

## **Assessing the Impact of Mortuary Siting and Environmental Compliance on Human and Environmental Wellbeing in Nigeria**

**Iloma Unwobuesor Richard, PhD**

Department of Environmental Health Technology; School of Environmental Health, Rivers State College of Health Science and Management Technology, Port Harcourt  
richardiloma528@gmail.com

**Princewill Chikakpobi Chukwure**

Department of Dental Surgery Technician, Rivers State College of Health Science and Management Technology, PMB 5039, Oro-Owo Rumueme, Port Harcourt, Nigeria  
princechukwure@gmail.com

**Abstract:** This study assessed the impact of mortuary siting and environmental compliance on human and environmental wellbeing in Nigeria. With increasing urbanization and inadequate land use planning, mortuary facilities are often located near residential areas, schools, and water sources, raising significant public health and environmental concerns. The research draws on qualitative and quantitative data, including case studies from Lagos, Abuja, and other urban centers, to analyze patterns of mortuary distribution, levels of environmental compliance, and associated risks. Findings reveal that poor siting practices and weak adherence to environmental regulations contribute to pollution, psychological stress, and violations of cultural norms. Furthermore, institutional barriers such as regulatory gaps, corruption, and limited stakeholder involvement exacerbate the problem. The study concludes that comprehensive policy reforms, stronger regulatory enforcement, and the incorporation of environmental justice principles into planning processes are essential to safeguarding public health and promoting sustainable urban development in Nigeria.

**Keywords:** Mortuary siting, Environmental compliance, Public health, Environmental wellbeing, Urban planning, Environmental justice, Waste management.

### **I. INTRODUCTION**

Mortuaries are essential components of the healthcare system, serving as temporary storage spaces for deceased individuals, often facilitating post-mortem examinations, forensic investigations, embalming, and eventual burial or cremation. In many countries, including Nigeria, mortuaries also play a critical role in public health by ensuring the safe handling and storage of corpses, particularly during disease outbreaks or mass casualty events (World Health Organization [WHO], 2014). Their strategic location, design, and operation are, therefore, of paramount importance not only for the dignity of the deceased but also for the protection of the living and the surrounding environment.

However, in Nigeria, the siting of mortuary facilities is increasingly becoming a subject of public concern. Many mortuaries are located near residential areas, schools, markets, or water sources without adequate environmental assessments or urban planning considerations. Such poor siting

practices can lead to negative externalities, including psychological distress, odor nuisances, contamination of groundwater, and the transmission of infectious diseases (Adewole et al., 2019; Akinbile & Oladoja, 2020). Moreover, the lack of consistent environmental oversight and regulatory compliance further exacerbates these risks, especially in urban and peri-urban areas where population density and land-use conflicts are prevalent.

Environmental oversight in the context of mortuary operations involves ensuring that such facilities comply with standards regarding waste disposal, structural integrity, pollution control, and hygiene practices. In Nigeria, agencies like the National Environmental Standards and Regulations Enforcement Agency (NESREA) and state-level ministries are tasked with monitoring such compliance. Yet, systemic issues such as underfunding, weak enforcement capacity, and lack of technical expertise often limit the effectiveness of these regulatory institutions (Ogunba & Olatunji, 2018).

Inappropriate mortuary siting and poor environmental compliance present significant challenges to public health and environmental sustainability in Nigeria. Mortuaries that are constructed too close to human settlements can lead to the contamination of soil and water through the leakage of embalming fluids and decomposition products. In many reported cases, mortuary effluents containing formaldehyde, phenol, and other toxic substances have been found to pollute groundwater resources used by local populations (Ehi-Eromosele et al., 2015). Additionally, poor mortuary hygiene and inadequate waste management can contribute to the spread of pathogens, creating potential public health emergencies, particularly in densely populated communities. The situation is further complicated by the absence of Environmental Impact Assessments (EIA) in the planning phase of many mortuary constructions, a legal requirement often ignored or bypassed due to weak institutional oversight or corruption (Nwachukwu & Maduabuchi, 2020). These problems collectively jeopardize both human wellbeing and environmental integrity, calling for a systematic evaluation of the issue. The result is a growing gap between policy and practice in mortuary environmental management.

