

Unintentional Slum Creation: Assessing Housing Development in Selected Inner City Settlements of Yenagoa, Nigeria

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Abstract This study reveals how the unchecked process of development and city expansion leads to unplanned slum creation in inner city areas of Yenagoa, Nigeria. It explores the relationship between housing development and compliance with building and planning laws in the city. It uses methods like physical observation and case study in examining possible factors that may have contributed to inner city settlements becoming slums. The findings show that factors such as age and maintenance of building, building density, building orientation, and building materials amongst others, have aided in determining the quality of urban environment and ultimately creating slums in Yenagoa, albeit unintentionally.

Keywords: *slums; planning regulations, building laws, housing, development*

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1. Introduction

The Millenium Development Goals (MDGs) describes typical slums in developing countries as unplanned informal settlements where access to services is minimal to non-existent and where overcrowding is the norm [1]. [2] defines a slum as a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. However, a review of different slum definitions by UN-habitat revealed the following attributes of slums: lacking basic services; substandard housing or illegal and inadequate building structures; overcrowding and high density; unhealthy living conditions and hazardous locations; insecure tenure; and poverty and social exclusion.

Of all the attributes, this study focuses on the issue of substandard housing and illegal or inadequate building structures. It examines how the development of housing and the building of structures done sub-standarldly have ultimately contributed to the creation of slums in the inner city of Yenagoa in Nigeria.

Yenagoa the capital of Bayelsa State in Nigeria which was created on the 1st of October, 1996 is one of many urban centres in Nigeria, facing major environmental challenges due to poor housing conditions and inadequate provision of basic sanitary services. The population of the city increased on daily basis due to the uncontrolled influx of people into Yenagoa immediately the town was designated as the capital of Bayelsa State. Consequent

upon this, there are grave challenges for quality and affordable housing within the city. Although there was a development master plan for the town in 1975, it became obsolete as the status of Yenagoa changed from local government headquarters to a state capital. The private sector housing developers had to invest in real estate development of all standards as a result of the above situation. In most neighborhoods, the statutory regulatory procedures and standards for housing development are not observed.

In spite of the enactment of relevant Laws for improving the condition of housing and sanitary services in Bayelsa State and Nigeria at large, the situation is yet to improve. Some of the Federal and Bayelsa State Government Laws include the Nigerian Urban and Regional Planning Act CAP 138, Laws of the federation of Nigeria, 2004; the Land Use Act CAP L5, Laws of the Federation of Nigeria, 2004; the Environmental Impact Assessment Act CAP E12, Laws of the Federation of Nigeria, 2004; the National Housing Policy of 1991 2012; the Urban Development Policy of 2012; the National Building Code of 2006: Bayelsa State Housing and Property Development Authority Law of 1998; Bayelsa State Physical Planning and Development Law of 2015; Bayelsa State Environmental Sanitation Authority Law of 1998; and Yenagoa Master Plan Law of 2004. Yet with all these laws in place, new neighborhoods still develop into slums or little less than slums at alarming rates. As such, this study examines the reason why these informal settlements keep developing in the heart of the city, amidst building laws and planning regulations.

2. Informal Settlements and Infrastructural Development

The authors [2] like most scholars in this field, attribute the development of slums to the reaction of people towards the unavailability of affordable housing by national and local governments due to rapid urbanization and urban growth. The UN predicts that about 2 billion people will be living in such informal settlements by 2030 unless major changes are made to urban management policies [3]. Similarly, the problems of slum in the urban centres of Nigeria are attributable to inadequate provision of accommodation and infrastructural facilities to match the population increase due to rural-urban migration for job opportunities. Also [4] noted that one of the problems relating to the built environment is the proliferation of substandard housing and squalors, informal squatter settlements collectively referred to as slums. The authors further observed in their study of slums, that urban development and upgrading of slums in Lagos metropolis pose great challenges due to population growth. This growth has resulted in challenges of inadequate housing coupled with high population density of 1,308 persons per square kilometer with available land falling prey to unregulated and unplanned development.

