



### Keywords

Sachet Water Waste,  
Environmental Abuse,  
Taraba State University Campus  
and Jalingo Taraba State

Received: August 27, 2014

Revised: September 03, 2014

Accepted: September 04, 2014

# Role of sachet water waste on the environmental abuse a case study of Taraba State University Jalingo Campus

Jerome Nyameh<sup>1</sup>, Abdullahi Ibrahim<sup>2</sup>, Fredrick Umaru Fidelis<sup>3</sup>

<sup>1</sup>Faculty of arts and social sciences, Department of Economics Taraba State University, PMB 6117 Jalingo, Taraba State, Nigeria

<sup>2</sup>Faculty of arts and social sciences, Department of Geography Taraba State University, PMB 6117 Jalingo, Taraba State, Nigeria

<sup>3</sup>Faculty of sciences, Department of Biological Sciences Taraba State University, PMB 6117 Jalingo, Taraba State, Nigeria

### Email address

dr.nyameh2014@gmail.com (J. Nyameh)

### Citation

Jerome Nyameh, Abdullahi Ibrahim, Fredrick Umaru Fidelis. Role of Sachet Water Waste on the Environmental Abuse a Case Study of Taraba State University Jalingo Campus. *International Journal of Ecological Science and Environmental Engineering*. Vol. 1, No. 2, 2014, pp. 22-26.

### Abstract

Over the years environment has been considered to be a determinant factor for development in any given society yet it is associated with diverse challenges ranging from abuse, misuse, underutilization and overutilization. Hence for a society to achieve development, environment must be considered within a balance (proper utilization). One of the common abuses is the deposition of waste products which directly affect the functionality of the environment towards development. It is on this note that this paper is designed to develop a theoretical model which examines the sachet water waste and its impacts on the environment using Taraba State University as a case study for the research in order to achieve research objective two hypotheses were formulated H<sub>i</sub>: There is significant relationship between the sachet water waste and the environmental challenges in Taraba State University Campus. H<sub>0</sub>: There is no significant relationship between the sachet water waste and the environmental challenges in Taraba State University Campus. The study employed quantitative methods to obtain data through a self-administered questionnaire survey. A sample size of 40 respondents was taken to answer the survey questionnaire of seven item questions using Likert scale where the data obtained was analyzed using SPSS version 16 to determine the co relationship between the sachet water waste and the environmental challenges in Taraba State University campus and a correlation analysis was conducted tested the hypotheses.

## 1. Introduction

The 21<sup>st</sup> century experiences a new form of business as a means of self employment and a product of entrepreneurship development with little income for commencement called package water, others call it pure water while to some it is sachet water. The common water consumed by the poor may be because of its low price and it is taken all at once. Thus the business attracts the engagement of a lot of people either as producers, middle men or sellers'. There are no restrictions to who buy or sale. The common categories of people that hawk the water are the adolescents and mostly those that are not in school. They move along the street and areas where there are a lot of people, they mostly cold the water and carry it inside a cooler distributing it to willing buyers at the cost of N10. Their total daily income ranges from N100 to N2000, contrary to this

business is that the environment is left vulnerable because there is no control on the waste of the sachet water after use and this waste is in form of a leather which after decay does not form a nutrient to our soil except it serves as a blockage to our drainage and litter around the environment serving as incubators for bacteria and mosquito breeding. In the case of desert areas it constitutes air pollution that is dangerous to health and green growth. The most common effect of this is its result to soil erosion and prevents the growth of green plant either food crops and animal feeds.

### 1.1. Statement of the Problem

The global concern for the environment requires, that waste management be given adequate attention particular when it occurs on human environment where people inhabit this is of no better reason that safeguarding the environment to serve the purpose of man existence and securing his healthy safety. To some extent that has been successfully management in the developed Nations of the world but in the contrary the situation is at the increase in some of the developing Nations of the world in particular Nigeria where surface a sachet water business in the twenty first century came with an uncontrollable sachet water refuse disposal behaviors, where waster of the used package or container littered everywhere in the environment. The volume of waste generated often constitute major environmental problem. The inability of government, individuals and waste disposal agencies to keep up with the task of proper and efficient waste management constitutes the burden of environmental management. Overcoming these problems has made governments, nongovernmental organizations and other stakeholders at different levels to design strategies in handling the issue of waste management which is yielding little or no result at all. This ugly situation has become major source of concern to environmentalist and the general public because of the thread posed by the sachet water refuse waste to the environment and it multiplier effects to the environment. This propelled the researchers to carry out an investigation on the sachet water waste as it affects the environment.

