

WASTE MANAGEMENT AND ENVIRONMENTAL PROTECTION IN URBAN COMMUNITIES IN NIGER STATE, NIGERIA

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Abstract

Waste management has been a problem in urban areas in Nigeria and various strategies have been devised in solving it but such solutions has yielded little or no result. The effects of improper waste management are so enormous and detrimental to human health as it depletes the environment. Waste management in most urban communities in Niger state were caused by inconsistencies in government laws and initiatives, economic activities and lifestyle of members of the community. If there is proper management of waste by all stakeholders, then the environment will be sufficiently protected. Therefore, environmental protection is the responsibility of everyone and there should be collaborative efforts between the government, business owners, and members of the community to protect the environment. The environment can be protected by proper waste management, regular environmental seminars and workshops organised by government and industry in both rural and urban regions as this will raise environmental awareness and improve waste management practices among the people in the community. At the site of waste generation, waste segregation methods should be encouraged as it will aid in better waste management system. After sorting, wastes should be recycled, which is a significant component in waste management system with attendant economic benefits.

Keywords: *Waste Management, Urban Communities Environmental Protection*

Introduction

Waste, as asserted by Brunner and Rechberger (2014) and Amasuomo and Baird (2016) is an essential product of human activities. In concord, Brunner and

Rechberger (2014) posited that most human activities generate waste. According to researchers, the term “waste” is to a very large degree subjective in meaning, as the term is open to several interpretations and also influenced by personal opinion. This stems from the fact that a substance can only be regarded as a waste when the owner labels it as such. This is particularly true because one individual may regard a substance as waste, while another may view the same substance as a resource.

Waste is defined by the World Health Organisation (WHO) as anything that the owner no longer desires at a specific moment and place and that which has no current or perceived market value (Ogbonna, Ekweozor & Igwe, 2002). This line of reasoning reflected a broad-based approach to defining what constituted waste. Waste sometimes referred to as trash, garbage, or refuse is any material, substance or by-product eliminated or discarded as no longer useful or required after the completion of a process (Ikenwa, 2020). What is considered garbage, however, may not be completely useless, as most of it can be recycled to create new items. Waste can be divided into three which are solid, gaseous and liquid. These three classes of waste can be hazardous and recyclable. Solid wastes, unlike gaseous and liquid wastes, are not free flowing and cannot easily move from one location to another (Environmental Protection Agency, 1972). Solid wastes to a great extent have remained a serious problem for mankind.

Waste management is a by-product of most human activities, which is tremendously unavoidable in human existence. Several years past, human beings have been craving to improve the environment they live; the attempt to develop the environment for decades have negatively affected the environment we inhabit today and subsequently endangering the survival of the earth and the future generations. The efforts to develop the environment have giving rise to increasingly unfavourable climate changes and natural disasters, also aided by wars, political and socio-economic instability. The attempts to advance the environment have caused some changes in the behaviour aiming towards more rational and efficient management of all resources that will allow less pressure and environmental impact (Klarin, 2018). Hence, such responsible behaviour continued will ensure the long-term exploitation of resources, without jeopardising the future generations is considered within unauthenticated concept of sustainable development (Klarin, 2018)). In the literature, however, Vázquez and Sumner (2013) avowed that development embraces the following meanings: (1) development as structural transformation; (2) human development; (3) development of democracy and governance, and (4) development as environmental sustainability. But Thomas (2004) opined that development involves the positive changes that society has experienced throughout history, and still experiences; while Sharpley (2009) in his contribution stated that development outlines the plans, policies, programmes and activities undertaken by certain institutions, governments and other governmental and non-governmental organisations.

Waste management is the generation, prevention, characterisation, monitoring,

treatment, handling, residue, and reuse of solid waste. It is the centre upon which the health of people hinges. In Niger State, it is common sight to see waste in refuse dumps being found everywhere for a good number of months with its non-attendance resulting to public health implications. It is hard to see waste collation site without odour nuisance as a result of degradation, decay or fermentation. (Newton 2019).

