

## Evaluation of Environmental Sanitation in Owerri Municipal Council of Imo State

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**Abstract:** Globally one of the major public health issues is poor standard of environmental sanitation. Most of the tropical African cities like Owerri municipal council do not have adequate facilities to achieve an ideal environmental Sanitation. The present study which took place between June and August, 2008 was therefore, carried out to evaluate the practice and standard of environmental sanitation in Owerri Municipal Council of Imo state. The researchers made use of a simple but well validated questionnaire instrument for data collection on 200 randomly selected households. The study concluded that there was no significant impact made so far to improve the standard of environmental sanitation in the municipality ( $p>0.05$ ). Again the study was constrained to report a poor solid waste disposal system and practice among the study population. This is partly due to factors like population increase and urbanization, which made the available but limited amenities not to serve all the inhabitants thereby bringing about environmental decay. The empowerment of the new polyvalent Environmental Health Officers (EHOs) is suggested to bring about a desired and positive change towards an improved environmental sanitation standard.

**Key words:** Evaluation, environmental sanitation, Owerri municipal council, Imo State

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### INTRODUCTION

A well-known fact to many United Nations specialized agencies such as the World Health Organization (WHO), UNICEF, UNESCO, UNDP, world bank etc. is that the single most significant cause of morbidity and mortality in Sub-Saharan Africa and other third world countries is poor standards of environmental sanitation. Most of the tropical African countries do not have adequate facilities to achieve an ideal environmental sanitation (Nwankwo, 2004a).

This predicament has significantly been contributory to the perennial high incidence of such communicable diseases as dysentery (*Bacillary* and *Amoebic*) cholera (*Vibrio*), typhoid (*Salmonella typhosii*) hepatitis (*Viral*) meningitis (*meningococcus*), Malaria and tuberculosis.

Nwankwo (2008) held that the word environment has long been used to describe all conditions, which are not part of the individual self or a person but which alter each individual to produce certain varieties or species. Such conditions may be physical, social or economical.

Obasi (1999) defined environment as the sum total of all external conditions influencing the growth and development of an organism. As a result of ignorance, inter alia, much harm has been inflicted on the environment. Hazards such as pollution of all kinds, erosion, flood, slums, droughts and deforestation have according to Okorie (2001), overtaken the environment. It is as a result of this that environmental education is imperative to enhance national development. Without the knowledge of man's environment he may not know what is expected of him as regards his attitude towards his environment.

However, Sade (1995) went further to explain that the environment is considered abused when injurious or corrupt elements are introduced. This reduces the satisfaction and utility derivable from growing and developing within it. In the same vein, environment can also be regarded as the sum total of all conditions that surround man at any point in time on the earth's surface.

The human environment according to Nwankwo (2004a) and Reeve (2002), consist of very basic elements: The air, we breathe, water used for domestic purposes, the food, we eat, the climate surrounding the body and the space available for the movement.

As a concept, pollution is regarded as any adverse change in the environment following from the activities of man and the living process in which, he indulges (Gupta and Ghai, 2007).

Obasi (1999) defined pollution as undesirable in physical, chemical and biological characteristics of the air, land and water that may harmfully affect human life and other desired species, the industrial processes, living conditions, cultural assets, or that may waste or deteriorate the raw material resources. It is also any disruption by man of the natural system. From the above definition it is lucid that environmental pollution is a worldwide crises caused by mismanagement of the environment.

On the other hand, 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 neighborhoods or the society at large.

However, 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, 2004a).

Environmental sanitation according to Nwankwo (2004a) 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
- Control of animal reservoir or infection
- Air hygiene and prevention of atmospheric pollution
- Elimination of environmental hazards, pollution like noise, radiation, etc.

A reciprocal relationship exists between man and his total environmental, i.e., physical, biological, social and economic. The aim of a good environmental sanitation is to modify human environment towards the maintenance and promotion of health and prevention of diseases (Nwankwo, 2004a).

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.

Amadi *et al.* (2002) opined that environmental decay is a perennial problem in Nigeria. In most urban areas of Nigeria like Aba, Umuahia, Owerri, Lagos, Onitsha, Kano, 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 etc. The situation is different from the scenario in the rural areas.

Draft copy of Lagos State environmental pollution control Act, 1985 defined environmental pollution as the presence in the air, water or soil, physical or chemical substances in such quantities, levels and duration as to adversely affect the environment and health of man, plant and animal (Nwankwo, 2004a). Consequently, any substance that can cause pollution is regarded as a pollutant. Akinsola (2006) defined pollution as the spoiling of a healthy and balanced environment by adding substances (pollutants) to it. These pollutants may be completely new to the environment or they may be present naturally.

Nwankwo (2004a) 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 (2004b) 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, b; Nwankwo, 2004b, 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 Owerri municipal council and of course in Nigeria in general. In most urban areas of Nigeria, such as Owerri municipal council, there is gross environmental pollution or contamination due to poor sewage and refuse disposal, lack of safe and adequate water supply, poor food hygiene practices, poor housing etc. The above background information makes it very pertinent that the environmental sanitation status of Owerri municipal

council of Imo state should be evaluated properly in order to device means of curbing these environmental hazards that might provoke high morbidity and mortality rates in the society. In the light of the foregoing, the following objectives were formulated for the study.

