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Environmental Effects on Squatter Settlement: A Case of Alagbede Village, Lagos, Nigeria

[1]Adeoye, D. O., [2]Ayanda, O. O. L. and [3*]Ajayi, O. O.

[1, 2, 3]Department of Architecture, Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria.

*Corresponding E-mail: ooajayi@lautech.edu.ng

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Abstract

Healthy housing is a function of provision of adequate physical, social and mental conditions for healthy environment. It is a function of both intrinsic and extrinsic attributes of housing that can influence human health. Environment and human activities are omen to development. The effects are manifested in generating land use problems such as congestion, sprawl development, incompatible land uses, building alterations and change of uses, the menace of temporary structures, alteration of land use functions, conversion of open and future spaces, and land degradation. Alagbede village is one of the areas that require such development drive. The study is required to facilitate this need. This research effort is to examine the environmental effect of squatter settlements in Alagbede village, Ikeja, Lagos State Nigeria. The paper examined housing conditions in terms of privacy, adequate space, physical accessibility, adequate security, security of tenure, structural stability and durability, adequate lighting, and ventilation, and basic infrastructure (such as water supply, sanitation, and waste management facilities including suitable environmental quality and health related factors and its influence on the residents of Alagbede area, Ikeja Lagos State. Approach includes the development of database and choice of appropriate data source (primary and secondary data sources). From the methodology, there were questionnaire administration, direct interview of respondents, collection and updating of the base maps, and the use of necessary field instrument for the study. The data gathered were analysed using descriptive method. The end result has revealed a number of environmental problems due to the existence of these settlements (Alagbede village). These problems are poor drainage system, noise pollution, illegal refuse dump sites, slum situations etc. Appropriate recommendations in form of short time and long term solutions were suggested to conclude the research work.

Keywords: Environmental effects, Degradation, Slum, Sprawl developments, Squatter settlements.

Introduction

A shelter according to Eteng (1999) is described as structure that shields against danger, rain, wind, sunlight etc. Bad housing is a major index of slum conditions. By bad housing is meant dwellings that have inadequate light, air, toilet and bathing facilities; that are in bad repair, dump and improperly heated; that do not afford opportunity for family privacy; that are subject to fire hazard and that overcrowd the land, leaving no space for recreational use. Slum is known to be a residential area that are physically and socially deteriorated and in which satisfactory family life is impossible. A slum settlement therefore, refers to the condition of a settlement, and squatter settlement would refer to the legal position of the settlement.

The World Bank estimated that in 1988 approximately one quarter of the developing world's absolute poor was living in urban area (World Bank, 2001). By the year 2015 half of the developing world's absolute poor will be in urban area. Several factors, including structural adjustment programs (SAP), economic crises and massive rural-urban migration have contributed to an increasing number of urban poor. The resource and environment of urban centre all over the world is increasingly being depleted as a result of pressure from the conception of people. The effect of this pressure is more visible in the cities 3rd world countries where the cities have failed to sustain their population than in the more developed world even though cities are expected to serve as engines of growth and development (Aluko, 2008, 2000). In these urban centres, there are rapidly growing number of individuals who have no access to the basic things of life needed for their survival and welfare. They are therefore most marginalized or

excluded from benefiting from the service provided by the cities. The most marginalized of the groups are the urban poor and their situation is made more critical by degraded environment in which they live.

The industrial revolution which spurred the process of urbanisation in the Global North, provided job opportunities for city dwellers and rural migrants and were formally accommodated, taken care of city dwellers within the context of municipal and urban planning laws and social welfare policies and thus, properly assimilated in the growing cities. The second wave of urbanisation, which began in 1950 and projected to ease in 2030, approximately 3 billion people would be urbanized in just 80 years compared to 400 million people in 200 years during the first wave. Latin America became urbanised quite substantially during the early years of the second wave. However, empirical evidence indicates that, this second wave will be experienced largely in Africa and Asia.

One of the major differences between the two waves of urbanisation is that, the current wave is taking place under conditions of informality. Under the process of informal urbanisation, most cities in the Global South are renowned for their largely informal economies, high levels of slums and informal settlements, high levels of unemployment and underemployment, high youthful population and low levels of industrialisation. To properly situate these challenges, it is estimated that there is about one billion slum dwellers in the world today, that is, one out of every six human beings on the planet. Informed projection is that by year 2030, the number of slum dwellers will rise by 100 percent (UN, 2009; Neuwirth, 2006). These urban settlers have no other place to live but in slums or squatter settlements.