The purpose of this study is to assess the impact of mortuary siting and environmental compliance on human and environmental wellbeing in Nigeria. Specifically, it seeks to investigate how the location of mortuary facilities affects public health outcomes and environmental quality, particularly in urban and peri-urban areas where land use conflicts are prevalent. Additionally, the study aims to examine how these facilities adhere to national environmental regulations and standards, such as those mandated by the National Environmental Standards and Regulations Enforcement Agency (NESREA) and the Environmental Impact Assessment (EIA) Act. By exploring these dimensions, the research intends to provide evidence-based insights that can inform policy reforms in urban planning, environmental management, and public health governance.

## 1.1 Scope and Significance

This study is situated at the crossroads of urban planning, public health, environmental governance, and sustainable development in Nigeria. It focuses on the challenges posed by the location and environmental management of mortuaries within both urban and semi-urban settings, where such facilities have the greatest interaction with human populations and ecological systems.

From a public health perspective, the research emphasizes the risks of disease transmission, pollution, and psychosocial stress associated with poorly managed mortuaries. From an urban planning viewpoint, it examines how poor land-use decisions and inadequate zoning regulations contribute to the siting problem. From an environmental governance angle, it assesses the effectiveness of regulatory frameworks and enforcement mechanisms, providing insights for policymakers and regulatory bodies.

The significance of this study lies in its potential to inform more responsible planning and management of mortuary services in Nigeria. In the context of sustainable development, where

social wellbeing, environmental integrity, and institutional accountability must align, mortuary management represents a critical yet often overlooked aspect. Addressing the gaps in this area can help mitigate public health risks, protect environmental resources, and uphold the dignity of both the dead and the living.

## 2.0 LITERATURE REVIEW

### 2.1 Conceptual Framework

Mortuary siting refers to the strategic placement of mortuary facilities in relation to human settlements, water bodies, and environmentally sensitive areas. A well-sited mortuary must consider factors such as population density, prevailing wind direction, proximity to water sources, and land use compatibility. When properly sited, mortuaries contribute to efficient healthcare services and ensure the dignity of the dead. However, when poorly located often due to poor planning or political interference they can become a source of public nuisance and health risks (Adefemi & Awoyemi, 2021). Improper mortuary siting can result in air and groundwater contamination, psychological stress for nearby residents, and conflicts with cultural or religious practices surrounding death (Akande & Ajayi, 2022).

According to Lawal & Olatunji (2023), mortuaries are often constructed without formal environmental assessments or in contravention of urban planning laws. Several reports indicate that mortuaries have been built in residential neighborhoods or close to major markets and water sources, raising serious health and ethical concerns. These lapses stem from the absence of enforceable siting guidelines and poor inter-agency coordination. In a recent review by the Nigerian Institute of Town Planners, mortuary siting was flagged as a critical urban public health issue, especially in the rapidly growing peri-urban areas where land-use conflicts are common (NITP, 2023). As such, the siting of mortuaries in Nigeria represents a pressing governance and sustainability challenge (Nwachukwu & Maduabuchi, 2020).

Environmental compliance refers to the extent to which institutions or facilities adhere to established environmental laws, standards, and regulations. For mortuaries, this means observing regulations related to waste disposal, effluent treatment, building codes, emissions, and sanitary conditions. Mortuary facilities typically generate hazardous waste, including formaldehyde-laden wastewater, biological tissues, and chemical residues, which require safe and regulated disposal (Okoro & Abah, 2021). Effective environmental compliance ensures that mortuary operations do not pose a threat to human health or the ecosystem and that community trust in public institutions is maintained (Adewole et al., 2019). However, environmental compliance in Nigeria's mortuary sector is often poor due to weak institutional oversight, inadequate funding, lack of political will, and low public awareness. Regulatory agencies such as the National Environmental Standards and Regulations Enforcement Agency (NESREA) and the Federal Ministry of Environment often lack the technical and logistical capacity to monitor mortuary facilities effectively (Ezeh et al., 2023). Additionally, the Environmental Impact Assessment (EIA) process, which is meant to guide project approvals, is frequently bypassed through corrupt practices or political interference. The consequence is that many mortuaries operate without permits or with outdated licenses, discharging untreated waste into surrounding communities (Ibrahim & Iwuoha, 2022).

