

Consequences of Indiscriminate Disposal of Solid Waste on Environment and Humans' Health in Nigeria

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Abstract: This scholarly study ascertained the consequences of indiscriminate disposal of solid waste on environment and humans' health in Nigeria. The indiscriminate disposal of solid waste along residential buildings, commercial centres (such as markets, shops, shopping malls, super market, kiosks), roads, on drainages, streets is very disgusting; and these indiscriminate disposal of wastes in Nigeria causes great environmental hazards and serious outbreaks of diseases such as cholera, typhoid and malaria including the annual rituals of flooding in Nigeria due to blockage of canals as a result of anthropogenic activities and carelessness that affects the free flow of water ; and all the aforesaid are associated to the indiscriminate disposal of solid wastes by humans. Secondary sources of data collection were used for this scholarly article. Amongst other recommendations, it is recommended that government should reinforce waste collection and disposal systems in every state within Nigeria as well as to strengthen and enforce the appropriate laws against indiscriminate disposal of solid wastes; Public campaign on the dire consequences of indiscriminate solid waste disposal on humans' health and environment should be organized by the government and non-governmental organizations; and monthly sanitation should be strictly adhere to in order to curtail the littering of our environment.

Keywords: Waste, solid waste, indiscriminate disposal, environment, humans' health

I INTRODUCTION

In developing nations especially Nigeria, a great proportion of solid waste generated are dumped either in controlled landfills or open dumps which constitute sources of health risks to surrounding residents. The use of sanitary landfills is not feasible for many waste management authorities of most countries due to cost constraints. Abul, (2010) concurred that open dumpsites rather than secured landfills are more in number for waste disposal and this constitutes great health hazards to the residents. Such open dumps are found on the outskirts of urban areas which form breeding sites for disease-carrying vectors in the communities. The preponderance of open dumps in many developing nations has spurred the need to ascertain the consequences of indiscriminate solid waste disposal on environment and humans' health in Nigeria. Yongsi et. al. (2008) conducted a cross-sectional epidemiological study to examine the health risks of different waste disposal system in Cameroun. The study found a 14% diarrheic prevalence among the respondents and a strong statistical association was found between household refuse

management methods and incidence of diarrheal among the respondents. This implies that waste is very harmful to our health and not only on the environment especially when they are not properly disposed.

Salam, (2010) examined the health impact of solid waste management among residents around the Mangwaneni Dumpsite in Swaziland. The study is unique in that the respondents were stratified by the distance of their homes to the dumpsites. The first group are those having their homes within 200 metres radius, while the second group live from 200 metres and beyond from the Manzini Dumpsite in Swaziland. The study, which was conducted among 78 households found a negative relationship between the distance of residential apartments from dumpsite and being affected by the dumpsite pollution. This implies that those who live closely to dumpsites are more likely to be infected by the pollution of solid wastes than those who lives far away from dumpsites. It is commendable to note that it is better to reside far away from dumpsites to avert the consequences of solid wastes.

Enebong, (1986) states that the problem of solid waste dates back to the time when urbanization started and since then, there has been an increasing rate of refuse generation in Nigerian towns and cities. The generation and accumulation of solid waste are beginning to produce social, economic and environmental problems in significant proportions. These problems are particularly acute in regions with the experience of high population growth, which result in the generation of high amount of waste with no land to dispose them (Rinberg, 1975). The continuous dumping of refuse and open defecation has resulted in bad odour and therefore result to the attraction of unwanted insects such as flies and mosquitoes to the environment. Prolonged dumping of both household and non-household solid wastes could lead to severe sanitation problems with increased risks of the spread of diseases such as cholera, malaria and typhoid among the residents in Nigeria. The indiscriminate dumping of solid waste along residential buildings, roads, on drainages, streets is very disgusting; and these indiscriminate disposal of wastes in Nigeria causes great environmental hazards and serious outbreaks of diseases such as cholera, typhoid and malaria including the annual customs of flooding in Nigeria which are

all associated to inadequate waste disposal materials on our homes, institutions, industries and roads, etc.

The contemporary difficulties facing urban centres in Nigeria can be attributed to government's incapability in financing solid waste management at various levels. It will be very difficult to hinder humans from their different activities; however, it is our duty to effectively palliate solid wastes from our various activities since everybody is a stakeholder to the environment. It is as the result of the aforesaid that this study seeks to unveil the consequences of indiscriminate solid waste disposal on environment and humans' health in Nigeria, so that the government at all level in Nigeria and her residents will take the issue of solid waste management system very serious in order to overcome the consequences.