Slums play crucial role in the urban scenery and have the potential of housing the urban poor due to its affordability and availability [5]. According to [6], slums have become unavoidable phenomena within the urban environment in most emerging economies. The common definition of a slum advocates that it is a connecting settlement where the residents and the environment exhibit characteristics of insufficient basic services and housing [7]. The United Nations Millennium Development Goals (MDGs) Report of 2015 identified that there is a significant decline in urban slum population in some regions of the world which include: South-Eastern Asia, Southern Asia and Eastern Asia. It is very evident based on the 2015 MDGs report that the prevalence of slums in sub-Saharan Africa has reached a remarkable high of 55 percent which is the highest in all regions globally. According to the MDGs report, it signifies a drop of just about 10 percent in the occurrence rate since 2000. Although the target was met, absolute numbers of urban residents living in slums continue to grow partly due to rapid development, poor housing policies, inappropriate land policies and growth in the population. There are about 880 million urban dwellers who are projected to reside in present day slum conditions which can be likened to the 792 million described in 2000 and 689 million in 1990 [1]. The above signifies the enormity of the environmental challenges in the urban areas due to constant increase of urban residents living in slum conditions over the years globally.

In Nigeria, the few available infrastructure and social services in most urban centres are dilapidated as they are over-stretched due to population increase. According to [8], rural-urban migration has not only over-stretched social and physical facilities, free flow of traffic, and access to open space, but has led to the development and

spread of shantytowns, uncontrolled settlements, and a general deterioration of our environmental quality. There is the realization by both policy makers and the populace that our cities have failed to meet the demands of their residents in terms of provisions of basic facilities, employment and prevention of crime and delinquency [8]. In addition, [9] identified overcrowding as a major environmental problem in the cities of developing countries. According to the author, there is congestion of both buildings and people leading to slums and poor sanitary conditions.

Generally, slums and shanty towns are often in danger of being demolished by governments at any time as they are below approved standards. The lives of slum residents are threatened as their stay in such areas is often temporary and they can be evicted without adequate notice. However, the residents in this study are not in any such danger as majority of the home owners in the study locations own not just the houses they live in but also have legitimate claims to the lands on which they are built. So, for the occupants in the study areas in Yenagoa, the status of illegal occupancy may not apply. The problem is that even with such privileges, the residents live in degrading conditions of their own making by formalizing the continuous development of informal settlements but with no intentions of doing so.

This research work was carried out to investigate the problem of unintentional slum creation based on how residents develop poor housing, planning and substandard buildings on their own in Yenagoa.

2.1. Description of the Study Area

The study was carried out in three of the inner city settlements of Yenagoa in Bayelsa State. The State capital territory Yenagoa lies between latitude $4^{\circ}, 55' N$ and $4^{\circ}, 57' N$ and longitude $6^{\circ}, 16' E$ and $6^{\circ}, 18' E$. Yenagoa capital territory covers a radius of 15Km with about fifty (50) settlements as at the time Bayelsa State was created. It covers the entire Yenagoa Local Government Area (LGA) and some communities in Kolokuma/Opokuma LGA on the North, Sagbama LGA on the North/West, Ogbia LGA on the South/East and Southern Ijaw LGA on the South/West. Based on the 2006 census, Yenagoa LGA had a population of about 266,008 persons and the population density was 376 persons per square kilometre [10]. Yenagoa had a linear pattern of settlement as at the time Bayelsa State was created. Presently, the original settlement pattern has changed with increased development and housing construction due to rapid population growth.

Yenagoa experiences heavy rainfall for eight to nine months (March to November) of the year with highest rainfall values obtained in the months of June (322.92mm), July (413.59mm), August (438.34mm) and September (439.84mm) while the mean annual rainfall is 3191mm [11,12]. The general topography of Yenagoa is relatively flat-lying. Due to the low swampy terrain and high rainfall, most parts of Yenagoa are flooded for about 8 to 9 months of the year especially during the flood season from the months of May to October.

