

Abstract

In most parts of the world especially in developing countries, the sprawling urban areas and enormous populations exert a tremendous amount of stress on the environment; resources are largely concentrated in urban areas, causing major challenges in waste disposal, noise, air, water pollution and many others. This study examined urbanization and environmental pollution in the growing town of Masaka. The main objective of this study is to examine the link between urbanization and environmental pollution in Masaka. A total of 180 respondents were sampled for the study using survey through the use of questionnaire technique. The findings revealed that the major causes of urbanization in Masaka are largely the influx of people from all walks of life into the area due to low cost of houses. The study further revealed that pollution from solid waste is one of the major causes of environmental pollution in the area. It was equally discovered that pollution from solid waste constitutes the major health challenge in Masaka. As a panacea in tackling the environmental pollution, the respondents suggested that there should be a proper waste disposal and effective waste management in the local government. The study recommended among others that an intensive public enlightenment campaign should be created to enlighten the public on the proper ways of waste disposal, and the need to keep a clean environment and to raise the level of awareness on sound solid waste management practice.

Keywords: Pollution, Hazard, Environment, Urbanization, Masaka.

Introduction

Urbanization is the geographical concentration of people in non-agricultural activities in any urban environment of various sizes and forms. The dominant demographic trend in the world most especially developing countries has been urbanized during the last half century. In recent times, urban areas comprise of more than half of the world's population. The influx of people from rural areas to the city in search of better life is too astounding to put into figures. Onibakun (1994) noted that there are several evidences of environmental impact of urbanization in Nigeria. The linkages between urbanization process and the environment are profound that the major components of the environment - air, water and land are adversely affected by the daily anthropogenic activities of urban residence and in the process of exploiting the natural resource base. The goal of ensuring environmental sustainability is greatly threatened by urbanization, which has created several serious environmental problems, such as pollution, deforestation and wetland destruction, erosion and flooding, urban sprawl, slum and squatter settlements, poor infrastructures, heat island and aesthetic degradation that have had negative impacts on man and other living organisms in the environment. If the threats posed by urbanization in Nigeria are not adequately managed, the capacity of the environment to continuously support life may be jeopardized with dire consequences on human life (Faniran and Onibakun, 1994).

These sprawling urban areas and enormous populations exert a tremendous amount of stress on the environment, resources are heavily concentrated in urban areas, causing major challenges in waste disposal, noise, air and water pollution, soil erosion, deforestation, health hazards and many others (Monandro, 2009; Shekwo, 2012).

The problems and challenges posed by the rapid urban growth in Nigeria are immense. More easily observable and perhaps very frightening are the general human and environmental poverty, the declining quality of life and the underutilised as well as the untapped wealth of human resources. Housing and associated facilities (such as water, electricity and waste disposal) are grossly inadequate. Millions of people lives in substandard environments called slums, plagued by squalor and grossly inadequate social amenities such as a shortage of social services, poor health facilities and lack of opportunities for recreation among others (Stren, 1994). Many research findings show that while urban areas in Nigeria, as in other developing countries have been growing at a very rapid, there has been no commensurable growth in the rate at which social services and infrastructural amenities are provided. The result has been a gradual decline in the quality of life. Waste management equipments/facilities such as the trucks and loaders have not been able to accommodate the sharp increase in the number of people. The ratio of population to social services such as roads and gutters is unfavourable, urban workers are neither well staffed nor adequately equipped (Lee and Anas, 1991).

Similarly, a number of factors also contributed to urbanisation in the study area; such as the demolition of satellite towns in FCT by the then Minister of the Federal Capital Territory, Mallam Nasir El-Rufai, availability of cheap houses for the low income earners, proximity to Abuja among others have contributed to the rapid urbanization of Karu LGA especially in areas such as Mararaba, Masaka, Ado, New Nyanya etc. Masaka attracted a high number of people from all walks of life leading to population explosion which brought about some challenges bordering on housing both at the micro family and macro society levels resulting to over congestion and social vices. Masaka, having experienced this population explosion, makes it inescapable from the environmental problems that accompany such unplanned population increase. This unplanned rapid urbanization in Masaka has given rise to problems such as poor sanitation, air pollution, overcrowding, poor infrastructures development contaminated water and exposure to adamant mosquitoes – conditions which are favourable to the spread of serious diseases. All these result from increased population and commercial activities (Sanda, 2008).