II. CONCEPTUAL CLARIFICATION

Waste

UNEP, (1989) articulates that Wastes are substances or objects, which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law. Lox, (1994) asserts that Waste is either an output with ('a negative market') 'no economic' value from an industrial system or any substance or object that has 'been used for its intended purpose' (or 'served its intended function') by the consumer and will not be re-used. Pongrácz, (1998) elucidates that Waste is an unwanted, but not avoided output, whence its creation was not avoided either because it was not possible, or because one failed to avoid it. Baran, (1959) opined that Waste is the difference between the level of output of useful goods and services that would be obtained if all productive factors were allocated to their best and highest uses under rational social order, and the level that is actually obtained. In the opinion of Kumar, (2007) waste is almost anything that has served its original intended purpose and is being discarded. In effect, there is no human endeavour that does not result in waste creation. All survival and life improvement or development activities go with the creation of one type of waste or the other. This fact is aptly captured by Cunningham, W.P. (2002) that waste management is everyone's business.

Solid Waste

Solid wastes are non-liquid and non-gaseous wastes from houses, streets and public places, shops, offices, and hospitals, industrial processes etcetera. We all produce unwanted by-products and residues in nearly everything we do. As man processes and prepares food, waste is generated from the non-edible parts (i.e. peels husk, fibres etcetera); upon eating food, waste in the form of excreta is the final outcome; in clothing the body, waste is generated from worn out fabrics; in meeting our desires to comfort ourselves by acquiring varied material belongings, waste is generated when these are worn out or become old; and in our technological advancement, waste, most of which is dangerous to life, is generated. A lot of solid wastes are been created each day in Nigeria from our

household, farms, institutions, industries, business centres among several others.

Indiscriminate Dumping

Achi et al., (2012) opined that indiscriminate dumping refers to unlawful disposal of waste in undesignated spaces such as open or vacant land, sources of water and other areas. Indiscriminate dumping is a very common and prevalent though risky practice, especially among developing countries.

III. SOURCES AND TYPOLOGY OF SOLID WASTE AS CITED IN THE WORK OF HOORNWEG, ET AL. (1999) BY ABDULLAHI, I. ET AL. (2014)

i. Domestic/Household Waste: These wastes are also termed as residential wastes or refuse and they are generated from Single or multi-family dwellings which give rise to food waste, paper, cardboard, plastics, yard waste, wood, glass, metals, ashes (Hoornweg et al., 1999). Household waste also comprising of wastes from kitchen, house cleaning, packaging items, garden trimmings and sweepings.

ii. Agricultural Wastes: In view of Hoornweg et al. (1999) these are wastes and residues that are resulting from diverse agricultural activities such as ploughing, harrowing, ridging, bush clearing, planting and harvesting of raw field and tree and vine crops, animal slaughter and operation are collectively called agricultural wastes.

iii. Commercial Wastes: These wastes are gotten from stores, offices, hotels, markets and warehouses. These include packaging materials, cartons, paper, typewriter, ribbons. The waste from restaurants etcetera is similar in nature to household refuses but usually contains higher portion of paper and polythene (Hoornweg et al., 1999).

iv. Municipal Services/Wastes: These are wastes that arise from street cleaning, landscaping, parks, beaches, other recreational areas which include litter, waste from road side vendors, animal droppings, unauthorized disposal of house and commercial waste, wastes from landscape and tree trimming, general wastes from parks and recreational areas (Hoornweg et al., 1999).

v. Institutional Waste: These are wastes that are often generated from hospitals, schools, dispensary, pharmacy, barracks which may be largely household types, but hospitals (medical wastes/clinical wastes) dispose more dangerous materials such as cotton wools, bandages, syringes, waste from operating theatres, discharged drugs and cans (Hoornweg et al., 1999).

vi. Construction/Demolition Wastes:

It includes waste generated from construction and demolition of buildings, roads, bridges, etc. It consists of earth, stones, bricks, wood, iron bars, concrete, etc.

vii. Hazardous Waste: According to Environmental Protection Agency (EPA), hazardous wastes are wastes or

combination of wastes that pose substantial threat to human health or living organisms because:

- a. Such wastes are non degradable in nature
- b. They can be biologically magnified
- c. They can be lethal
- d. They may otherwise cause or tend to cause detrimental cumulative Effects (Hoorweg et al., 1999).

