

## Appraisal of Characteristics of Slum Neighbourhood of Minna, Niger State

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### ABSTRACT

Slum is a consequential effect of unplanned urbanization in cities especially in developing countries. Insecure tenure, crime, overcrowding, uncollected waste and poor sanitation are problems that often characterized slum neighbourhood. The problems of Slum is not a peculiar problem as most slum areas tend to exhibit the same trait, these identified problems are evident in the slum area of Kpakungu, a Neighbourhood in Minna, Niger State. Since the inception of the present political dispensation (1999 till date), the state government has been enforcing all the planning tools to control its development but this has proved abortive. This study aims at appraising the characteristics of slum neighbourhood of Minna, Niger State with reference to Kpakungu between 1999 and 2014. This was achieved by examining the factors responsible for slum proliferation in Kpakungu neighbourhood and the impact of town planning activities in Kpakungu between 1999 and 2014. Quantitative approach was used in data collection and stratified random sampling was used to select respondents. The neighbourhood was divided into 8 units from which random sampling was used to select the respondents for the study. A total of 95 questionnaires were administered due to the size of the population and the respondents. Geospatial techniques were also used to substantiate data from both sources. The Rasi 700 gas meter was further used to determine the pollution level. The analysis of the spatial development of the neighbourhood indicated that there is a significant increase in the size of the slum between the periods of investigation. The pollution level of the neighbourhood shows higher level than the stipulated value of 10ppm for CO, 0.04-0.06ppm for NO<sub>2</sub> and 0.01ppm for SO<sub>2</sub> by NESREA. There is also increase in crime rate in the neighbourhood by 25%. The study recommends inclusive planning approach in the management and planning of neighbourhood and proper monitoring and implementation of development control measures should be enforced by the relevant agencies in the state.

**Keywords:** Development Control, Geospatial, Inclusive Planning, Pollution and Slum

### Introduction

Over the years, scholars in urban studies are faced with the challenging phenomena of increasing rates of urban growth in the world, especially in developing countries, where less urban planning is being carried out to contain such growth in a viable manner (Egunjobi, Jelili, Adeyeye, 2007). Unplanned urbanization and rapid urban growth are linked to various environmental challenges in developing countries. Olthuis, Jiya, Eichwede and Zevenbergen (2005) opined that unplanned urban and rapid urbanization often result in chaotic development which in turn breed slum settlements in developing countries of the world with Nigeria inclusive. Also, Agbola and Agunbiade (2009) share the same opinion about development and slum formation. Slum settlements are defined as any neighbourhood or city with half or more of its residents lack access to improved potable water supply, sanitation, sufficient living area, durable housing and secure tenure (UN-Habitat, 2009).

Consequently, proliferation of slums areas are seen as major challenge to development in the developing countries. This is because slum areas are often characterized by appalling living and environmental conditions which frequently result to inadequate water supply, squalid conditions of environmental sanitation, breakdown or non-existence of waste disposal managements, overcrowded and dilapidated habitation, hazardous location, insecurity of tenure, and vulnerability to serious health risks (Arimah, 2010). More so, social vices such as drugs addiction, prostitution, smuggling, etc. are attributed to slum proliferation in

developing countries (Fourchard, 2003). All challenges that are associated with Slum areas are seen as an impediment undermining the actualization of goal number 7, target d of the Millennium Development Goals that seeks to improve the lives of at least 100 million dweller by the 2020 (IDB, 2013).

The rate of the proliferation of slum in the world at large is alarming and this calls for stern concern by stakeholders. According to the UN (2008) a total of one billion people worldwide were estimated to be living in slums currently and this figure translates to one-sixth of the world's population. Thus, with the rapid and unplanned urbanization experienced in most cities of the world, especially Africa, there is a likelihood of a significant increase in the number of slum dwellers and environmental problems that will accompany the influxes (IDB, 2013). Challenges posed by rapid urbanization are peculiar to all, but the developing countries are the ones finding it increasingly difficult to respond to these challenges (Siddharth, 2008).