Unmanaged waste can cause a lot of hazards to our health and can encourage the spread of infectious disease as it attracts vectors like flies and rodents like rats. For those who live around areas filled with waste, it is common for them to suffer communicable diseases like diarrhea, dysentery, typhoid because the carriers of these diseases breed on the waste dumps.

The method of waste management in Nigeria has left much to talk about, it is not an all comers affair and as such cannot be managed by non-professionals as to curb refuse dumps being found everywhere with reckless abandon. The problems of improper management have for long become a source of concern to the nation with its negative impact to the environment and health of the masses.

In Niger State, it was observed that there are indiscriminate waste dump sites and it is a common phenomenon in major roads and streets where you find heaps of refuse packed on road median. This waste constitutes serious environmental degradation and alters the beauty of the city. Majority of the dumps are near residential areas, marketplaces, farms, roadside ditches, and waterways. The content of waste dumps varies greatly and several human activities are been carried out at close range to dump sites (Olorunfemi & Odita 1998).

Domestic and industrial wastes are two well-known examples of solid waste. Chemicals, insecticides, paints, grease, inorganic materials, oil sludge, and other industrial processes produce industrial waste, while domestic wastes are those generated by businesses and households. Wastes come in a variety of forms, including waterborne waste from residences, such as sewage water, garbage, human and animal remains and chemical and laboratory wastes (Ayeni, 1987 in Ogbonna, Ekweozor & Igwe 2020). Apart from the disease and harmful conditions that are inherent in and derived from waste products, the presence of waste degrades the environments aesthetic value. Most urban communities in Niger State are characterised with increasing population and diverse kind of economic activities are been done in these communities, and due to the large population, waste generation is high and indiscriminate waste disposal is inevitable. This method of waste disposal has caused serious health problems and environmental degradation to the communities. Given the unique characteristics of most urban communities of the state and their economic, cultural and sociopolitical concerns, this study seeks to consider proper waste management strategies and policies that could be implemented to ensure environmental protection.

Waste Management Methods in Urban Communities in Niger State

Nigerians appear to consider pollution from home and industrial wastes as an unavoidable consequence of progress, as is the case in most emerging economies. Domestic waste production is on the rise; heightened by a vicious cycle of poverty, population growth, falling living standards, poor governance, and a lack of

environmental knowledge. Many of the contemporary trash disposal issues, according to Izeze (1999), are the result of expanding urban populations, quick and haphazard industrialisation, and unavoidable increases in garbage creation.

Previous administrations in the state have sought ways to address waste management concerns using a "task force" strategy in acknowledgement of these issues. In the long term, this method backfired because it caused more problems due to a lack of coordination and technological know-how across responsible institutions. The Nigerian Federal Government launched a major programme the Environmental Sanitation Programme (clean-up campaign) in 1985, every last Saturday of the month which is still in existence in the state, all Nigerian residents were required to participate in a mandatory environmental clean-up. The idea was good, but putting it into action caused further complications. Garbage and waste from the exercise were thrown along roadsides rather than at approved dump sites by the local authorities. Animals ate the waste, scavengers picked it up, and rainwater/floods washed it away.

Most communities in this Local Government Areas produce more solid trash than they can handle, and this problem tends to worsen as income levels and the area's economic development rise. Slums and shanty towns have always received the least attention when it comes to waste collection and disposal. In most urban communities' services of private firms are engaged in the collection and disposal of solid waste, but these firms usually do not have dumping sites for the waste. These wastes are dumped in open spaces close to residential areas which are very harmful to the people. Those who could not afford the services of these

private firms dump theirs on walk ways of major roads waiting for the government agencies responsible for waste management to clear them off, which in most cases does not happen.