The population of major areas in Karu is growing at a staggering rate, especially the population in Masaka town. Consequently, environmental degradation may just be occurring very rapidly due to uncontrolled urbanization. The major environmental problems bedeviling Masaka environs in Karu usually result from the continuation and sharpening of existing problems that currently do not receive enough political attention. It has become the norm not to bring the existing problems under focus, or then nothing is done even when the situation has been detected. The most emerging issues are climate changes, freshwater scarcity, deforestation, slum creation, insecurity, increased crime rate, fresh water pollution and population growth. These problems are very complex and their interactions are hard to define.

Summarily, a rapidly urbanizing region such as ours would mean that the proportion of the population with access to infrastructural and municipal facilities and services increases, especially in the cities. Masaka's urbanization is characterized by modernization, as it leads to constructive alterations in social lifestyle, behaviour, norms and relations in many areas. Masaka with so many population of people, mostly youths is a typical example.

Given the agglomeration of people of diverse social and cultural origins, Masaka town often times has been regarded as FCT whilst its population

continually to soar with reckless abandon. This unfortunately does not equal the square area one bit. The large water body in the town of excellence even makes the situation worse for not just the inhabitants but also the government. And if the rate of urbanization in the town is left uncontrolled it may have dire consequences

It is important to note that some causes of damage to the environment due to urbanization lies in the legislation and the regulating agencies of the country. Failure of governance in today's urban areas has resulted in the growth of informal settlements and slums that constitute unhealthy living and working environment (Stren, 1994).

It is within this purview that this paper attempts an investigation into the impact of rapid uncontrolled urbanization on the environmental pollution in Masaka, Karu LGA of Nasarawa State.

Statement of Problem

The alarming rate of urbanization in many Nigerian towns today is causing environmental pollution and degradation especially as it relates to solid waste disposal and management (Onibakun, 1994). Ogwueleka (2009) noted that 25million tonnes of municipal wastes are generated annually which has become an issue of serious concern.

Inadequate solid waste management which was relatively bearable in Masaka, Karu Local Government Area of Nasarawa State before 1980, is impossible now especially with the growing urbanization, rural urban migration, indiscriminate sitting of buildings and water ways as well as the proliferation of public and private schools, small scale businesses, eating houses among others, generating lots of refuse in Masaka town. This is complicated as a result of the absence of regular and efficient solid waste collection system. Wastes are dumped in open spaces, on access roads, Masaka market, close to the over head bridge and along water courses which constitutes health hazard. The volume of urban wastes in Masaka is continually on the increase and has indeed been growing progressively causing health related problems. In most parts of Masaka town, there are no public facilities for disposing refuse within reasonable distance. Major dump sites which is the Federal highway that passes through the town is over flooded with all manner of refuse including human faeces which constitutes serious environmental pollution and severe health hazards (Shekwo, 2012).

This study is therefore an examination of urbanization and environmental pollution in line with the indiscriminate and poor management of solid waste disposal in Masaka town.

Objectives of the Study

The broad objective of this paper is on urbanization of Masaka town and the resultant environmental pollution. Other specific objectives include:

1. To examine the nature of urbanization and environmental pollution in Masaka.
2. To examine how the inhabitants of Masaka dispose their solid wastes.
3. To investigate the causes of urbanization and environmental pollution in the study area.
4. To investigate the effects of pollution on the people of the study area.

Literature Review

There are several evidences of environmental impact of urbanization in Nigeria. The linkages between urbanization process and the environment are profound that the major components of the environment—air, water and land—are adversely affected by the daily anthropogenic activities of urban residence and in the process of exploiting the natural resource base (Onibakun, 1994). The goal of ensuring environmental sustainability is greatly threatened by urbanization, which has created several serious environmental problems, such as pollution, deforestation and wetland destruction, erosion and flooding, urban sprawl, slum and squatter settlements, heat island and aesthetic degradation that have had negative impacts on man and other living organisms in the environment. If the threats posed by urbanization in Nigeria are not adequately managed, the capacity of the environment to continuously support life may be jeopardized with dire consequences on human life (Verma, Anas and Lee, 1991).