Nigeria has also had its own fair share of slum proliferations which are evident in urban centres across the country. Olotuah (2006) opined that 75% of dwelling units in Nigeria urban centres are substandard and these dwelling units are cited in slums. In Minna, the Niger state capital Aliyu (2008) reported that 70% of the population of Minna reside in slums and squatter settlements. This analysis from Aliyu (2008) affirms Olotuah's (2006) assertion that 75% of urban dwellers in Nigeria reside in Slum neighbourhood. The "story" of slum proliferation is not different in the case of Kpakungu a neighbourhood in Minna, Niger state. The study area shows that it is an undulating neighbourhood which has valley towards the southern part. This allow for the indiscriminate sewage and solid waste disposal in and around the neighbourhood. The environment is filthy and shows high level of unplanned and uncontrolled growth. The people of Kpakungu neighbourhood are gregarious in nature and lives in a compact ties, they have similar social and economic characteristics. Due to negligence on the part of the authority and the poor socio-economic status of the people, Kpakungu neighbourhood has shown a near or total collapse of urban infrastructure which has resulted to high crime incident and growing environmental problem such as air pollution, uncollected waste, poor accessibility, poor sanitation, silted drains and erection of buildings without planning permit. These phenomenons have led to the growth of slum in Kpakungu.

Efforts to address these issues by the Niger State Urban Development Board right from the inception of the present political dispensation (1999 till date) have proven abortive. Against this background, the planning activities toward revitalizing Kpakungu were assessed in this study.

### **Aim and Objectives of the Study**

The aim of this study is to appraise the characteristics of slum neighbourhood of Minna, Niger State with reference to Kpakungu between 1999 and 2014. To effectively carry out this appraisal, the factors that are responsible for slum proliferation in Kpakungu were examined, the trend of slum proliferation between 1999 and 2014 was analyzed, the implications of slum proliferation in Kpakungu is looked into and the impact of town planning activities between 1999 and 2014 are also examined.

### **STUDY AREA**

Kpakungu, a suburb of Minna is located on Latitude 9°35' North and Longitude 6°31' East and occupies a land area of 801.402 Hectares and an estimated population of about 22,587 projected from NPC, 2006 population census. Kpakungu is one of the 24 neighbourhoods of Minna city and one of the largest populated neighbourhood in the city. Figure 1 shows the spatial extent of the neighbourhood and its location in relation to Minna. Kpakungu

neighbourhood is bounded by Fadipe, Soje, Barkin Sale and Gbaganu community to the North, East, South and West respectively.

