautionary building standards, planning regulations and building approval.

Reality of Urban Sprawl in Minna

Minna was linked with rail lines in 1905 and this gave the town a comparative advantage over other towns within the region such as Kotangora, Bida and Zungeru, as a major nodal point for many farm produce. The relocation of colonial officials from Bida to Minna in 1924 gave Minna a face lift and it became the Regional Administrative Headquarters. The colonial administration in 1928 constructed the Zungeru – Paiko road. These developmental processes became the platform for the emergence of a new urban centre, to be linked by a newly constructed road. Construction of Bosso Dam in 1949 and the connection of Minna with electricity in 1956 propelled rapid increase in population prior to Nigeria independence.

At the post independence era, Minna became more attractive to people and government. The political and social development activities that preceded and followed the independence directly influenced both the economic and spatial activities of Minna. The town further received a change in political status, when it became the capital of Niger State in 1976, coupled with location of the both federal and state institutions in the town.

Changes in the built-up area of Minna between 1972 and 2015

This section is important as it reveal the periodical changes in the built-up area between 1972 and 2015. The data employed are topographical map of Minna in 1972, township map of Minna in 1979, the processed satellite

imageries of Minna in 1986, 1996, 2006 and 2015 and neighbourhoods' demarcation map.

Figure 10 shows the changes that occurred in the built-up area of Minna. Expectedly, there has been a tremendous increase in the land development between 1972 and 2015. From a mere 368.3 hectares in 1972, Minna has increased to 11,913.2 hectares by 2015. A sharp increase in the areal extent of the town occurred between 1979 and 1986; from 893.7 hectares to 4,368.7 hectares, respectively. Table 2 reveals the details of the magnitude of changes within the periods covered by the study. For instance, between 1972 and 1979, the spatial area of Minna increased by 143%, but remarkably between 1979 and 1986 when the increase was 388.8%. This rapid change can be attributed to the rapid population increase, as a result of the new status of the town. The town drastically grew between 2006 and 2015. Indeed there was an increase of 102% in less than a decade.

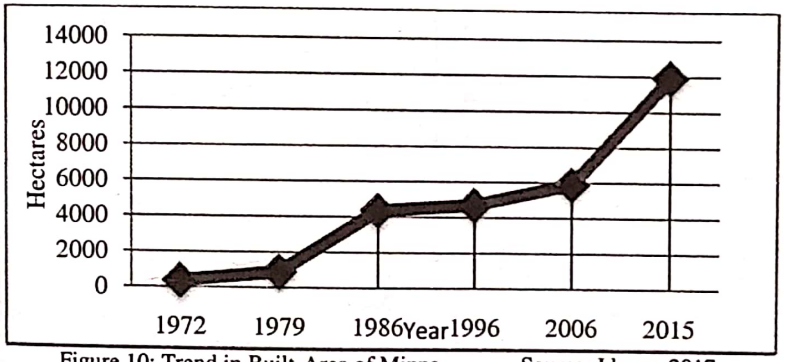

Figure 10: Trend in Built-Area of Minna Source: Idowu, 2017.

Table 2: The Built-up Area of Minna: 1972 - 2015

Year	Land Area (Ha)	Area Changes (Ha)	% Increase	Remark
1972	368.31	-	-	-
1979	893.74	+525.43	142.66	Increase
1986	4,368.70	+3,474.96	388.81	Increase
1996	4,706.50	+337.8	7.73	Increase
2006	5,904.50	+1,198.00	25.45	Increase
2015	11,913.20	+6,008.70	101.76	Increase
1972 - 2015	-	**+11,444.89**	**2,443.87**	**Increase**

Note: The sign + indicate the gain in the areal extent. Source: Idowu, 2017

Generally, Idowu (2017) reported that Minna was thirty-two times its size in 1972; thirteen times its size in 1979; thrice its size in 1986 and 1996, respectively; and twice of its size in 2006. Vance (1964) best explained the situation of Minna in 2015 because of the decentralization of urban functions outside the core areas of the city. Figure 11- 16 exhibits the periodical sprawled pattern of development in Minna. As observed, these areas are characterized by expanse of land that are unused, the expanse of land, therefore, support continuous development, clustered or decentralized pattern of development, mixed uses, high or low density as the case warrant, low concentration and low proximity, scattered and uncoordinated leapfrog development. All these are evidences, establishing the fact that urban sprawl is inevitable and is a reality in Minna.

