

Level of sachet water consumption in Nsukka urban, Enugu State, Nigeria

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Abstract : *It is a common belief that the consumption of sachet water is high among households in Nigeria. The study sought to determine the level of sachet water consumed in Nsukka urban, Enugu State, Nigeria. A sample of seven hundred and twenty (720) randomly selected respondents was used for the study. Out of the 720 structured questionnaire distributed, only 74% were completely filled/returned and used for the analysis. Descriptive statistic (percentage) was used for the analysis. The results show that sachet water consumption was high in all the wards in Nsukka urban with University ward ranking highest (72%). It further shows that students were the highest (61%) consumers of sachet water. High level consumption of sachet water in the study area invariably will generate high sachet water wastes. The study therefore recommends that appropriate authorities example Enugu State Waste Management Authority (ESWAMA) should provide adequate number of dumpsters at strategic places to ensure proper disposal of the anticipated large quantities of sachet waste that will result from the high level consumption of sachet water. Furthermore, the study recommends that government and private establishments could embark on the recycling of the waste as an economic venture.*

Keywords: *Sachet water, Nsukka urban, Consumption, Enugu State.*

I. Introduction

The absence of surface water in Nsukka urban have deprived the Nsukka urban dwellers the primary sources of water supplies such as rivers and lakes; which are very important to traditional settlements as a source of water supply [1]. Following the introduction of pipe-borne water in Nsukka urban, domestic water needs of the people were largely met. Unfortunately, most of those pipes laid down to supply water are no longer functional; they are either rusted or broken. This exposed the people to obtaining their domestic water needs from undesirable sources with the attendant problems of incurring water borne diseases like cholera, typhoid, dysentery etc.

Consequently, the introduction of sachet water into the market in Nigeria, including Nsukka urban was well accepted by the people as a reliable means of obtaining potable water, quenching thirst and escaping from water borne diseases. However, after the consumption of the water, the sachet water wastes are disposed indiscriminately at various undesired sites such as along the streets, gutters, motor parks, schools, markets, homes, and venues of social functions etc.; thereby, leaving behind a very unsightly, polluted and filthy environment. They also contribute immensely to a lot of other environmental problems [2]. Sachet water waste disposal is a vast problem that needs to be tackled because of the implications it has on biophysical environment such as soil, vegetation, air, water and on health.

In Uganda, [3] noted that the effects of poor sachet water wastes disposal on the environment lead to loss of soil fertility because they cannot rot and decompose. He was of the view that polythene sachet water has an acidic combination of sulphur-oxide which with time disturbs the chemical formulae of the soils. He suggested that recollection of these sachet water wastes for recycling, by the producing companies will go a long way in solving these problems. [4] noted that the oxides of carbon, sulphur and nitrogen produced from disposed water sachets cause various health problems such as cancer, carboxyl-haemoglobin, brain damage, dizziness, headache, fatigue, lethargy, respiratory problem and eye irritation. The resulting environmental ills from burning the sachet waste pose extreme health hazards to people (both consumers and non-consumers) exposed to them such conditions according to [5] can precipitate epidemics and national health crises. In Nigeria, [6] noted that the disposal of waste generated from the production and consumption of packaged water including sachet water, constitutes an aspect of health and environmental hazards. She stressed that generally pollution affects not only the polluters but also the non-polluters, that is, it has external effects (externality) on those who are not responsible for the pollution especially during burning.

According to [7] over 70 percent of Nigerian adults drink at least a sachet of water per day resulting in about 50 to 60 million sachet water waste disposed daily across the country. If such quantities of sachet water waste are generated daily, there is need for their proper disposal. Improper disposal of the sachet waste will expose the country to environmental problems on soil, vegetation, air, water and on health. Against this

backdrop, it becomes pertinent to determine the level of sachet water consumption in Nsukka urban, Enugu State, Nigeria.

II. Methodology

The study was conducted in Nsukka urban, Enugu State, Nigeria. Nsukka is one of the major towns in Enugu State of Nigeria, situated towards the northern part of the state. The land surface of Nsukka lies between latitudes 06°18'N and 07°06'N and longitudes 06°52'E and 07°54'E (Fig1). Nsukka has a humid (forest) mega thermal climate. But, there is a seasonal drought from November to March, when soil moisture storage is nil. Consequently, the climate is of the tropical wet-and-dry (savanna) type. Atmospheric temperature in Nsukka is high with mean daily minimum temperatures between 21.4°C to 25.0°C and mean daily maximum temperatures between 28.1°C to 34.6°C, while the mean daily range varies from about 6.6°C to 12.2°C. Nsukka urban is divided into Nru, Nkpunano, Ihe, Owerre, University of Nigeria, Nsukka and Government Reserved Area (GRA) wards (Fig 2). One hundred and twenty (120) respondents were randomly selected from each of the wards giving a total sample size of seven hundred and twenty (720) respondents. Out of the 720 structured questionnaire distributed, only five hundred and thirty-five (i. e. 74%) were completely filled/returned and used for the analysis (Table 1). Descriptive statistic (percentage) was used for data analysis and the results were presented in Tables.