### 1.2. Objectives of the Study

The study seeks to examine the effects of sachet water waste on the environment, specifically:

- I. To determine the effects of sachet water waste and the challenges it posed on the environment in the taraba state university campus
- II. To assess the relationship between development and the environment in the taraba state university campus

### 1.3. Research Hypotheses

Hi: There is significant relationship between the sachet water waste and the environmental abuses in Taraba State University Campus

H0: There is no significant relationship between the sachet

water waste and the environmental abuses in Taraba State University Campus

### 1.4. Significance of the Study

The important of the environment as it relate to development cannot be over emphasize, knowing the role environment plays in the process and equally such process is threaten by refuse disposal waste. the result of the findings will be of importance to inhabitants, policy maker and general public in moderating their behavior towards sachet water waste disposal and develop new ways of managing waste and the way of turning messy into wealth.

## 2. Literature Review

According to Richbol Environmental Services Ltd that sachet water has providing the following:

1. The commodity-pure water presently plays a major role in the provision of drinkable water in Nigeria. It has provided relief and comfort to millions of people who find it readily available, accessible and affordable to quench their thirst, whenever nature demands. 2a. The commodity has created a lot of job opportunities (both through the production and sales) to many Nigerians. The sachets recycling technology being advocated is capable of providing between 9,000 and 15,000 job opportunities in each of the states in Nigeria, depending on the size, population density and level of industrialization of each state. (This means that the technology is capable of providing over 370,000 direct job opportunities in the entire country, aside several other thousands of indirect jobs it will create). 3. All plastics including pure water sachets are known to be (a) non-biodegradable for example they cannot decompose like other organic waste, it is therefore not advisable for them to be land filled or buried as they affect the soil structure, composition and the level of microbial activities in the soil.
2. b. Scientifically and medically too, it is not advisable to incinerate (burn) plastic products, as this is known to generate air-borne cancerous toxics fumes such as dioxins and furans and a range of other dangerous air pollutants which causes variety of human health problems like; cancers, immune and reproductive system defects, spontaneous abortions, respiratory diseases, diabetes and hormone disruption etc. The burning of plastics and other waste materials is also known to cause damage to the ozone layer, which equally causes so many ill health and environmental degradation<sup>4</sup>. Since pure water sachet cannot be buried or incinerated, the ONLY means of adequately taking care of several million of tonnage of sachets being produced in the course of drinking pure water is through the recycling process. Hence the need to install high-tech, long lasting and easy to maintain

technology (which we do)5. This will provide a sustainable solution to the incessant blockage of drainages and other water channels with the attendant flooding.6. This will also lead to the achievement of clean and aesthetic environment, through reduced indiscriminate littering/dumping of the sachets, reduction in environmental pollution and degradation.

### 2.1. Sachet Water Waste



Figure 2.1. part of dumped sachet water waste in the campus

From the above pictorial evidence and by the opinion of other source sachet water waste is becoming a social menace to the environment and is detrimental to health of the inhabitants where such waste are often disposed by the means of mess it cause in form of pollution, breeding ground for bacterial and mosquitoes and above all the soil nutrient suffer a great deal from the refuse disposal of sachet water waste. Sachet water waste blocked drains, gutters and canals that emit foul odor have continued to be a regular feature of metropolis and indeed other urban centres in the country. People have come to accept it as part of city life even at the detriment of their health and environment and this also causes. Flooding during rainy season due to blocked drains, gutters and canals arising from the mountains of refuse that litter every part of the densely populated commercial nerve centre. It is commonplace to find pure water sachets, plastic indiscriminately disposed of by people ending up in these drains, gutters and canals. The result is that most of them are blocked all year round

The daily visible pollution, abuse of and threat to the ecological system, posed by the impact of man's activity and technological and industrial development on the essential components of the natural environment-that is the air, land, and water, belie any appearance of complete ignorance in their regard. (Ikhile, C. I. & Aifesehi P.E.E.2011)

### 2.2. Environmental Challenges from Refuse Disposal

According to Frank E. (2014) Plastic is a highly useful material and its applications are expected to increase as more new plastic products are developed to meet demands.

However, the increase use and production of plastic in developing nation should be a concern of policy makers since the sophistication of waste management infrastructure may not be developing at an appropriate rate to deal with the increasing level of plastic waste. Plastic waste, and for that matter, plastic pollution involves the accumulation of plastic products in the environment that adversely affects humans, wildlife and wildlife habitat. Plastic pollution occurs in many forms, including, but not limited to LITTERING which is the major problem in Ghana. About 85% of the solid waste dredged from choking gutters around the Market Circle is made of plastic from sachet water (Adediji, A. & Ajibada L. T. 2005).

## 3. Methodology

A quantitative research paradigm was employed in this study (Richardson 2009). A descriptive survey questionnaire was engaged using likert scale five option instrument, where ten respondents responded, to seven items questionnaire on the independent and dependent variables of construct of the research.

### 3.1. Data Analysis

Data was analyzed using the SPSS version 16. Where the reliability test was conducted through the use of cronbach's alpha to determine the overall reliability of the survey questionnaire and the correlation to examine the relationship between sachet water waste and the environmental abuse this was used to test the hypotheses.

