



Assessment of Waste and Sewage Disposal Activities in Abakaliki Slaughterhouses, Implication for Transforming the Environment of Abakaliki Capital City of Ebonyi State, Nigeria

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Abstract

The procedure of slaughterhouses in Abakaliki capital city of Ebonyi State Nigeria is a typical form of human activities that has disturbed the ecosystem from indiscriminate disposal of animal wastes to the immediate environment. This study investigates the effect of poor waste and sewage disposal activities at the slaughterhouses on the life of the public. A survey research design was used and three research questions were raised to guide the study. Direct observation and oral interviews were the method used for data collection. Photographs, observation and information's received were analyzed, presented and discussed. It was observed that categories of animal wastes generated are in both liquid and solid forms. Simplest technique of their disposal include burning and flushing into nearby stream. Effect of the waste disposal approach on the immediate community includes water pollution, air pollution, land pollution and exposure of diseases and infections. There was recommendation that government should regulate the activities of those slaughterhouses and also build alternative waste dump site and incinerators for waste disposal in Abakaliki capital city of Ebonyi State, Nigeria.

Introduction

The significance of healthy environment cannot be over emphasized in the lives of plants, animals and humans. There is no doubt concerning the fact that it is only a healthy environment that can house a healthy plants and animals. This is because an unhealthy environment is a big treat to the existence of both human, animals and vegetation existing within such environment. A good ecosystem that has not been tampered with, will always generate and regenerate itself. But, the activities of human have posed serious disruption and treat to the natural ecosystem as well as the entire environment. That is what brought about global warming which everyone both government and private organizations at various levels are struggling to manage till date.

The unavailability of good clean water is on the increase which was caused as a result of indiscriminate disposal of waste into nearby water bodies (Tekenah, 2024). The activities of those managing the slaughterhouses in Abakaliki the capital city of Ebonyi State is a typical example of human activities that caused harm to the ecosystem by indiscriminately dumping the animal wastes

within the environment and waterbodies. Those working at the slaughterhouses does not only wash their animal meat inside the nearby stream rather they dispose the animal waste directly into those streams as a means of transporting them out of their environment thereby causing serious pollution to the aquatic animals inside those streams and also when those wastes are transported or washed away into other nearby rivers or streams the pollution keeps increasing, thereby posing more danger to both human and other animals within the environment.

Animal and livestock production are major source of food and nutrient such as protein to human, its method of processing in Nigerian and Abakaliki capital city of Ebonyi state, has been a major contributor of environmental pollution (land and water). Because those waste if not properly managed and are continuously being dumped into the streams, it may lead to a serous dieses outbreak such as cholera. And off Couse the danger of cholera or dieses outbreak in any community or environment is not something to play with.

The World Health Organization WHO (2011), opined that waste production from animals such as cow and poultry manure, livestock waste, litter of bedding, waste water feedlot run off and all kinds of waste feed are form of pollutant. This is when too much wastes generated from animal farms in an environment has no well-established recycling or management practice available to manage such wastes. Therefore, the indiscriminate disposal of waste over time can affect both the air and water quality if no proper arrangement is made available to manage such wastes. Such unwanted disposal of animal waste into the environment according to Ezeoha and Ugwuishiwu (2023) is referred to as Non-Point Source (NPS) pollution.

Based on the views of Adeyemo, Adeyemi and Awosanya (2025), the Non-Point source of pollution is the biggest remaining water quality treat in Nigeria today. Such waste in surface water reduces Dissolved Oxygen (DO) and causes harm on aquatic life. It also leads to the water bodies to produce very offensive pungent smell. Is important to dispose animal waste properly to save the environment. Waste management system should be part of the soil and water conservation plan for farmers producing livestock and poultry. It is necessary to thoroughly access the kind of waste generated and also examine its ways of disposal (National Institutes of Health, 2025). If waste is properly managed, quality manure for farming will be made available thereby making the soil to be fertile. Hence, recycling is highly recommended

It is no doubt that proper waste disposal and management is an important aspect of human activity in any giving environment. The main objective of animal waste management is to make use of the nutrient in nature while protecting the natural resources in the ecosystem. Hence, when animal waste is not carefully and properly managed it may lead to a serious disaster to human life and the entire environment. But when waste is properly managed, much value is gotten from it especially for farming. However, in Slaughter houses in Abakaliki capital city of Ebonyi State, the solid waste such as cow dungs, and animal blood which are being disposed in the environment without proper waste management practice and regulations, has posed great treat and unhealthy life to the residents within the environment. Lack of proper waste management practice has brought about diseases and sicknesses such as cholera, malaria and typhoid to the residents of such environment.

Purpose of the Study

The purpose of this study is to:

1. Determine the kind of waste generated at Abakaliki slaughterhouses
2. Confirm the way at which wastes from Abakaliki slaughterhouses are being disposed
3. Know the effect of the waste disposed on the environment and its residents.

Research Questions

The following research questions guided this study:

1. What kind of wastes is being generated at Abakaliki Slaughter houses?
2. What approach of waste disposal is being practiced by the workers at Abakaliki slaughterhouses?
3. What is the effect of the disposed wastes on residents of the environment?