These wastes are swept away by tidal floods into bigger creeks and Niger River in the estuarine environment, affecting surface-water quality (Nweke, 2000). When the dump sites are eventually emptied, the waste items end up in places like abandoned excavators on the outskirts of town. Abandoned excavation trenches, river channels, ravines, and even opens spaces; simply put it is a transfer of garbage from places where some people are irritated by its existence to places where its nuisance value is thought to be reduced. The ecological effects on the other hand, are given little or no thought. This type of "waste transfer" activity is ineffective as an environmental management strategy since it simply affects one environmental sector at the expense of another (Nweke, 2000).

Challenges of Waste Management.

In Niger State, managing waste disposal has become a major concern despite several attempts by successive governments and private organisations in that direction. That is why it is a common sight across the state today to see heaps of festering waste dumps in almost every nooks and crannies. Residential apartments, markets, waterways, highways, streets and undeveloped plots of land have been turned to waste dumps for many households. No wonder many say that in Niger State, waste increases in a geometrical progression and collection and disposal is at an arithmetical progression.

It is obvious that some factors are responsible for poor waste disposal management. These include lack of adequate

funding, excessive population, lack of comprehensive legal framework and enforcement of the existing regulations. Others include low investment in infrastructure, inadequate human capacity for administrative and technical issues, and wrong attitude of the public towards solid waste disposal, poor planning, low data management and uncontrolled urbanisation, uncoordinated institutional functions, low academic research and industry linkages and lack of the needed political will on the part of the leaders. Until these challenges are properly, boldly and diligently addressed by relevant authorities and individuals, managing waste disposal will remain a nightmare and recurring decimal in Niger State.

Domestic waste management in Niger State is plagued by a slew of concerns ranging from economic, environmental, socio-cultural and political. The level of environmental awareness and education about the dangers of a dirty environment is still shockingly low. People are more concerned with surviving on a daily basis and are unconcerned with "elitist" concepts such as trash management.

Poor management skills in the handling of home garbage are also a serious issue at the urban level. In this scenario, government technocrats promote the use of open dumps for trash disposal. In many situations, trash dumps are built wherever land is available, regardless of safety, health risks, or the aesthetic value of the area. In trying to dispose waste, only a small portion of the population is served by the house-to-house collection system, hence they earn very little money directly from their services. Property taxes and/or tenement rates are not collected on a regular basis. As a result, authorities in charge of waste management initiatives

frequently rely on government subsidies, which are frequently insufficient. The ever-increasing population increase in Urban cities has an impact on the overall garbage generated. A significant influx of individuals from rural communities to Niger State and Minna/Bosso has resulted from high levels of industrial development and the concentration of key government offices in cities. As a result, there is a severe housing scarcity and the haphazard development of shanties and poor homes without respect for early town-planning relationships. As a result, there are issues with appropriate garbage collection and disposal planning. The Niger State Government contracted waste collection and disposal to waste-disposal corporations which was monitored by a state agency called Niger State Waste Management Board (NSWAMA). These companies, on the other hand, are unable to appropriately manage solid waste since some urban areas are not covered and trash collection methods are not always adequate. These private companies, for example, employ shovels and open trucks, which result in droppings from wastes strewn about the streets. Furthermore, the issue of classifying garbage at the site of generation is not addressed. This government's endeavour should be better planned and executed to achieve broader coverage and more effective citizen participation. Everyone is concerned about waste management. In Niger State, Cases of unlawful squatter settlements along the waterfronts of Minna abound, with no regard for urban planning standards. In these settlements, basic infrastructure such as appropriate water supply and garbage disposal systems are almost non-existent. These settlements are typically extremely overpopulated due to low rent and the nature

of housing systems. Household and human wastes are frequently thrown along the streets or poured straight into bodies of water, contributing significantly to pollution and health issues.

