URBAN SLUM AND THE ENVIRONMENT IN SULEJA (NIGER – STATE).

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DECLARATION

I hereby declared that this project titled **URBAN SLUMS AND THE ENVIRONMENT"** is an authentic work done by me and has not been presented elsewhere for the award of any degree programme.

OGUNDELE.O. JOSEPH.

PGD/GEO/2001/2002/238.

ACKNOWLEDGEMENT

Having successfully completed the task of compiling this project, I wish to express my profound gratitude and appreciation to my project supervisor Dr. Akinyeye P.S whose direction and constructive criticisms constituted a tremendous success to this thesis.

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Finally, I must acknowledge the great role played by my friends and well- wishers who contributed to the successful completion of this thesis.

Also not left out are my friends, classmates especially.

CERTIFICATION

I hereby certify that this work has been supervised, read and approved as meeting part of the requirement for the awards of PGD in Enviro mental Management, FUT Minna Niger State.

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DEDICATION

I dedicate this project to my loving wife Mrs Yemisi Ogundele and to my Mother, Mrs V.A Ogundele.

ABSTRACT.

This project work centers on the use of questionnaire technique for assessing the effects of urban slum on the people and the environment. Data was collected based on the following requirement land use structure, number of rooms per household, number of person per room, construction materials used, age of the structure, ventilation condition, availability of kitchen, toilet and bathroom, type of sewage disposal facilities, type of water supply available, refuse collection points, accessibility of motorable road and accessibility of dwelling units to primary schools. However, comprehensive analyses based on graphical work have postulated to give a wide understanding. The recommendation centers on two policies. In the first category are long-term policies issues relating to prevention of slum while in the second category are short-term policy issues relating to the physical improvement of slum area in Suleja.

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1.0 INTRODUCTION

Slums are identified as places where people are predominantly engaged in primary activities: agriculture, street trading, hawking e.t.c, other demographic characteristics such as community size density, heterogeneity are casually related to the occupational difference .

Hence slum areas are further defined as homogeneous areas of low density and small, isolated settlement. One can therefore say that slum settlement areas are small, homogenous settlements where people depend on primary activities as means of livelihood.

It is also to be noted that these settlement lack essential public facilities and community services, in addition slums are characterized by poverty, illiteracy and subsistence.

Schnore (1966) suggests that certain variables should be measured to find out whether settlement is a slum or not. He says to defined slum one need to incline to the choice of those variables, which can be statistically measured. These variables include population, type and level of economic activity predominant in the area, migration pattern, heterogeneity and social differentiation and stratification.

In the same vein Jones (1963) in his book man and his environment described slum as a cluster of dwellings, housing, often flanked by areas of irregular dispersed cultivation and pasture.

However the study of urban slum began with RITTERS work in the early nineteenth century. Since both the content and the methodology of this study have been developed principally in the developed nation.

Ritters them of inter dependence among the elements of landscape gave a broad base of early settlements studies. Inspite of the rapid rate of urbanization in Nigeria within the last three decades, the country is still dominated by slums;

Much growth of slums has out stripped the capabilities of Municipal governments because national government do not give them sufficient authority to raise revenue and manage their affairs, the failure of government therefore are not merely administrative, however, in many cases they also reflect historical influences.

According to Gana (1978) the illegal (Slum) Scenery is one of a more nucleated and unsettled pattern of village based on particulars economic activities at the time of their establishment, such as fishing, hunting, farming, trading, social organization and history, evidence of adjustment to physiographic, Socio- cultural and slave settlement located close to the farms.

The slums areas of Suleja are good examples of traditional slums, which are made up of residential areas built up during the precolonial era or during the early years of colonial administration in Nigeria.

Apart from the poor building materials and low technology, which gave birth to such slum areas, lack of development control contributed remarkably to their emergency.

On the other hand, the slum area in Gaiboi dan and Kwamba (both in Suleja) are example of a slum, which developed as a result of the expansion of the built area of an urban area Suleja, which came up as a result of influx of people (occupation) from Abuja.

Since such area were not planned and the house built of local materials to house mainly farmers. the physical environment of these areas contrast sharply with that of surrounding urban neighborhoods. The subsequent expansion of the continuously built up urban area eventually places such slums areas between the city center and the slum.

Finally, the slum area in Suleja, owes its origin to the squatting of urban dweller that could not find or afford accommodation in the city of Abuja, laid

out area of Suleja, localities where market shift dwellings are constructed develop into slums.

1.2 STATEMENT OF PROBLEMS

Urban slum has resulted to various environmental problems many of such environmental problems are as follows; smog (pollutants) which result from combustion and burning process of fossil fuel wood and others which is harmful to man, animal and vegetation.

Indoor air pollution as a result of the use of asbestos in so many building may develop a rare form of lung cancer (WHO) in addition the radioactive gas RADON, which is present in well water and building materials, such as traditional or local blocks /brick if they are made from material with a high random concentration. Which is known to cause irritation to ear, nose, and throat and lung cancer (WHO 1988)

Furthermore, the dumping of cars and lorries involved in ghastly motor accidents and exposing of life expectancy has render the land wasted Water pollution is mostly carried out along the stream where solid waste, condemned motor battery, industrial waste, unidentified chemical from motor mechanic were dumped, human feaces which are washed into water render it unfit for drinking bathing, cooking e.t.c.

Extinction of domestic animals has a normal feature of evolution in urban slum; extinction by a variety of acts radiation, as with hunting of animals, collecting of eggs and plants introducing animal and plant, which compete with native species. Soil erosion resulting from deforestation and agricultural practice is prominent and serious.

The most common forms of human waste disposal are pit, pan and bucket latrines and open defecation. These are slums in the entire areas, where more than half of the children and adult and open spaces and more than half of

the population recede in building without private toilet facilities.In Suleja, out fall from the poorly functioning sewage system contaminates the ground surface and poor sewage coverage result in se ious stream pollution as well as soil contamination from the open defection in slums areas. It was discovered that organic waste from household is the waste pollutes of water bodies.

However, the overview of other associated environmental problems at the urban slum level are as follows.

The menace of sanitation, street trading, lack of portable water supply, health problems, inadequate infrastructure and noise pollution. Another serious defect of the land use in the slums is the small amount of land devoted to transport, that is road and street this indicate that mobility within the slum is highly restricted. With very deplorable living conditions that comes into sharp focus is the Garbodan area that all houses in Suleja high class area (low cost and local Government

It was noticed that insufficient proportion of land in the squatters/slum areas of Suleja is devoted to commercial and other land use types, this indicate that community services in the slum areas do not have adequate space infact recreational space is non-existent in all the squatter areas.

One implication of the almost complete allocation of developed land in the slums area is the high population density per hectare in the areas. The field survey by NPC (1991) indicates that the densities range from 600 person per hectare in Abuja to 1,500 persons per hectare in Ibadan. This high densities contrast with the normal standard of between 100 and 200 persons per hectare, which is acceptable in high-density residential areas of Nigeria cities.

The high densities therefore constitute serious constraints on the maintenance of an acceptable standard of environmental sanitations in these areas.

1.3. AIM AND OBJECTIVES

The aim of the study is to analyze the impact of urban slum on the people and it's environment. Within this broad aim, the specific objectives are:

1. To examine the trends in the growth of burning fossil fuel or ingestion of fuel in the air, water and food, and suggest a substainable and appropriate way of reducing them.
2. To identify and recommend efficient and sustainable ways to implement such laws and regulations.
3. To encourage people to discontinue haphazard development of building and cultivate the habit of building houses in a well planned and legally approved environment.

1.4 JUSTIFICATION FOR THE STUDY.

The pattern in Suleja urban slum centers whereby the poor are segregated into areas with very deplorable living conditions that comes into sharp focus is the Garbodan area. That all houses in Suleja high-class area
(Low cost and local Government laid out etc) enjoy pipe born water supply while residents of other neighborhood manly depend on water from well (as a result of emplemtic nature of water supply.

Where residents have no access to well or pipe born water some hawker fill the gap of selling water, in the absence of pipe-born water supply, pit and bucket latrines are the most common toilet facilities in the low income areas.

Most residents empty their human wastes at night into the drains, refuse dumps and swamps, thereby intensifying the health hazards. The studies demand to know, the deplorable environment in which large proportion of

residents live is greatly exacerbated during the raining season (about eight month of each year) during which several areas are flooded.

At this time many households are either forced to live in damp, water logged buildings and wade knee-deep in floodwater or, in extreme conditions to vacate their homes. However the unsatisfactory method of disposing of domestic refuse and human waste constitutes a major health hazard for this area in addition the absence of a functional fire station increases the danger of major fire out-break, while inadequate access, would inhabit / hinder efficient performance, when fire fighter are available

The medium through which pollutants reach us include not only the air we breathe, the water we drink, the food we eat, but also the sounds we hear, this emphasizes the point that noise pollution constitutes an element of the general environmental pollution problem.

Noise is no longer regarded as a mere nuisance it has now been found to be a hazard, posing serious threat to the quality of life enjoyed especially in urban environment (Egunjobi 1988).

It is against this background that attempt is made to raising some basic issues with a view to establishing a basis for understanding the problem and then indicate possible directions for possible direction for policy making.