III. Results And Discussion

3.1 Level of consumption of water from various sources

Table 2 shows the level/quantity of water consumed from various sources of drinking water in the different wards in Nsukka urban. The entries show that majority (42%) of the respondents from Nru ward consumes sachet water, 27% consumes water from borehole/well. Twenty two percent and 9% consumed water from pipe borne water and rain water respectively. It also shows that in Owerre ward, majority (51%) consumes sachet water, 26% consumes water from borehole/well, 21% consumes water from pipe borne water whereas only 2% consumes rain water.

Further, the Table shows that in Ihe ward, 51% consumes sachet water, 32% consumes water from borehole/well, 15% consumes water from pipe borne water while 2% consumes rain water. In Nkpunano ward, majority (47%) consumes sachet water, 28% from borehole/well, 22% from pipe borne water and 3% from rain water. In the University ward, majority (72%) consumes sachet water, 10% consumes water from borehole/well, 18% consumes from pipe borne water whereas as none consumed rain water. Sixty three percent consumes sachet water, 29% consumes water from borehole/well, 8% consumed water from pipe borne water and none consumed rain water (Table 2).

From the Table it was very clear that in all the wards in Nsukka urban, the level of consumption of sachet water is high. University ward stands out as the highest consumer of sachet water with 72%. This should be expected because they are the most literate in all the wards and may be conscious of the hygienic nature of the water they consume and its source. This study agrees with that of Edoga *et al.* (2008), which noted that over 70% of Nigerian adults drink at least a sachet of water per day resulting in about 50 to 60 million sachet water waste disposed. Since it is evident that there is high level consumption of sachet water in the study area, the appropriate agencies/bodies e.g. Enugu State Waste Management Authority (ESWAMA) should make necessary arrangement to provide dumpsters at strategic places so that respondents could dispose the sachet waste properly. If such is not provided, with the high consumption level of sachet water, the streets and drainages in Nsukka urban will soon be littered/filled with the sachet waste.

3.2 Percentage distribution of respondents using occupation to determine level of consumption of water from various sources

Table 3 shows level of water consumed from different sources grouping the respondents based on occupation. From the data collected, the students stand out as the highest consumer of sachet water in all the wards of Nsukka urban with 61%. Twenty eight (28) percent of the students consumed water from borehole/well whereas 11% consumed from pipe-borne water. Civil servants also exhibited high level of sachet water consumption with 55%. Twenty five (25) percent and 23% consumed water from borehole/well and pipe borne water respectively. Among the traders, 53% consume sachet water because according to them; it is more reliable, portable and affordable; 25% consume borehole/well water while 16% and 6% consume pipe-borne water and rain water respectively. For the artisans, 27% consume sachet water, 18% consume from borehole/well, 37% consume from pipe borne water while 18% consume rain water. This results shows that students consumes the highest quantities of sachet water. This calls for the distribution of dumpsters in various schools to facilitate proper disposal of the sachet waste.

IV. Figures And Tables

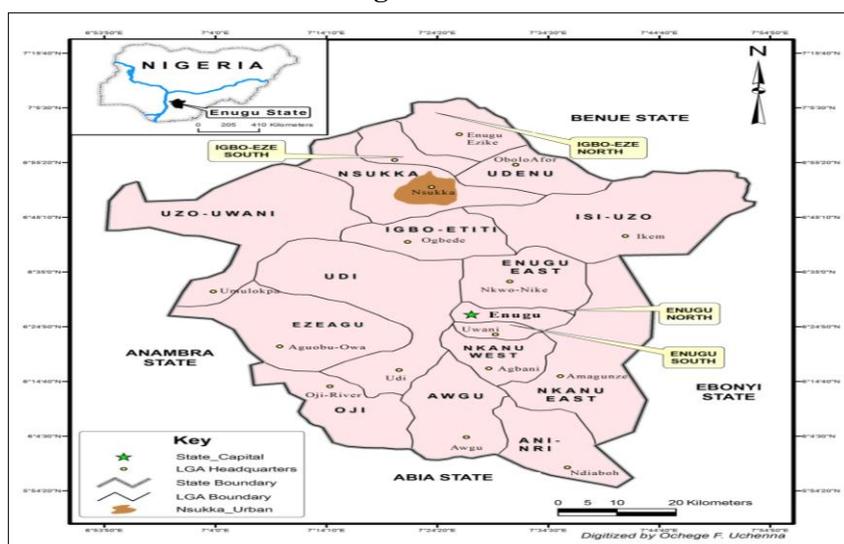


Fig 1: Map of Enugu State showing Nsukka Urban
Source: Department of Geography, University of Nigeria, Nsukka.