## 4. Results and Discussion of Findings

### 4.1. Reliability Test

Table 4.1.a. Overall Cronbach's Alpha for the Scale

Case Processing Summary			
	N	%	
Cases	Valid	40	100.0
	Excluded <sup>a</sup>	0	.0
	Total	40	100.0

Table 4.1.b. Listwise deletion based on all variables in the procedure.

Reliability Statistics	
Cronbach's Alpha	N of Items
.935	7

The value of Cronbach's alpha in Table .1 for the overall questionnaire scale is 0.935, which is indicative of a high reliability.

**Table 4. 2.** correlation for test of hypothesis

Correlations		VAR00001	VAR00002	VAR00003	VAR00004
VAR00001	Pearson Correlation	1	.681**	.628**	.836**
	Sig. (2-tailed)		.000	.000	.000
	N	40	40	40	40
VAR00002	Pearson Correlation	.681**	1	.343*	.550**
	Sig. (2-tailed)	.000		.030	.000
	N	40	40	40	40
VAR00003	Pearson Correlation	.628**	.343*	1	.758**
	Sig. (2-tailed)	.000	.030		.000
	N	40	40	40	40
VAR00004	Pearson Correlation	.836**	.550**	.758**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	40	40	40	40

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Table 1 shows that the computed value of the correlation coefficient  $r$  are 0.836, 0, 550, 0.758 and 1 at the 0.01 level of significance. This implies that the result is highly significant,

therefore H1 is accepted, i.e. there is significant relationship between the sachet water waste and the environmental abuses in Taraba State University Campus

**Table 4.3.** Summary subjective responses on the role of development on environment

S/N	Questions	Responses	Yes %	No %
1	No society can achieve physical development without proper taking care of its environment?	31 respondents agreed that no society can achieve development without take care of the environment while 9 respondent disagreed	77.5	22.5
2	Do environmental abuse like littering of sachet water waste result to health problem and invariably affect human being at work place?	37 respondents agreed that environmental challenges can result to health through pollution while 3 respondents disagreed	92.5	7.5
3	Do sanitary condition in TSU favorable?	25 respondents agreed that sanitary condition in Taraba State is not favorable while 15 respondents disagreed	62.5	37.5
4	Do you agree that the environment can be care for through proper clean up and control of sale of sachet water	40 respondents all agreed that environment can be care for through proper clean up and control of sale of sachet water	100	-

Table 3 above is a subjective response of 40 respondents who were requested to ticket Yes or No on four items questions, indicating their opinion on the role of environment and development. In the first question, 31 respondents agreed that no society can achieve development without taking care of the environment while 9 respondent disagreed which represent 77.5% for yes and 22.5% for No, this shows that environment play a vital role in developmental process. In question two, 37 respondents agreed that environmental challenges can result to health challenges through pollution while 3 respondents disagreed which represent 92.5% for yes and 7.5% for No, indicating that health challenges can be attributed to environmental pollution. In question three, 25 respondents agreed that sanitary condition in Taraba State University is not favorable while 15 respondents disagreed which represents 62.5% for yes and 37.5% for No. In question four, 40 respondents all agreed that environment can be care for through proper clean up and control of sale of sachet water which stand for 100%.

From the above analysis it is very clear that sachet water waste in taraba state university campus constitutes environmental abuse and it has health challenges on the inhabitation by a way of pollution to the environment. It also revealed that environmental value can be depreciated where such waste from sachet water are littered around without providing waste management strategy.

## 5. Conclusion and Recommendation

This study concludes that environment plays a vital role in the development of any society and that sachet water waste cause's environmental pollution which attribute to health challenges, particularly when environment is contaminated by refuse waste from sachet water disposal.

Some of the respondents acknowledged that they were not acknowledgeable of the health consequences of indiscriminate sachet water waste disposal.

## Recommendations

From the findings of this study, it is recommended that:

1. University authority should step-up campaign strategies that will educate the students and the folk that hawk sachet water about the attendant health consequences of indiscriminate sachet water waste disposal in the campus.

2. The organization hired to clean up the campus should be more alive to their roles, especially, the environmental sanitation issues in the university should be given due attention.

3. Also, University should ensure that designated waste area in order to prevent littering of the sachet water waste in the campus.

4. There is a urgent need for the university to employ environmental health officer who will oversee the general sanitary condition of the university environment.

## References

- [1] Adediji, A. & Ajibada L. T. (2005). Quality of well water in Ede Area South Western, Nigeria, Ibadan
- [2] Ikhile, C. I. - & Aifesehi P.E.E.(2011) - Geographical Distribution of Average Monthly Rainfall in the Western Section of Benin- Owena River Basin, Nigeria An International Multidisciplinary Journal, Ethiopia Vol. 5 (4), Serial No. 21, (Pp. 493-500)
- [3] Richardson S., Balachandher, K.G., Cheng, M.Y.,Khong, K.W. and Leo, P. (2005). *How to Research: A Guide for Undergraduate & Postgraduate Students*. Malaysia: Division of Thomson.
- [4] <http://www.richbol.com/Advocacy.html>
- [5] <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=299666>