CHAPTER TWO

2.0 BACKGROUND INFORMATION OF THE STUDY AREA

Suleja is one of the most densely populated towns in Niger State. The history of the escalated population can be traced back to the creation or carving out of the Federal capital territory which resulted in the influx of people, seeking for construction work then and latter those that could not afford the housing cost of the Federal, Capital tend to settle down at Suleja where from which they shuttle to and for into the FCT for their daily work.

Slum settlement tends to display certain internal form such as the degree of connectivity of their dwellings and their overall shape. The form of any urban slum settlement (unplanned environment) tend to display certain internal form of the population, socio-economic background, land forms drainages, climate conditions, Geology (topography) and cultural environment in which it has developed. Thus these forms of settlement may be compact, with closely space dwellings due to scarcity of enough land for expansion.

2.1 Population

As at 1991 census figure of Suleja at that time was considered as having a total number of about (120,000). Historically the Gwaris, which made up about 25% of the population, are the first settlers in Suleja, in search of available land for farming.

Civilization also threatens the Gwaris traditions and farming with the establishment of the Federal Capital Abuja.

2.2 The spatial pattern of distribution

An analysis of the distribution pattern of population in Nigeria, based on the 1991 census, was recently undertaken by Omideji (1998). The author categorized the pattern into three broad areas: Densely populated areas having over 200 persons / km^2 and which sparsely populated area which have less than 100person /km^2. The first category is of interest for our purpose here. The category represents where population is already existing serve pressure on land resources and where appropriate measures are presently needed.

The undesirable impact of population on the environment is only of futuristic problem. An important dimension of the total truth is Suleja population is disaggregated through a distribution.

2.3 General quality of life

The quality of life among the people has direct bearing on environmental quality. The truth in this statement is easy to comprehend when we understand that quality of life has to do with such issues as the States of poverty / affluence, illiteracy / literacy, cultural and technology among the people. For example poverty affects people's perception of resources and the proneness of society to extract national resources at levels injurious to ecosystems.

Through the 1991 census showed that a literacy rate of 57% had been attained, the degree of awareness about environmental matters and commitment to take protective measures generally low. This is because at least 3% of the populations remain illiterate, couple with the overriding impact of poverty.

2.4 Socio-Economic Background.

The existence of slum areas and neighborhood at any place clearly confirms inefficient use of the nations resources as well as an inequitable distribution of resources among the segments of the population. Some of those things, which can be inefficiently distributed, include infrastructural facilities like school, health centers, and police station, shopping facilities.

It is of advantage in the part of the society to effect improvement of the situation prevalent in the study area. The government can adopt certain polices like granting of subsidies with a view to finding an equation by stimulating the private sector for development of good environment.

2.5 Climatic Conditions.

Suleja is located in the guinea Savanna belt which fall between the rain forest In the south and Sudan Savanna in the north. As a result temperatures are generally high throughout the year. In terms of the nation wide pattern of atmospheric pressure distribution, Suleja Climate is dominated by the international between the pressure belts over the savanna and forest zone throughout the year (Acheampong 1982)

During the northern hemisphere winter, a high-pressure center develops over the Sahara and the dry harmattan wind affects the whole of Suleja.The harmattan air is dusty and warm in the daytime but cold at night, the result of rapid radiation cooling through the cloud lest skies. During the time complete dryness and low humidity prevail over Suleja. In summer, the southwest monsoon winds that bring thick cloud cover and rainfall to the country, in the rainfall total range from 760mm to over 1500mm (Acheampong 1982). During this season, cloud cover over the country is thick and the house of bright sunshine are reduced very considerably especially in the southeast.

The rainfall distribution during the rainy season is more critical than annual total, especially for agricultural and hydrological processes. Two-rainfall season exist; the major rains occur between March and October with the peak in September, while the minor rains cast from October to November.

2.6 Drainage pattern

The cleaning and development of land often have a pronounced influence on drainage pattern or networks. Deforestation and agriculture most at times initiate soil erosion and gully formation. As gullies advances, they expand the drainage pattern, thereby increasing drainage density. It's precise example of the happening in the entire Suleja drainage pattern On a more positive side Suleja development has increased pressure on land and improved the degreed of human infringement on ecological fragile land.

Suleja is without a proper drainage system as such the locally constructed drainage are filled up with refuse and garbage of all kinds, rain water and liquid form of waste mainly escape from the earth surface as uncontrolled run off and possibly percolate in to the soil and the refuse is always littered on the main road thereby rendering the environment filthy.

CHAPTER THREE

3.0 LITERATURE REVIEW

Environmental issues and public health have received much attention in environmental problems arising from the process of urbanization emanated from the technologist and institutional changes necessary for a successful transformation from a rural to urban life style, which have failed to keep up with the rapid movement of the population (Mabogunje 1968).

Drakakis – smith (1981) is of the view that, there is no single and accepted definition of what a slum area is. He further went to say that, there are various definitions, which reflect the different orientations of various disciplines such as sociology, demography, economics, medicine and physical planning.

At the same time, different societies define slums in different ways, even among people in the same discipline. Thus, the physical planners definition of a slum in the united states of American or Great Britain is bound to be different from that of a developing country such as Nigeria.

Drakasis 1981 provide an over view of what constitutes a slum area in the context of third world countries in general and Nigeria in particular. Third world cities are known to have two types of environmentally degraded areas.

The first is the squatter settlement which comprises uncontrolled or temporary dwellings largely inhabited by immigrants from outside the city concerned, often, such area are occupied illegally since building planning are not approved before dwellings are built.

The second type is the slum proper, which can be, defines as legal, permanent dwellings, which have become substandard through age, neglect and or subdivision into micro occupational units such as rooms, cubicles or cock lots (Onokerhoraye AE 1988).

According to P.K Makinwa-Adebusoye 1988, defined slums/ squatter as area characterized by sub-standard housing built mainly of corrugated iron sheets, plants and plywood set haphazardly on land without adequate thought. For vehicles movement, drains, ventilation and natural lightening, he further said existing houses are usually overcrowded rooming houses and most of these over 80% contain more than these household (F.O.O Iemerhon and Sada, 1988 pg 142).

During the Victorian period slum dwellers were viewed as socio-spartially isolated group whose separation was attributed variously to preferred deviance, the rejection of the work ethic and other anti social value. In the words, slum areas have viewed as generation of host deviant behaviour such as criminality, prostitution and juvenile delinquency (Odongo, 1979)

Economically, slum area are viewed as areas inhabited by the poor in the urban system, the economic perception of slum areas is thus largely of a people who are unskilled and therefore cannot be employed, since there is no employment there is no source of income for the vast majority of the dweller of slum areas.

Thus, PORTERS (1971) is a not untypical passage has described urban slums in chine as housing the poorest of the poor the unemployed, the vagabond and the delinquent. The unskilled and illiterate and often the alcoholic the vagabond, and the delinquent.

According to PORTES, the slum and its inhabitants have both reached dead and situations a refuge of ultimate destitution. Politically slum was view as the breeding ground of political radicalism and violence. This perspective stems from the basic assumption that slum dwellers, experiences of poor living conditions and a variety of socio economic hardship would, in time, generate feelings of frustration and discontent such feelings would eventually lead to an eruption of political radicalism and violence (PORTES, 1971).

Overcrowding is a demographic phenomenon, which occurs indiscriminately in slums. Overcrowding is regarded generally as a hazard to health and in particular encourages the spread of infections disease such as typhoid, respiratory infection example tuberculosis. This is most pronounced in a residential situation in which sleeping accommodation is congested and the ventilation facilities are poor.

Thus the theory that a filthy and decaying environment is indeed a health hazard of slum dwellers is widespread (Abrams, 1966, Clinard 1966). Clinard, in a study of slums in India and narris 1961 in Lagos, for example, have independently observed that the often supposed poor health of slum dwellers is not excursively a consequence of poor housing conditions as such as, poor health could also be attributed to unbalanced diet, inadequate medical facilities and willful disregards of personal hygiene.

Public health bye law of April 1972 recommends a room occupancy of 2 persons per room, only the high income areas conform with this standard, while residents of low income areas live in overcrowded rooms with occupancy ratio ranging from 8 person per room in a defined area of slums. Settlement (Mabogunje 1968 page 270).

Reviewing studies carried out in Ghana, Uganda the Philippines and Venezuelan among other developing countries Clinaod and Abbort (1973) have noted a significant degree of correlation between slum housing and deviant behaviours.

SCHNORE (1966) suggested that certain variables should be measured to find out whether a settlement is a slum or not. According to him to define slum settlement one needs to incline to the choice of those variables, which can be statistically measured, these variables include population, type and level of economic activity predominant in the area, migration pattern heterogeneity and social differentiation and stratification.

Slum settlement scenery is one of more nucleated and unsettled pattern of villages based on particular economic activities at the time of their establishment, such as hunting, farming, trading, social organization and history evidence of adjustment to physiographic and slave settlement located to the forms (GANA, 1978).

The Nigeria slum settlement has always been dominant scenery in the country mainly because Nigerian the settlement space has been most extensive (CHIKE MBA 1995) virtually the settlement spaces of the country in precolonial era were few and far apart. From available records these settlement were of relating small population and had not the features associated with modern urban centers.