In general, Squatter settlement is considered as a residential area in an urban locality inhabited by the very poor who have no access to tenured land of their own, and hence "squat" on vacant land, either private or public. A squatter settlement therefore, can be defined as a residential area which has developed without legal claims to the land and/or permission from the concerned authorities to build; as a result of their illegal or semi-legal status, infrastructure and services are usually inadequate. Squatter settlements lack cultural, planning and management tools to ensure the safety of the environment. The attitudes of man as a squatter toward the use of available environmental resources are highly destructive. This has resulted in diverse problems associated with environmental degradation from the activities of man. A "squatter" (in The Concise Oxford Dictionary) is a person who settles on new especially public land without title; a person who takes unauthorized possession of unoccupied premises. Therefore, a residential area occupied by squatters becomes a squatter settlement. There are a number of names by which squatter settlement are described by various authors, which highlight the attitudes and approaches towards them, ranging from a positive to neutral to negative outlook. These include Informal settlements, Low-income settlements, Semi-permanent settlements, Shanty towns, Spontaneous settlements, unauthorized settlements, unplanned settlements and Uncontrolled settlements.

This research was carried out to assess and evaluate the effects of human activities as related to squatter settlements which is the human shelter. The effects of this type of environment are numerous of which this research activity has tried to evaluate the magnitude and effect of such environment on man. The aim of this research is to assess the environmental effects of squatter settlements in an informal area, Alegbede village, Ikeja, Lagos State Nigeria. To actualize this aim the following objectives were set up:

(i) to take inventory of the houses in the study area
(ii) assess the type of infrastructures and social amenities available in the study area
(iii) examine the type of houses and their characteristics
(iv) assess the quality of houses and its environment
(v) assess the effect of the condition of the environment and the sources of health hazard witnessed on the quality of life of the residents and proffer possible suggestions in order to improve the environmental condition of the study area

Conceptualization and review of literature

To address the question of informality, the existing literature has come up with various definitions and concepts. De Soto (1989) observed that there is no district border between formality and informality in the legal sense. He noted that individuals are not informal, but their actions and activities are. However, broadly speaking, informal activities are those beyond the purview of the state. Lipton (1984), in his review of informality, identified several strands of conceptualization including small size of enterprise, overlap between capital and labour, and "prevalence of perfect or rather near – perfect competition". De Soto (1989) observed that there is no district border between formality and informality in the legal sense. He noted that individuals are not informal, but their actions and activities are (Olokesusi, 2015) and poor urban housing as in all regions of the world is a manifestation of informality.

Urban informality, according to Roy (2009), means a state of deregulation, one where the ownership, use and purpose of land cannot be fixed and mapped according to any prescribed set of regulations or law (Roy, 2009:80). He further observed that, informality is situated in the labile relationship between what is legal and illegal, legitimate and illegitimate, authorized and unauthorized (Roy, 2009). The concept of informality was first introduced into development literature by Keith Hart in his 1971 study of informal employment in Ghana. He distinguished between formal and informal income opportunities as being the difference between being wage-earning or self-employed. Notably, informal activities are, broadly speaking, those that are beyond the purview of the state. The second conceptualization of urban informality emanated from the report of the Urban 21 Commission. The commission consists of a group of experts appointed in 2000 as a World Commission on Cities in the 21st Century. The report, published by Ulrich Pfeiffer and Peter Hall (2000), titled Urban Future 21: A Global Agenda for 21st Century Cities identified "informal hyper growth" cities as a distinct form of urbanisation. The authors contend that such exploding cities, especially in the Global South, constitute sober apprehension in the 21st century. The authors noted that the urban poor coped by building their own city without any allusion to the entire bureaucratic system of physical planning in the adjoining formal city. Hussmanns (1996) described informality as a term designating a range of phenomena, such as absence of regulation, smallness of size, and competition that generally go together.

Studies by Onyebueke (2000), Okeke (2000), Jelili and Adedibu (2006) among others found out that the home based enterprises and informal sector activities are mainly based on neighbourhood characteristics, additionally, low socio-economic level, coupled with poor infrastructural facilities in our growing cities, contributes to the proliferation of the sector. Therefore their activities is highest to the extent that it is generating land use problems such as congestion, sprawl development, incompatible land uses, building alterations and change of uses, the menace of temporary structures, alteration of land use functions, conversion of open and future spaces, and land degradation.

