

The Challenges of Urban Sprawl Development in Suleja, Niger State

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ABSTRACT

Urban sprawl has been used to describe a wide variety of the undesirable aspects of urban growth; it is consciously referred to as, unplanned and uncontrolled development resulting in poor and much unplanned urban fringe. Across the world, there is growing concern and awareness about urban sprawl and its consequences, as urban systems are evolving and emerging in surprising ways. Urban sprawl is a major problem in the course of development in developed and developing countries. This paper aimed at examining the challenges of sprawl development in selected neighbourhood of Suleja. The objectives are to examine the drivers of urban sprawl and challenges of urban sprawl development in the peri-urban of Suleja. Remote sensing along with Global Positioning System (GPS) and Geographical Information System (GIS) were helpful in this regards. This study reveals that the development of urban sprawl settlement in the suburbs of Suleja is as a result of rapid population increase and its proximity to Abuja, the Nigeria Federal Territory. The cost of land which is relatively cheap at the suburb has caused the shift in population to the peri-urban of the town forming a sprawled like characteristics of development, the town is growing without a proper planning, despite its advantageous location and proximity to the Federal Capital of Nigeria. Weakness of the physical planning agencies in enforcing planning standards, rules and regulation is the evidence of the current pattern of growth of the town. However, the impact of urban sprawl development in Suleja is enormous; range from environmental to transportation and to economy. In order to reduce further impact, the peri-urban of Suleja should be planned and developed in the view and assumptions of Vance's theory of urban realm; creating a suburb that is independently sustainable and functional viable.

Keywords: Urbanization, Urban Sprawl, Urban Growth, Planning, Development

INTRODUCTION

The world's urban areas are now home to nearly half of humankind. Kofi Annan, the former General Secretary of the United Nation in 2001 emphasized that the world has entered into the realm of urban millennium, a period with a remarkable difference in innovations, for an irresistible urban growth (UN-Habitat, 2001; Idowu, 2015). The industrial revolution of the 18th century began the current phase of urban growth, which the world is facing in the recent time (UN-Habitat, 2001). The growth of the world population since the turn of the 19th century and particularly after the World War II has been unparalleled in the history of the world. With the increased population, the phases of urban settlements are changing rapidly, with the semi-urban areas and medium-sized towns turning into full urban town (Obateru, 2005; Idowu and Olaniyan, 2009; Idowu, 2015b).

UN-Habitat (2001), presented the global report on the collective implications of the growing population of the world during the two hundred years (19th and 20th centuries) of global economic expansions. It was published that the cities which grew at less than 30 million in that century, now recorded more than 3 billion at the beginning of the 21st century, with over 500 cities harbouring thousands of people. This implies that, the planet earth hosts a range of population of people across the world. Other studies also established that, the process of urban growth will, however, continue as this century advances. The prediction is that, there will be an increasing urban agglomeration in all regions of the world by 2050 (UN-Habitat, 2008; 2011; 2013; United Nations, Department of Economic and Social Affairs, Population Division - UNDESA, 2014; 2015).

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Consequently, growth is a natural phenomenon in life, therefore it is expected that cities and towns should grow (Popoola, 2014). Meanwhile, the growth of cities and towns increasingly subjected the urban environment into dramatic problems which ranges social to physical and environmental problems. The negative implications of urbanization and urban growth are widely linked to several problems such as urban sprawl development (Durieux, Lagabrilie, and Nelson, 2008).

Urban sprawl has been used to describe a wide variety of the undesirable aspects of urban growth; it is consciously referred to as, unplanned and uncontrolled development resulting in poor and much unplanned urban fringe. There is growing concern and awareness about urban sprawl and its consequences across the world, as urban system are evolving and emerging in surprising ways (Downs, 1999; Torrens, 2006. Feng, 2009). It is agreed as one of the problems affecting the course of development, both in the developed and the developing countries.

The idea and early studies on urban sprawl is unanimously agreed to start from the United States of America (Hamidi and Ewing, 2014). As rightly observed by Franz et al. (2006) the discussions and researches on urban sprawl were anchored predominately in the context of the urban morphology and land use pattern in the US for a long time, but, it later spilled over to Europe and other regions of the world. Alabi (2009) and several other scholars, however, observed the variations in the degree of urban sprawl between the developed and developing countries, he accepted that there are differences in the challenges of urban sprawl all over the world. The components of urban sprawl, however, have been highly debated by several scholars in the field of urban studies; it means different things to different people. Concomitantly, it remains a hot topic attracting a considerable attention from geographers, planners and social scientists across the world (Downs, 1999; Paul and Tonts, 2005; Frenkel and Ashkenazi, 2008).