In the work of Ehi-Eromosele et al. (2015), human and environmental wellbeing represents the comprehensive health, safety, and sustainability of individuals and the ecosystems they live in. It encompasses physical health, mental wellbeing, access to clean resources (air, water, food), and the preservation of natural systems such as soil, water bodies, and biodiversity. Moreso, the location and operation of mortuaries, when mismanaged, can significantly affect both domains. From the human perspective, exposure to biohazards, psychological discomfort due to proximity to the dead, and odor pollution can diminish the quality of life (Onwugbuta-Enyi & Okafor, 2020). From the environmental standpoint, leakage of embalming fluids and improper waste

disposal can lead to contamination of water sources and disruption of soil microbial balance (Chukwu et al., 2023).

According to Adewole et al. (2019), promoting wellbeing in the context of mortuary management requires a multidimensional approach involving proper infrastructure planning, community involvement, environmental monitoring, and adherence to cultural norms. Recent research has emphasized that communities living near mortuaries often experience cumulative impacts that go unaddressed by policymakers due to the lack of a holistic wellbeing assessment framework (Adepoju et al., 2022). However, integrating human and environmental wellbeing into urban planning processes and health infrastructure design is essential for building resilient and inclusive cities, as emphasized by the United Nations Sustainable Development Goals (UN-Habitat, 2022).

## 2.2 Mortuary Siting in Nigeria

The distribution of mortuaries across Nigeria reflects deep disparities between urban and rural areas, shaped by uneven development, demographic concentrations, and the availability of healthcare infrastructure. In major cities like Lagos, Abuja, and Port Harcourt, mortuaries are more numerous and better equipped due to higher demand driven by population density and proximity to tertiary health institutions (Adeyemo & Ogunleye, 2023). Conversely, rural areas suffer from acute under-provision of such facilities, resulting in overreliance on informal preservation methods or long-distance corpse transportation to urban mortuaries. These spatial inequalities are further influenced by land value and availability; urban mortuaries are often crammed into existing hospital premises, while rural land availability does not translate into facility development due to weak investment incentives (Yusuf et al., 2022).

According to Ibrahim & Oludare (2023), the pattern of mortuary distribution also highlights informal practices and unregulated facilities emerging in response to demand gaps. In peri-urban zones, for instance, private mortuary operators often set up facilities with minimal regulatory oversight or health safeguards, exploiting lapses in government supervision (Ezeh & Nwafor, 2023). These operators may lack basic waste management infrastructure or embalming protocols, posing serious risks to environmental and human health. Furthermore, because siting decisions are rarely guided by comprehensive urban planning or health risk assessments, the proliferation of poorly sited mortuaries has become a visible symptom of Nigeria's broader planning and regulatory deficit (Chukwuemeka et al., 2022).

One of the most pressing siting challenges in Nigeria is the encroachment of mortuary facilities into residential zones. In many instances, mortuaries are located within close proximity to schools, markets, and homes, creating conflict with local residents who often oppose such facilities on health and emotional grounds (Nwankwo & Agboola, 2023). This encroachment is facilitated by weak zoning laws, corruption in land allocation processes, and the absence of clear national guidelines for mortuary siting. In fast-growing cities, this issue is exacerbated by urban sprawl, which transforms previously isolated mortuaries into unwanted neighbors as housing developments expand toward previously peripheral areas (Adebanjo & Udo, 2022).