The major reasons for the increasing urban population are rural to urban migration including international migration to a lesser extent and the reclassification or expansion of existing city boundaries to include populations that were hitherto classified as being resident outside the city limits. These are estimated to contribute about 60 percent of the region's growth, while natural increase account for some 40 percent (Masakazu, 2003).

In Africa and other developing countries, it is rural poverty that drives people from the rural areas into the city in search of employment, food, shelter, education, succour from war and famine. Most people move into the urban areas because they are pushed out by factors such as poverty, environmental degradation, religious strife, political instability, food insecurity and lack of basic infrastructure and services

in the rural areas or because they are pulled into the urban areas by the advantages and opportunities of the city including education, electricity, water etc. Even though in many African countries, the urban areas offer few jobs for the youth, they are often attracted there by the amenities of urban life (Tarker, 1996).

Environmental conditions in cities have gradually deteriorated due to the rapid growth of the cities and the attendant inability of social services and infrastructures to keep pace with the rate of growth. Inadequate stocks drains, dumping of refuse in drainage lines and construction of houses close to and even on the natural water channels have been shown to be responsible in that order for the increasing cases of environmental pollution in the urban centres (Agukoronye, 1994).

According to Gugler (1997), it should be noted that urban growth has a number of positive impacts on the environment and human well-being, i.e. higher population densities may lower per capita costs of providing energy, health care, infrastructure and services. Also, urbanization has historically been associated with declining birth rates which reduces population pressure on land and natural resources. Despite all these impacts, almost all major cities of the world are increasingly plagued by environmental problems. Even though urbanization is the driving force for modernization, economic growth and development, there is increasing concern about the effects of expanding cities principally on human health, livelihoods and the environment. The implications of rapid urbanization and demographic trends for employment, food security, water supply, shelter and sanitation, especially the disposal of both solid and liquid waste that cities produce are staggering (UNCED, 1992; Shekwo, 2012).

Due to urbanization, great threat to health and safety in cities comes from water and air pollution, especially the households and community levels. While ambient air pollution impairs the health of almost all urban residents in many cities, households who are regularly exposed to higher concentrations of air pollutants from cooking and heating in poorly-ventilated housing. Waterborne diseases are found most commonly in low-income neighbourhoods as a result of inadequate sanitation, drainage and solid waste collection services. Health risks, especially to the poor, are also posed by pesticides and industrial effluents (Ezema, 2009). Throughout the world, the problem of air pollution arises from the fact that emissions from vehicles, industrial boilers and domestic heating sources exceed the capacity of cities natural ventilation systems to disperse and dilute

these emissions to non-harmful exposure levels (Bartone, 1989).

The emergence of urbanization is responsible for the rapid accumulation of waste. Generally, it would appear that the growth of urbanization and industrial development coupled with the poor waste management have added a great deal to environmental pollution in most Nigerian urban areas (Emeribe, 2000; Gourlay, 1992).

Theoretical Framework

The study employed the Traditional Malthusian Demographic Theory to explain the phenomenon of urbanization and environmental pollution in Masaka. The most well-known theory of population is the Malthusian theory. Thomas Robert Malthus wrote his essay on "Principle of Population" in 1798 and modified some of his conclusions in the next edition in 1803.

The rapidly increasing population of England encouraged by a misguided Poor Law distressed him very deeply. He feared that England was heading for a disaster, and he considered it his solemn duty to warn his country-men of impending disaster. He deplored "the strange contrast between over-care in breeding animals and carelessness in breeding men".

His theory is very simple. To use his own words: "By nature human food increases in a slow arithmetical ratio; man himself increases in a quick geometrical ratio unless want and vice stop him. The increase in numbers is necessarily limited by the means of subsistence. Population invariably increases when the means of subsistence increase, unless prevented by powerful and obvious checks" (Malthus, 1803).