On the perspectives of urban sprawl Torrens (2008), Liu and Jiang (2011) and Idowu (2015a), however, maintained that, the term 'urban sprawl' is characterized to be popular, complex and as well surrounded by controversy. Several reports on sprawl begin with the admission that, sprawl has no definite definition, it is a value loaded term and a reference point in many planning literature (Frank, et al., 2000; Adaku, 2014). Other contentions areas in the study extend to the bottleneck associated with the characterization, measurement, causes and consequences (Torrens 2008; Hamidi and Ewing 2014). Several authors have made several attempts to describe how urban sprawl looks like, without a clear cut accepted features to describe it (Ewing, 1997; 2002; Burchell et al., 1998; Glaster et al., 2001). Franz et al. (2006) on the contrary, however, argued that these features describing urban sprawl are ambiguous; it's jointly reflecting the causes and consequences in the same manner its presenting what characterized by urban sprawl, while, the existing methods for measuring urban sprawl have been contested worldwide. The entire areas still remain unresolved based on the divergent views of the scholars.

The causes of urban sprawl in the world are universal, but vary in character, impact and challenges (Oueslati et al., 2015). Urban sprawl has not only generated a series of studies and discussions in the developed countries, but also in the developing countries. For instance, in Nigeria, Mabogunje (1968), Olorunfemi (1979), Okewole (2002), Barredo, et al., (2004), Fabiyi (2006), Olujimi (2009) Alabi (2009), Aguda and Adegboyega (2013) among several others scholars have reported the sprawling nature of several urban centres in Nigeria. Barredo, et al., (2004), Olujimi (2009) and Aguda and Adegboyega, (2013), have attributed the rapid increasing urban agglomeration in Nigeria to the prevailing inadequate institutional framework, economic growth and population increase. The unprecedented demographic

changes have seriously laid huge challenges on the peri-urban space, mostly in the development of residential accommodations (Olujimi, 2009, Wapwera et al., 2015).

The location and proximity of Suleja to Federal Capital of Nigeria speaks volume on the development of sprawl settlements in the town. This study is aimed at examining and challenges of sprawl development in selected neighbourhood of Suleja. The objectives of this study include, examining the development pattern of the peri-urban settlements, to identify the physical characteristics of the selected per-urban neighbourhoods and the challenges of sprawl development on urban landscape.

STUDY AREA

Suleja, lies on latitude $7^{\circ} 31'N$ and longitude $7^{\circ} 58'E$. The town was formerly referred to as Abuja prior to the time of the establishment of the Federal Capital Territory. The town is situated on the Iku River, a minor tributary of the River Niger at the Abuchi Hills and lies at the intersection of several roads. The Local Government reform of 1976 facilitated the creation of the Suleja Local Government Council from the defunct Abuja Native Authority. The Local Government Council shared boundary with Gurara and Tafa Local Government Councils in Niger State and Gwagalada in FCT. The Local Government land expands for about 153.4 sqkm land coverage (Fig. 1). The Census report of 1991 put the population of Suleja Local Government at 151,300 persons, the population was estimated at 174,638 in 1996 and it rose to 216,578 people in the 2006 National population Census. This study is centred on four peri-urban neighbourhoods in Suleja. This consists of Maje in the Northern part of the Local Government, Chassa and Paulossa in the Southwest region of the town and Gwazumu in the Eastern part of the town (Fig. 2)