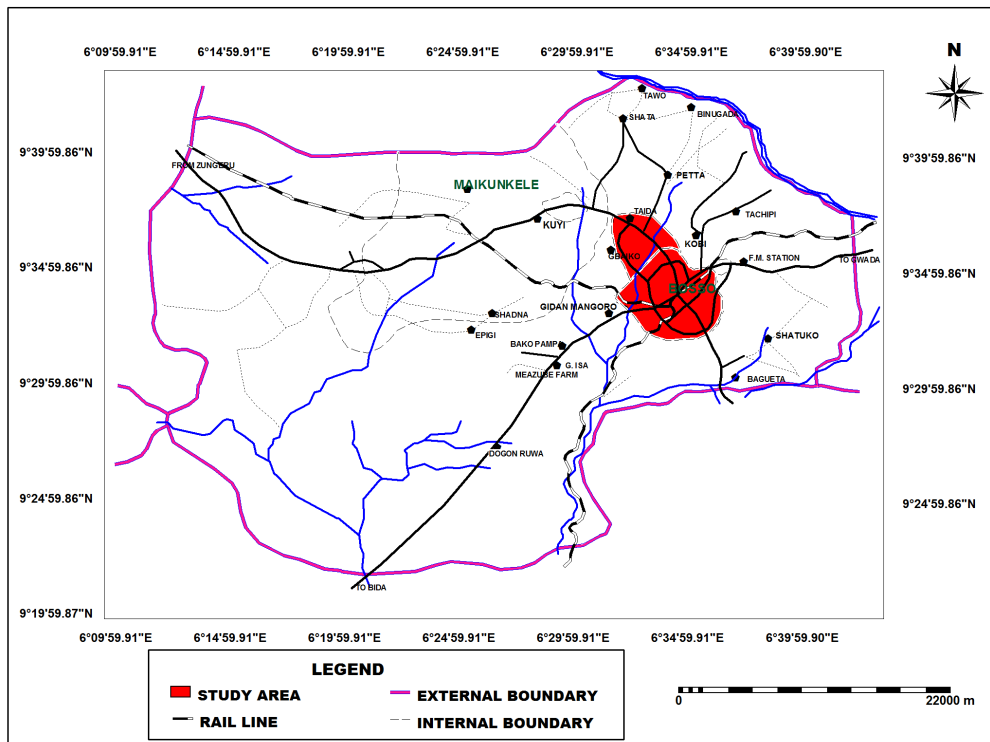


Figure 1: Street Guide Map of Minna Highlighted in Bosso L.G.A.  
Source: Department of Urban and Regional Planning, FUTMINNA

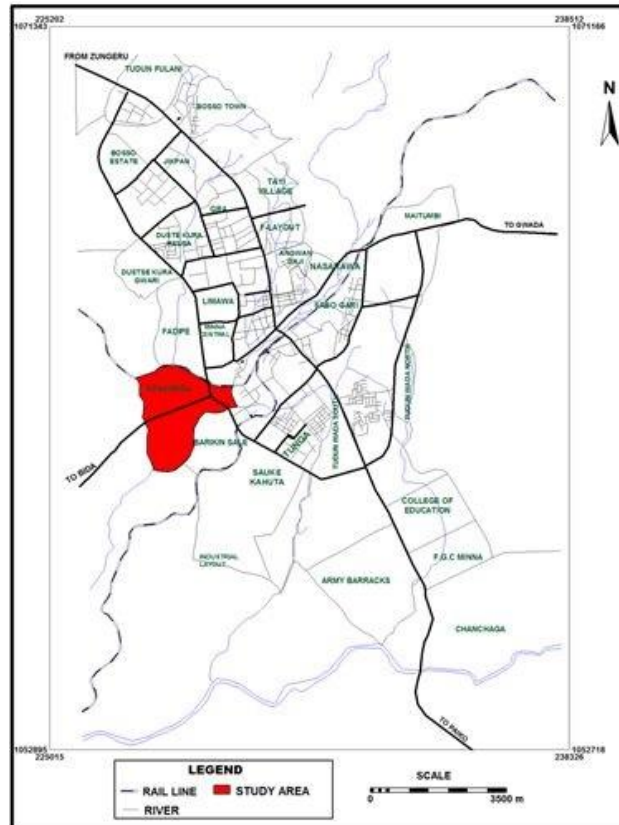


Figure 2: Kpakungu Neighbourhood highlighted in the Street Map Guide of Minna  
Source: Department of Urban and Regional Planning, FUTMINNA

**MATERIAL AND METHOD**

**Sources of Data**

Data for this study were collected through Primary and Secondary sources. A total of 95 questionnaires were administered using Stratified random sampling, and each unit has certain number of questionnaire based on the population of the unit. Kpakungu neighbourhood was divided into eight units for easy administration. At each unit a random sampling was employed to give each household an equal chance to be selected. At unit one, nine questionnaires were administered; at unit two, eleven questionnaires, were administered; at unit three, fifteen questionnaires were administered; at unit four, sixteen questionnaires were administered; at unit five, thirteen questionnaires were administered; at unit six, twelve questionnaires were administered; at unit seven, ten questionnaires were administered and at unit eight, nine questionnaires were also administered. The perception of the households on the issues of slum and town planning activities in Kpakungu neighbourhood was ascertained. Pollution levels in Kpakungu were recorded for seven days at three different intervals (morning, afternoon, and evening). This was done with the use of the Rasi 700 gas metre and the mean of the gases were computed. The coordinates of the location where these gases were taken was also recorded. Data on the development control in Kpakungu were sourced from Development Control Department of the Niger State Urban Development Board, Minna through an oral interview. Data on crime was obtained from the Nigeria Police Force Kpakungu Division, the crime report was later corroborated by the findings from the literatures on crime in Minna.

