# THE PREVALENCE OF OPEN DUMPING OF WASTE AT THE MARKET SITE: ASSESSING ITS HEALTH IMPLICATIONS ON THE TRADERS AND BUYERS AT ARIARIA MARKET IN ABA

**By**

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## ABSTRACT

*This study examined the prevalence of open dumping of waste at the market site, assessing its health implications on the traders and buyers at Ariaria market in Aba. Urban marketplaces serve as vital nodes of economic activity, social interaction, and food distribution, especially in densely populated cities across sub-Saharan Africa. In the context of carrying out this research, the following subheads were expounded on: the concept of open dumping of waste, components of waste at dump sites and the prevalence of open dumping of waste in Ariaria market, among many others. The study mentioned organic waste, plastic waste and paper/cardboard waste, among many others, as the components of waste at the dump site. The health implications of open dumping of waste to traders and buyers in the Nigerian markets, as highlighted in the study, included exposure to disease-causing organisms, air pollution/respiratory issues and contamination of water sources, to mention a few. Regulatory measures and legal frameworks improved waste collection and disposal Infrastructure, public awareness and community engagement, among others, were stated as the strategic controls of open dumping of waste in the markets. The study concluded that the unchecked open dumping of waste at Ariaria International Market in Aba poses serious health and environmental threats to both traders and buyers. One of the recommendations made was that the local government, in collaboration with market authorities, should implement a structured and centralised waste collection system within Ariaria Market.*

**KEYWORDS: Open Dumping, Waste, Market Site, Health Implications, Ariaria Market, Aba**

## INTRODUCTION

Urban marketplaces serve as vital nodes of economic activity, social interaction, and food distribution, especially in densely populated cities across sub-Saharan Africa. One such hub is Ariaria International Market in Aba, Nigeria—a thriving commercial centre renowned for its vast

array of goods and entrepreneurial vibrancy. However, behind this commercial dynamism lies a deeply unsettling issue: the rampant and unchecked practice of open dumping of waste. In Ariaria Market, the accumulation of unregulated waste presents not just an environmental eyesore but a grave public health concern, endangering both traders and the millions of buyers who frequent the market.

Open dumping—the indiscriminate disposal of waste without environmentally sound management—is a chronic challenge in many developing nations where infrastructure and regulatory enforcement are inadequate (Ichipi & Senekane, 2023). In the case of Ariaria, this practice has escalated due to high population density, lack of adequate waste disposal facilities, poor policy implementation, and insufficient public awareness. The result is a toxic mélange of organic refuse, plastic, metal scraps, and decomposing food items littering the environment, obstructing drainage systems, and creating breeding grounds for vectors such as flies, rodents, and mosquitoes.

The implications of this environmental degradation on human health are profound. Studies have consistently linked poorly managed waste in urban areas to the outbreak of infectious diseases, respiratory problems, and skin infections among exposed populations (Omang, John, Inah & Bisong, 2021). Traders and buyers in Ariaria Market are particularly vulnerable due to their prolonged and repeated exposure to these unsanitary conditions. With markets being spaces of high human interaction and close contact with food products, the threat of disease transmission becomes alarmingly high. Children, pregnant women, and elderly traders are disproportionately affected, experiencing heightened susceptibility to illnesses like cholera, typhoid fever, and malaria (Olisa and Ezeodili, 2024).

Moreover, the socio-economic implications of this issue cannot be overlooked. The health-related absenteeism of traders due to waste-induced illnesses leads to loss of income, decreased productivity, and increased healthcare costs. For buyers, especially those travelling from distant locations, the deteriorating sanitary conditions diminish the market's attractiveness and credibility. This, in turn, threatens the very fabric of local economic sustainability and undermines broader developmental goals focused on health, environmental protection, and economic empowerment (United Nations Environment Programme [UNEP], 2016).

The persistence of open dumping in Ariaria Market calls for a multi-dimensional investigation that examines not only the physical and environmental dynamics of waste but also its intersection with public health and urban planning. This study seeks to fill a critical gap in the literature by systematically assessing the health implications of open dumping on market stakeholders, thereby informing local authorities and policymakers on the urgent need for sustainable waste management strategies tailored to the realities of high-traffic markets like Ariaria.