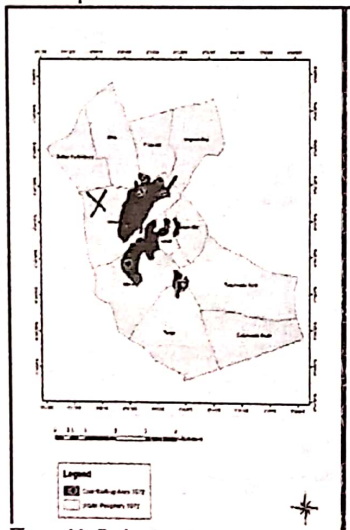

Figure 11: Peri-urban Development of Minna in 1972

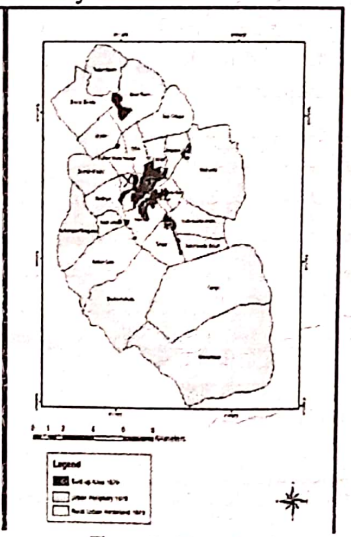

Figure 12: Peri-urban Development of Minna in 1979

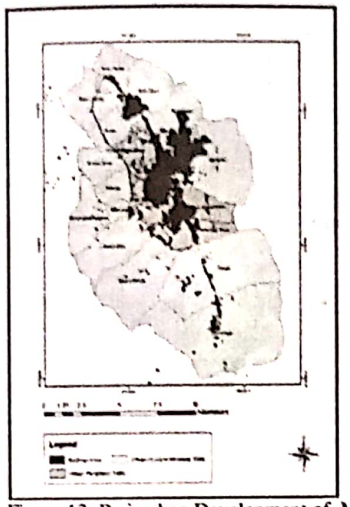

Figure 13: Peri-urban Development of. Minna in 1986

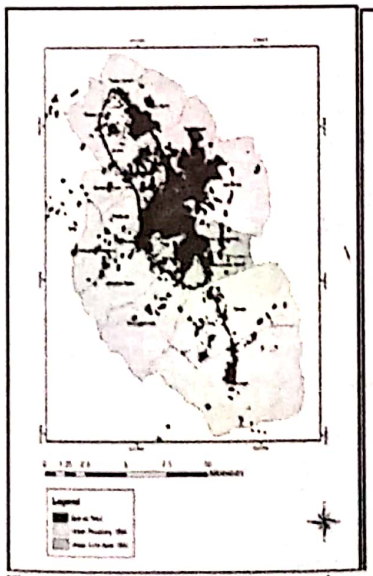

Figure 14: Peri-urban Development of Minna in 1996

Figure 15: Peri-urban Development of Minna in 2006

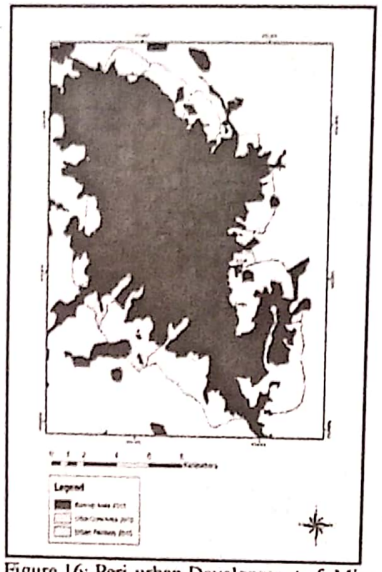

Figure 16: Peri-urban Development of. Minna in 2015.

Conclusion

Urban sprawl remains a contending spatial problem in most of the cities across the world. This chapter focused on the conflated issues and realities of urban sprawl across the world. Obviously, there are several efforts to unravel the term, urban sprawl, but to no avail, as there is no definite definition, in spite of its loading values and the wide referencing in planning literature. Other aspects, such as characteristics, causes, measurement, impact and consequences have received a much attention of scholars, but which still remain contentious. Nevertheless, the argument of scholars about urban sprawl in no doubt has created avenues for further researches to be conducted on the subject and establish the reality of the phenomenal. Supportively, the magnitude in the changes in built-up areas reveals the sharp increase in the areal extent of Minna from a mere 368.3 hectares in 1972 to 11,913.2 hectares in 2015. The pattern of growth of the peri-urban areas establishes the reality of urban sprawl in Minna.

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