The basic tenets of this theory are that; first, Food is necessary to the life of man and, therefore, exercises a strong check on population. In other words, population is necessarily limited by the means of subsistence (i.e., food). Secondly, Population increases faster than food production. Whereas population increases in geometric progression, food production increases in arithmetic progression. Thirdly, Population always increases when the means of subsistence increase, unless prevented by some powerful checks. And lastly, there are two types of checks which can keep population on a level with the means of subsistence. They are the preventive and a positive check.

The first proposition is that the population of a country is limited by the means of subsistence. In other words, the size of population is determined by the availability of food. The greater the food production, the greater the size of the population which can be

sustained; and the check of deaths cause by want of food and poverty would limit the maximum possible population.

The second proposition states that the growth of population will out-run the increase in food production if not properly plan. Malthus thought that man's sexual urge to bear offspring knows no bounds. He seemed to think that there was no limit to the fertility of man. But the power of land to produce food is limited. Malthus thought that the law of diminishing returns operated in the field of agriculture and that the operation of this law prevented food production from increasing in proportion to labour and capital invested in land.

In fact, Malthus observed that population would tend to increase at a geometric rate (2, 4, 8, 16, 32, 64, etc). Thus, at the end of two hundred years "population would be to the means of subsistence as 259 to 9; in three centuries as 4,096 to 13, and in two thousand years the difference would be incalculable." Therefore, Malthus asserted that population would ultimately outstrip food supply.

According to the third proposition, as the food supply in a country increases, the people will produce more children and would have larger families. This would increase the demand for food and food per person will again diminish. Therefore, according to Malthus, the standard of living of the people cannot rise permanently. As regards the fourth proposition, Malthus pointed out that the two possible checks which could limit the growth of population i.e preventive checks, and positive checks are very important in balancing population with the available resources (Tusher, 2016).

Malthus (1834) argued that the capacity of human population to growth supersedes the earth's capacity and food production because of limited land and increased population and urbanization. If the population continues to grow faster than the resources in the cities, the excess population would create problems, such as overcrowding, slums, overstretching of infrastructures, epidemics, poor sanitation and waste disposal problems which leads to health hazards and environmental pollution (Atemie, 2005).

The Malthusian Demographic Theory is not far from the situation in Masaka. Over time, the population of Masaka town has overgrown the resources that sustain the environment. This has resulted to indiscriminate building of houses on the few available lands, creation of slums, shacks, overcrowding which often leads to overstretching of weak infrastructures, poor sanitation and waste disposal system which has led to environmental pollution in the town.

Methodology

The survey method was used to gather data on the basis of its usability in this study where the sample size was 180 through questionnaire administration. The study was conducted in Masaka in Karu Local Government Area of Nasarawa State. Masaka is a large town that has been witnessing steady growth in terms of infrastructural facilities as a result of the influx of people into the area due to its closeness to the Federal Capital Territory, Abuja. The town as a result is densely populated with the attendant indiscriminate waste disposal and environmental pollution.

In terms of sampling technique, cluster sampling was applied. The usage of cluster sampling was due to its cost effectiveness and time saving nature. The town was clustered into four (4) areas and a simple random technique was used to select forty five (45) respondents from the following areas; Angwan Makama, Area one, Angwan Hausawa and Angwan police respectively. The questionnaire was used to elicit information on the causes of urbanization in Masaka as well as the environmental pollution and its

effects on the inhabitants of this large town. In addition, the respondents were equally asked to suggest some panaceas towards tackling environmental pollution in Masaka town.

Results and Discussion

This section presents, analyzes data and the findings in line with the research objectives of the study.

Socio-demographic Characteristics of Respondents

Information in table one shows that majority (31.1%) of the respondents are within the age range of 30-39 years. It indicates that there are more youths among the respondents in the study area. Data collected on occupation also showed that those engaged in business and trading activities account to 42.2 percent followed by civil servants with 37.8 percent. Farmers, 8.9 percent while students constituted 11.1 percent. The high number of business respondents and traders as well as civil servants was as a result of their availability as at the time of the research.