Usman & Ezeanya (2021) in their work stated that inadequate land use planning and the failure to enforce environmental regulations further deepen siting-related conflicts. Nigeria's urban planning institutions often operate with outdated or non-existent master plans, leaving room for arbitrary infrastructure siting (Chukwuemeka et al., 2022). Moreover, the cultural and religious sensitivities associated with death and corpses create friction when mortuaries are sited near sacred places, mosques, churches, or residential compounds. In many Nigerian communities, particularly in the north and among indigenous populations, close proximity to death-related facilities is considered taboo and a source of spiritual pollution (Ibrahim & Oludare, 2023). Without community engagement and cultural consideration in mortuary siting decisions, public resistance and policy failure are inevitable outcomes (Okonkwo et al., 2023).

## 2.3 Environmental Compliance Practices in Nigeria

Nigeria's environmental compliance framework is primarily anchored by the National Environmental Standards and Regulations Enforcement Agency (NESREA), established in 2007 to ensure environmental protection and the enforcement of environmental laws. NESREA plays a central role in monitoring environmental performance, developing sector-specific guidelines, and prosecuting environmental violations (NESREA, 2023). Another critical component of the compliance framework is the Environmental Impact Assessment (EIA) Act of 1992, which mandates environmental assessments for proposed infrastructure, including mortuary facilities, before approval and construction. The EIA process is designed to anticipate, evaluate, and mitigate adverse environmental effects through detailed reporting and stakeholder engagement (Okorie et al., 2022). Together, these instruments form the backbone of Nigeria's attempt to integrate environmental considerations into development processes (Nwosu & Ekene, 2023).

Agbo & Hassan (2022) mentioned that despite the existence of these laws and agencies, the implementation of environmental regulations in Nigeria remains inconsistent, especially in sectors like health infrastructure. Notably, for mortuary projects, compliance with EIA procedures is often overlooked or superficially carried out, particularly at the state and local government levels where oversight is weaker (Ogunbiyi & Akintunde, 2023). Moreover, although NESREA has made progress in formulating sectoral guidelines, including those for healthcare waste and sanitation, there is limited capacity for routine inspections and enforcement in decentralized contexts (Ibrahim & Musa, 2021). However, the federal structure of governance also contributes to fragmentation, as state agencies frequently operate without full alignment with federal environmental standards. Consequently, mortuary developers, especially private operators, often exploit these regulatory gaps to circumvent environmental safeguards (Oladimeji et al., 2024).

According to Adeleke & Omotoso (2023), one of the primary barriers to effective environmental compliance in Nigeria is the weak enforcement of existing regulations. While NESREA and related bodies have the statutory mandate to enforce environmental laws, they often lack the logistical resources, political backing, and manpower to carry out inspections, enforce penalties, or ensure sustained compliance. In addition, political interference and inadequate funding hinder the independence of regulatory institutions (Lawal & Ojo, 2021). These constraints are more pronounced at the sub-national level, where enforcement often depends on poorly trained or underfunded environmental units in ministries or local councils. For mortuary projects, this means that permits are sometimes issued without proper environmental scrutiny, and violations go unpunished, even in cases involving biohazard exposure or improper waste disposal (Chijioke et al., 2021).

Corruption and low public awareness further compound the challenges to environmental compliance. Developers frequently bypass regulatory processes through bribery or collusion with government officials, while community stakeholders are rarely engaged or informed about their rights and the environmental implications of nearby infrastructure projects (Ezeanya & Oladapo, 2022). In many instances, EIAs are treated as bureaucratic formalities rather than meaningful tools for sustainable development, with consultants producing generic or plagiarized reports to expedite approvals (Nnaji et al., 2024). Moreover, public participation in environmental governance is generally low due to limited awareness, educational barriers, and weak civil society involvement. This lack of stakeholder engagement erodes transparency, accountability, and environmental justice especially in vulnerable communities affected by improperly sited or non-compliant mortuaries (Okonkwo et al., 2023).