Hagget articulated that the uncontrolled slum settlements are largely a third world problem. Inward immigration of the rural poor area in the western world has led to a spatially, different through socially similar phenomenon the ghetto, that the term ghetto originally described Jewish areas within the medieval cities of eastern and southern Europe.

Lack of environmental education awareness is a diseases which could only be cured by conservation awareness and lack of awareness brings about destruction of biodiversity, unplanned development, poor land utilization lack of municipal waste management which brings about poor sanitation as well as leading to water pollution, air pollution, destruction of ecosystem disaster, hunger, poverty and death.

CHAPTER FOUR

4.0 ANALYSIS AND RESULTS.

Questionnaires were designed with the aim of providing information that will be used to establish basis for arriving at conclusion. A hundred questionnaires were personally administered randomly to few households within the study area. The questionnaire focuses on the social, economic and physical characteristic of the households and dwellings in which the inhabitants live.

The slum area in Suleja is made up of residential area built up during the pre-colonial era or during the early year of colonial administration in Nigeria. Apart from the poor building material and low technology, which gave birth to such slum lack of development control contributed remarkably to their emergence.

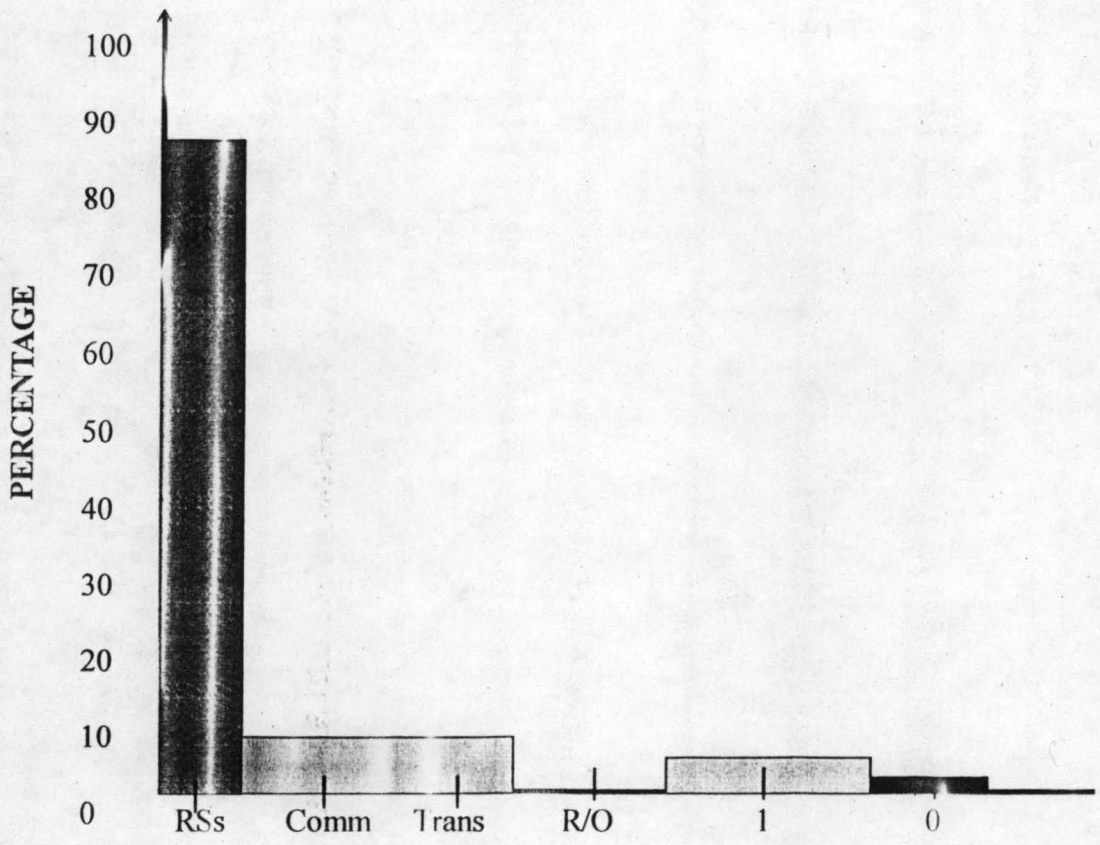
On the other hand its development is as a result of the expansion of the built up areas of an urban area into existing rural villages. The slum settlement in Suleja also owns its origin to the squatting of urban dwellers who could not find or afford accommodation in the city of Abuja, the field survey in the slum areas indicates that residential dwellings constitutes over 90% of the total developed land. (Table 4.1)

This reflects the known characteristics of traditional slum area in Suleja, in which virtually all available spaces is devoted to residential land use.

Table 4.1
Land use structure in Suleja

LAND USE TYPE	PERCENTAGE
Residential	90.0
Transport	4.0
Commercial	4.0
Industrial	1.5
Recreation	0.0
Others	0.5

Source: Compiled by the author



LAND USE TYPE.FIGURE 4.1

From the chart significant proportion of land in the five slum area of Suleja is devoted to residential, while the remaining 10% is for other types of land use.

Another visible problem within the slum area is mobility, which is highly restricted, from table 4.1 only small amount of land was devoted to transport (road and streets), the table also indicates that community services wherever they exist in the slum area do not have adequate space. No space for recreational activities in the slum area.

Niser field survey (1982) indicates that the population densities ranges from 600 person per hectare in Kaduna to 1,400 persons per hectare in Abuja respectively, this constitute serious constraints on the maintenance of an acceptable standard of environmental sanitation in these areas:

4.1 RECONNAISSANCE SURVEY (QUESTIONNAIRE) OF HOUSING CHARACTERISTICS.

This will attempt to measures the degree of overcrowding. The average numbers of rooms per house hold should be three (Niser, 1982 by A.G Onokarhoraye).

Majority of the house holds in the surveyed areas of Suleja live in one or two rooms., the situation in Dawaki is almost the same, in these two areas only a few of the households live in three rooms.

However Gabondan, Alagbado and kurmi Sarki households appears to be relatively evenly distributed. The number of rooms per household as an indicator of the pressure on accommodation is not adequate because it does not take into consideration, the size of the households concerned.

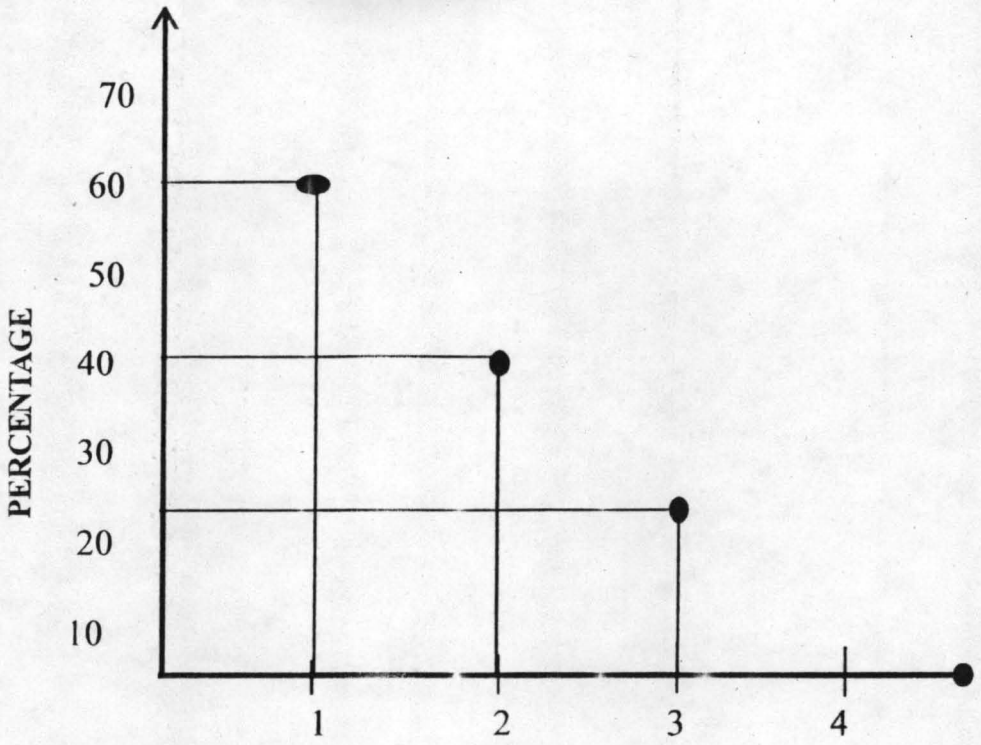
Consequently the usual indicator of overcrowding is the number of person per habitable room (table 4.3 represents the pattern in the sectional areas of Suleja (Kantoma, Dawaki Gabondan, Alagbado and Kurmi Sarki) over 65% of the dwellings surveyed have four or five persons per room. Which is against the average national standard of two person per room in the urban area.