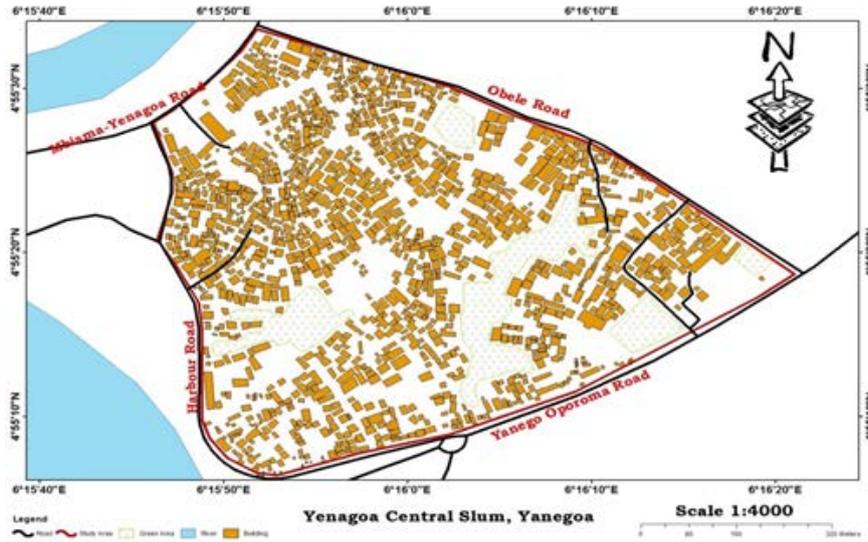


Figure 1. Satellite Imagery of the Study Area showing Yenagoa Central Slum obtained in 2010

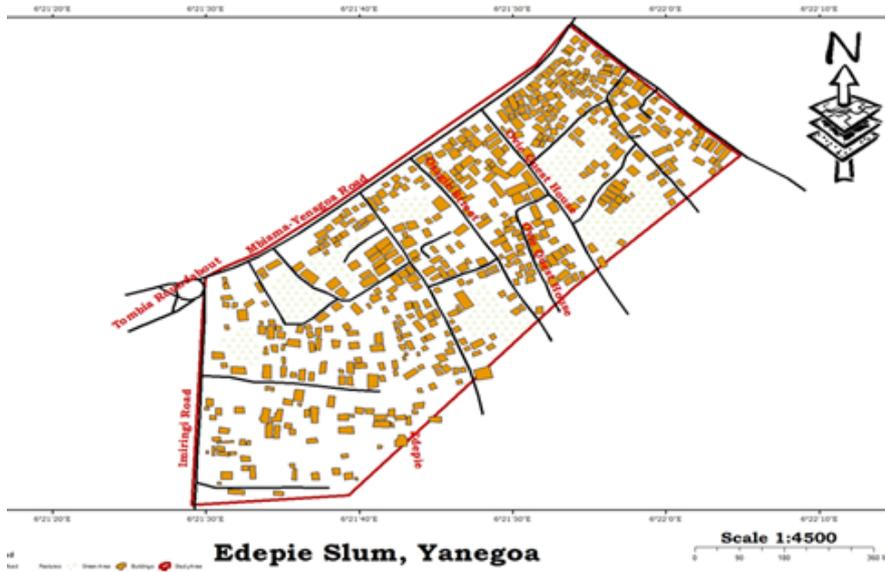


Figure 2. Satellite Imagery of the Study Area showing Yenezue-Gene Slum obtained in 2010

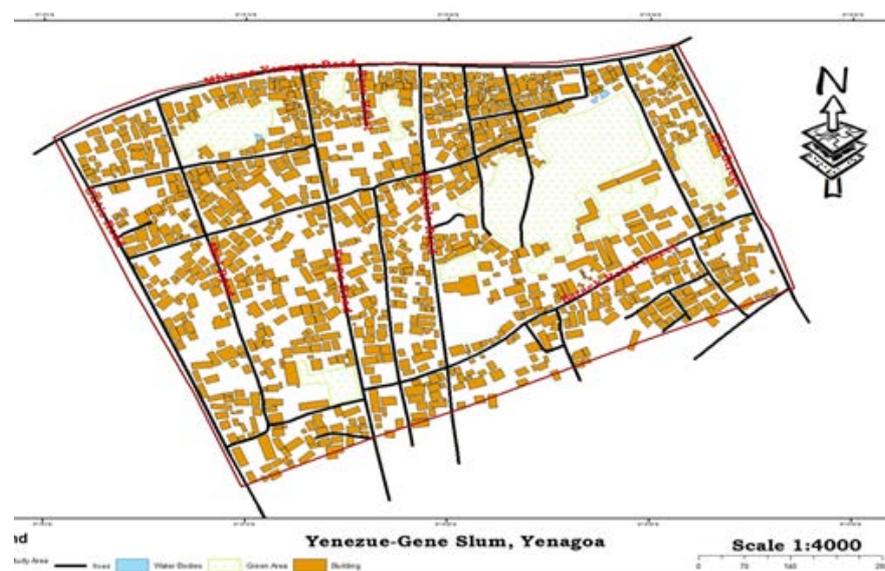


Figure 3. Satellite Imagery of the Study Area showing Edepie Slum obtained in 2010

3. Methodology

The study was designed to apply both qualitative and quantitative techniques to collect detailed accounts and experiences from the respondents and the physical environment. The data was collected through observation and measurements, key informant interviews, questionnaire administration, satellite imagery, maps and photographs. The data from field was collected, collated, coded and analyzed qualitatively.