## 2.4 Impacts of Mortuary Siting on Human Wellbeing

The siting of mortuary facilities in close proximity to residential areas has significant public health implications (Chukwu & Nwankwo, 2024). Mortuaries generate biomedical waste, including embalming fluids (formaldehyde, methanol), body fluids, and organic decomposition

materials that, if poorly managed, pose serious risks to human health. Improper handling and disposal of these materials can lead to contamination of groundwater and nearby water bodies, especially in densely populated urban slums with unlined waste pits or faulty sewage systems (Onuoha & Etuk, 2023). Residents in these areas often rely on shallow wells or boreholes for drinking water, increasing the likelihood of exposure to waterborne diseases such as cholera, dysentery, and typhoid. Moreover, airborne contaminants from improperly ventilated embalming rooms, including volatile organic compounds (VOCs), have been associated with respiratory conditions and chronic irritation among nearby populations (Adebayo et al., 2022).

In Ishola & Zubair (2021) added that chemical exposure from improperly sited mortuaries may become breeding grounds for disease vectors. Also, stagnant water from cleaning operations and organic waste attracts flies, rodents, and other pests, which can spread infectious diseases. For instance, poorly maintained morgues in Southern Nigeria have been linked to increased local incidence of leptospirosis and skin infections (Okafor & Tijani, 2021). The situation is compounded by the lack of occupational health and safety standards for mortuary workers, who are often exposed to bloodborne pathogens such as hepatitis B, hepatitis C, and HIV due to inadequate protective gear and unsafe waste handling practices. The cumulative effect is a heightened public health burden for communities living near non-compliant or informally operated mortuary facilities (Ezekwe & Bassey, 2023).

Beyond physical health, the siting of mortuaries in residential areas causes profound social and psychological distress. Residents living near mortuary facilities frequently report feelings of fear, anxiety, and discomfort due to the presence of dead bodies, body transport vehicles, and the odors associated with decomposition and embalming chemicals (Nnamani & Ogunjimi, 2022). These reactions are often rooted in cultural and spiritual beliefs that view death as a sacred or polluting phenomenon, particularly in communities where proximity to corpses is considered taboo. In Nigerian societies where death is surrounded by elaborate rites and spiritual observances, the continuous visibility of death-related infrastructure near homes can erode emotional security and community cohesion (Balogun & Edem, 2023). Moreover, mortuaries sited near schools, religious spaces, and markets tend to trigger stronger community resistance, leading to protests, litigation, and in some cases, the stigmatization of surrounding neighborhoods. This is especially true in multi-ethnic urban centers where differing religious and cultural norms shape perceptions of death (Onuoha & Etuk, 2023). In Muslim communities, for example, the concept of ritual purity can be compromised by proximity to death-related facilities, resulting in resistance to mosque attendance or market patronage in affected zones (Ishola & Zubair, 2021). Furthermore, the long-term psychological effects such as sleep disorders, chronic stress, and social withdrawal are rarely addressed in environmental impact assessments or urban planning guidelines, despite their documented impact on quality of life (Chukwu & Nwankwo, 2024).

## **2.5. Impacts of Mortuary Siting on Environmental Wellbeing**

The environmental implications of improperly sited mortuaries are profound, particularly in relation to pollution and contamination. Embalming fluids, which typically contain formaldehyde, methanol, and phenol, are highly toxic and persistent in the environment. When these chemicals leak into surrounding soil or are disposed of in unlined pits, they infiltrate groundwater and nearby surface water bodies, thereby contaminating sources of domestic and agricultural water use (Iroegbu & Okonkwo, 2023). In many Nigerian cities, where water infrastructure is underdeveloped, residents depend on shallow wells and boreholes, increasing the risk of exposure to hazardous chemicals. Studies have also indicated that formaldehyde is not only a groundwater pollutant but also a known carcinogen with long-term ecological implications (Abiola et al., 2021).

According to Nnamani & Ogunjimi (2022), improper waste management practices in mortuary facilities further exacerbate air and water pollution. Open dumping of pathological waste, including tissues and fluids, along with inadequate drainage systems, often leads to leachate

generation and runoff during the rainy season (Udoh & Mbah, 2022). These leachates carry heavy microbial loads and chemical pollutants into nearby streams and wetlands, degrading aquatic habitats. Additionally, the incineration of medical waste without air quality controls results in the emission of toxic gases such as dioxins and furans, which contribute to atmospheric pollution and pose respiratory risks to nearby populations (Nkereuwem & Agada, 2023). These pollution dynamics are typically under-reported, yet they illustrate the urgent need for sustainable waste disposal and containment mechanisms in mortuary facility planning and operation (Balogun & Edem, 2023).