Method

The study adopted a Survey research design. A survey research design according to Thompson, (2025) is defined as a systematic, quantitative, or mixed-methods approach to collecting primary data from a sample of individuals to describe, compare, or predict attitudes, behaviors, and characteristics of a larger population. It acts as a structured "blue-print" or "plan of action" for formulating research goals, selecting a representative sample, designing instruments (questionnaires/interviews), distributing them via online or traditional channels, and analyzing findings to generate actionable insights (Global Research Council. 2025). Since this study is to find out the way by which waste is disposed and its impact on peoples' life observation and interview were used for data collection. Population of the study was made up of all slaughterhouse workers and residents within the immediate environment where the activities of the slaughterhouses disposed wastes where affected. A sample size of ten workers of the slaughterhouse and twelve residents including the community head and a resident doctor in a nearby health facility within the area made up the sample size. The survey was done through the following:

- i. **Observation:** The researcher visited the slaughterhouses and observed various ways at which cows and other domestic animals are being slaughtered, skinned and cutting of the carcass. All the processes and methods of wastes disposal where observed
- ii. **Photograph:** The picture evidence of what was observed as the usual operation of the slaughterhouse workers at Gariki slaughterhouse in Abakaliki was taken for

more information. Date was collected was presented thus:

- iii. Direct contact and observations were made through visitation to the slaughterhouse, the stream where the wastes are discharged, the wastes dump sites, the community head, the resident health personnel of the nearby health facility, residents, interview guide was administered to the persons listed above and the entire residents so as to gather the required information's. Direct observation was carried and photographs taken at the slaughterhouse wastes disposal site for data collection

3.

Research Question 2: What approach of waste disposal is being practiced by the workers at Abakaliki slaughterhouses?

Table 1. Summary of approaches of waste disposal observed in Abakaliki slaughterhouses

Types of waste	Method of disposal
Dung	Dispose and sale out as manure to farmers
Bones	Sold to customers who demanded it
Blood	Disposed out through the drainage system
Hair	Burning in fire
Hooves	Sold out to those that needs it

Dung: The dung is of various forms as observed during the study. The first one was excreted by the cattle before they were killed while the second one was the one the cow butchers brought out from the animals' large intestine. The second one was confirmed by a worker in the slaughterhouse who said in an interview that they also sell the dungs to farmers

- iv. **Interview Guide:** An interview guide was designed and used to get information from the 22 respondents of the area which is made up ten workers of the slaughterhouse and twelve residents of the area.

Results

Research question 1: What kind of wastes is being generated at Abakaliki Slaughter houses?

1. **Solid waste:** This comprises of animal dung, bones, hairs, horn and hooves.
2. **Liquid waste:** This includes animal blood, waste water and urine.

which they use as manure in their farms. They also confirmed that they wash away other remaining dung. All that was said by the worker at the slaughter house was corroborated by a resident who made it clear that they use cow dung to farm in their gardens and farms. He further said that they use cow dung as a good manure to nurture their vegetables





Fig1. Cows waiting to be slaughtered at Gariki Slaughterhouse in Abakaliki, Ebonyi State, Nigeria



Fig2. A heap of cow dung at Gariki Slaughterhouse in Abakaliki, Ebonyi State



Fig.3: A worker at Abakaliki slaughter house removing cow dung from the stomach chamber of the slaughtered cow

Bones: Bones were extracted from the slaughtered animals. The major bones from those animals were the long limb bones, the ribs bones and the girdle. Other forms of smaller bones are cut and disposed with the meat to the customers. The bigger bones

were kept for customers who purchased them for bone mill production and processing. The researcher observed that long bones and skin were kept for prospective buyers who may wish to purchase them for whatever purpose they like.



FIG. 4: Disposal site of animal bones at Abakaliki slaughter house, Gariki

Blood: The blood of the animals especially the cows that were slaughtered was seen spilled on the floor (see fig 5) as observed by the researcher. The approach in which the workers at the slaughter house use in disposing the blood is through flushing them into the drainage linked to the river near the slaughterhouse.



FIG. 5: Disposal site of animal blood at Abakaliki slaughter house, Gariki

Responding to questions on how waste from slaughtered animals are disposed in Gariki slaughterhouse in Abakaliki, the chairman of the slaughterhouse association presented thus:

We dispose the hooves by gathering them at one place and sell to those who demands it

We also do same with the horns and the bones because those who are into poultry mills regularly come to look for bones to buy because they are useful for poultry feed. For the hair we burn it. Then after burning the hair we sell the skin as Kanda meat to

customers who needs them. As for the dung he said they pack them together in a separate location within the slaughter house so that as soon as it decomposes, they sell it as manure to farmers.

The chairman who has spent above 18years in the slaughterhouse business also explained that for now the only known method which they are using to get rid of the animal hair is through burning. Other workers who said they have worked at the slaughter house for over 11 years further corroborated all that the chairman said. They further stated that:

We have some traditionalists who come regularly looking for animal hoofs, bones and horns to buy. Then only thing we burn is the hair but the faeces (dung) are gathered over a period of time which will later be sold to farmers who may request for them.