In the cities of many developing world countries, urban centres are seen as bait for socio-economic development, hence immigrants and city dwellers only find employment mostly in informal sector which refers to human activities generally organized outside of the formal rules and regulations set by governments. The informal city of the poor is characterised by housing of poor quality and with inadequate provision of water, sanitation and drainage that put the lives and health of residents under continuous dangers while the gated communities of the ruling elite in the formal city enjoy the advantages of city life usually at the expense of the informal city. The informal sector is identified as encompassing a wide range of areas of informalities such as environmental, spatial, economic, housing and social realms including business activities, employment structures, markets, settlement patterns, neighbourhoods and growth patterns. Each of these areas has been making contributions to the informal sector since the early days of independence.

However, empirical findings indicate that informal urban networks and land markets are rational and very ordered. A major meeting point of the two perspectives is that informality is distinct from formality. Another area of agreement is that the poor could be assisted through enablement by government so that they could improve their circumstance by self-help.

Description of Alagbede Village, Ikeja, Lagos State

Alagbede village is one of such small settlement which came into existence recently around airport hotel, Awolowo way, Ikeja Lagos state.

Figure 1: One of the Buildings in the Village

The residents originally were the inhabitant of present site of Ikeja airport hotels. The land then was leased out to the occupant for some years..

However, after the expiration of the lease period; the owner (offspring) of the land decided to expel the occupants of the land leased out. The issue resulted in a court case of which the court upheld that the occupants should leave the land and be paid some compensation and be relocated and be allocated a very small area of the land adjacent to the present site of airport hotels of which a token was collected on each portion of the land allocated.

Majority of the inhabitants of the area decided to build houses though not of the standard from where they were expelled just to still retain ownership of houses in the area they grew-up since their childhood days and where they earn a living. Thus, the emergence of the informal or the squatter settlement named Alagbede Village.

Figure 2: Satellite imagery of Alagbede village, Ikeja Lagos

Methodology

Two sources of data were used for this study. These include primary and secondary data sources. The primary data used were acquired from direct field survey by questionnaire administration, interview survey and community participation methods. The secondary data involves the use of information already in existence sourced from past literatures, journals articles, conference proceedings.

The questionnaire was divided into four broad sections with each section containing variables such as house type, condition of houses; The questions on condition of houses were aimed at identifying the type and quality of materials used for the house and their condition. It also includes the number of rooms, their sizes, ventilation and lighting condition of the rooms. The third section focuses on information that has to do with adequacy of setbacks, type of access (es) to the houses, type and quality of drainage system, electricity and water source(s) and supply, type of tenure and approval status and title on the land. The last section of the questionnaire dealt with availability of social facilities and services, methods of waste disposal, and the likelihood of diseases which could emanate from such living conditions.

A total of 121 questionnaires were administered to the respondents who are residents (both house-owners and non-house owners) in the village.

Results and Discussion

Housing type

The predominant building types found in the area were bungalows in the likes of face-the-face apartment (See figures1). There was no defined setback from one building to the other because the buildings were sited haphazardly and very close to one another. None of the buildings had access roads. The only available means of reaching most of these houses were through footpaths available by chance or circumstances. The rooms in the houses were below standards and the sizes of the rooms (i.e less than 10.8m^2) were generally substandard. All the rooms were poorly ventilated as there was only one window per room with floor area below 50m^2 (see Fig 2) thus overcrowding and congestion were the experience of the inhabitants.

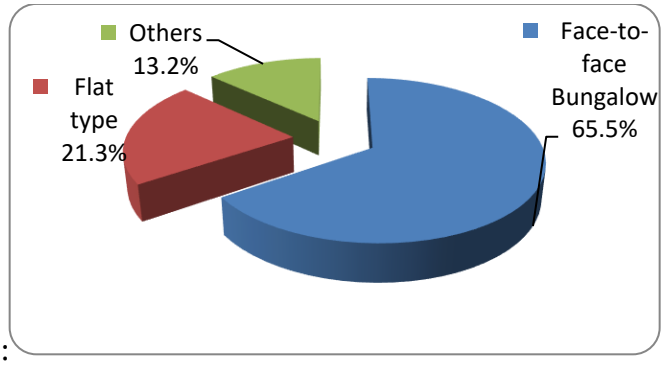


Figure 3: Housing Type

Floor area distribution and assessment

The standards of floor area of the house types were assessed. Respondent's opinions or views assisted in arriving at the distribution (See Fig 2). The floor finish material reflected that Cement screed was the major material used for floor finish. This is followed by ceramic tiles in some buildings. It was also revealed that the floors were cracked with lower foundation belt remaining damp permanently throughout the year. It could be concluded that the floor conditions of Alagbede village were below standard.