In the work of Ishola & Zubair (2021), mortuary siting also leads to significant ecological disruption, particularly when facilities are established in or near ecologically sensitive zones. The alteration of natural land cover to accommodate mortuary buildings, access roads, and waste storage areas often leads to habitat destruction, particularly in peri-urban areas where urban expansion encroaches upon wetlands, forests, or agricultural lands (Olatunji & Hassan, 2022). The introduction of embalming chemicals and organic effluents into the environment can alter soil chemistry, reduce fertility, and inhibit plant growth, thereby impacting local biodiversity. In one case study in southeastern Nigeria, vegetation near a mortuary showed reduced chlorophyll content and stunted growth due to formaldehyde accumulation in the soil (Chukwuma & Ene, 2023). In aquatic systems, untreated mortuary waste can disrupt ecological balances by contributing to eutrophication and altering microbial communities and nutrient-rich effluents promote algal blooms, which decrease oxygen levels in water bodies and harm fish populations and aquatic invertebrates (Chukwu & Nwankwo, 2024). Moreover, the presence of pathogens from cadaveric fluids can introduce diseases into animal populations, thereby disturbing food chains and local ecosystems (Aminu et al., 2021). Insects, birds, and rodents that feed on improperly disposed remains may also serve as vectors, further complicating the ecological web. These consequences are especially critical in rural areas, where communities are more directly reliant on natural ecosystems for livelihood and sustenance.

## 2.6 Urban Case Studies of mortuary Siting and Environmental Compliance

A study by Bamidele and Ifeanyi (2022) examined mortuary locations in Lagos Mainland and found that over 60% were established without comprehensive Environmental Impact Assessments (EIAs), leading to nearby groundwater pollution and significant community backlash. Similarly, in Abuja's Gwagwalada district, residents reported frequent odors, increased pest infestations, and psychological discomfort due to a privately operated mortuary sited close to residential blocks. These conditions not only violate the National Urban Planning Standards but also reflect the growing disconnect between public health regulations and infrastructural development (Nnamani & Ogunjimi, 2022).

Beyond anecdotal complaints, formal documentation of environmental noncompliance has also emerged. The Lagos State Environmental Protection Agency (LASEPA) has recorded multiple infractions involving improper disposal of mortuary waste and air pollution from unauthorized burning of biological materials (Ogundele & Bakare, 2023). In Enugu, protest actions were reported in 2022 against the expansion of a public mortuary situated near a community health center and a primary school residents cited declining school attendance and emotional distress among children (Nwachukwu & Ezeani, 2022). These urban case studies emphasize the urgent need for regulatory alignment and underscore the practical consequences of siting mortuaries in disregard of environmental standards and social considerations (Iroegbu & Okonkwo, 2023).

A multi-city epidemiological survey by Akinyemi and Olarenwaju (2021) found that residents living within 500 meters of mortuary facilities reported significantly higher incidences of respiratory conditions, gastrointestinal infections, and waterborne diseases compared to those in unaffected areas. Moreover, areas with documented chemical leaks especially those involving formaldehyde and chlorinated waste were also marked by reduced biodiversity and higher bacterial contamination in soil and water samples. These patterns are particularly evident in metropolitan zones with limited drainage infrastructure and unregulated building approvals

(Iroegbu & Okonkwo, 2023). Furthermore, geospatial analysis using satellite imagery and ground-truthing methods has revealed that mortuaries situated near wetlands and water catchment zones disproportionately affect surrounding ecosystems. In a 2023 study conducted across five Nigerian states, mortuary-related land use changes were linked to the degradation of riparian vegetation and increased nitrate levels in adjacent streams (Abubakar & Iluno, 2023). A separate meta-analysis of 17 mortuary sites across Nigeria concluded that lack of proper waste segregation and containment practices was a major predictor of environmental violations (Chidera et al., 2022). These data-driven findings reinforce the imperative for environmentally informed site selection and stronger enforcement of ecological protection protocols (Chukwuma & Ene, 2023).