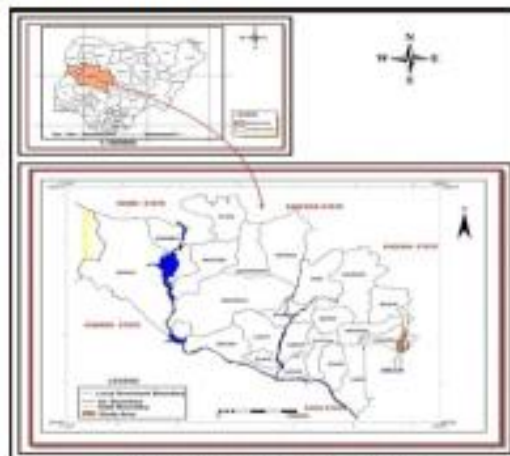


Figure 1: Map of Niger State

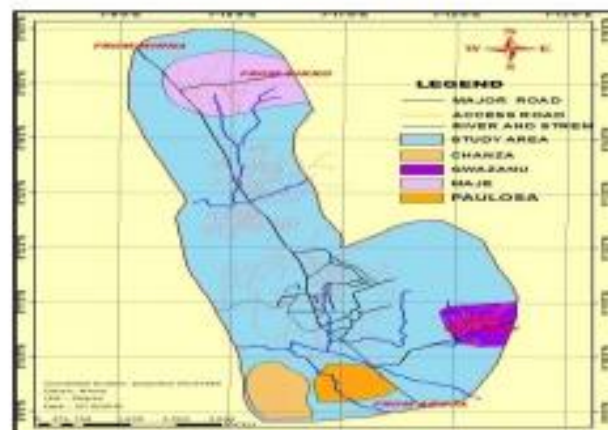


Figure 2: Selected Neighbourhoods for the study

METHODOLOGY

This study explored both secondary and primary sources of data required for this exercise. The secondary data employed in the study include the remote sensing imagery (Google earth data), Census data and published materials obtained from libraries and the internet. The primary data were sourced through the direct survey and investigation of the study area. Google earth image was retrieved from the internet and digitized using ArcGIS 10.2 software in order to show the housing density and pattern of development in the selected peri-urban neighbourhoods.

RESULTS AND DISCUSSIONS

Patterns of Development in Suleja

The digitization and analysis of google earth image of the selected four neighbourhoods reveal the development pattern of the study area. For instance, in Maje, the neighbourhood covers approximately about 567,246.01sqm area. Based on the pattern, this neighbourhood exhibited a continuous characteristic pattern, showing an intense development of unused land and forming unbroken fashion of development. Although the settlement is supported by major access linking Kaduna – Abuja road, haven bounded by the Minna – Suleja regional road (Figure 3). With the population of just 1,302, the outward march of low density is observed in ribbon low pattern development along major suburban highways is an evidence of sprawlin that axis of Suleja.

Paulossa neighbourhood covers about 548,017.88sqm area with 1,866 people. Paulossa exhibited clustered pattern of development, haven linked the neighbourhood with several alleged environmental problems, in regards to the natural feature (River and mountain) which bounded the area eastward, these features have bunched the growth and development of the neighbourhood tightly, minimizing the amount of land for development of residential or nonresidential units (Fig. 4).

Chaza neighbourhood covers about 49,361.87sqm area, with 900 people living in the area. This peri-urban neighbourhood is a low density area surrounded by open spaces (Fig. 5), it has the attributes for a high continuous pattern of leap frog development and the potential for the development to extend toward any direction in the neighbourhood. Gwazumu has the coverage of about 638,277.60 sqm area and the estimated population of 1,140 people. The settlement is characterized as clustered pattern settlement, bounded by roads and rivers

All these imply that, the peri-urban of Suleja commonly exhibits a clustered or continuity pattern of development, based on the advantages of landscape, terrain and the morphology of the town. In most cases, the relatively unstable land-form affects the pattern of development in the urban fringe.

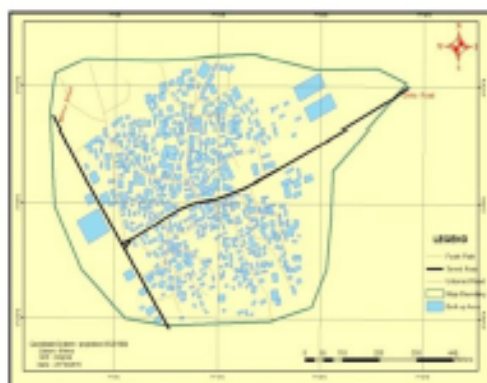


Figure 3: Development Pattern of Maje



Fig. 4: Development Pattern of Paulossa



Figure 5: Development Pattern of Chassa



Figure 6: Development Pattern of Gwazunu

The physical Characteristics of the Selected Peri-urban Neighbourhoods

The data reveals the three major factors responsible for the spread of sprawl in Suleja and they are, social, economic and physical factors. Different attributes such as ethnicity and religion, safety and security, community or infrastructure facility, reduction in the rent and low price of land were among the major causative drivers of urban sprawl and the choice of neighbourhood in Suleja. Table 2 shows the physical, environmental characteristics of the selected peri-urban neighbourhoods.