TABLE 4.2 NUMBER OF ROOMS PER HOUSEHOLD (PERCENTAGE TOTAL)

Number of Room	Kantoma	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
3 Room per household	10	8	4	4	5
2 Room per household	32	32	40	40	38
1 Room per household	58	60	56	56	57

Source: Compiled by the author

NUMBER OF ROOM PER HOUSE HOLD



Number of room (Figure 4.2)

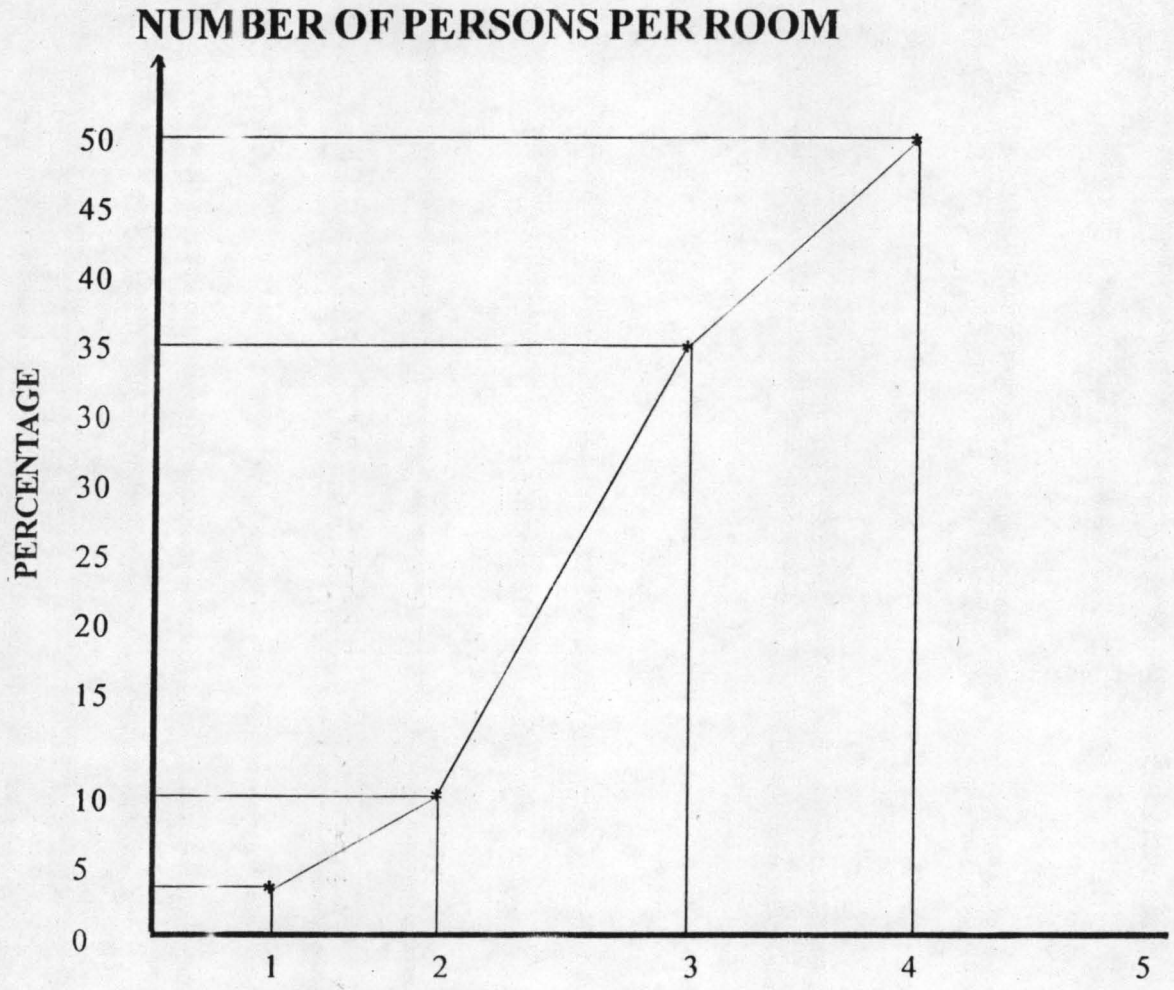
There appear to be relatively even distribution of households among the three categories. From the graph 5 % of the dwellers of the studied area source their water from public tap. 47% get pipe born water connected into their dwellings.

In the traditional slum areas, the pressure of accommodation space is not as serious as in the modern areas and significant proportion of one room per house hold is dominant. in which the graph indicate upward rise.

TABLE 4.3 NUMBER OF PERSONS PER ROOM (PERCENTAGE TOTAL)

Number of Room	Kantoma	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
1 Person per Room	2	1	1	0	5
2 Person per Room	10	15	12	8	16
3 Person per Room	68	19	27	28	34
4 & Above	20	65	60	64	45

Source: Complied by the author



No of person per room. (FIGURE 4.3)

From the graph there is a high proportion of four person per room, over 50 percent of the dwellings surveyed have three or four persons per room. This is against the average national standard of two persons per room in the urban areas. The main reason for this congestion is that the inhabitant (majority) are illitrate and family planning does not urgur well with their religion.

Physical feature of the dwellings themselves is another housing characteristic that is relevance. Table 4.4 indicates five main combinations of building materials that could be used in the area. Most of the building are constructed with mud walls and galvanized or asbestos roofs., only few of the dwellings have cement rendered mud walls, while less than 7% are built of sand Crete block wall. Analysis of the age of structure of the dwelling unit surveyed also indicates marketed differences.

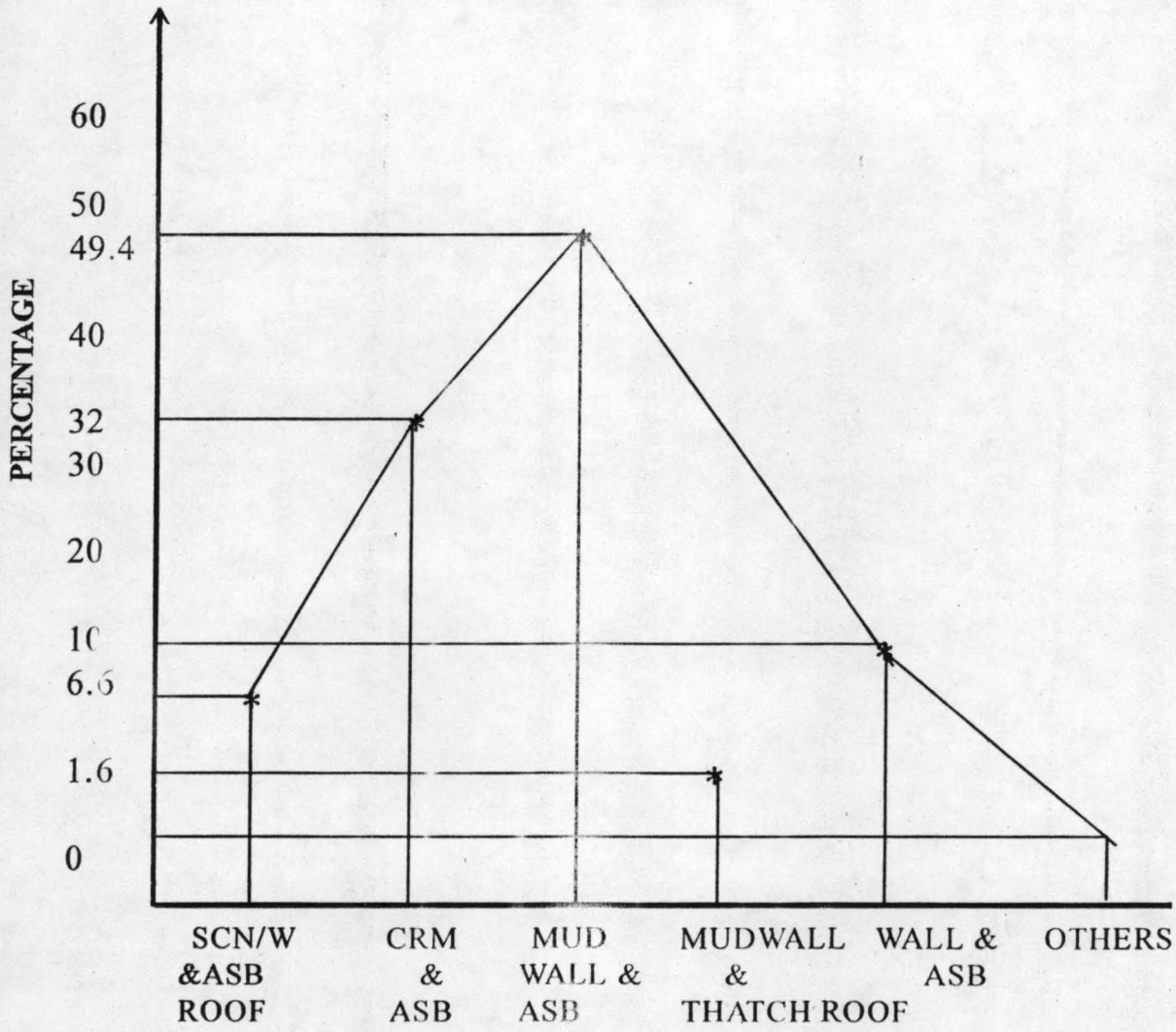
Table 4.5 shows over 26 percent of the dwellings are either thirty years or less, the relatively old age of some of the dwellings is because such buildings were in existences as rural settlement before the town intruded and many newer building were added.