## CONCEPT OF OPEN DUMPING OF WASTE

Open dumping refers to the disposal of solid waste without any environmental controls or planning, often in designated or undesignated areas, leading to significant environmental and health problems. The term “open dump” means any facility or site where solid waste is disposed

of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act. According to the Illinois Environmental Protection Agency (2025), open dumping of waste consists of abandoning piles of household garbage, bags of yard waste, appliances, old barrels, used tyres, and demolition debris such as lumber, shingles, pipes, and asbestos, which can threaten the health of humans, wildlife, and the environment.

Furthermore, Hamilton County Public Health (2023) states that open dumping occurs when large quantities or piles of waste accumulate in areas not designed to handle such materials. Open dumping of waste refers to the indiscriminate and unregulated disposal of solid waste in undesignated areas without any environmental safeguards or management practices. This method involves simply depositing refuse in open spaces such as streets, vacant lots, market surroundings, or near water bodies, where it is left exposed to the elements. Unlike sanitary landfilling, open dumping lacks protective liners, leachate control, or compaction, making it a major source of environmental pollution and public health hazards. It encourages the proliferation of disease-carrying pests, contaminates soil and water sources, and significantly contributes to urban degradation, especially in developing countries.

## COMPONENTS OF WASTE AT DUMP SITE

Waste management remains a critical issue in urban planning and environmental conservation. Dump sites, whether formal or informal, are key locations where waste accumulates, often with a variety of materials that contribute to pollution and environmental degradation. The composition of waste at dump sites varies, influenced by factors such as the region, population density, and economic activities. Understanding the components of waste at dump sites is essential for developing effective waste management strategies and mitigating the environmental and health risks associated with waste disposal. This article explores the main components of waste found at dump sites and their implications for sustainable waste management.

Organic Waste: Organic waste is one of the primary components of waste found at dump sites, especially in urban and semi-urban areas. Organic waste includes biodegradable materials such as food scraps, garden trimmings, agricultural waste, and other plant-based materials. According to the United Nations Environment Programme (UNEP, 2020), organic waste constitutes a significant portion of the total waste in many low- and middle-income countries, often representing 40-60% of the total waste generated.

**Fig 1:** Organic Waste

**Source: https://neoakruthi.com/organic-waste-converter.html**

In dump sites, organic waste tends to decompose naturally, producing methane gas, a potent greenhouse gas that contributes to climate change. The decomposition of organic waste also leads to the contamination of the surrounding environment, as leachate (the liquid that drains from decomposing waste) can seep into the groundwater, causing contamination. Proper composting and waste diversion programs can mitigate the environmental impact of organic waste at dump sites.

Plastic Waste: Plastic waste is another dominant component of waste found at dump sites, particularly in urban areas. Plastics, including packaging materials, plastic bags, bottles, and containers, are commonly discarded after use due to their convenience and low cost. However, plastic waste is non-biodegradable and persists in the environment for hundreds of years. Studies have shown that plastic materials represent up to 10-20% of the total waste composition in many developing countries' dump sites (Kaza et al., 2018).

**Fig 2:** Plastic Waste

**Source: https://datatopics.worldbank.org/what-a waste/tackling_increasing_plastic_waste.html**

Plastic waste poses severe environmental hazards, including the blocking of drainage systems, the creation of microplastics, and the harming of wildlife that may ingest or become entangled in plastic debris. In addition, plastic waste can leach toxic chemicals into the soil and water, further

polluting ecosystems and posing health risks to humans. Recycling and the reduction of single-use plastics are essential strategies for reducing plastic waste in dump sites.

Paper and Cardboard Waste: Paper and cardboard make up a substantial portion of the waste found at dump sites, particularly in areas with high consumption of paper products. This category includes newspapers, magazines, office paper, packaging materials, cardboard boxes, and other paper-based items. According to a report by the World Bank (2018), paper waste often represents 20-30% of the total municipal solid waste in many urban regions. While paper and cardboard are biodegradable and can be recycled, their accumulation in dump sites contributes to the clutter and inefficiency of waste management systems. Paper waste can also contribute to the production of methane during decomposition if not properly managed. Recycling paper products and promoting digital alternatives to paper consumption are important strategies to reduce paper waste.

Metal Waste: Metal waste at dump sites consists of both ferrous and non-ferrous metals, such as aluminum cans, steel containers, iron scrap, and electronic waste (e-waste). Metals are often discarded due to their limited reuse or recycling in certain regions. According to a study by Nzeadibe (2020), metal waste accounts for a significant portion of the waste in urban areas, often leading to environmental pollution when not properly disposed of. The non-biodegradable nature of metals means they do not break down over time, making them long-term pollutants in the environment. E-waste, in particular, poses serious health and environmental risks due to the presence of toxic substances such as lead, mercury, and cadmium. Metal waste, especially e-waste, requires specialized recycling processes to avoid environmental contamination and to recover valuable materials.

