

ENVIROMENTAL SANITATION PROBLEM AND SOLUTION A CASE STUDIES OF KANO MUNICIPAL LOCAL GOVERNMENT AREA, KANO, NIGERIA

Kamalu Abdullahi Alhassan*

ABSTRACT

The continued existence and well-being of all living things, plants and animals depend to a large extent on the ability of man to enhance, protect, conserve, and manage the natural resource in the environment. These life supporting means are threatened by natural and anthropogenic challenges or a combination of the two.

In Nigeria, different challenges are associated with various climatic, vegetation, and geologic zones. Also, there are disparities between urban problems and those of the rural areas. Specific problems like oil spillage, coastal erosion, flooding and pollution are also rampant in the oil producing areas. The human induced challenges are aggravated by high population growth rate, poverty, unemployment and over-reliance on natural resources. The effects include health hazards, global warming, ozone layer depletion, climate change, pollution, environmental degradation, over-exploitation of natural resources as well as reduction in ecosystem complexity and diversity.

The objectives of the present study were to study the problem of environmental sanitation, to suggest solution to the problem of environmental sanitation and to understand the common methods of refuse disposal in Kano municipal local government council. The study was a descriptive cross-sectional study design, in which the data were collected using structured questionnaire administered in face to face interview among the 200 randomly selected residents in Kano municipal local government council.

* Assistant Lecturer Department of Biological Science, Faculty of science. Northwest University Kano State, Nigeria.

The results show that 50% of residents use unauthorised dump site plot for refuse disposal while only 31% of the residence disposed their refuse once in a week. The study concluded that there is poor level of environmental sanitation among the residents. Major solutions to the environmental challenges in Kano Municipal are environmental education, governance of nature, formulation and implementation of stronger laws or/and penalties, as well as the use of environmentally sound technology for the monitoring of the environment.

INTRODUC TION

A conducive environment is required for normal and healthy living of all the living beings including humans, live stocks, plants, microorganisms and the wild life. Addition of harmful substances (or) effect in to the environment composition modifies the changes in the physical, chemical, and biological characteristics of our resources (Jeyalakshmi 2013). Environment defines as sum of all social, economical, biological or chemical factors which constitute the surroundings of man, who is both reactor and moulder of his environment (or) the other words. It is the representative of physical components of earth wherein man is the important factor influencing the environment. The environment of any living organisation has never been static or constant. It has always been changing, some slowly or drastically. It is a complex system that includes physical, chemical, biological, social, and cultural elements and is interlinked to each other (Sharma 2004).

Environmental sanitation is an often-misconstrued subject matter. The average person on the street and even in government circles understands it as no more than the routine evacuations of municipal solid waste, i.e., refuse in town. As long as refuse is removed from the streets, the average individual seems completely satisfied with the state of the environment, not wanting to be bothered by other aspects of life that might be infringing on the well being of the individual in the neighbourhoods or the society at large.

Moreover, Environmental sanitation according to World Health Organization (WHO) is defined as the control of all those factors in man's physical environment, which exercise or may exercise deleterious effect on man's physical, mental and social wellbeing (Nwankwo, *et al.*, (2004).

Environmental sanitation according to Nwankwo *et al.*, (2004) and Reeve (2002) deals with:

- Provision of safe and adequate supply of water
- Proper and efficient disposal of wastes
- Safeguarding of food
- Provision of insect vectors and other pests control measures and Control of animal reservoir or infection
 - Air hygiene and prevention of atmospheric pollution
 - Elimination of environmental hazards, pollution like noise, radiation, etc.

The growing concern about environmental degradation at the local, regional and global levels has increased the demand for reliable information about environmental data. Each year in spite of all the modern technologies available to medicine, health and bio-medical sciences, millions of people still get ill or may even die from undue exposure to environmental hazards Benjamin *et al.*, (2009).

Environmental decay is a perennial problem in Nigeria. In most urban areas of Nigeria like Kano, Maiduguri, Lagos, Onitsha, Kaduna etc., there is gross environmental pollution/contamination due to poor sewage and refuse disposal, lack of safe and adequate potable water, poor food hygiene practices, poor housing arrangement in our cities, etc. The situation is different from the scenario in the rural areas Amadi *et al.* (2002).