Plate 1: Unplanned structure on Paulossa



Plate 2: Wastes deposit along Gwazunu

Challenges of Urban Sprawl Development in Suleja

The Challenges of urban sprawl development in the peri-urban of Suleja are basically categorized into three main headings:

- i. **Transportation:** this category of challenge is enormous, as it is influenced by the use of automobiles. Studies by Gordan and Richardson (1997) Glaster et.al (2001) firmly asserted this with respect to the volume of traffic and distance travel by the residents of the neighbourhoods examined.
- ii. **Economy:** the influence of market forces is more prominent in the spread of sprawl settlements. The influence of low rental value in these suburbs areas and the cheap cost of land are considered high in this study to promote the development of urban sprawl in Suleja. Also urban sprawl directly affects the provision of infrastructure facility into the hinterland
- iii. **Environment:** this is seemingly numerous. This includes the development in the ecological unstable area, reduction of regional open space, indiscriminate disposal of wastes, increase pollution and higher energy consumption, increase runoff of storm water and risk of flooding, removal native vegetation and ecosystem fragmentation.

Table 2: Physical Characteristics of the selected Peri-urban Neighbourhoods:

Environmental Attributes	Maje	Paulossa	Chassa	Gwazanu
Neighbourhood Layout	Unplanned residential landscape, presence of other complimentary land use like commercial area and industrial areas.	Unplanned residential area and presence of other complimentary land use.	Unplanned residential area and presence of other complimentary land use.	Unplanned residential area and presence of other complimentary land use.
Building Type	The buildings presence ranges from traditional houses to modern . There are mixed use of buildings especially for the buildings along the major highways.	The buildings in this area are predominantly modern, and are mostly owners occupiers houses, with just few of them as tenement	The buildings in this area are predominantly traditional; it's mostly owners' occupiers' houses.	The buildings in this area are predominantly modern, and are mostly owners occupiers houses, with just few of them as tenement
Building Condition	The buildings in this area are of different categories, mostly, the houses are inadequate.	Buildings in this area are of different categories, reflecting the status of the residents of the area.	Buildings in this area are of different categories, reflecting the status of the residents of the area.	Buildings in this area are of different categories, reflecting the status of the residents of the area.
Condition of Access	Apart from the major access road, all other roads connecting houses were untared and are in poor condition	The access roads are fair within the neighbourhood	The access roads are poor within the neighbourhood	The access roads are fair within the neighbourhood
Water Supply	Water supply to this neighbourhood is inadequate, as quite number of the population relies on water vendors and well	The neighbourhood was not connected to water mains.	The neighbourhood was not connected to water mains.	The neighbourhood was not connected to water mains.
Electricity Supply	Not regular	Not regular	Not regular	Not regular

RECOMMENDATIONS

In view of the patterns of development exhibited by the Neighbourhoods selected for this study (Maje, Paulossa, Chassa and Gwazunu) in Suleja Local Government area of Niger State, these Neighbourhoods were observed to exhibit a serious trend of clustered and continuous spread patterns. This pattern, however, is observed to have a serious negative impact on the sustainability of urban Agriculture in Suleja as these areas form the Peri-Urban Fringe of the city. There is, therefore, the need for a comprehensive Land use Planning and Development Control with a view to limiting the outward spread of the Neighbourhoods and Predisposing the Suleja and by extension Niger State to Food Insecurity and adverse effect of climate change.

The challenges of sprawl development in Suleja is exhibit three (3) dimensions that is; transport, economic and environmental dimension. There is therefore, the need for a comprehensive development plan which can be harnessed into the sustainable development agenda and the climate change framework in order to improve transport infrastructure, promote economic development through improved urban agriculture and proper land management and conservation to reduce the challenges of environmental degradation.

CONCLUSION

The suburbs of Suleja are increasingly spreading with the evidence of unplanned growing peri-urban neighbourhoods. The proximity of Suleja to the Federal Capital of Nigeria has attracted quite a number of people into the town, the low rental value and cheap land in the suburbs were few of the factors encouraging the movement of people into the suburbs. The patterns of development in the selected neighbourhoods have also established that the peri-urban of Suleja are intensely clustering and continuously spreading. The social, economic and physical factors, however, are responsible for the choice of neighbourhoods

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