TABLE 4.4 CONSTRUCTION MATERIALS OF DWELLING UNITS. (PERCENTAGE TOTAL)

Construction materials of dwellings	Kantoma	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
(a) Sand – Crete block wall asbestos roof	16	10	4	2	1
(b) Cement sand and mud wall & asbestos roof	20	46	30	24	40
(c) Mud wall & asbestos roof	42	31	55	58	52
(d) Mud wall & thatch roof	1	3	1	2	1
(e) Wall / asbestos	20	8	8	10	3
(f) others	3	2	2	2	3

Source: Complied by the author

CONSTRUCTION MATERIALS OF DWELLING UNITS



(Figure 4.4)

Majority of the dwelling is been constructed with mud wall and galvanised roofing sheet (as indicated) in the figure.
Mudwall and thatch roof has almost faded out because of civilisation from the studied area.

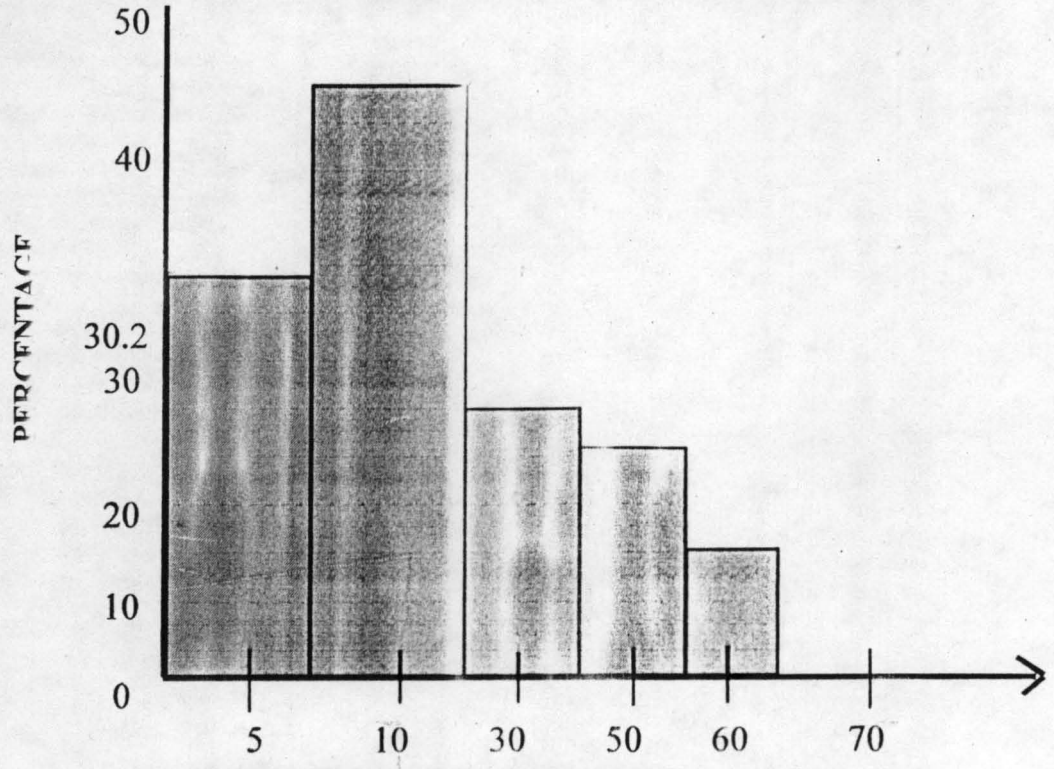
AGE STRUCTURE OF DWELLINGS UNITS (FIGURE 4.5)
(PERCENTAGE TOTAL)

Age of dwelling units	Kantoma	Dawaki	Garbodan	Alagbado	Kurumi Sarki
Between 5years	20	40	25	36	30
Between 5-10years	15	20	40	64	40
Between 11-30years	40	30	35	-	30
Less than 31-50	10	10	-	-	-
Over 50years	15	20	-	-	-

Source: complied by the author

The survey indicate that there are many rooms in the dwellings which do not even here one window., while majority of the rooms in the dwellings have one or two small windows.

AGE OF STRUCTURE OF DWELLING UNITS



AGE OF DWELLING UNIT (Figure 4.5)

An analysis of the age of structure of the dwelling unit surveyed also indicate marked differences between eleven and 30 years, in Kantoma and Dawaki most of the dwelling are between 11 to 30 years

TABLE 4.6: VENTILATION CONDITION OF DWELLING UNITS (PERCENTAGE TOTAL)

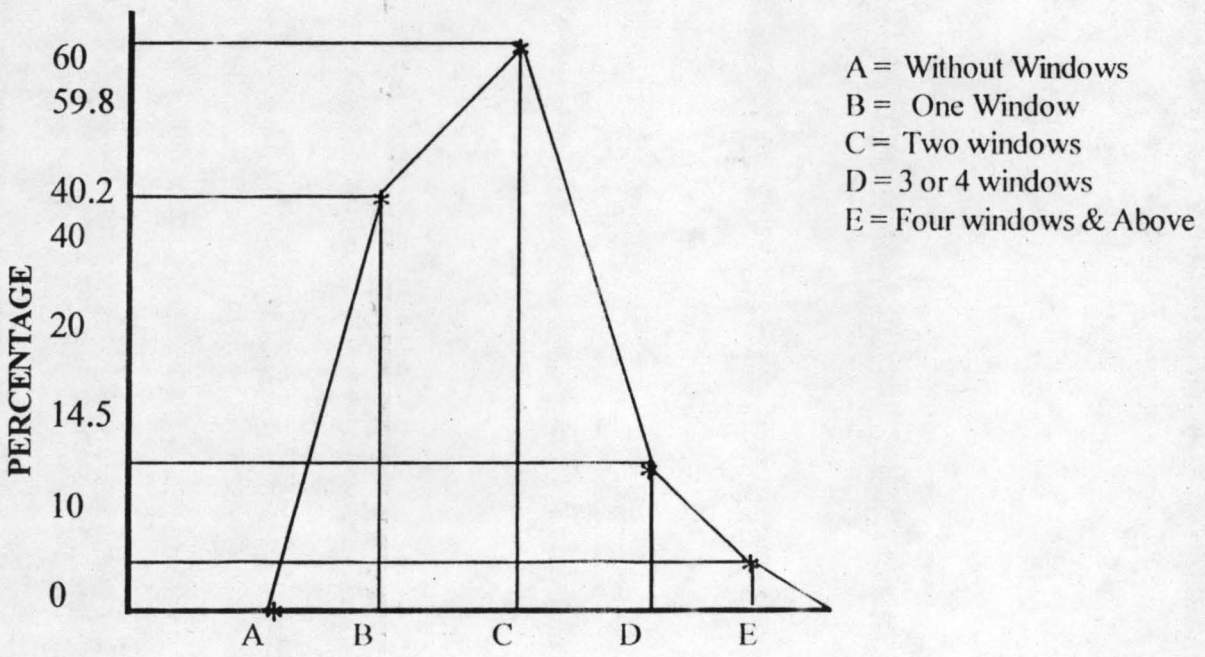
Ventilation Conditons	Kantoma	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
Rooms without window	-	-	-	-	-
Rooms with one window	40	38	44	42	38
Rooms with two windows	32	40	38	44	45
Rooms with 3&4 windows	18	20	10	14	10
Rooms with 4 & above windows	10	2	8	4	7

Source: Complied by the author.

From the analysis of the type of sewage facilities used in those dwellings with any facilities indicates that in all the selected areas the pit latrine is the commonest form.

VENTILATION CONDITION OF DWELLING UNITS

FIGURE 4.6



. From the graph almost 60% percent of the dwelling have two windows (59.8) throug in most cases the size of the windows are substandard, while 40.2% percent of the dwelling have one window. This houses are poorly ventillated.

Even in situation whereby the windows are relatively large the closeness of adjacent building render the window non functional.

4.1.1 RECONNAISSANCE SURVEY OF HOUSING FACILITIES

The nature of basic facilities available in the studied area is examined by looking into the availability of certain basic facilities which are essential for a healthy residential environment.