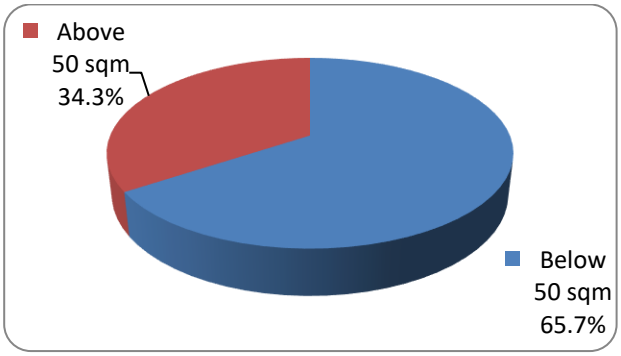


Figure 4: Floor Area Distribution

Room distribution

There were a high number of rooms in the houses survey in Alagbede Area. Most of the buildings were roomy type – Brazilian type (face-to-face) while a few were simple modern flat bungalow type. Those with number of habitable rooms ranging from 4 – 6 rooms are less than those above 6 rooms. The household size is between 9 – 13 people. This suggested congestion in the houses surveyed.

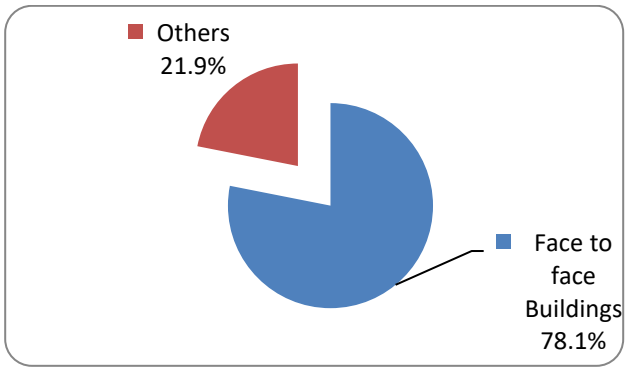


Figure 5: House Type and room Distribution.

Room size

The standard room size according to town planning authority is 3.6 x 4m and 4m x 4.5m. However, none of the rooms assessed in the study area conforms to this standard. Majority of the rooms' size were 3m x 3m or even less in some cases. This explains why there was congestion in the household size as seen in Fig 6.

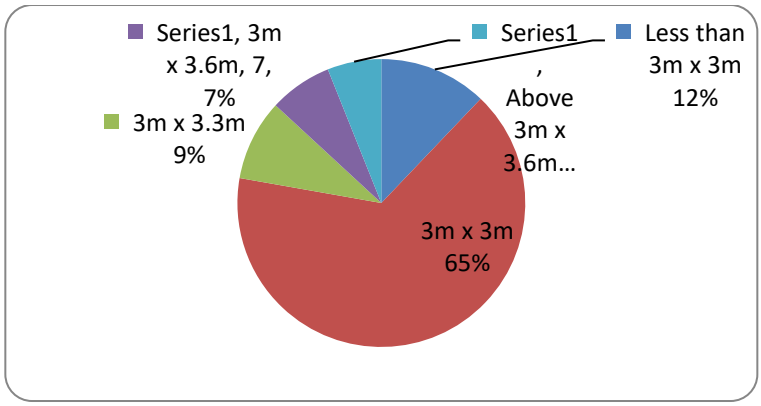


Figure 6: Room Sizes

Quality of wall materials

The quality of wall material was arrived at through the combined effort of the observation checklist and the respondents. Majority (60.0%) of the buildings in Alagbede area were built with sandcrete /concrete blocks while some of the buildings were built with mud materials with no finishing in the outer walls. Some of the walls were plastered and painted while majority were not plastered at all. However, there were some older buildings that were built with mud and later plastered with cement and painted. All these indicate a relative urban slum quality. Although, majority of the materials appeared in good order, larger proportions of the buildings were not in good condition due of poor workmanship during the construction exercise. Majority of the buildings also stood on weak foundations that can endanger the life of the occupants.

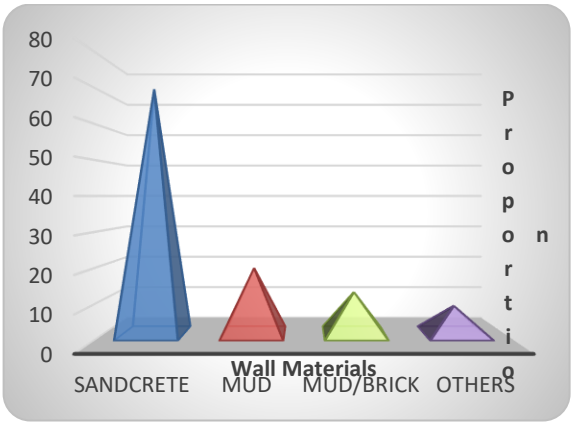


Figure 7: Quality of Wall Materials

Figure 8a: Wall material and finishing

Quality of roof materials

The observation checklist was used to assess the quality and materials for roofing in the study area. Fig 6.below shows such distribution. Corrugated iron sheet covers the highest percentage of the roofing material in the study area with considerable rusting, leaking and sagging noted in few cases. However, majority of the buildings have no defect in their roof.