The multi-staged sampling technique which involved the listing of all the identified slum locations within the study area, physical enumeration of properties, with the aid of geographic information system map imageries to identify sixty-two (62) streets traversing the entire stretch of the study area. Three (3) slum neighbourhoods were purposely selected for ease of access to collect data on demographic, physical and spatial characteristics of the study area. Systematic sampling technique was adopted to select respondents in the study area. The three slum neighborhoods were purposely identified and captured for the study with the aid of Geographic Information System (GIS) map imageries as shown in [Figure 1](#), [Figure 2](#) and [Figure 3](#) above.

A total of 25% of the population was purposely chosen for the study and the simple random sampling technique was applied to pick sampling units (houses) to avoid bias. The data collection techniques include questionnaire

administration, observation and measurement of the physical buildings and environment and interview of key informants. The respondents in the study are household heads in the area and enumerators who administered the questionnaires for the study. Key informant interviews were also conducted to gather data from government officials and community leaders. Qualitative data analysis techniques were used to interpret and explain the condition of housing and also sanitary services in the study area.

3.1. Data Collection

Both primary and secondary data were collected for the study. The primary data includes the housing conditions such as building materials, building density, orientation and aesthetic value amongst others. The sources of primary data include residents of the study area (slum dwellers), the houses and the physical urban environment. Secondary data includes existing studies and reports, government policies and gazettes. These are obtained from the National Bureau of Statistics and other online sources. In order to gather adequate data for the study, three methods of data collection were used. These include questionnaire administration, observation of physical environmental condition and key informant interview methods. [Table 1](#) below shows a list of the streets and number of houses where data was collected.

Table 1. Housing Census of the Study Area

S/No	Road/Street/Lane Name	Number of Houses	Sample Size (25%)	Nearest Number
1	Obele road	127	31.75	32
2	Chief Akenge Close	6	1.5	1
3	Awala Iyakoro Lane	15	3.75	4
4	Chief Kenigbolo Lane	14	4.00	4
5	Mso Freeborn Lane	16	3.50	4
6	Erigbe Lane	43	4.00	11
7	Enize Street	39	10.75	10
8	Ebi Wilson Close	16	9.75	4
9	Thursday Enize Lane	36	4.00	9
10	Amos Kikili Lane	17	4.25	4
11	Belo Ogbara Lane	12	3.00	3
12	Coastman Fefegha Lane	13	3.25	3
13	Ebeni-Ekien Street	45	11.25	11
14	Ogbara Close	10	2.50	3
15	Emi Street	76	19.00	19
16	Mama Azaiki Close	19	4.75	5
17	Ben Leadership Academy Close	16	4.00	4
18	Great Redeemer Church Street	52	13.00	13
19	Triumphant Covenant Church	43	10.00	10
20	Obele Lane	16	4.00	4
21	Chief Ogilo Street	45	11.25	11
22	Yenagoa/Mbiama Road	8	2.00	2

3.2. Observation of Housing Conditions

For purposes of gathering appropriate data for the study, physical observation and case study method was applied to enable the enumerators collect the needed data on housing conditions in the study area. In the study, the enumerators ticked the appropriate answers to questions on the physical environment after proper observation of the physical conditions within and outside the premises of each house selected for assessment were done. The aspects of the physical environment targeted for assessment through observation method include description of houses, building density, building materials, aesthetic value, building orientation and setbacks as well as building and utility lines.