AVAILABILITY OF KITCHEN, TOILET AND BATHROOM (PERCENTAGE TOTAL)

Table 4.7

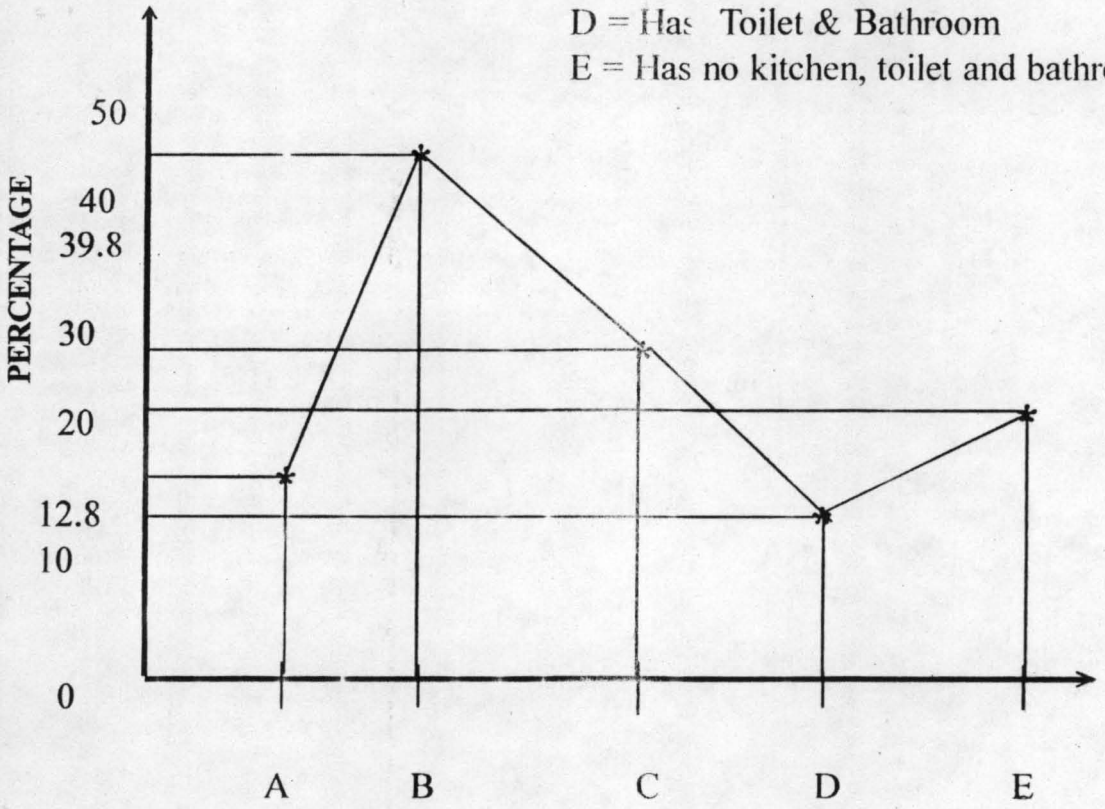
House Hold Amenities	Kantoma	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
Has Kitchen toilet & Bathroon	18	12	10	4	20
Kitchen toilet and Bathroom	42	48	45	22	42
Kitchen & Bathroom	20	10	22	38	20
Toilet & Bath no Kitchen	10	8	13	10	10
Toilet & Bathroom	10	22	10	26	8

Source: Complied by the author

Table 4.7 indicates that 15.2% of the studied area has no kitchen, toilet & Bathroom, while only 12.8% has the three basic facilities complete. while 72% of the studied area have either of them .

HOUSE HOLD AMENITIES (KITCHEN, TOILET & BATHROOM)

A = kitchen, toilet & bathroom available
B = Has kitchen & toilet
C = Has " " Bathroom
D = Has Toilet & Bathroom
E = Has no kitchen, toilet and bathroom



HOUSEHOLD AMENITIES. FIGURE 4.7

The graph shows that 39.8% has kitchen and toilet while only 12.8% of the studies has the 3 facilities. while the remaining dwellings have a combination of only two of them, while 15.2% of the studied area have non of the 3 basic facilities.

Table 4.8: TYPE OF SEWAGE DISPOSAL FACILITIES
(Percentage Total)

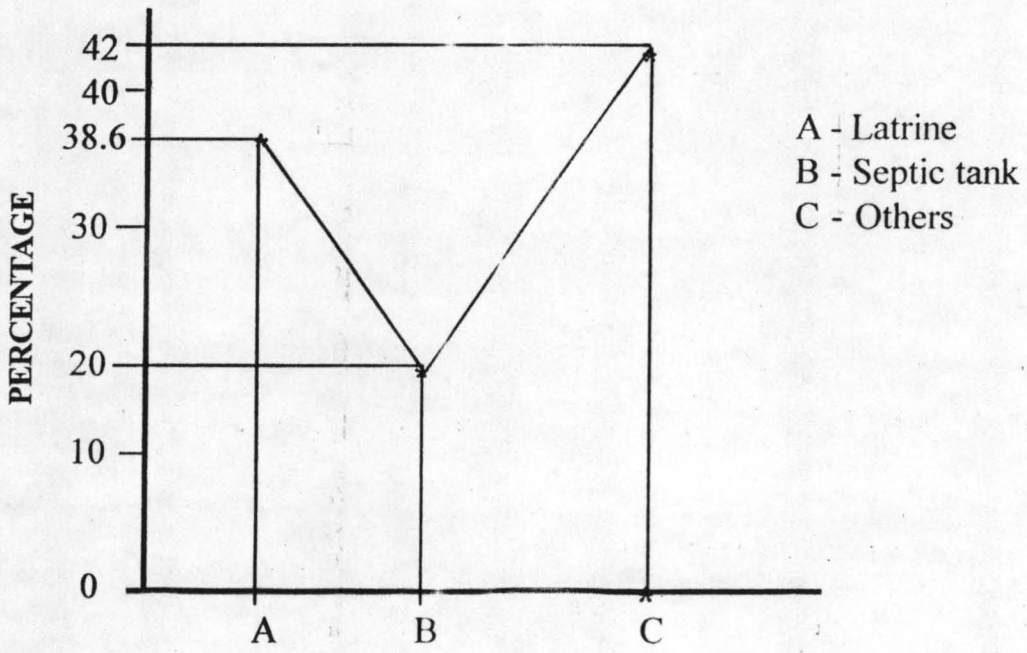
SEWAGE DISPOSAL FACILITIES	Kantoma	Dawaki	Garbodan	AlagbAdo	Kurmi Sarki
Pit Latrine	30	42	40	35	46
Septic tank	15	25	18	20	22
Others	55	33	45	45	32

Source: Compiled by the author

Water supply available in Suleja vary from one area to the other, at Kantoma there is a fairly regular supply of public tap water supplemented with kantoma river, the same thing goes for Dawaki. Public water supply is emplenitic in Gabordan and Kurmi Sarki but dwellers of this area have river and well as supplement. While Alagbado dwellers observe less or no tap water supply but get their water supply from untreated well.

SEWAGE DISPOSAL FACILITIES.

Analyis of the type of sewage facilities used in dwellings of the studied area shows that pit latrine is the commonest while septic tank or water closet is of less use.



SEWAGE DISPOSAL FACILITIES FIGURE 4.8

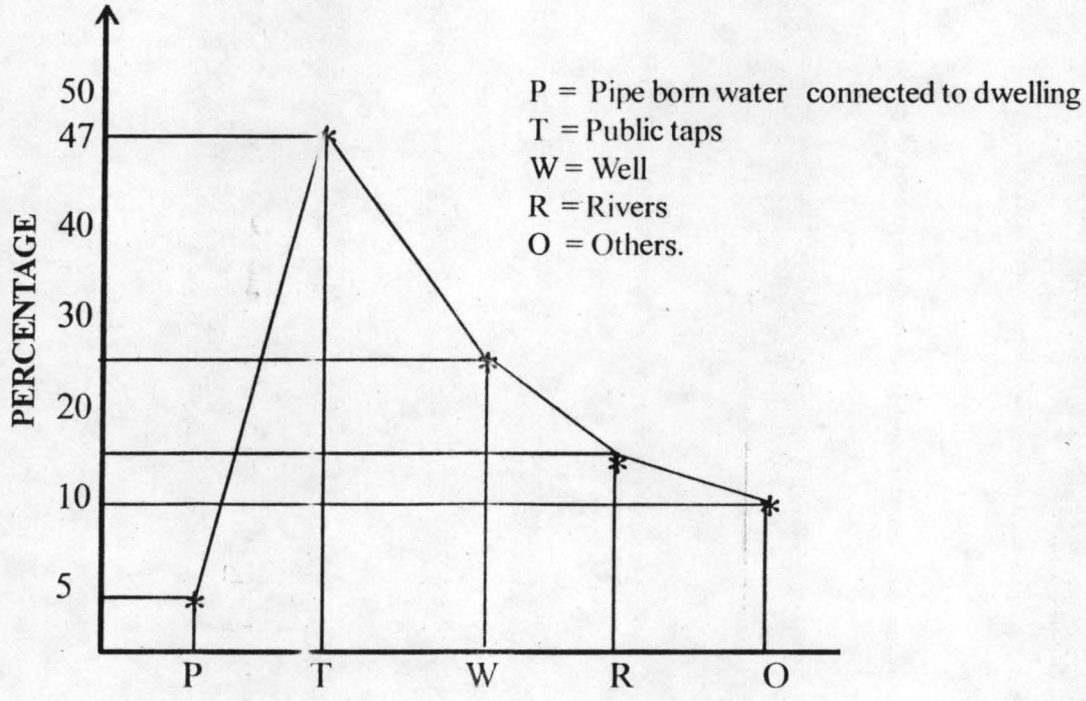
Table 4.9

Type of water supply Available in dwelling (Percentage Total)

Water Supply	Kantoma	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
Pipe born water connected to dwelling.	10	15	-	-	-
Public taps	65	65	45	10	50
Well	10	10	30	40	30
Rivers	10	5	10	25	15
Others	5	5	10	25	5

Source: Complied by the author

WATER SUPPLY AVAILABLE IN DWELLING



Water supply (FIGURE 4.9)