Municipal solid waste management is an important part of the urban infrastructure that ensures the protection of environment and human health (World Bank 2002, 2003)

Nwankwo *et al.*, (2004) and Gupta and Ghai (2007) had earlier revealed that the objective of environmental sanitation is to create and maintain an environment that will promote health and prevent diseases. Nwankwo *et al.*, (2004) opined that all environmental problems are essentially caused by growth in population. According to this source, we are living in the world of exploding cities. When population density increases so also do the possibilities

of pollution. Other authorities (Emeharole and Nwankwo, 1999; Amadi, 2001, 2004; Moses, 2005a, Nwankwo, 2004, 2008) had earlier submitted that the rate of environmental pollution in the urban centres is increasing with rapid population increase and economic activities.

Humans exist in a social and spiritual environment, which is of great importance to the mental and physical health. Environmental decay is a perennial problem in Kano municipal council and of course in Nigeria in general. In Kano metropolis, like most cities in the developing world, several tons of municipal solid waste is left uncollected on the streets each day, clogging drains, creating feeding ground for pests that spread disease and creating a myriad of related health and infrastructural problems (Nabegwu 2008). A substantial part of the urban residents in the old city and suburban informal settlements of Kano metropolis also have little or no access to solid waste collection services. This is due to lack of proper land use planning which resulted in the creation of informal settlements with narrow streets that make it difficult for collection trucks to reach many areas. The result is that a large portion of the population is left without access to solid waste management making them particularly vulnerable (Nabegwu 2008).

Some studies have been carried out on environmental sanitation problems in Kano metropolis which stated that; increase of environmental sanitation problem is due to improper housing arrangement, shortage of suitable waste refuse disposal arrangement in the area, poor sewage and good drainage, lack of safe and adequate water supply, poor food hygiene practices, people attitude to general public and lack of trained health personnel and manpower etc (Nabegwu 2008).

The above background information makes it very clear that the environmental sanitation level of Kano municipal council of Kano state should be study properly in order to suggest the solution to these environmental sanitation problems that might reduce high morbidity and mortality rates in the society. The aims and objectives of this present study were. To evaluate the level of environmental sanitation in Kano municipal local government area and To understand the common methods of refuse disposal in Kano municipal.

Materials and Method

Study Design And Area

A descriptive cross sectional study was conducted from June to August 2014 in one of the local government in Nigeria. Kano Municipal local government is among the 774 local government areas in Nigeria and a Local Government Area within the Kano Urban Area in Kano State, Nigeria. Its headquarters are in Kofar Kudu, in the south of the city of Kano. It has an area of 17 km² and a population of 365,525 at the 2006 census.

The main environmental sanitation scope given attention in Kano Municipal is waste disposal. Kano Municipal, which is an Urban centre, is known for its over population and commercial activities. Kano Municipal like many other cities in Nigeria is faced with perennial ecological problems favourable to the survival of parasites causing diseases. The major sanitation facilities include: REMASAB bins, evacuating tanks, personal bins, basket, unauthorised dump site plot and occasionally, fumigation of the markets.

Study Variables

The study contained three domains mainly; Demographic and vital information, mode of refuse disposal and refuse disposal consistency. Demographic characteristics that we collected from the participant in the study are 200 Residents age, sex occupation and residential area. Mode of refuse disposal test focussed on collecting information on method of refuse disposal, types of building residents live, and material use for disposal. While refuse disposal consistency test collected information on refuse disposal consistency.

Study questionnaire

The data sources were measured using a structure questionnaire. Primarily, a structured interview questionnaire, which was made valid and reliable by a team of environmental health experts, was used for data collection. The final questionnaire had 16 questions covering information about domains; demographic information and vital information, mode of refuse disposal and refuse disposal consistency.

Statistical Analysis

Data were obtained from the filled questionnaire and entered into computer using excel soft

ware version. The data were then imported in SPSS version 16; it was then cleaned and validated. Frequencies for all the variables were obtained; means and standard deviation were used for the results.

RESULTS

A total of 200 residents were interviewed, with a range of 8 to 10 residents far street. The average age of the respondents was 32.9 ± 8.5 years; 75% of the respondents were male. Out of 200 respondents 46.5% were businessmen, while others were 39.5% and only 14% were civil servant. Among 200 respondents 64% were live in unspecified residential area, 20% live in quarters, while 16% of the respondents were unspecified Table 1.