Table 1: Age and occupations of the respondents

Age	Frequency	Percentage
18-29	38	21.1
30-39	56	31.1
40-49	52	28.9
50-59	22	12.2
60 and above	12	6.7
Total	180	100
Occupation	Frequency	Percentage
Civil Servants	68	37.8
Business/Traders	76	42.2
Farmers	16	8.9
Students	20	11.1
Total	180	100

Source: Field Survey, 2016

Table 2: Responses on the causes of urbanization in Masaka town

Pull factors that attract people into Masaka	Frequency	Percentage
Availability of low cost houses in Masaka town	62	34.4
Availability of business opportunities	52	28.9
The town's proximity to Abuja	56	31.1
Others	10	5.6
Total	180	100
Push factors that drives people into Masaka	Frequency	Percentage
Lack of Basic Amenities in the rural area	51	28.3
Sprawling poverty	75	41.7
Fear of violence	40	22.2
Others	14	7.8
Total	180	100

Source: Field Survey, 2016

Information in table two showed that majority 34.4 percent of the respondents were of the view that people moved into Masaka of the availability of low cost houses as against the mind bugging real in Abuja and the satellite area around Abuja. Other respondents 31.1 percent were of the view that the town proximity (close) to Abuja influenced the migration into Masaka, 28.9 percent attributed their movement into the study as a result of business opportunities available in the town.

On the push factors, majority of the respondents 41.7 percent showed clearly that their choice of Masaka was a result of the sprawling and endemic poverty in their villages that drove them into Masaka, 28.3 percent responded they migrated to Masaka because their former areas of abode lacked basic amenities such as water, electricity among others, 22.2 percent moved into Masaka because of the fear of violence, while 7.8 percent attributed their movement into Masaka as a result of other factors such as the attraction of might life, employment and probably hope for a better life.

percent dumps their waste in any sighted uncompleted building close to them, and 3.3 percent indicated using other means of waste disposal.

Table five revealed that majority 56.7 percent of the respondents believed that solid waste constitute the major source of pollution in Masaka, 26.6 percent indicated pollution from smoke due to domestic cooking, 15.6 percent believed the pollution from vehicles/motorcycles emission, while 1.1 percent feels pollution in Masaka comes from the air.

Respondents as shown in table six indicated that health problem(s) as a result of environmental pollution affects them most as shown in the table with a majority of 43.3 percent, inhalation of foul smell is next with a frequency rate of 22.8 percent, the respondents also indicated that polluted water/flooded houses especially in rainy sea son is another effect of the environmental pollution with the response rate of 22.2 percent, 6.7 percent ticked disturbance from noise 3.3 percent indicated the soil was being polluted while 1.7 percent were indifferent.

Table 3: Responses on the relationship between urbanization and environmental pollution in Masaka

Item	Options	Frequency	Percentage
The influx of people from all walk of life into Masaka has caused urbanization and environmental pollution in Masaka	Strongly Agreed	98	54.4
	Agreed	42	23.3
	Strongly Disagreed	10	5.6
	Disagree	12	6.7
	Indifferent	18	10
	Total	180	100

Source: Field Survey, 2016

Data in table three indicates that majority 54.4 percent of respondents strongly agreed that the effect of urbanization has caused environmental pollution in Masaka, 23.3 percent agreed, 5.6 percent strongly disagreed, 6.7 percent disagreed and 10 percent were indifferent.

From the information in table four, most of the respondents 60 percent indicated they usually dump their waste solid or liquid by the federal high way passing through the town, 30.6 percent responded they drop their waste by the comer of the strengths, 6.1

Discussion of Findings

This study has revealed that urbanization as a result of the influx of people into Masaka town has resulted to environmental pollution especially from the attitudes of people towards waste disposal and management. More so, the current trend in environmental pollution in Masaka is largely attributed to lack of planning and absence of enough social facilities. Due to lack of physical planning from the local authority, houses are built even on waterways, absence of a demarcated area for refuse disposal,

Table 4: On how people in Masaka dispose solid liquid waste

Options	Frequency	Percentage
By the federal high way	108	60
Comer of the streets	55	30.6
On uncompleted building	11	6.1
Others	6	3.3
Total	180	100

Source: Field Survey, 2016

Table 5: Cause of pollution in Masaka

Options	Frequency	Percentage
Pollution from smoke as a result of domestic cooking	48	26.6
Gaseous pollution from vehicles and motorcycles	28	15.6
Pollution from solid waste disposal	102	56.7
Air pollution	2	1.1
Total	180	100