TABLE 4.1.0
REFUSE COLLECTION POINTS
(PERCENTAGE TOTAL)

LOCATION/ DISTANCE	Kantoma	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
Within 100 Metres	8	10	8	20	12
Between 100 – 200m	16	21	20	14	20
Between 200 – 300m	35	30	30	28	28
Over – 300Metres	41	39	42	38	40

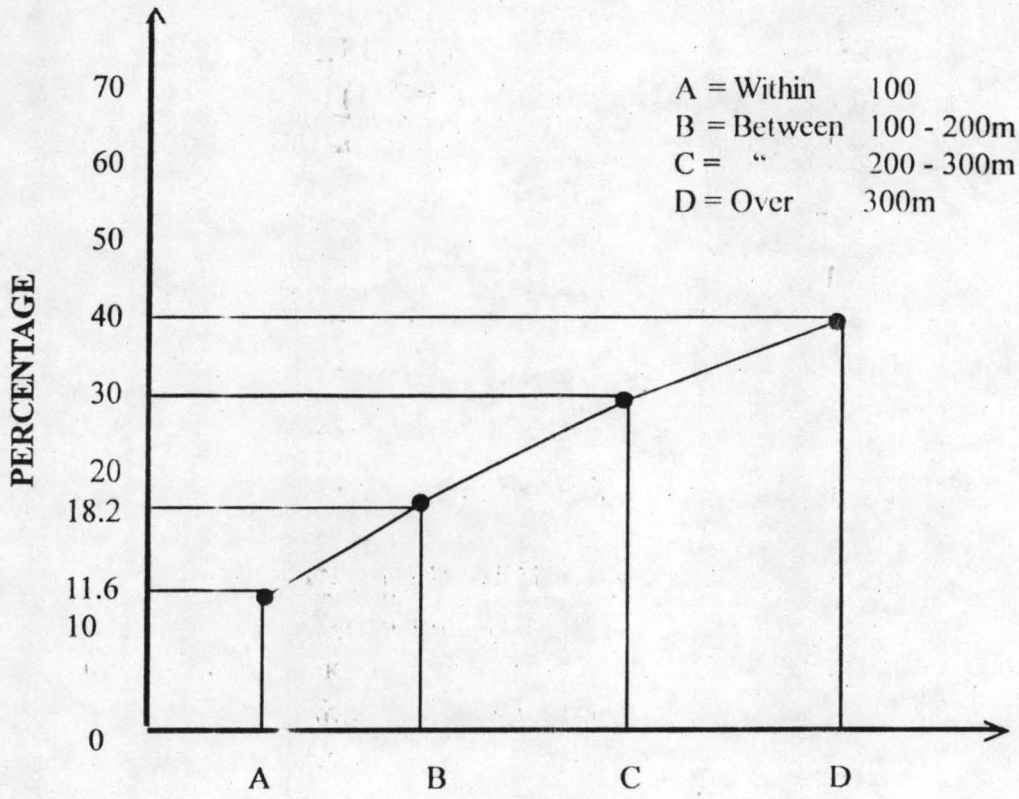
Source: Complied by the author

FIELD WORK ON AVAILABILITY OF COMMUNITY SERVICE.

Most of the dwellings in the various slums area do not have easy accessibility to refuse collection point, lack of motorable road which inhabit the collection of Gabage by lorry also responsible for the dwellers trecking long distance before getting to the nearest refuse collection point.

Table 4.1.0 indicates that only few dwellings in these areas are close to motorable roads.

REFUSE COLLECTION POINT



Location / Distance Fig. 4.1.0

The graph indicates that most of the dwellings in the various slum areas do not have easy accessibility to refuse collection points. However majority of dwelling are located more than 300 metres from the refuse collection point.

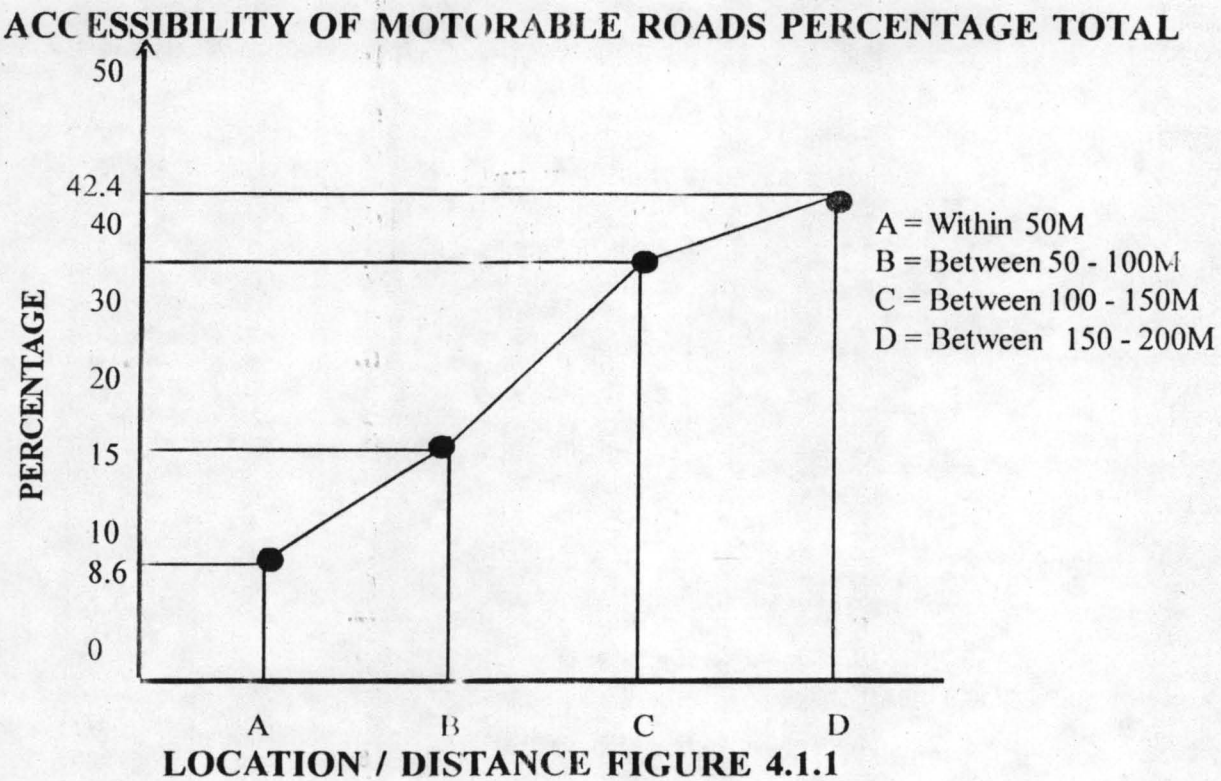
Table 4.1.1

ACCESSIBILITY OF MOTORABLE ROADS (PERCENTAGE TOTAL)

LOCATION/ DISTANCE	Kantom	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
Within 50 Metres	15	15	5	-	8
Between 50 – 100m	20	25	10	-	20
Between 100 –150m	30	30	35	45	30
Between 150 –200m	35	30	50	55	42

Source: Complied by the author

From table 4.1.1, there was a clear indication that most people in the slum area's of the five location of Suleja treck long distances before getting to a primary School which in most cases is located few kilometers away from them.



The graph indicates that only few dwellings on these areas are adjacent to motorable roads majority of houses are seen to be far away from the road.

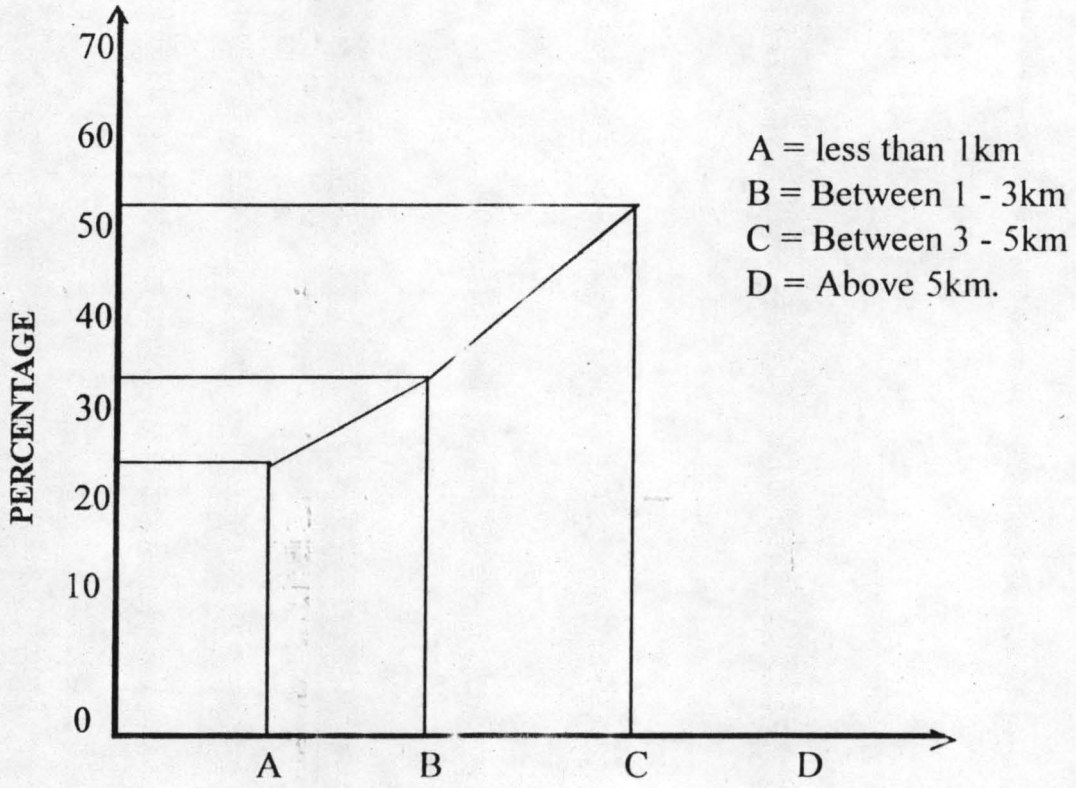
TABLE 4.1.2

ACCESSIBILITY OF DWELLINGS UNITS TO PRIMARY SCHOOLS (PERCENTAGE TOTAL)