3.2.1. Description of Houses

The data collected show that 32% of the houses are built with temporary building materials (wooden/zinc wall, zinc roof, concrete floor, wooden windows, no ceiling); 6% are wattle and daub houses not plastered, roofed with zinc, concrete floor, wooden windows, ceiled); 3% are wattle and daub houses but plastered, roofed with zinc, cement floor, wooden windows, not painted, ceiled); 12% are also wattle and daub houses plastered, roofed with zinc, cement floor, wooden windows, painted, ceiled), 29% are

block houses not plastered, roofed with zinc/corrugated iron or aluminium sheets, louver/glass windows, ceiled); 18% are block houses, roofed with zinc/corrugated iron or aluminium sheets, louver/glass windows, painted, ceiled). This means that as at the time of collecting data, only 47% of the houses were made of sandcrete or concrete blocks at different stages of completion. The findings also show that most of the houses in the area are only a few years old but in deplorable physical condition either due to the use of non-conventional building material or lack of maintenance and therefore aesthetically unpleasing.

3.2.2. Types of Houses

Of the buildings in the study location, the chart below shows the type of houses in the study area. The results show that 27% of the houses in the area are family houses with many rooms and flats, 33% are block of rooms, 9% are semi-detached flats, 2% are detached flats, while 29% are temporary structures. It shows that the types of houses in the area are mainly family houses with many rooms and flats, block of rooms, and temporary structures. This implies that the area is made up of mainly rooming houses which are built to accommodate many households (tenants) in a building with common facilities or without any facility.

Table 2. Description of Houses

Description of House	No.	%
(1) Thatch house (wattle and daub, thatch roof, not concrete floor, wooden windows, no ceiling)	-	-
(2) Temporary structure (wooden/zinc wall, zinc roof, concrete floor, wooden windows, no ceiling)	140	32
(3) Wattle and daub house not plastered, zinc roof, concrete floor, wooden windows, ceiled	26	6
(4) Wattle and daub plastered, zinc roof, concrete floor, wooden window, not painted, ceiled.	13	3
(5) wattle and daub house plastered, zinc roof, concrete floor, wooden window, painted	53	12
(6) Block house, zinc/corrugated iron sheets roof, concrete floor, louver/glass windows, unpainted wall, ceiled.	127	29
(7) Block house, zinc/corrugated iron sheets roof, concrete wall, louver/glass windows, painted wall, ceiled.	79	18
Total	438	100

Source: Field work.

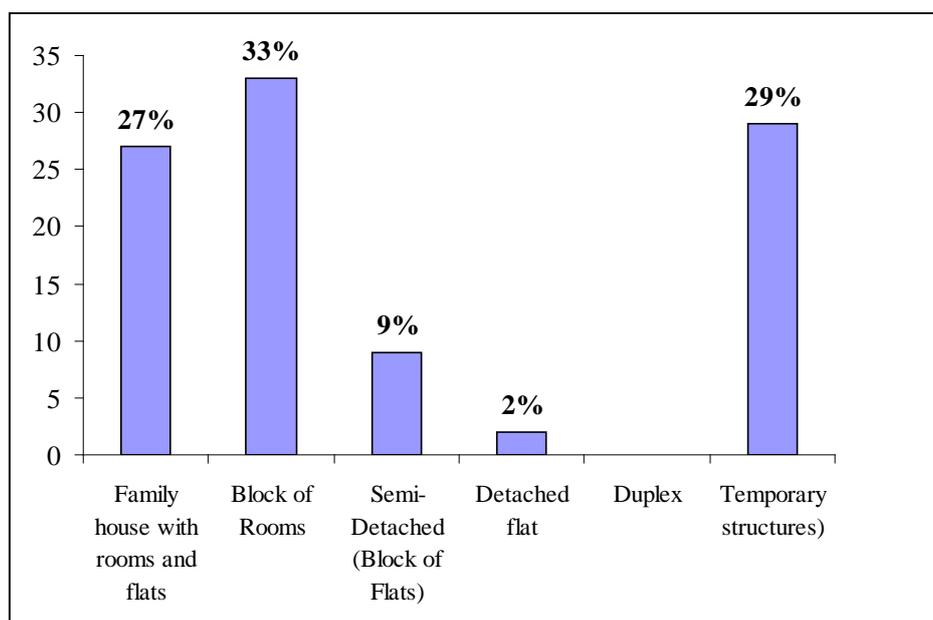


Figure 4. Types of Houses

3.3. Housing Conditions

The house an individual lives in is a symbol of his status, a measure of his achievement and social acceptance. Therefore, the indices considered for determining universally acceptable pattern and standard of buildings in the study are numerous. Some of the most relevant indices include physical condition of buildings and provision of basic facilities in the buildings. The components considered for assessment of physical condition of buildings in the study include age/maintenance, building materials used and aesthetic value amongst others.