Source: Field Survey, 2016

Table 6: On the effects of pollution on the people of Masaka

Option	Frequency	Percentage
Inhalation of foul smell	41	22.8
Health problems	78	43.3
Contaminated water/flooded houses	40	22.2
Disturbance due to noise	12	6.7
Soil pollution	6	3.3
Indifferent	3	1.7
Total	180	100

Source: Field Survey, 2016

narrow streets among other features of an unplanned settlement. This as a result makes the residents to dump their waste indiscriminately some on the high way as shown in table four, corner of streets, and uncompleted buildings leading to an unhealthy and polluted environment as indicated in table five.

The effects of this pollution as revealed in table six is largely health related problems and ailments as 43.3 percent responded followed closely by the stench that emanates from the improper disposal of waste which is highly unhealthy for any society.

The problems and challenges posed by the rapid urban growth in Masaka are immense. More easily observable and perhaps very frightening are the general human and environmental poverty, the declining quality of life and the underutilized as well as the untapped wealth of human resources. Housing and associated facilities (such as water, electricity, waste disposal) are grossly inadequate. Thousands live in substandard environments called slums, plagued by squalor and grossly inadequate social amenities, such as, a shortage of social services, poor health facilities and lack of opportunities for recreation among others. Juvenile delinquency and crime have become endemic in study areas as a result of the gradual decline of traditional social values and the breakdown of family cohesiveness and community spirit. Moreover, the capacity of law enforcement institutions to prevent crime is increasingly hampered by technological and resource limitations.

Lack of infrastructure is one of the most pressing problems in Masaka. Significant proportions of the houses in major areas and locations have no access to electricity, pipe-borne water or hygienic toilet facilities. This finding also agreed with a study carried by Onibokun and Faniran (1991) that the proportion of existing urban housing stock that is dilapidated or is in need of major repairs is estimated at 1.3 per cent generally, while about 3 thousand housing units are required to meet the backlog of housing needs and the replacement of substandard ones. In many Nigerian cities, the city centres are decaying without any programme of rehabilitation while new urban peripheries develop without planning or the necessary infrastructure (Onibokun and Faniran, 1991).

Intra-urban mobility is greatly hampered by poor planning and inefficient land use. The network capacity of the transportation system is grossly inefficient and structurally defective. The study area economy is characterized by low and marginal productivity and high rates of unemployment and underemployment as the resultant effects. The low capacity utilization in the industrial sector also continuously worsens the employment-generating capacity of the study area economy. The World Bank also carried out a similar study on the infrastructure situation in Lagos and its impact on productivity. The findings are revealing (see Anas and Lee, 1988; Lee and Anas, 1989 ; 1990). The failure of the Nigerian

government to respond adequately to the increasing demand for urban infrastructural services has had the following consequences:

- a. The productivity of the economy of Lagos, and of Nigeria in general, has been seriously affected.
- b. The quality of life in the city has deteriorated; conditions of living have worsened.
- c. The inadequate provision of infrastructural services has affected most business firms, as they spend over 20 per cent of their capital outlay on providing their own infrastructure — electricity, water supply, transport, telecommunications, and waste disposal — which, under normal circumstances, should have been provided by the municipal authorities.

In agreement with the World Bank study, this study also revealed that the capital value of electric power generating facilities alone was about 10 per cent of the total value of machinery and equipment of most of the large firms operating in most areas. Similarly, the study also shows that the average cost of producing a firm's own power was high, about 10 times the cost in developed countries due to poor infrastructural availability. The high cost of producing power and other infrastructural services are passed on to the consumers in the form of higher prices. The use of generator for power is at increase which causes noise pollution and other problems in the study area. This finding also agreed with the research objective three which highlights the nature of urbanization and environmental pollution in Masaka