DISTANCE / LOCATION	Kantoma	Dawaki	Garbodan	Alagbado	Kurmi/ Sarki
Less than 1 Km	40	60	-	-	-
Between 1-3km	35	34	-	60	30
Between 3-5km	25	6	100	40	90
Above 5Km	-	-	-	-	-

Source: Compiled by the author

ACCESSIBILITY OF DWELLINGS UNIT TO PRIMARY SCHOOLS



LOCATION / DISTANCE. Figure: 4.1.2

The graph indicates that most pupils in the slum areas walk long distance before getting to school, which in most cases; is located far away from them. Lack of space for the location of a school is largely responsible for this.

ANALYSIS

The questionaire administered focused on the following social, economic and physical characteristics of the house holds and dwellings in which the inhabitants live, it is from this information the data analyses was derived.

a. Land use structure
b. Number of rooms per household
c. Number of person per room
d. Construction materials of dwelling units
e. Angle of structure of dwelling unit
f. Ventillation Condition of dwelling units
g. Availability of kitchen, toilet and bathroom
h. Type of sewage disposal
i. Type of water supply available in dwelling
j. Refuse collection points
k. Accessibility to motorable roads
l. Accessibility of Dwellings unit to primary school

CHAPTER 5

5.0 RECOMMENDATION

Having assessed the slum area of Suleja, on the basis of results of the questionnaire survey coupled with other studies of the physical environment in Nigeria, some policy issues can be identified. These policies can be divided into two categories.

The first categories are long term policy issues relating to the prevention of slum areas, while in the second category are short term policy issue relating to the physical improvement of slum are a in Suleja.

The first issue in the first category relates to the reduction of the rate of urban population growth, there is an immediate need to retard population growth substantially by perfecting the implementation of family planning programmes and to consider even more direct and effective measures.

Since one of the factors impelling young rural inhabitants to move to the urban areas is resentment of the traditional system of social and economic control excerted by the family and village elders. Provision of independent economic opportunities, which are not subject to the control of elders, will reduce feelings of resentments towards them.

The rate of rural urban immigration will continue to increase except an effort is made to improve condition in the rural areas. The development medium size town in primitive areas to facilitate the distribution of social amenities to rural dwellers should be adopted and implemented.

Improving the income of the rural dwellers is inevitable through major investments in agricultural mechanization the quality of life and urban

environmen cannot be significantly improved in Suleja without increasing employmen opportunities for urban dwellers.

The major venue where public policy must focus attention is the industrial developmen t, infrastructure development and the informal sectors. Providing job opportu nitie s and improving the skills of urban dweller are important ways of accumula ting immigrants into urban life as well as improving the quality of life of low - inc ome household.

Comi ng to the short term issue, with the quantity of waste generated daily in Sul ja coupled with the existing hips of refuse left uncleared the local government should take immediate action on waste management by clearing all the refuse dumps both the legal and illegal dumps in the area.

The evacuation of the refuse should be at least twice a month or at worst Once a month in order to maintain a healthy environment and improve the health condition of the settlers in the area.

More accessible roads should be provided for efficient collection and disposal of waste and the number of refuse dumps should be increased in order to prevent illegal dumping of waste.

The epileptic nature of pipe borne water supply in the area needs the attention of the local and state government; this action would help in preventing the frequent cases of water borne disease in the area. Bore holes could be constructed to ease the problem of water shortage.

Furthermore, environmental education awareness programme that has also been incorporated in the mass literacy campaign programme, as well as in the school curriculum right from the primary level should be implemented and enforced without further delay.

5.1 CONCLUSION

Natural environments are beautiful scenes to sight and besides a few natural factors, only man is able to greatly alter those look, which in turn become a threat to his life.

A large volume of waste is being generated in the area daily consisting mostly of Garbage (food remnants) and rubbish (can, containers papers-carton etc). Base on findings obtains through questionnaire, field survey and interviews in the study area help to establish the fact that slums area all-live below poverty line.

The water supply and its distribution are environmental services how they are provided has had important effects. The supply of piped water to Suleja is inadequate, forcing many people to seek costly and often unsanitary alternatives thereby resulting to frequent cases of water borne disease like typhoid, diarrhea, malaria, dysentery etc.

Sanitation, including wastewater treatment, is an important environmental service that is closely linked to water management. Poorly functioning sewage system contaminates the surface of ground and poor sewage coverage results in serious stream pollution as well as soil contamination from open defecation in slum areas. The aquifers are being gradually contaminated by sewage from poorly maintained septic tanks. Consequently, I discovered that organic waste from households is the worst pollutes of key water bodies.

The most common forms of human waste disposal are pit latrines and open defecation by children and some adult more than half of the children and adult used sewage ditches and open spaces and more than half of the population. Did not live in facilities with private toilet.

The environmental problems resulting from the slum in Suleja can be improved based on the recommendation stated in 5.0.

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QUESTIONNAIRE

ON URBAN SLUM AND THE ENVIRONMENT (A CASE STUDY OF SULEJA)

SECTION A PERSONNAL

1. LOCATION OF TENENTMENT.....

2. OCCUPATION.....NATIONALITY.....

3. DO YOU WORK IN ABUJA AND RESIDENT/SETTLED IN SULEJA

   DELETE YES ☐ NO ☐

SECTION B (TECHNICAL)

4. HOW LONG HAVE YOU SETTLED IN THIS AREA.....

5. HAVE YOU WITNESSD ANY ECOLOGICAL PROBLEM IN THIS AREA YES ☐ NO ☐

   IF YES WHAT TYPE OF HAZARD /PROBLEM .....

   WHEN DOES IT OCCURRED.....WHAT ARETHE DEGREE OF ITS SEVERITY DELETE SERIOUS, ☐

   LESS SERIOUS ☐ NOT SERIOUS ☐

   HAZARD PROBLEM

   a. Flood b. erosion c. drought d. others.

6. WHAT IS THE SOURCE OF WATER SUPPLY: STREAM ☐

   BOREHOLE ☐ WELL ☐

7. IDENTIFY ANY HEALTH CENRE AROUND AND ESTIMATE THE DISTANCE TO YOUR HOUSE OR RESIDENTIAL AREA..... .....

AND INDICATE WHETHER QUALIFIED MEDICAL PERSONNEL ARE AVAILABLE YES☐ NO ☐

8. WHAT ARE THE MEANS OF REFUSE DISPOSAL METHOD.....

9. WHO MONITOR SUCH D SPOSAL UNIT/ POINT.....

WHAT IS THE DISTANCE OF REFUSE COLLECTION POINT TO YOUR HOUSE.....

10. HOW MANY NUMBERS OF PEOPLE / ROOM.....

HOW MANY WINDOWS PER ROOM. .....

HOW MANY NUMBERS OR ROOM PER HOUSEHOLD.....

11. WHAT FORMS OF LAND USE STRUCTURE ARE IN PLACE DELETE (RESIDENTIAL, COMMERCIAL, TRANSPORT, RECREATION / OPEN SPACE, INDUSTRIAL AND OTHERS)

12. WHAT ARE THE TYPE OF CONSTRUCTION MATERIAL USED.... .....

13. WHAT ARE THE AGE OF STRUCTURE OF THE DWELLING .....

14. HOW AVAILABLE THE HOUSEHOLD AMENTITIES LIKE KITCHEN .....(INDICATE NUMBER PER HOUSEHOLD) BATHROOM.....

15. WHAT ARE THE TYPE OF SEWAGE DISPOSAL FACILITIES AVAILABLE DELETE (PIT LATRINE, ☐
SEPTICTANK ☐ OTHER. ☐

16. WHAT IS THE DISTANCE BETWEEN YOUR RESIDENTS TO MOTORABLE ROADS.....

17. WHAT IS THE DISTANCE BETWEEN YOUR RESIDENT TO PRIMARY SCHOOL .....

SECTION C ADMINISTRATIVE

SHOULD THE GOVERNMENT – REMODITY THE SETTLEMENT PATTERN IN SULEJA

_____ YES ☐ NO ☐

AND WHAT FORM OF MODIFICATION WIILL YOU SUGEST