Table 1. Demographic Characteristics

Variables		Frequency	n=200(%)	
Gender	male	175	75	
	female	25	25	
Age Distribution	15-24	29	14.5	
	25-34	85	42.5	
	35-44	57	28.5	
	45-54	24	12	
	55 to above	5	2.5	
occupation	Business	93	46.5	
	Civil servant	28	14	
	others	79	39.5	

Residential Area	Quarters	40	20	
	Unspecified	128	64	
	others	32	16	

Based on the method of refuse disposal by residents, 50% residents responded that, they were used unauthorised road site dumping, 20% of the responds used authorised dump site, 10% residents used REMASAB bin, 16% respondents responded that, they used basket/dust bin and only 4 % used basin for disposing their refuse Table 2.

Table 2. Method of Refuse disposal by residents

Variables	Frequency	Percentage (100%)
REMASAD bin	20	10
Authorised dump site	40	20
Unauthorised road site dumping	100	50
Basin	8	4
Basket/Dust bin	32	16
Total	200	100%

The consistency of refuse disposal among respondents shows that, 39% of the residents dispose their refuse not often, 31% of the residents dispose their refuse once a week, 24% responded that, they were disposed their refuse twice a week and only 6% disposed their

refuse every day.

Table 3. Refuse disposal consistency

Variables	Frequency	Percentage (%)
Once in a week	62	31
Twice a week	48	24
Every day	12	6
Not often	78	39
Total	200	100%

According to system of sewage disposal the results showed that, 53.5% of the residents used pit latrine, water system latrine were 29%, 15% of them used unspecified method and 2.5% used bucket system Table 4.

Table 4 System of sewage disposal

Variables	Frequency	Percentage (%)
Pit latrine	107	53.5
Water system latrine	58	29
Bucket system	5	2.5
Others	30	15
Total	200	100%

DISCUSSION

The finding from the data on residents' demographics showed that, the residents were business men and lives in unorganised residential area. This result was in agreement with Nabegu (2010) who stated that, increase of environmental sanitation problem is due to improper housing arrangement and shortage of suitable waste refuse disposal arrangement in the Kano metropolis.

The results on method of refuse disposal by residents was consistent with work of Nabegu (2010) and anunonwu C *et al.*, (2009) who reported that, the highest frequency of respondents, i.e., 235 or 47.5% use refuse bins. The irony however, is that 180 or 36.4% take to street dumping and also 70% of the residents do not have an authorized dumping site for their waste. This results show that, the residents need to be educated on how to dispose refuse and effect of environmental pollution.

Based on the results of refuse disposal consistency, the residents were not constantly dispose refuse. This result was contrary with report of Kano state REMASAB who reported that, the streets were cleaned regularly.

The findings of the present study on system of sewage disposal showed that, 53.5% of the residents used pit latrine. This result was similar with work of Nabegu (2010) who reported in An Analysis of Municipal Solid Waste in Kano Metropolis, Nigeria that, Poor sewage and good drainage, lack of safe and adequate water supply are the problems of environmental sanitation in Kano metropolis. But the results was in opposite with work of anunonwu C *et al.*, (2009) who reported that, the greatest frequency of Owerri municipal inhabitants 415 or 83.8% use the water cistern seconded by 55 or 11.1% that use the pit latrine. This by extension reveals that the excreta/sewage disposal system is reasonable or of acceptable standard.

CONCLUSION

The present study concluded that, the results show that 50% of residents use unauthorised dump site plot for refuse disposal while only 31% of the residence disposed their refuse once in a week. The study concluded that there is poor level of environmental sanitation among the residents in Kano Municipal council. Therefore public enlightenment on value of environmental sanitation should be improved. People Attitudes toward proper setting of environment, public health,

environmental conditions and negative impacts of inadequate waste collection should also be improved through environmental sanitation campaigns. Such campaigns should also inform people of their responsibilities as waste generators and of their rights as citizens to waste management services. Whilst people attitudes towards solid waste should also be educated by public information on educational measures, improve solid waste handling patterns.

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