3.3.1. Age of Building/ Maintenance

The results on [Table 3](#) below show the age of houses in the study area. The results show that 2% of the houses in the area were built before the creation of Bayelsa State in 1996, 18% were built between 1996 and 2000, 19% were built between 2001 and 2005, 23% were built between 2006 and 2010, 21% were built between 2011 and 2015, while the rest 17% were built from 2016 to date. This shows that only 2% of the houses in the area were built before the creation of the state while 98% of them were built after 1996. It implies that most houses in the area are in deplorable condition not because of age, rather because of poor architectural standards, poor construction and inadequate services.

The study further shows that only 2% of the houses are well-maintained while the rest 98% require either various levels of renovation or some even demolition. The study identified lack of finance as a factor responsible for deteriorating condition of houses in the area which expose residents to health challenges. This brings to mind [\[13\]](#) definition of slum as an urban habitat that has deteriorated and must be rehabilitated and organized jointly with the full participation of the inhabitants.

Table 3. Age of Buildings

Age	No.	%
Before 1996	9	2
1996 – 2000	79	18
2001– 2005	83	19
2006 – 2010	101	23
2011 – 2015	92	21
2016 to date	74	17
Total	438	100

3.3.2. Building Materials

The findings have shown that 53% of the houses in the study area are built with temporary building materials. It shows that the ability of building materials to stand the test of time in terms of resisting environmental and climatic conditions determines their quality for building construction. The study has also shown that only 47% of the houses are built with sandcrete or concrete blocks which are more permanent or longer lasting building materials. The implication is that houses built with temporary materials deteriorate within a few years and also create maintenance problems shortly due to their inability to withstand both environmental and climatic conditions. Also, [\[14\]](#) noted that Shanty towns are houses

built with temporary or substandard materials. According to the author, the type(s) of building materials used has profound influence on the functionality and overall efficiency of the building. The author further noted that the type of material used determines maintenance requirement and durability of buildings. The above scenario is also shown here as the unsanitary condition of houses in the study area is attributed to low quality building materials used in construction of the houses.

3.3.3. Aesthetic Value

The type of building design and proper finishing are also vital determinants of the physical condition of buildings in terms of enhancing aesthetic value. The study indicated that most houses in the area are unfit for habitation not because of age or use of low quality building materials alone but due to lack of functional architectural building design and proper finishing. It shows that most of the houses are not properly designed as 47% of the houses built with permanent building materials are noted to have been built haphazardly. One set making up 18% are built without the necessary cement-sand render to enhance their aesthetic value. The study also shows that most of the houses are uncompleted but occupied by people as only 18% of the houses are properly completed. The remaining 29% are uncompleted buildings being occupied by people either without flooring, cement-sand wall render, ceiling, or painting. The uncompleted buildings being occupied by people, especially the dilapidated houses adversely affect the aesthetic value of the entire settlement as they are unattractive and therefore not aesthetically pleasing. Similarly, the presence of leftover or unutilized spaces that break the monotony that occurs from proper arrangement of plots and buildings also contributes in reducing the aesthetic value of the properties. This is the situation in the study area as the houses are not arranged according to any particular order or planning principle.

The above findings conform to the assertion in [\[15\]](#), that the physical appearance of houses in the slums and shanty towns are unattractive and aesthetically displeasing. The author noted that these buildings are substandard and usually in deplorable condition due to their inability to withstand weather conditions.

3.3.4. Building Density, Building Orientation and Setbacks

The pie chart shown in [Figure 5](#) below reveals density and the distance between houses in the study area. The results on the figure show that only 2% of the houses in the area are three or more metres away from other houses while 98% are less than three metres apart from other houses. The study further shows that the houses that are three or more metres apart are in Igugu community, while the rest of the houses that are less than three metres apart are in all the three communities in the study area. This shows that houses in the area are overcrowded due to haphazard building operations without adequate air spaces between them. Despite the existing laws to regulate building operations in Yenagoa, developers in the area build houses without adequate setbacks or open space for ventilation and outdoor activities which is a serious environmental challenge [\[16\]](#).