**Post Processing**

Spatial analysis of the growth of the neighbourhood over the planned period was obtained from three sets of images, which are the Enhance Thematic Mapper of 1999, 2006 and 2014 (Table 1). The area of interest (Kpakungu) was "clipped" out of the three images using Arcgis 10.2 software. Band combination of 4,3,2 were used to form the "False Colour" composite for the images via the use of the "New Map list" operation tool on ILWIS 3.3 Academic. On band 4,3,2 "False Color" composite, Vegetation appears in shades of red while Urban areas and Densely populated urban area come out in cyan blue and light blue respectively. Sample Set for urban areas and vegetation were created on all the images in question (1999, 2006 and 2014) after which the images were subjected to maximum likelihood classification on ILWIS 3.3 academic.

On each of the classified images of Kpakungu neighbourhood the urban area were digitized and then overlaid. This task was performed in order to determine the direction and spatial extent of Slum in Kpakungu neighbourhood. Finished were composed into maps by adding graticules, scales, legend and cardinal point.

**Data Processing Techniques**

Data processing techniques used for this study include: Data evaluation, Image Sub-setting, Image Classification, Overlay Analysis and Map Composition.

*Table 1: Image Properties*

S/No	Image Year	Path and Row	Sensor	Captured Date
1	Kpakungu 1999	P189 R053	ETM <sup>+</sup>	03 /04/1999
2	Kpakungu 2006	P189 R053	ETM <sup>+</sup>	11/07/2006
3	Kpakungu 2014	P189 R053	ETM <sup>+</sup>	04/04/2006

**RESULT AND DISCUSSION**

**Factors Responsible for Slum Growth in Kpakungu, Minna**

Several factors were advanced by the perception of respondents as reasons for its spatial growth. Factors responsible for slum proliferation in Kpakungu reveals that 3.2% of the

respondents were of the view that transportation nodes in Kpakungu must have influenced slum proliferation in Kpakungu, 15.8% of the respondents opined that economic activities in Kpakungu is responsible for Slum proliferation. Low land value was attributed for slum growth by 26.3% of the respondents in Kpakungu. Majority of the respondents (42.1%) are of the view that low rent must have influenced the growth of slum in Kpakungu while 12.6% of the respondent believed that the development of micro housing has swayed the growth of slum in Kpakungu (Table 2).

*Table 2: Factors Responsible for Spatial Growth of Kpakungu*

<b>Factors</b>	<b>No of Respondents</b>	<b>Percentage</b>
Transportation Node	3	3.2
Economic Activities	15	15.8
Low Land Value	25	26.3
Low Rent	40	42.1
Development of Micro Housing	12	12.6
<b>Total</b>	<b>95</b>	<b>100.0</b>

The result of the study indicated that all these factors contributed in different proportion to development of slum spatially in the neighbourhood. Though perception is subjective, it corroborated the findings of other researcher that low cost of illegal land, unplanned and unserviced land as well as low rental value is the factors that encourages slum development (UN-Habitat, 2003; Tibaijuka, 2005; UNDP, 2003; and World Bank and UNCHS, 2002).

### **Spatial development of Kpakungu, Minna between 1999 and 2014**

*Table 3: Land Area of Slum between 1999 and 2015*

<b>Year</b>	<b>Area (Hectares)</b>	<b>Percentage of Increase</b>
<b>1999</b>	119.610	
<b>2006</b>	272.970	128
<b>2014</b>	482.940	77