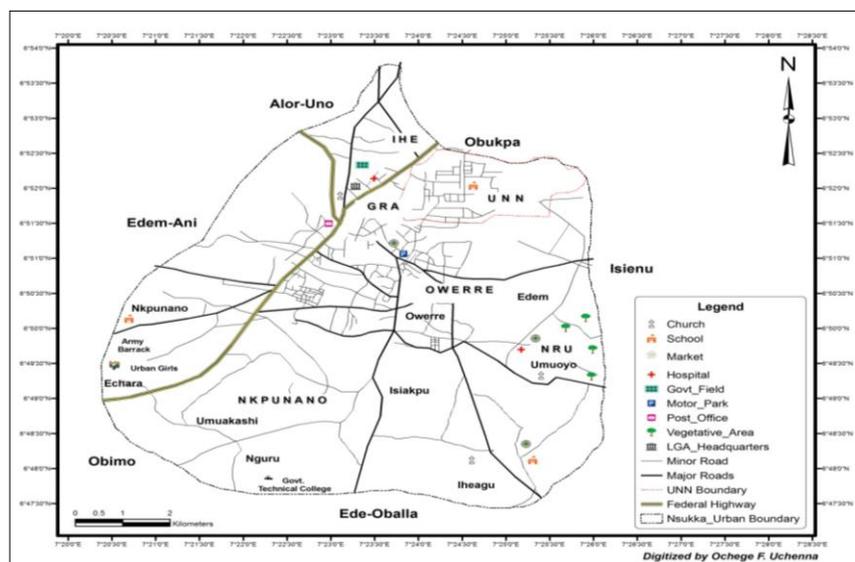


Fig 2: Map showing different wards in Nsukka Urban
Source: Department of Geography, University of Nigeria, Nsukka

Table 1: Copies of questionnaire distributed and returned

Wards	No distributed	No returned	% returned.
Nru	120	86	71.67
Owerre	120	106	88.33
Ihe	120	82	68.33
Nkpunano	120	118	98.33
University	120	80	66.67
GRA	120	63	52.50
TOTAL	720	535	74.31

Source: Field survey 2012

Table 2: Percentage distribution of respondents on level of water consumed from various sources of drinking water from different wards

Wards	Sachet Water	Borehole/Well water	Pipe-borne water	Rain water	Total respondents
Nru Frequency Percentage	36 (42%)	23 (27%)	19 (22%)	8 (9%)	86
Owerre Frequency Percentage	54 (51%)	28 (26%)	22 (21%)	2 (2%)	106
Ihe Frequency Percentage	42 (51%)	26 (32%)	12 (15%)	2 (2%)	82
Nkpanano Frequency Percentage	56 (47%)	33 (28%)	26 (22%)	3 (3%)	118
University Frequency Percentage	58 (72%)	8 (10%)	14 (18%)	- (0%)	80
GRA Frequency Percentage	40 (63%)	18 (29%)	5 (8%)	- (0%)	63
TOTAL	286 (53%)	136 (25%)	98 (18%)	15 (3%)	535 (100)

Source: Field work, 2012.

Table 3: Using occupation to determine level of consumption of water from various sources.

Occupation	Sachet water	Borehole/well	Pipe-borne water	Rain water	Total respondents
Students Frequency Percentage	109 (61%)	51 (28%)	20 (11%)	- (0%)	180
Civil-servants Frequency Percentage	98 (55%)	46 (25%)	43 (23%)	- (0%)	187
Traders Frequency Percentage	56 (53%)	26 (25%)	17 (16%)	6 (6%)	105
Artisans Frequency Percentage	13 (27%)	9 (18%)	18 (37%)	9 (18%)	49
Others Frequency Percentage	10 (7%)	4 (29%)	- (0%)	- (0%)	14
TOTAL	286 (53%)	136 (25%)	98 (18%)	15 (3%)	535 (100)

Source: Field work; 2012

V. Conclusion

The study investigated the level of consumption of sachet water in Nsukka Urban. One hundred and twenty (120) respondents were randomly selected from each of the wards giving a total sample size of seven hundred and twenty (720) respondents. Out of the 720 structured questionnaire distributed, only five hundred and thirty-five (i.e.74%) were completely filled/returned and used for the analysis. Results show high level consumption of sachet water in all the wards with University ward ranking highest (72%). It further shows that students were the highest consumers of sachet water (61%).

High level consumption of sachet water in the study area invariably will lead to the high generation of sachet water wastes. The study therefore recommends that appropriate authorities example Enugu State Waste Management Authority should provide adequate number of dumpsters at strategic places to ensure proper disposal of the anticipated large quantities of sachet waste that will result from the high level consumption of sachet water.

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