The orientation (Positioning) of buildings is another significant parameter for determining the informality of a settlement. The present state of houses in terms of building orientation in Yenagoa is very poor. It is clearly shown that most houses in the study area are poorly positioned with most of them facing the back or sides of other houses without adequate air space. In a well-planned settlement, the building pattern is regulated in a manner that houses either face each other or face the back or sides of other houses with adequate space (setback) or separated by concrete block wall fence. The findings of the study have shown that poor orientation of buildings is also a major factor responsible for environmental problems in Yenagoa. Density in relation to urban planning does not only refer to the number of houses in an area but also persons per unit of space. The findings of the study have shown that high building density in Yenagoa contributes to the creation of informal settlements.



Figure 7. Poor spacing and orientation of buildings at Obele community

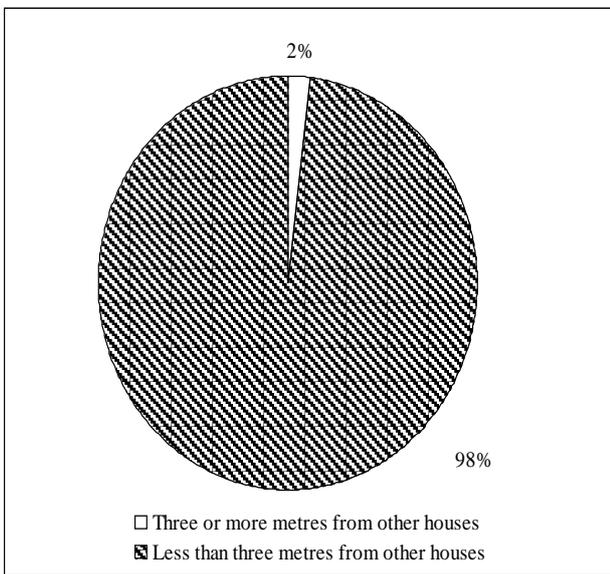


Figure 5. Pie chart showing Building Density (Source: Field work)



Figure 8. Poor spacing and orientation between buildings

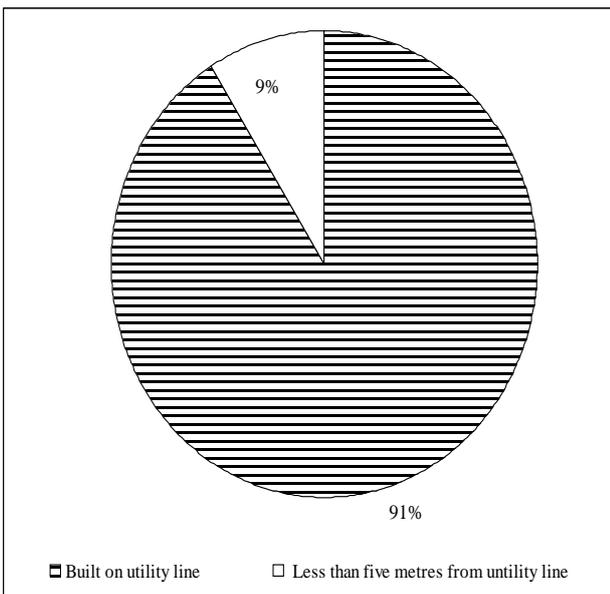


Figure 6. Building orientation and setbacks (Source: Field work)

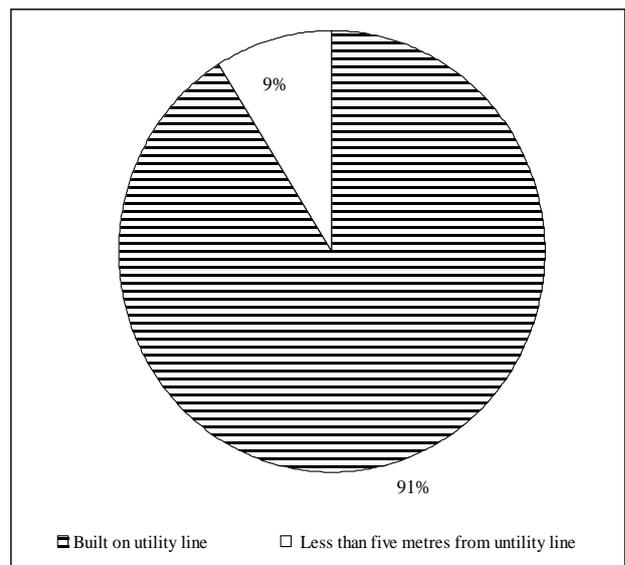


Figure 9. Distance between Houses and Utility Line (Source: fieldwork)