From the above responses, it can be deduced that while hoof, bones and horns were sold to others who may request for them, hair was usually burnt. Regrettably, burning of hair as a means of disposing it will continue to course air pollution as earlier pointed out in the waste management practices.



FIG. 6: Worker at Abakaliki slaughter house, Gariki getting the cow head, hair and skin ready for burning



FIG. 7: The only stream at Abakaliki slaughter house, Gariki already polluted by the animal wastes

Research question 3: What is the effect of the disposed wastes on residents of the environment?

During the course of this study, it was discovered that there were more of negative effects which includes:

1. **Water Pollution:** When the wastes from the animal killed in the slaughterhouse are disposed into the river it increases the turbidity of the water content of the river. There is only one major stream in that slaughterhouse where they flush all the wastes from the animals including the dung, the blood and the urine. Also when washing the meat, other animal particles finds their way into the same river which courses more pollution.
2. **Water borne diseases:** Residents and health personnel at Gariki slaughter house in Abakaliki, Ebonyi stste, confirmed the presence of water related diseases within their area. Specifically, the medical personnel in a medical facility near the slaughterhouse said:
 - Truly, there are so many confirmed cases of water borne diseases within the area which was caused as a result of the animal wastes being disposed into the river. Such disease includes; typhoid, cholera and gastro enteritis diarrhea. He said the typhoid and cholera has been on high rate since he has been practicing here. He said in this 2026 only between January and M which is about 4 months we have about 7 persons that nearly lost their lives as a result of the diseases. From the above, it can be confirmed that truly, these animal wastes what were disposed into the river has great negative effect on the water body as earlier discussed.
 - The medical personnel at the area also confirmed that only the flies hovering around the area of the slaughter, when perched on food usually courses health problem to anyone that consumes such food.
 - A resident in the area also told the researcher that she has been treating typhoid, malaria and infection for some time now and she also said her neighbor is also facing the same challenge currently. She said she

strongly believe that all were part of the problems they are facing as a result of the wastes being disposed inside the only river they have within the area.

3. **Air Pollution:** The only process of disposing hair as unwanted part of the cow is through burning. Burning hair would always bring about heavy smoke especially as inorganic materials such as kerosene was the source of fuel for the burning. Humans and other animals within the area inhales this smoke all the time a cow hair is burned. All the residents present confirmed that the only way the get rid of the cow skin when killed is through burning.
4. **Unpleasant odor:** Resident in the area complained bitterly on the challenges they are facing from the offensive odor they have been perceiving from the slaughterhouse. One of them said he is getting use to the odor but he confirmed that most times it makes him get sick. One of the residents expressed her dissatisfaction, saying that the worry she is having is not only on the bad odor she has been perceiving but from the wastes they dispose around the area indiscriminately which has posed serious health challenge to all of them living within that area. Although a worker at the slaughter house confirmed that truly farmers comes regularly to buy those animal dungs but the time difference between when the wastes are dumped and the time those prospective buyers will come is highly unbearable. All the above have pointed to the fact that unpleasant odor oozes from the slaughterhouse is highly detriment of the residents.

Recommendations:

Based on the findings of this study the following recommendations were made:

1. Government should regulate the activities of those slaughterhouses and also build alternative waste dump site and incinerators for waste disposal in Abakaliki capital city of Ebonyi State, Nigeria.
2. Government should enforce the existing sanitary and health laws regarding hygiene. This will go a long way in controlling those wrong attitudes of those working at the slaughterhouses
3. The slaughterhouse workers should as a matter of urgency, stop the indiscriminate

disposal of wastes into the river. It is very hazardous to the health of the residents who makes use of such water.

4. Agencies like the Ministry of Health, Water resources and the ministry of environment should find a way of cleaning up the waste water
5. There should be a well-planned continuous sensitization programs by some regulatory government agencies such as health and environment to sensitize the public especially those working in the slaughter houses on the need to practice and know the health implications of dumping animal waste indiscriminately within the environment and water bodies.

Conclusion:

There are so much unacceptable practices as it concerns animal wastes disposal in the community located around Gariki slaughterhouse in Abakaliki capital city of Ebonyi state, Nigeria. These practices include but not limited to the following: poor disposal of liquid wastes such as animal urine and blood, other animal fluid and solid wastes like cow faeces (dung) etc. these wastes are disposed poorly and they are mostly dumped into the water bodies. The water automatically gets contaminated with so much diseases and bacteria and other harmful pathogenic microscopic organisms and this has resulted to the residents of the area being effected with diseases. Serious measures should be embarked upon by all relevant stakeholders towards putting a total stop to such attitude. Adequate measures should be taken by government such as re-enforcing the environmental protection laws; apprehending offenders of wrong waste disposal. Churches and other religious organizations should sensitize their member to stay away from such attitude.

When wastes are not properly disposed or managed, it will surely course environmental hazard. Hence it will be of great benefit to manage waste properly to save our environment from any possible harm from indiscriminate waste disposal.

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