IV. CONSEQUENCES OF INDISCRIMINATE DISPOSAL OF SOLID WASTE ON ENVIRONMENT AND HUMANS' HEALTH IN NIGERIA

Exponential population growth and uncontrolled industrial development are seriously degrading the urban and semi-urban environment in Nigeria, placing gargantuan damage on natural resources and impeding efficient and sustainable development in the country. Emily (2004) asserted that when waste is not collected, unsanitary conditions develop and pose environmental and human health risks. The prevalence of parasites, tetanus, malaria, hookworm, cholera and diarrheal in most cities in Nigeria is attributed to the unsanitary condition in these cities. Oyediran, (2004) unveils that unsanitary disposal of solid waste promotes facial-oral transmission of diseases through facial contamination of the hands, food and water. He further asserted that solid waste dumps provide breeding grounds for mosquitoes, rats and other vermin, generating amongst others; yellow fever, Lassa fever, and trachoma mortality in Nigeria. Isa, (2006) also concurred to the aforesaid claims when he elucidates that, a further canter through the Nigerian condition and a focus on refuse disposal and access to sanitary means of excreta disposal may not be in your menu of good taste. The litters that abound in the environment contain the admissible evidences. There is also a concern about those residues including the domestic wastes that may poison or damage the environment, adversely affecting species in the biosphere and destabilizing ecological balance. The modern Nigerian urban domestic waste is characterized by polythene materials, garbage, bottles, cans, papers or foil wrappings and all throwaways of all sorts from the household. The volumes of these wastes are increasing greatly because of the constant desire of consumers to discard the old and acquire new items.

UNEP, (2006) unveiled that wastes that are not managed properly, especially solid waste from households and the community, are a serious health hazard and lead to the spread of infectious diseases. The report further revealed that unattended wastes lying around attract flies, rats, and other creatures that, in turn, spread diseases. Normally, it is the wet waste that decomposes and releases a bad odour. The ever increasing consumption of resources results in huge amounts of solid wastes from industrial and domestic activities, which pose significant threats to human health (Foday *et al.*, 2013; Frosch, 1996). Health deterioration, accidents, flood occurrences, and environmental pressures are just a few of the consequences. However, the consequences of indiscriminate

disposal of solid wastes are somewhat numerous to be cited. In many developing countries especially Nigeria, solid waste disposal sites are found on the outskirts of urban areas. These areas become children's sources of contamination due to the incubation and proliferation of flies, mosquitoes, and rodents. They in turn, are disease transmitters that affect humans' health, which has its organic defences in a formative and creative state. The said situation produces gastrointestinal, dermatological, respiratory, genetic, and several other kind of infectious diseases (Foday *et al.*, 2013; Salam, 2010).

Nguyen *et al.* (2011) unravelled that many cities in developing countries face serious environmental degradation and health risks due to the weakly developed municipal solid waste management system. This waste is ultimately thrown into municipal disposal sites and due to poor and ineffective management, the dumpsites turn to sources of environmental and health hazards to people living in the vicinity of such dumps. This waste causes pollution on land, water and air. Open dumpsites are a major problem to the environment especially to the air that we inhale as oxygen. Health care waste and other medical waste disposed in dumpsites, mixed with domestic waste, increasing the risk of infection with Hepatitis B and HIV, and other related diseases (World Bank, 2005). Dumpsites emit obnoxious odours and smoke that cause illness to people living in, around, or closer to them (Marshal, 1995). In the views of Medina, (2002) pollution is seen as a major environmental effect of dumpsites, which is not directly transferred from land to people, except in the case of dusts and direct contact with toxic materials. Pollutants deposited on land usually enter the human body via the medium of contaminated crops, animals, food products, or water. In addition to the aforesaid, the dumpsites also have smelly conditions. These conditions are worse in the summer because of extreme temperatures, which speed up the rate of bacterial action on biodegradable organic material. With the numerous aforementioned consequences of indiscriminate disposal of solid waste in Nigeria, it is crystal clear to note that we have no other reason(s) for not adhering to the proper disposal of solid waste and management in order to avert the aftermath of the indiscriminate disposal of residential, industrial, commercial, agricultural and institutional wastes.

V. CONCLUSION

Solid wastes are the wastes arising from human activities that are normally solid and are discarded as useless or unwanted; it is also seen as non-liquid and non-gaseous products of human activities. Based on the exponential population growth in Nigeria and the great increase in the production and consumption processes, poor solid waste management system, inadequate facilities for the disposal of solid wastes, inadequate of knowledge on the dire consequences of indiscriminate disposal of solid wastes by most residents, a lot of solid wastes are generating in Nigeria on a daily basis and are disposed indiscriminately. These solid wastes are being generated from various sectors such as agricultural, commercial, domestic, industrial and institutional sector.

VI. RECOMMENDATIONS

It is recommended that;

- Government should reinforce waste collection and disposal systems in every state within Nigeria as well to strengthen and enforce the appropriate laws against indiscriminate disposal of wastes.
- Monthly sanitation by government through the environmental officers should be reinstated in Nigerian states that are lagging behind in order to curtail the littering of environments and indiscriminate dumping; and offenders should be fined where and when necessary.
- To prevent serious humans' health hazards and environmental disaster, priority should be accorded to proper waste management.
- Adequate facilities for the collection of solid wastes should be provided by governments.
- Public campaign on the dire consequences of indiscriminate solid waste disposal on humans' health and environment should be organized by the government and non-governmental organizations.
- Recycling methods of solid waste should be established.

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