**Fig 3:** Metal Waste

**Source: https://earth911.com/home-garden/reducing-metal-waste/**

Glass Waste: Glass waste, though not as prevalent as plastic or organic waste, is still a significant component of waste found at dump sites. Glass containers, such as bottles, jars, and broken glass, are commonly discarded and can accumulate in large quantities. Glass is non-biodegradable and can persist in the environment for thousands of years without breaking down (Eze et al., 2018). However, glass is highly recyclable, and its recycling reduces the need for raw materials and energy. The challenge in managing glass waste at dump sites lies in its breakability, which leads to sharp fragments that can pose injury risks to individuals handling waste or living in close

proximity to dump sites. Encouraging recycling programs and the use of returnable glass containers can help mitigate the environmental impact of glass waste.

Hazardous Waste: Hazardous waste, though a smaller proportion of the total waste composition at dump sites, represents a significant environmental and health risk. Hazardous materials include chemicals, batteries, fluorescent lights, solvents, pesticides, and medical waste. The improper disposal of hazardous waste at dump sites can lead to soil and water contamination, air pollution, and long-term health issues, including respiratory diseases, cancer, and poisoning. In many developing countries, including Nigeria, hazardous waste is often improperly managed due to a lack of awareness, infrastructure, and regulation (Akinbami et al., 2019). Effective waste management systems must prioritize the safe disposal of hazardous waste, with specialized facilities for its treatment, recycling, or safe containment.

**Fig 4:** Hazardous waste

**Source: https://sensoneo.com/how-to-dispose-hazardous-waste/**

Textile Waste: Textile waste, including discarded clothing, fabric scraps, and shoes, has become an increasingly common component of waste at dump sites. This type of waste often results from the fast fashion industry and consumer behavior that encourages the frequent disposal of clothing. Textile waste is mostly non-biodegradable and can take years to decompose, contributing to environmental pollution (Gharfalkar & Aghdasi, 2020). The accumulation of textile waste in dump sites can contribute to land degradation and pose environmental risks through the release of microfibers into water systems. Recycling textiles and promoting sustainable fashion practices, such as clothing repair and reuse, are essential to addressing textile waste in dump sites.

**Prevalence of Open Dumping of Waste in Ariaria Market**

Ariaria International Market, located in Aba, Abia State, is one of West Africa's most economically significant commercial hubs. Despite its vast contributions to local and regional trade, the market faces serious environmental degradation, primarily due to the prevalence of open dumping of waste. Waste materials are frequently discarded indiscriminately in public spaces, drainage systems, and near trading stalls. As the market continues to expand in population and commercial activity, the volume of daily waste has surpassed the capacity of available disposal infrastructure (UNEP, 2024).

The widespread nature of this issue is largely due to inadequate waste management systems. Ariaria Market lacks sufficient waste bins, regular collection services, and designated dumping sites, leaving traders and buyers with few options but to dispose of refuse openly. Furthermore, poor enforcement of sanitation regulations by local authorities contributes to this persistent problem. With limited accountability and public awareness, open dumping becomes a normalised, yet hazardous, practice in the market's daily operations.

The types of waste commonly dumped include organic refuse, plastics, metal scraps, textiles, and, in some cases, human waste. These waste types not only produce offensive odours but also block drainage channels, increasing the risk of flooding. More alarmingly, these open waste sites serve as breeding grounds for disease vectors like flies, rats, and mosquitoes, which are known to transmit illnesses such as cholera, typhoid, and malaria. These health threats are particularly severe for traders and customers who spend extended hours within the market premises.

The persistence of open dumping in Ariaria Market underscores broader urban management and public health failures. Without swift and coordinated interventions, the market faces escalating health risks and a decline in economic viability. Addressing this issue requires an integrated approach involving community education, sustainable waste management infrastructure, policy enforcement, and increased government accountability. Only through such collective efforts can Ariaria Market be transformed into a cleaner and healthier trading environment (United Nations Environment Programme [UNEP], 2016).

**Health Implications of Open Dumping of Waste to Traders and Buyer in the Nigerian Markets**

Open dumping of waste in Nigerian markets presents serious health risks to both traders and buyers. These markets, often characterized by the uncontrolled accumulation of waste, expose individuals to hazardous conditions that contribute to a range of communicable and non-communicable diseases. In addition to the immediate risks posed by poor waste disposal practices, open dumping also impacts the broader public health system. This article examines the health implications of open waste dumping for traders and buyers in Nigerian markets, discussing the environmental and health hazards, the socioeconomic costs, and the need for effective waste management strategies.