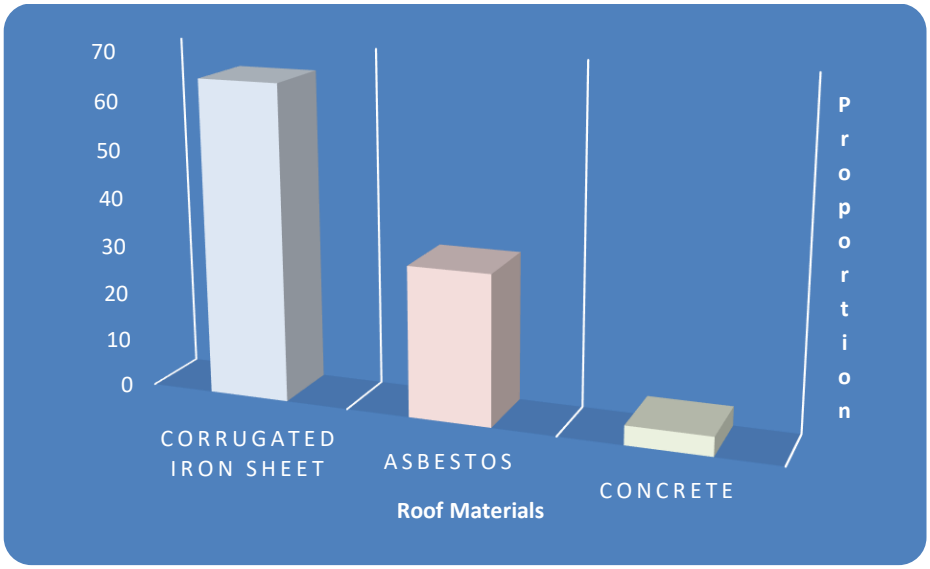


Figure 8b: Quality of Roof Materials

On the ceiling materials, majority while majority of the houses had asbestos ceiling materials while majority of them were in good condition. Few though significant number had the building ceilings leaking and which constituted a great risk to the lives of the dwellers.

Sources of water supply

The source of water supply is a major indicator of measuring the quality of residential environment. The residents in Abule Alagbede used well and borehole as the major source of domestic water supply pipe-borne water lines were not connected to any of the houses. It was also revealed that at least a well was also revealed that at least a well was available in each of the houses but most of them were polluted during raining season due to high water table. These were also got dried up during the dry season, the resultant effect was scarcity of water during the dry season.

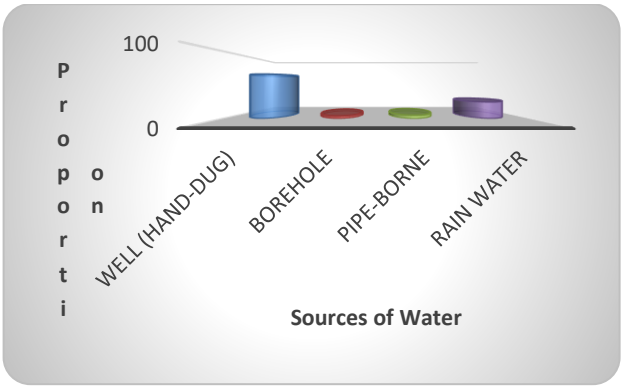


Figure 9: Sources of Water Supply

Figure 10: Borehole Water Supply in the Area

Figure 11: Storage tank for Supply of Water

Figure 12: Uncovered dumped well

Plot size

The plot sizes were assessed using the available plot sizes in the area. They were then grouped and categorized accordingly. The figure below shows the distribution of such plot sizes. The Fig 13 below revealed that majority of the occupants has 9m x 9m size of plot that explains why there are small squatter houses in the study area.