Table 3 reveals a progressive growth spatially in the size of Kpakungu neighbourhood between 1999 and 2014. The spatial extent of Slum area in Kpakungu in 1999 (base year) was 199.610 Ha. In 2006, the Slum area rose to 272.970 Ha (128 percentage of increase). The relocation of Federal University of Technology, Minna and National Examination Council in 2005 to Gidan-kwano and Gidan Mangoro respectively, influenced the proliferation of slum in Kpakungu neighbourhood in 2006. These settlements (Gidan-Kwano and Gidan Mangoro) are all adjoining settlement to Kpakungu Neighbourhood. In 2005, construction of buildings were done to meet the housing need of staff of National Examination Council and Staff and students of Federal University of Technology with little or no regard for development control. Slum proliferation in Kpakungu increased by 77% in 2014 compared to 2006 size. As at the end of 2014, Kpakungu neighbourhood has spread territorially to about 482.940 Ha. The proliferation of Slum at this period can be attributed to increase in Commercial activities in Kpakungu. Figure 3 and Figure 4 shows the spatial extent of Kpakungu in 1999, 2006 and 2014 respectively.

The overlay of the spatial development of the Kpakungu slum over the study period is indicated in Figure 5. This was depicted by different colours, the red colour indicated the area extent of the neighbourhood in 1999, the green indicated the area extent in 2006 and blue colour implies the development in 2014. The overlay shows that between 1999 and 2014 (period of 16 years), the slum has expanded more than two folds.

The development of the slum is toward the western and southern part of Kpakungu neighbourhood. At the western axis Federal University of Technology and National

Examination council are seen as growth pole while Shiroro Hotel is seen as the growth pole at the southern axis of the neighbourhood.