Health Implication of Indiscriminate Waste Disposal

Some of the health issues linked to poor water quality are caused by insufficient trash disposal and waste management practices. Typhoid fever, diarrhea, cholera, hepatitis, hook worm infestation, skin ailments, malaria, and other illnesses are among them (Chukwuekezie, 1998). When there is a shallow aquifer and permeable and/or semi-permeable soil types, ground or surface water pollution occurs (as found in most of the coastal areas of the Niger Delta). Liquid wastes, such as leaks from stored solid wastes, might easily trickle down to the groundwater and pollute it in such regions. 97 nature and degree of the leak will be determined by the waste's composition, the amount of water that infiltrates it, and the length of time that the infiltrating water is in touch with it (Chukwuekezie, 1998). Waste dumps are filthy and pollute the environment. They harbour flies, fleas, mosquitoes, rats, and other disease vectors. Some of the diseases carried by rodents and insect vectors include Lassa fever, malaria, filariasis, yellow fever, etc. These waste areas provide food, water, and habitats, and breeding areas for these disease-carrying agents (Ekugo, 1998). Pollution of Niger State and lakes results in extensive fish kills and destruction of other forms of aquatic life due to an increased organic load and the concomitant depletion of dissolved oxygen in the water. When fish or other aquatic organisms are not immediately killed, they accumulate pollutants, which are eventually

transferred to man via the food chain (Ajiwe, Nnabuike, Onochie, & Ajobola, 2000).

Environmental Benefits of Waste Management:

The environmental benefits of proper waste disposal cannot be over emphasised, the following are some of the environmental benefits of proper waste disposal:

1. By smartly managing your waste, you also help conserve natural resources including minerals, water and wood.
2. It helps in minimising the extraction of resources along with reducing pollution and energy consumption which is associated with manufacturing new materials.
3. One of the most significant benefits of waste management is the protection of the environment and the health of the population.
4. . When the waste is disposed of efficiently, least amount of the junks reaches the landfills. By conserving space in landfills, the productions of harmful substances are reduced.
5. Proper waste removal helps improve air and water quality as well as reduces greenhouse gas emissions.
6. When the waste is recycled, it helps turn recyclable waste into useful substances.

Improper waste disposal allows the disease to proliferate in the environment. Junk and waste are the perfect hosts for bacteria, and it can grow if the waste is not disposed of properly. It increases the risk of disease in humans who come in contact with the trash.

Waste Management for Environmental Protection

Effective waste management comes in many forms according to the scale or scenario of

waste creation; effective waste disposal can be as minimal as individual putting waste in a bin and not littering. On a larger scale effective waste disposal can be huge waste producers ensuring their waste is disposed of in an ethical or sustainable way. The methods to overcome the above issues include reuse and recycling which help to mitigate the harmful effects of waste by reducing the amount that ends up in landfill. Disposing of waste has huge environmental impacts and can cause serious problems. Needless to say, the most important reason for proper waste management is to protect the environment and for the health and safety of the population. Protecting the environment is the collective responsibility of everyone, because our sustenance on earth is a function of a healthy environment. One of the major problems of environmental degradation is improper waste disposal method, to stop this menace of a problem all hands has to be on deck. For this to be achieved, proper waste management policies has to be in place. It will take the collective efforts of everyone in the community to properly manage waste, for environmental sustainability. Environmental Protection includes programmes that are aimed at reducing risks to the environment from contaminants such as hazardous materials and wastes, fuels, and oils. These programmes address pollution prevention measures and waste management programmes. For any community to be environmentally protected, all organisations which includes, government, non-governmental organisations, business owners, community members, schools and so on have to be fully involved.

Government has an important role to play in protecting the environment through proper waste management. This can be done by

encouraging private bodies or organisations to be involved in funding waste disposal agencies which will be involved in proper waste disposals. These waste disposal agencies will be responsible for the collection of solid waste and disposing them in designated dumpsites. Also, the services of taskforce should be employed to apprehend defaulters of existing laws concerning waste disposals. The agency responsible for waste management in the state which is the Niger State Waste Management Agency (NSWAMA) with the aid of taskforce should also be saddled with the responsibilities of checkmating defaulters and bringing them to book.