Exposure to Disease-Causing Organisms: One of the most significant health risks of open waste dumping in Nigerian markets is the exposure to pathogens and disease-causing organisms. Waste in these markets often includes food scraps, organic waste, plastics, and hazardous chemicals, which can become breeding grounds for bacteria, viruses, and parasites. As noted by the World Health Organization (WHO), improper waste disposal significantly increases the likelihood of vector-borne diseases such as cholera, dysentery, and typhoid fever, which are common in areas with poor waste management (WHO, 2020). Traders and buyers are particularly vulnerable to these diseases due to their close proximity to waste piles. The constant handling of food items, including raw meat, fruits, and vegetables, increases the risk of contamination. Additionally, flies, rodents, and other vectors that thrive in waste accumulate around these areas, further exacerbating the spread of diseases (Ogunjobi & Fajemirokun, 2018). Cholera outbreaks, for instance, have been linked to open waste dumping in several Nigerian cities, with traders and

buyers often being the first to suffer from waterborne diseases due to their direct contact with contaminated surfaces or water sources.

**Air Pollution and Respiratory Issues:** Open dumping in Nigerian markets not only leads to the spread of waterborne diseases but also results in air pollution. The burning of waste, particularly plastic and other non-biodegradable materials, is a common practice in many Nigerian markets. The release of toxic fumes, including dioxins and furans, has serious respiratory implications for traders, buyers, and anyone in proximity to these waste dumps. Prolonged exposure to such pollutants can lead to chronic respiratory conditions such as asthma, bronchitis, and even lung cancer (Eneji et al., 2019). The inhalation of smoke from burning waste is particularly harmful to children and individuals with pre-existing health conditions. According to a study by Folarin et al. (2020), the practice of waste burning in Nigerian markets has led to an increase in respiratory illnesses, which puts both traders and buyers at risk. As markets often remain crowded with people during business hours, the presence of air pollutants further elevates the health risks for the entire community.

Contamination of Water Sources: Water contamination due to the open dumping of waste is another pressing health concern in Nigerian markets. In many areas, especially in informal markets, waste is frequently dumped in open drains, gutters, and rivers that serve as both waste disposal sites and sources of water. Contaminated water can easily spread harmful pathogens and chemicals into the food supply chain, leading to foodborne illnesses. According to the Nigerian Centre for Disease Control (NCDC), the consumption of contaminated food and water is a leading cause of gastrointestinal diseases in the country (NCDC, 2021). Traders who store food close to open waste dumps or use contaminated water for food preparation are at risk of spreading foodborne pathogens to buyers. Additionally, the ingestion of water tainted by waste can result in long-term health complications, including kidney damage and neurological disorders (Ogundele & Adebayo, 2019). The contamination of local water sources by open waste dumping significantly contributes to the high rates of waterborne diseases, especially in densely populated urban markets.

Impact on Mental Health and Well-being: The psychological impact of living and working in areas where open waste dumping is prevalent should not be overlooked. The constant exposure to filth and the associated odors, pollution, and visual degradation can contribute to stress, anxiety, and a general sense of insecurity. As observed by Okpala (2020), prolonged exposure to unsanitary environments can lead to mental health issues such as depression and increased levels of anxiety among traders and buyers. The stigma associated with living or working in waste-laden environments can also contribute to a decline in social well-being, further exacerbating the public health crisis. Additionally, the risks of disease outbreaks and environmental hazards in the markets can contribute to a lack of confidence in market activities, leading to social isolation, lower productivity, and reduced economic opportunities for traders.

Socioeconomic Costs: The health implications of open dumping in markets also extend to the broader socioeconomic impacts on traders, buyers, and the wider community. Infected individuals may experience a decline in their quality of life, and in severe cases, prolonged illness or death can occur. This not only leads to increased healthcare costs but also results in lost productivity and reduced earnings for market traders. According to a study by Adewole et al.

(2017), the economic burden of disease outbreaks related to open waste dumping can be substantial, affecting both the individuals directly involved and the broader community. This creates a vicious cycle in which poor health contributes to poverty, and poverty, in turn, makes it difficult to invest in proper waste management infrastructure.