- To evaluate the state of environmental sanitation in Owerri municipal council
- To determine the predominant method of refuse disposal in Owerri municipal council
- To suggest means of proper environmental hygiene, restoration and control

It is expected that an improvement in the level of environmental sanitation will reduce morbidity and mortality rates due to poor environmental sanitation. This is in addition to promoting health and longevity of the inhabitants of Owerri municipal council and Nigeria in general.

## **MATERIALS AND METHODS**

Owerri municipal council is one of the 27 local government areas of Imo state. It is located on the South Eastern part of Nigeria. It is also inhabited by Ibos. Owerri Municipal council is located on latitudes: 5°25'50.23"N and longitude 7°2'149°.33'E. It is traditionally called Owerri Nchi-ise revealing that Owerri has five communities which are Umuororonjo, Amawom, Umuonyeche, Umuodu and Umuoyima in the order of seniority.

According to the 2006 National census, Owerri municipal has a population of 127,213 inhabitants, 62,990 males, 64,223 females with about 17,000 households, including shops and offices. It is bounded on the North by Amakohia on the North East by Uratta, on the East by Egbu, on the South East by Naze, on the South by Nekede and on the North West by Irete.

In February 3,1976, Owerri was declared the capital of Imo State by the Late Head of State, Gen. Murtalla Muhammed. It has two geological regions, namely a coastal plain and a plateau portion. The vegetation is typical rainforest, although some parts consist of Guinea Savanna due to poor environmental management and pollution. It has a mean annual rainfall of about 2.250-2500 mm. The mean temperature is 25-27°C. The relative humidity is 80%. Owerri Municipal inhabitants are mainly traders, few artisans, civil servants and farmers who are predominantly natives.

The main environmental sanitation scope given attention in Owerri Municipal is waste disposal. Owerri Municipal, which is an Urban center is known for its commercial activities. Owerri 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: refuse bins, evacuating tanks and occasionally, fumigation of the markets.

This study was conducted between June and August, 2008. Two hundred out of 17,000 households were randomly selected as sample size. Each of the five traditional communities as explained above were randomly and proportionally allocated 40 units. By sampling fraction, one in every 85 households (as sampling interval) was selected. Primarily, a structured interview questionnaire, which was made valid and reliable by a team of environmental health experts was used for data collection. Respondents were simply asked to indicate the major type of refuse disposal system practiced by them. A hypothesis was also put up to ascertain whether a significant difference in environmental sanitation standard was seen or identified from 1998 through 2008. Alpha value was set at ( $\alpha$  0.05), using Chi-squared ( $\chi^2$ ) goodness of fit test.

## **RESULTS AND DISCUSSION**

Based on the analysis, there was no significant change of the environmental sanitation standard from 1998 through 2008 ( $p > 0.05$ ) (Table 1). Though in late 2008, the level has slightly improved especially in the area of waste disposal, but the change is not very significant and the other aspects of environmental sanitation like housing, vector control, water, food hygiene etc. are yet to be given priority attention.

From the survey (Table 1), 15% of the respondents maintained that the environmental sanitation standard in Owerri Municipal was high, while 77.5% saw it as being low 10 years ago. On the other hand, 7.5% of respondents were undecided on the issue.

Table 2 presents analysis based on the method of refuse disposal system common in Owerri municipal. Table 2 shows 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. This is not a very healthy situation since the hazards of the street dumping by this high percentage can cancel the benefits of organized refuse bins collection.

Table 1: Respondents response on standard of environmental sanitation between 1998-2008 in Owerri municipal

Item	Rating from 1998-2000			Total
	Poor	Undecided	Good	
Standard of environmental sanitation	155	15	30	200

Table 2: Line table showing the method of refuse disposal system in Owerri Municipal (%)

Items	No. of respondents	%
Farm land composting	5	1.01
Street dumping	180	36.40
Refuse bins	50	10.10
Nearby stream	25	5.10
Pit latrine	-	-
All of the above	235	47.50
Void	0	0.00
Total	495*	100.00

\*Multiple responses were allowed

This study also shows 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. The gains of this needs to be encouraged, sustained and improved on.

One can deduce from the above information that the present situation of environmental sanitation in Owerri municipal council is to say the least static indicating no significant difference between the former status (10 years ago) and this present status (Table 2).

### CONCLUSION

The study has revealed that the present standard of environmental sanitation in Owerri municipal has not made any significant difference from what it used to be 10 years ago. This is in line with what Nwankwo (2008) observed in a study on solid waste generation and management among traders in Owerri municipal markets, Imo state. The study was constrained to conclude an obvious delay between waste generation and final disposal among these traders, which results to odour nuisance, environmental degradation, fly and rodent infestation. Emeharole and Nwankwo (1999) had earlier observed similar trend when they conducted similar study on management of refuse among students in a tertiary institution in the same municipality. Although, the area under investigation has embarked upon various strategies to check environmental pollution, but due to the high influx of people and commercial/domestic activities, amenities available can hardly satisfy or serve the geometric population rise, thereby countering all the efforts made to improve the environmental standard in the city.

Also, apart from waste disposal, the other aspects of environmental sanitation like, housing, pest control, food hygiene and adequate portable water supply etc. have not received due attention and there is need to reorientate the inhabitants of Owerri towards a decent life style that would be void of environmental decay. The researchers suggest the institution of an environmental tracking mechanism (under environmental health information systems) that will form surveillance network on the whole

environment and thereby help to improve environmental standards in the communities in both the short and long run. The empowerment of the new polyvalent Environmental Health Officers (EHOs) will be a welcome development in this direction.

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