For waste management to be effective in Niger State, the services of some privately owned recycling company should be employed. These companies would be responsible for recycling some of the wastes generated by households to turn them into new and useful products. Some of these companies includes; Freetown Waste Management Recycle Limited, I Recycle Limited, Fifth seed Recycling Ltd and so on. NGOs can also partner with government and schools in protecting the environment through proper waste management. This can be done by sponsoring environmental protection programmes through which the general public will be sensitised on the dangers of indiscriminate waste disposal and the need to protect the environment.

Private companies should be seriously concerned with solid waste management, the strict implementation of solid waste management or lack thereof, can significantly affect their business environment and the community. Some ways business owners can protect the environment is by practicing the 3Rs, which includes: reduce, reuse and recycle. If these principles

are strictly adhered most of the waste generated by them will drastically reduce. Individuals are usually the highest depletes of the environment through the generation of excess waste, due to their daily activities and life style. If these groups can be sensitized on the dangers of their activities that degrade the environment and endanger their health and adhere to policies, then the environment will remain sustainable. Some waste management habits they can adapt to reduce solid waste includes; avoiding plastic bags for shopping and using their own bag or basket and refusing plastic bags at the store, start composing, learn to repair rather than discard, stop using disposal plates, cups and cutleries and buying food in larger quantities to reduce the amount of packaging they bring home.

Conclusion/Suggestions

Environmental protection has been seen to be the collective responsibility for everyone in the community, if all hands are on deck, 99 menace called indiscriminate waste disposal will be curbed to a large extent. For environmental protection to be sustainable through proper waste management, government has to implement existing laws concerning indiscriminate waste disposals and defaulters of such laws would be made to face penalties. Furthermore, regular environmental seminars and workshops organised by government and industry in both rural and urban regions would serve to raise environmental awareness and improve waste management practices. Environmental management and protection should be a collaborative effort involving the government, industry, and the general public. People should be at the center of participatory environmental management, and their needs, perceptions, knowledge, and

values should be respected. However, removing the barriers to effective public participation in environmental policies will be necessary. Illiteracy, ignorance, and some unfavourable cultural and religious beliefs are examples of such barriers. At the site of waste generation, waste segregation methods should be encouraged. Waste separation will aid in the better management of the entire waste bulk. After sorting, wastes are recycled, which is an important aspect of waste management. Paper waste recycling, for example, will alleviate pressure on the raw material supply for paper production. This could help Nigeria's economy develop more rapidly. Materials that were previously regarded as garbage could become valuable raw materials in this way. Recycled sewage and other household waste and garbage could be used to make a variety of fertilizers. Finally, environmental policy should assign responsibility for environmental protection to corporate, government, and voluntary entities, as it does in many industrialised economies. This means that corporate officers and community leaders (including family members) could be held criminally accountable for any contamination caused by indiscriminate garbage disposal. This will also allow for a more effective participatory approach to waste management issues.

Suggestions

The need to overhaul the existing management practices in Niger State, with a view to increase the coverage, effectiveness and efficiency of the services offered cannot be understated. Thus, the following suggestions were made:

1. Public enlightenment campaigns on waste reduction, and management should be carried out by NGOs in collaboration with government agencies.

2. Waste avoidance and safety measures. This involves appropriate procedures and measures to reduce or avoid the production of waste in order to take the pressure off the capacities of waste disposal systems and thus off the environment. For example, at the household level, waste are avoided through adoption of a waste-saving attitude such as avoidance of superfluous packing, non-returnable containers, disposable articles etc. while at the commercial and industrial levels, wastes are often avoided by adopting new recycling-oriented production processes.
3. Re-orientations towards refuse disposal: It is pertinent that residents of Niger State to understand the environmental health problems associated with improper waste management. Community mobilisation and re-orientation for waste management is therefore necessary.
4. Environmental sanitation needs to be incorporated into the usual daily activities of residents. Monthly sanitation should be re-introduced and enforced adequately. It should go beyond once in a month exercise, since wastes are generated every day in the course of routine existence.

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