## STRATEGIC CONTROLS OF OPEN DUMPING OF WASTE IN THE MARKETS

The uncontrolled dumping of waste in markets remains a persistent issue across many regions, leading to serious environmental, health, and social challenges. Open dumping, which involves the illegal disposal of waste in public spaces, especially in markets, has detrimental effects on urban environments. Strategic controls to manage and mitigate the issue are essential to foster cleaner, healthier, and more sustainable communities. These controls can be implemented through a combination of the following:

Regulatory Measures and Legal Frameworks: The establishment of clear regulations and the enforcement of waste management laws are key to reducing open dumping in markets. Countries and local governments have a responsibility to create and enforce laws that prohibit illegal dumping, penalize offenders, and set guidelines for waste disposal. For instance, in many countries, open dumping is banned under national environmental protection laws, but weak enforcement often hinders the success of these laws. As emphasized by the United Nations Environment Programme (UNEP), effective regulation should not only include punitive measures but also provide incentives for businesses and citizens to comply with waste management practices (UNEP, 2020). Additionally, integrating local governance into waste management plans ensures that policies are adapted to specific regional needs and contexts.

Improved Waste Collection and Disposal Infrastructure: One of the primary causes of open dumping is inadequate waste collection and disposal infrastructure. In markets, where waste generation is high due to the large volume of food, packaging, and other materials, effective waste management systems are critical. A strategic control to address open dumping includes expanding and improving waste collection services. According to a study by Pires et al. (2019), enhancing waste collection efficiency in urban markets significantly reduces illegal dumping by providing alternative, accessible waste disposal options. Investment in adequate waste bins, waste segregation, and scheduled waste pickups can prevent waste from accumulating and being dumped in open spaces. Additionally, setting up dedicated collection points for different types of waste, such as organic waste, recyclables, and hazardous waste, helps streamline disposal processes.

Public Awareness and Community Engagement: Public education and community involvement are vital components of reducing open dumping. Many markets suffer from open dumping because people lack awareness of the environmental and health risks associated with waste mismanagement. Strategic controls must involve campaigns that educate market-goers, vendors, and community members about proper waste disposal methods. According to the World Health Organization (WHO), awareness campaigns focusing on the importance of waste separation and disposal at source can significantly reduce waste accumulation in public spaces (WHO, 2021). Moreover, involving local communities in the design and implementation of waste management

systems encourages responsibility and participation, fostering a sense of ownership and reducing illegal dumping practices.

Technological Solutions: Technological solutions play an increasingly important role in tackling the challenge of open dumping in markets. Innovations such as waste-to-energy technologies, mobile applications for waste collection scheduling, and smart waste bins with sensors to indicate when they are full are emerging as effective solutions. For instance, a study by Vinnari et al. (2020) highlighted the potential of smart waste management technologies to improve waste segregation and reduce the amount of waste that ends up in open dumps. These technologies allow for more efficient monitoring of waste disposal practices, helping authorities identify areas with high rates of illegal dumping and respond quickly. Additionally, the use of drones and satellite technology can help monitor waste disposal activities in real time, making enforcement efforts more effective.

Partnerships with Private Sector and NGOs: Public-private partnerships (PPPs) and collaborations with non-governmental organizations (NGOs) can strengthen the effectiveness of waste management initiatives in markets. Governments can partner with private waste management companies to improve waste collection systems, while NGOs can offer expertise in educating communities and advocating for better practices. A case study in Nairobi, Kenya, demonstrated that collaboration between the city government, private waste collectors, and community-based organizations reduced illegal dumping in the city's informal markets (Amis, 2018). These partnerships help leverage resources, expertise, and local knowledge, ensuring more sustainable waste management solutions.

## CONCLUSION

The unchecked open dumping of waste at Ariaria International Market in Aba poses serious health and environmental threats to both traders and buyers. This unsanitary practice fosters the spread of diseases, reduces productivity, and diminishes the market's overall appeal. Vulnerable groups, including children and the elderly, face the greatest risks due to prolonged exposure. Without urgent intervention, the situation may further erode public health and local economic stability. This study emphasises the need for proactive waste management strategies that integrate health, infrastructure, and policy. Promoting sustainable practices is crucial to safeguarding lives and preserving the market’s long-term viability.

## RECOMMENDATIONS

- The local government, in collaboration with market authorities, should implement a structured and centralised waste collection system within Ariaria Market.
- Regular awareness programmes should be organised to educate traders and buyers on the health risks associated with open dumping.
- Relevant authorities must enforce existing sanitation laws and introduce stricter penalties for non-compliance.

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