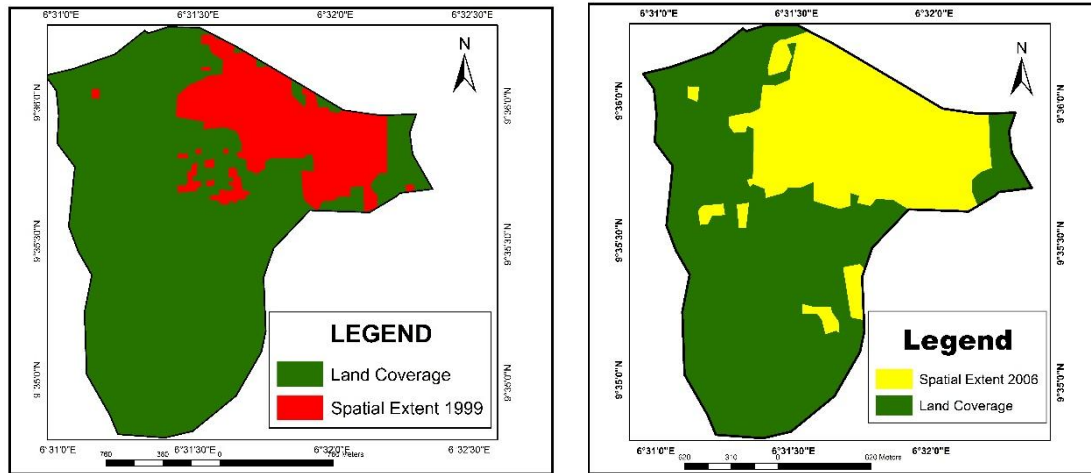


Figure 3: Spatial Extent of Slum in 1999 and 2006

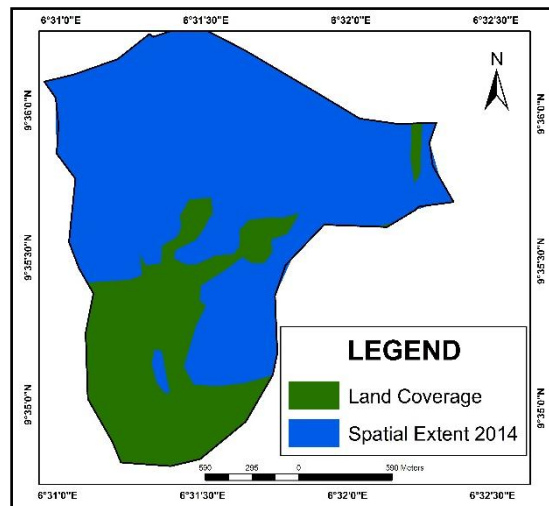


Figure 4: Spatial Extent of Slum in 2014

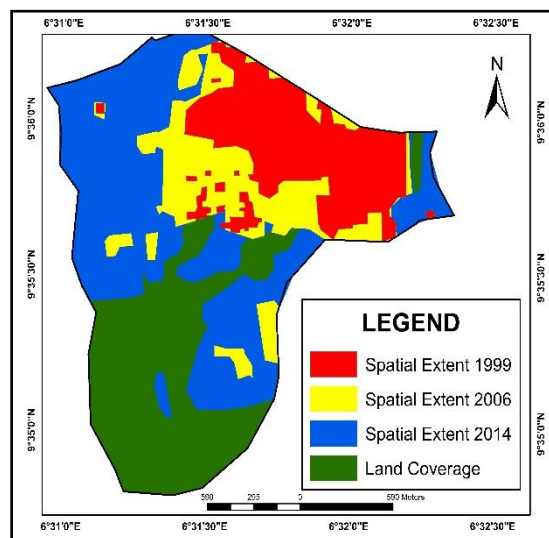


Figure 5: Overlay of Spatial Extent

### Implications of Slum Proliferation

There are many implications of the slum development in Kpakungu, these ranges from all forms of social vices to local acts. The prominent types of insecurity faced by the inhabitant of Kpakungu neighbourhood are Armed Robbery, Burglary, Stealing and increase in Juvenile delinquency. A significant number (46.3%) of the respondents believed that stealing was more pronounced in Kpakungu, 25.2 % of the respondents were of the view that burglary was rampant in Kpakungu, 25.3% of the respondents were of the opinion increased in juvenile delinquencies was raging Kpakungu while Armed Robbery which constitute 3.2% of the respondents was believed to be threatening.

According to the Nigerian Police force, Divisional Headquarters Kpakungu, a total of 86 cases of crime was reported between 1999 and 2014 in Kpakungu. The police force opined that out of the other neighbourhoods in Minna, the number of cases of crime in Kpakungu was more. As a result of this Kpakungu neighbourhood was termed as a hot spot area. Jinadu, Morenikeji, Sanusi, Dukiya and Owoyele (2013) in their study on "Digital Mapping of Crime Statistics in Minna" also termed Kpakungu neighbourhood as a hot spot zone when it comes to crime. Between 2000 and 2011, Kpakungu recorded the highest incidence of crime in Minna, Niger State and this was attributed to slum proliferation (Jinadu, et al., 2013). It was observed that the inhabitants of Kpakungu were faced with the problem of flooding, Land Degradation and Erosion at the western part of the neighbourhood these problems can as well be attributed to the slum expansion.

The problem of poor sanitation in Kpakungu was also seen in the manner of waste disposal as 33.7% (highest number of respondents) of the respondents disposed their waste in the drainage channels. The methods of burning and incineration were adopted by 6.3% of the respondents and 24.2% of the respondents respectively. The services of the Niger State Environmental protection agencies were employed by 23.2% of the respondents.

Problem of insecure tenure were also pronounced in the Kpakungu as 72.6% of the respondents do not have a secure tenure. Only 15.8% of the respondent could boast of a secure tenure. The low number of secure tenure in Kpakungu can be attributed to the organic nature of the neighbourhood.

### Level of Pollution in Kpakungu Neighbourhood of Minna

One of the environmental consequences of slum development in Kpakungu is pollution as a result of poor sanitation and unclean environment. The national air quality standard according to National Environmental Standard and Regulation Enforcement Agency (NESREA) indicated that the amount of various components of the air ranges between 10ppm for CO; 0.04 -0.06ppm for NO<sub>2</sub> and 0.01ppm for SO<sub>2</sub>.