Another aspect which this study identified was that many residential houses and small firms which could not afford the cost of providing their own basic infrastructure became marginalized, with very low productivity. This situation is consistent with the 'incubator question' which shows that the location of small businesses (employing less than 5 people) is influenced by the availability of utilities and other essential services (see Linn, 1982; Lee, 1989; Verma et al., 1991). This means that an urban centre such as Masaka, with its poor infrastructure, does not offer a conducive environment for houses and small-scale enterprises which are important to the development of her economy. Those enterprises that have already been established cannot grow at a rate that would generate enough employment opportunities to meet the demand of the growing population, while fewer and fewer new ones are able to get started. Since economy growth and employment generation in a

country depend heavily on the extent to which small firms and enterprises can grow and succeed, it should not be a surprise to policy makers that Nigeria continues to have a high rate of unemployment and underemployment. Poverty is also becoming more endemic in our urban centres just like Masaka and will become still more so unless the infrastructural problems, which contribute significantly to the breeding of poverty, are seriously addressed.

A study on urban problems in 38 Nigerian cities; and another on urban infrastructure in three major cities were also conducted (Onibokun, 1987). The surveys showed the declining quality and gross inadequacy of urban infrastructure. Specifically, they revealed that a significant proportion (up to 34% in some cities) of the housing units had no access to electricity, pipe-borne water and safe liquid waste disposal systems. With reference to housing, high rates of overcrowding, substandard buildings and infrastructural inadequacies have been reported in all the urban centres in Nigeria (Onibokun, 1987; Lee, 1989). Access to land, mortgage loans and building materials at affordable prices have become increasingly difficult and have limited the ability of most people to build their own houses. This has resulted in overcrowding, excessive house rents, poor or total absence of infrastructural facilities, and unwholesome and unhygienic environments generally. The proportion of urban housing (i.e., existing housing stock) that was either in need of major repair or was dilapidated in the different areas of Masaka is high. It was estimated that about 3 thousand housing units were needed to meet the backlog and replace substandard houses in Masaka.

Conclusions and Recommendations

This study considered the impact of urbanization on the environmental pollution and its effects in the lives of people in Masaka, Karu Local Government Councils in Nasarawa State. The study revealed that the major reason for the influx of people into Masaka is as a result of the availability of low cost houses as indicated in table two, the town's proximity to Abuja, business opportunities, sprawling poverty in the rural areas among other pull and push people to the study area among other factors.

The effect of urbanization has resulted to congestion, increase in economic and social activities among others, which has equally led to the creation of slums, ghettos which has posed serious problems of waste disposal in Masaka. The study has also shown that the major source of pollution in Masaka comes from solid waste with health effects on the populace of

Masaka. As a panacea in tackling the environmental pollution, the respondents suggested that there should be a proper waste disposal and effective waste management by local authority.

Indeed serious attention should be given to the need for improving urban strategies, which promote efficiency in resource use. Not forgetting that vehicular pollution control in metropolitan towns and other cities deserves top priority too. Also, urgent attention should be given to reduce the generation of solid waste at the sources through mandatory standards and regulation fee and tax incentives, and education and voluntary compliance. In case adequate steps are not taken to prevent pollution and to improve the quality of life by providing more social amenities, the life of the urban dwellers in Nigeria may become more miserable, this may be the cause of health hazards and worst devastation. Although it is impossible to restrict urbanization, it has to be ensured that urbanization proceeds in the right path causing minimum impact on environment.

- The study therefore recommends that Karu Local Government Area should endeavour to reduce congestion in Masaka and Mararaba etc, by encouraging rural settlement through the provision of social services in the rural areas.
- Efficient sanitary methods of solid waste management at point of generation, collection, transportation and final disposal that will be economical, sustainable and environmentally friendly, should be employed.
- The Local Government Authority should employ hand-pushed trucks by direct labour for collection of solid wastes from households in areas not accessible to automobile trucks. This will help to eliminate indiscriminate waste dumps in the neighbourhoods without access roads where automobile trucks cannot reach.
- An intensive public enlightenment campaigns should be conducted to enlighten the public on the need to keep a clean environment and to raise the level of awareness on sound solid waste management practice.
- The Government should re-introduce the subject of hygiene into our national educational curriculum. Hygiene should be taught in primary, secondary and tertiary institutions. Through the teaching of hygiene, young Nigerians will learn how to become conscious of their personal and environmental health from the earliest beginnings.

This kind of awareness will help to remould our attitudes towards waste generation and disposal over times so as to mitigate environmental pollution.

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