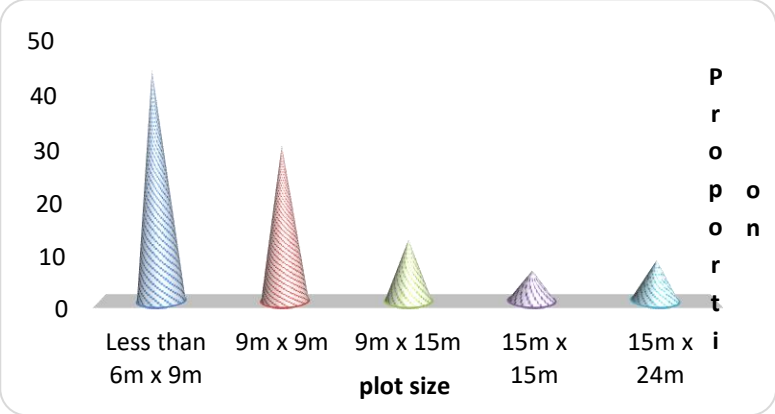
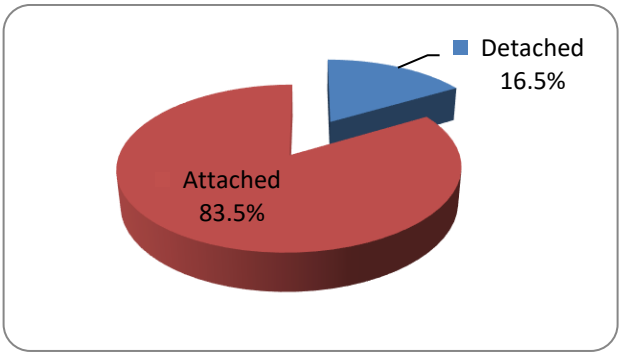


Figure 13: Plot Sizes

Position/location and quality of kitchen and materials

The position of the kitchen facility was also assessed by the researcher through the observation checklist. Majority of the kitchen were detached types while those that were attached were located at the extreme end of the houses especially for the face to face buildings.

However, most of the kitchens here were not being used by the inhabitant who prefers cooking in the corridor or passage as the case may be in the buildings. This type of exercise found used to health most only few that were attached effects on the inhabitants as the CO_2/CO_2, emitted in the face – to – face buildings were being made good use of in the kitchens. Fig. 14 below shows that distribution.



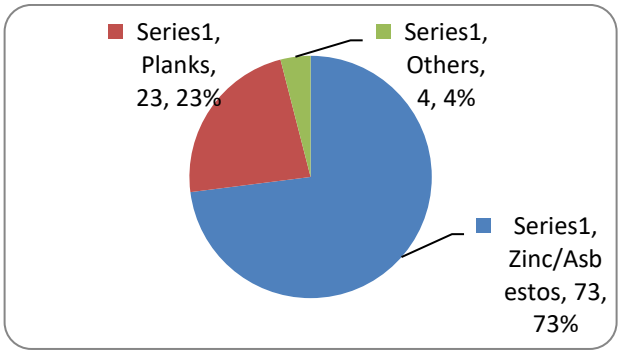


Figure 14: Location of Kitchen

Figure 15: Quality of Kitchen and Materials

The materials for the kitchen also revealed that the attached kitchens were of sandcrete or mud plastered and painted and roofed with either zinc or asbestos/while the detached types were finished with either plants, or iron sheets or even left open to the sky. This means that the kitchens were subjected to rain effect especially during rainy season.

Quality and type of toilet facilities

The quality of the toilet facilities as related to the house types were also assessed through the combined effort of the respondents and the observation checklist. The study revealed that few of the toilet and bathroom were located within the buildings while some were located or detached outside the houses. The type common here was the one the users carried buckets into the bathroom which might be outside or within the houses. The shower – bath type were very few. The toilets with water – cistern type and within/attached to the buildings were of average type with the soak-away attached latrine type of toilet-located mainly outside/detached from the house. The positions of latrine facilities in some of the houses identified were assessed through the cooperation of the respondents. Figure 16 explains the distribution.