Table 3: Level of Gas Emission in Kpakungu in 2011 and 2014

Coordinate	Gases	Standard	2011	2014
		Unit (PPM)	Unit (PPM)	Unit (PPM)
229272 1061852	CO	10	10.00	15
	H <sub>2</sub> S	10	0.00237	5
	NO <sub>2</sub>	0.04 -0.06	0.00312	14
	SO <sub>2</sub>	0.01	0.00295	0.02

Table 3 reveals the level of gas emission in Kpakungu in 2011, after the average emission of the were recorded CO constitutes 10.00ppm, H<sub>2</sub>s constitutes ppm while NO<sub>2</sub> and So<sub>2</sub> reads 0.00312ppm and 0.00295ppm respectively (ATPS, 2013). The level of gas emission increased in 2014, 15ppm was recorded for CO, 5ppm was recorded for H<sub>2</sub>S, 0.02ppm was recorded for SO<sub>2</sub> and 14ppm was recorded for NO<sub>2</sub>. The value recorded in 2014 were higher

than the stipulated value by the NESREA which state 10ppm for CO, 0.04 -0.06ppm for NO<sub>2</sub> and 0.01ppm for SO<sub>2</sub> (FEPA, 1999). The High pollution values can be attributed to slum proliferation and large concentration of Motor cycles in Kpakungu.

### **Impact of Town Planning Activities in Kpakungu between 1999 and 2014**

Since the inception of the present political dispensation (1999) the Niger State Urban Development Board has been saddled with the responsibility of curbing the problems posed by slum proliferation in Kpakungu. Development control mechanisms were employed by the Agency on a smaller unit and building plans were properly scrutinized before approval. More so, site inspections were often carried out by the agency to checkmate the activities of contraveners in Kpakungu. The Niger State Urban Development Board opined that development control cannot be done on a larger scale in Kpakungu because the neighbourhood was just an organic settlement with no initial plan.

As a result of the ineffectiveness of the "smaller unit of development control" the Niger state urban Development Board proposed a Slum Upgrade for Kpakungu in 2008 before the entire Neighbourhood degenerate. The proposal of the Slum Upgrade for Kpakungu was defended that same year (2013) at the Federal Ministry of Lands, Housing and Urban Development.

The Slum upgrade proposal was accepted by the Federal Government and this was published in the memo of the National Council of Lands, Housing and Urban Development in 2013. Niger State Urban development Board believed that lack of political will by the government has hindered the implementation of the proposal. The Niger State Urban Development Board were of the opinion that the inability of the board to have her proposal approved has further made planning deteriorate in Kpakungu and this in turn has made development control ineffective in kpakungu.

### **RECOMMENDATION**

Based on the major findings in the study, the following recommendations are made to ameliorate the problems of Slum proliferation in Kpakungu Neighbourhood.

There is need for slum upgrading in Kpakungu through rehabilitation, creation of accessibility as well as provision of urban basic services. This approach will go a long way to revitalize Kpakungu. More so inclusive planning approach should be adopted in the slum upgrade plan intended for Kpakungu, this will make the plan more viable.

The reconnaissance survey of the study area shows that there is no designated solid waste disposal area. The only waste collection point in the study area is far from the houses of the residents of the neighbourhood. The agency responsible for waste collection concentrated on only the designated dump site, and this has led to problem of indiscriminate waste disposal in drainage channels, open spaces uncompleted buildings. Niger State Environmental Protection Agency therefore need to address the problem of waste management in Kpakungu to forestall environmental and health hazard. Also public enlightenment campaign should be carried out on the dangers of insanitation by the Niger state Environmental Protection agency. This will help the inhabitant of Kpakungu keep a more hygienic environment.

All the Activities of the Niger State Urban Development Board should be well supported by the Niger State government through effective development control mechanism. In addition, Inhabitants of Kpakungu should be made to revalidate their tenure because this will assist in controlling slum development in Kpakungu and Minna at large.

## CONCLUSION

From the analysis presented above, it can be seen that the relocation of the Federal University of Technology, Minna and NECO has contributed to the development of slum in Kpakungu neighbourhood of Minna. It was also observed that within the space of 16 years, the Slum grows more than 2 folds (192.61 Ha in 1999 and 484.7 Ha in 2014). This implies that the slum is growing astronomically. The implication of this growth has been the increase in crime activities, poor sanitation and increase in air pollution beyond the national standard. The tools of town planning (development control) have not been able to stem the tide of unplanned development in the neighbourhood.

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