3.3.5. Building and Utility Lines

The study further shows that none of the houses in the study area is five or more metres from the utility line, 9% are less than five metres from the utility line, while the

rest 91% of the houses are built on the utility line. It shows that none of the property owners in the area met the government approved building line standard of a minimum of five metres away from the utility line. This is regardless of the fact that majority of the residents living in finished block houses submitted building plans for approval and part of the documentation required for approval is a proposed site plan indicating planning regulation setbacks from the main access, utility lines and oil pipeline right of way. This infers that there is either inadequate land space between houses in the study area and the utility lines or the prescribed setbacks have been ignored.

4. Compliance with Building and Environmental Laws

The findings of the study show that houses in the area were built without regard for building regulations. The study shows that only 2% of the houses are more than three metres apart while the rest 98% are less than three metres from each other. This has shown that the area is overcrowded with houses. The study further shows that none of the houses in the area is five or more metres from the utility line, only 9% are less than five metres from the utility line, while the rest 91% are built within the utility line. This indicates that property owners in the area have not to comply with the government approved three metres minimum setback between houses and five metres minimum building line (setback) from the utility line. According to [17], the Building Regulations of Nigeria stipulate that no person shall build or erect any dwelling house so that the area covered by the building together with that of all out-houses appertaining thereto shall exceed one half (i.e. 50%) of the total area of the site. The [18] defined Building Line as the line established by law, beyond which a building shall not extend, except as specifically provided by law. With the data presented, there is an indication of a high level of non-compliance with building regulations in the study locations. The implication is that there is high building density, which poses a serious environmental challenge in Yenagoa as the city is overcrowded with houses covering more than 50% of individual plots. The residents of the city lack adequate ventilation not only inside the houses but also within the yards.

5. Conclusion and Recommendation

The findings commence with a description of houses found in the study area in which only 47% are constructed with permanent and more modern building materials. although, the construction of houses using traditional building materials do not necessarily translate to shanty towns or slums, the manner in which these materials are used and their level of deterioration due to temporariness, gives them an appearance of informality and squalor. Also, the study indicated a high population density in the area, not only in terms of persons per building plot but also number of houses per plot as houses are built without the recommended distances apart. In addition, there is poor building orientation (positioning) in the study areas as

most buildings face the back or sides of neighbouring houses with pedestrian accesses as the only available distances between them. The findings further show that most houses in Yenagoa are built without recourse to adequate open spaces for air circulation and outdoor activities. Furthermore, there is also the issue of building on or close to utility lines not regarding the danger it poses or the shanty appearance it creates.

In summary, the study has revealed to a large extent how unsupervised housing developments and the way and manner houses are built in the inner city settlements of Yenagoa have contributed to the creation of slums. It also shows how the statutory regulatory procedures and standards for housing development are not observed in some select neighbourhoods. In addition, there is a lack of governmental control or oversight by the designated supervisory agencies over urban development in some parts of the city. However, the study does not surmise that the above mentioned factors constitute the only reasons why slums are created as there are other environmental and infrastructural factors which are not captured within the scope of this study.

Nonetheless, this study infers that the extant laws for regulating building operations and other human activities in the state have not made an appreciable impact in Yenagoa but rather have contributed in the development of slums in inner city settlements that would have otherwise been formal settlements.

Based on the above conclusion, the main recommendation in the study is the implementation of a Comprehensive Slum Rehabilitation Scheme that can improve the condition of housing and sanitary services in Yenagoa, as well as the creation of affordable mass housing programs for the urban poor. It was observed that both the state and federal governments have not judiciously implemented the relevant housing policies and programs to assist housing developers in Yenagoa and with the absence of a Mass Housing Program, the development of informal settlements to accommodate the urban poor continues to thrive. The relevant government agencies have not done enough in terms of embarking on housing schemes through which layout designs can be prepared and implemented to provide basic housing or allocate plots of land to housing developers. This has inevitably resulted in creating a huge housing gap in the state capital, a gap that more often than not tends to be filled by self-help construction of numerous substandard buildings, the agglomeration of which ultimately become slums.

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