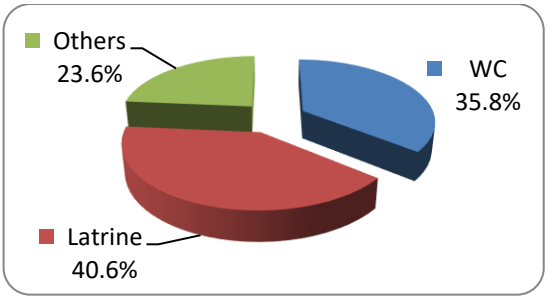


Figure: 16 Type of Toilet Facilities

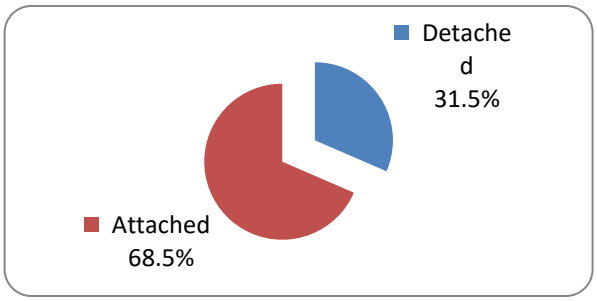


Figure: 17 Location of Toilet

Type of access to houses

Accesses to houses were assessed in term of types and width using personal judgments. Type of Access to houses accesses to houses were assessed in term of types and width using personal judgments and respondents' views.

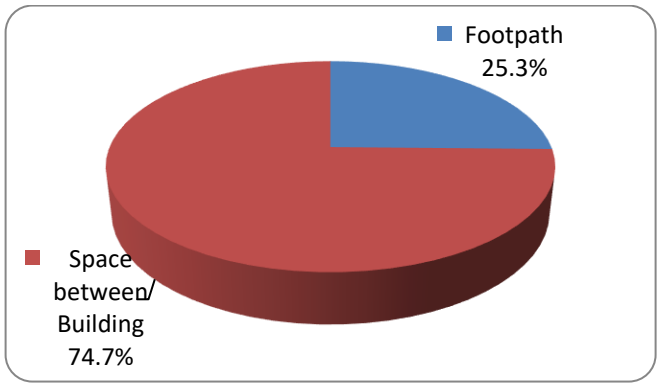


Figure 18: Access to Houses

Assessment of drainage system

The drainage system available was assessed. This was done through direct observation of the entire study area by the observation checklist used. Figure 19 is showing the distribution of such assessment.

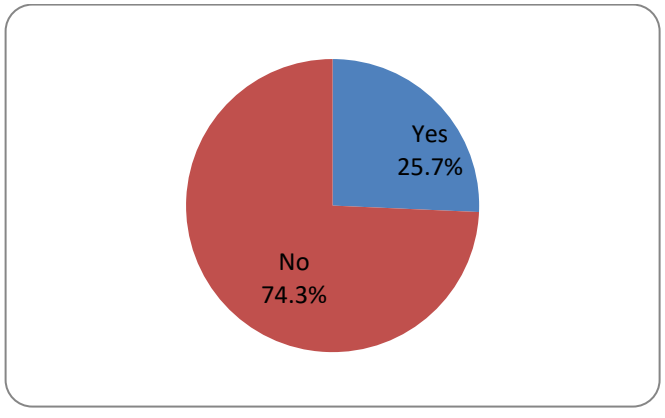


Figure 19: Availability of Drainage System

Figure 20: Open drainage system in the area

Sources and type of electricity supply

The sources of electricity supply were also assessed using the view of the respondents. Figure 16 above shows the distribution of such views. With the recent power problem in the country, the only alternative source of power supply has been the electrical generating sets.

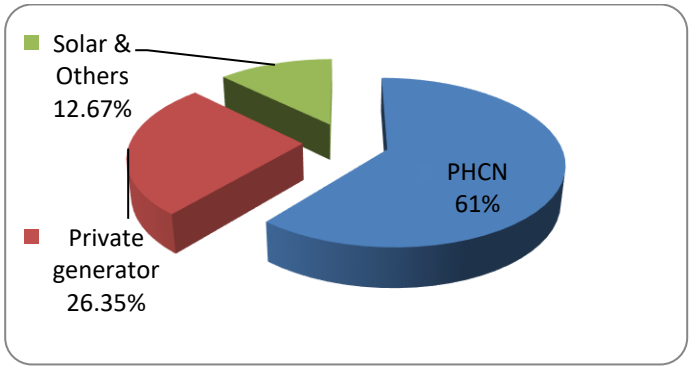


Figure 21: Type of Electricity Supply

More than quarter of the household has at least one set each. Electricity supply to the study area was chiefly from PHCN which is the only source of electricity supply to all Nigerians. The identified effect of the use of generating set was measured in terms of the amount of carbon monoxide as pollutant these sets were emitting, thereby endangering the health of all the inhabitants of Alagbede village.

Method of solid waste disposal

The methods of disposal of solid waste were assessed and the respondents' views on the distribution of such methods are shown in the Figure 1 below. The major method for waste disposal is through government or private body or agency that has been designated to collect the waste at a particular period in the week. Dumping refuse anywhere can cause land pollution which will consequently put the occupants at high risk of contracting communicable diseases as revealed in the Table 1.

Dumping refuse anywhere can cause land pollution which will consequently put the occupants at high risk of contracting communicable diseases as revealed in Table 1 and Figure 22

Table 1: Method of Solid Waste Disposal

Solid Waste	Percentage (%)
Burning	28.25
Government/Private Agency	59.25
Anywhere/Open dump	12.5
Total	100.0

Types and sources of health hazard witnessed

The assessment of the possibility of health hazard in the study area was conducted. The respondents' views and assessment of the possibility are explained in the distribution table below. The causes of some of the identified health hazards were assessed through a community-based effort. Table 2 below is showing the distribution of the respondents' assessments.

Figure 22: Hip of Waste in the Area

Figure 23: Waste Dumped at a corner

Table 2: Types of health hazard witnessed

Types of Health Hazards witnessed	Percentage (%)
Typhoid Fever	21.2
Malaria Fever	25.8
Cholera	3.5
Measles	4.25
Diarrhoea	2.75
Dysentery	15
Skin disease	12.75
Eye problem	8.25
Lung-related ailment	6.5
Total	100.0

Table 3: Sources of health hazard witnessed

Sources of Health Hazards Witnessed	Percentage (%)
Poor sanitary system	25.25
Pollution	43.5
Excessive heat	15.5
Dust	12.75
Others	15.5
Total	100.0

Conclusions

The study attempted to examine some environmental effects of squatter settlement in Alagbede Area Ikeja, Nigeria. The results obtained revealed poor housing structures ranging from poor qualities of wall materials, poor standard of floor surface, small room sizes (Less than 3 m x 3 m), poor quality of roofing materials (Planks). Toilet and Kitchen facilities were grossly found to be inadequate. The result also confirmed poor drainage system, poor accessibility, poor social facilities such as water supply, energy etc. Also discovered was poor refuse disposal system which consequently results to outbreak of communicable diseases such as typhoid, malaria fever, cholera etc. The enumerated effects above have shown that squatter settlement is more hazardous to man than the known advantages. Most of these negative effects are long term in nature and not readily visible until they have gradually destroyed the environment and also until such a time when drastic measure has to be taken to save the same environment.

Formal activities, by their very operations and rules, prevent access to land by the majority of city dwellers all over Africa. As a result, informal markets fill this exclusion gap and this is where the overwhelming majority of African urban land transactions take place nowadays. It is therefore left for governments to seek the most effective entry points for an overhaul of the often abysmal failures of the formal urban land administration systems, with their unresponsive institutions, excessive delays, cumbersome land transaction administration and the associated corruption. Stigmatising informal urban land markets as inappropriate, illegal, illegitimate or undesirable negates the realities on the ground. This type of informal development, mostly undertaken by low-income urban residents, has defied government attempts to set standards or enforce compliance and is therefore a challenge for urban planners. There is need to reconsider the sector's activities in light of their positive contributions, which offset their negative effects on urban space. The recommendations towards alleviating the enumerated environmental effects of the existence of Alagbede as a squatter settlement are as follows:

i. An effective environmental sanitation measure should be put in place and managed by any appropriate environmental agency to reduce frequency of health hazard in Alagbede's village.
ii. The indiscriminate citing of well as source of domestic water supply to the residents of Alagbede's village should be controlled to avoid underground water contamination and extinction which is already a known environmental effect here.
iii. An effective control measure should be put in place to ensure Alagbede does not grow more than its present size. In other words, more houses should not be allocated to spring up in the area through government control effort.
iv. An effective environmental education should be introduced through Government and communal efforts to encourage the rehabilitation of the facilities in Alagbede houses, which study had already revealed as generally in deplorable condition. Such facilities include kitchen, toilet and baths.
v. Selective clearance should be carried out such that houses that are no longer habitable for now are gotten rid of until a major decision is taken on Alagbede.
vi. Power Holding Corporation of Nigeria should intensify efforts to ensure every household is given regular supply of electricity so as to reduce the usage of private generators and also will drastically reduce noise pollution.
vii. Outright clearance of Alagbede is the ultimate. A gradual and complete clearance measure should be intensified by the government such that the present residents of Alagbede do not completely feel the demolition exercise. The residents can be resettled in another safe and more hygienic settlement with some little assistance as palliatives to start off a new live.
viii. Payment of compensation to the affected landlords should also be intensified as 'cushoin effect'. Alternative locations could also be provided as an added effort to make the evacuation not totally felt by the residents.
ix. Immediate usage of the land for another use after clearance or demolition to avoid further occupation by squatters.

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