### **3. Theoretical Framework**

#### **3.1 Risk Theory**

Risk Theory was principally propounded by Ulrich Beck, a German sociologist, through his seminal work *"Risk Society: Towards a New Modernity"* (Beck, 1986). Risk Theory is a foundational concept in environmental health and disaster management studies, offering a framework for understanding how hazards impact populations and ecosystems. At its core, the theory emphasizes the interaction between hazard exposure and vulnerability to explain varying risk levels across different contexts. A hazard refers to any potential source of harm such as chemical leaks from mortuary waste while exposure denotes the extent to which people or the environment come into contact with that hazard. Vulnerability, on the other hand, captures the susceptibility of exposed populations to harm, influenced by socio-economic status, health infrastructure, environmental resilience, and governance systems (Wisner et al., 2012). It also underscores the social construction of risk, highlighting how institutional decisions, political marginalization, and cultural perceptions shape who bears the brunt of environmental hazards (Douglas & Wildavsky, 1982).

In the context of mortuary siting, communities living near poorly regulated facilities face heightened exposure to harmful substances, while inadequate health services and weak environmental laws exacerbate their vulnerability. In many Nigerian urban and peri-urban settings, the siting of mortuaries in low-income or informal settlements is not coincidental but reflects systemic inequities in urban planning. These communities often lack the political clout to resist the placement of environmentally sensitive infrastructure in their neighborhoods, increasing both their exposure and vulnerability. Moreover, the absence of effective risk communication and public participation in siting decisions further deepens this imbalance (Ajibade et al., 2021). Therefore, applying Risk Theory in this context not only helps identify where risk is concentrated but also informs equitable policy interventions that address both the sources of exposure and the structural conditions that heighten vulnerability.

#### **3.2 Environmental Justice Theory**

Environmental Justice Theory is a multidisciplinary framework that addresses the equitable distribution of environmental benefits and burdens across all social groups, particularly focusing on marginalized or disadvantaged communities. Emerging in the United States during the 1980s as a response to evidence that minority and low-income communities were disproportionately exposed to environmental hazards, the theory has since expanded globally to include social, political, and ecological dimensions of justice. At its core, Environmental Justice (EJ) emphasizes that all people regardless of race, ethnicity, gender, or socioeconomic status have the right to live in a clean, healthy, and sustainable environment (Bullard, 1993; Schlosberg, 2007). The theory encompasses three main pillars: distributive justice, which concerns the fair allocation of environmental goods and harms; procedural justice, which emphasizes inclusive and equitable participation in environmental decision-making; and recognition justice, which demands respect for diverse cultural identities and values in environmental governance (Fraser, 1997; Walker, 2012).

In the Nigerian context, Environmental Justice Theory has become increasingly pertinent, particularly in the realms of urban planning, environmental regulation, and public health governance. As cities expand rapidly and infrastructure develops unevenly, many environmental decisions such as the location of mortuary facilities are often made without adequate community consultation, environmental impact assessments, or adherence to zoning laws. This is especially prevalent in low-income and marginalized urban neighborhoods, where regulatory oversight is weak and the voices of residents are frequently excluded from decision-making processes. The siting of mortuaries in or near residential zones, schools, water sources, or community health facilities reflects a deeper structural inequality in how environmental risks are distributed. Such practices reveal a pattern where vulnerable populations those with limited political capital or economic resources are disproportionately exposed to environmental hazards, including chemical contamination, biohazards, offensive odors, and psychological stress. These burdens, while avoidable, are often the result of deficient institutional frameworks, lack of transparency in urban governance, and the commodification of land without regard for social or ecological wellbeing. Consequently, these communities bear the external costs of development decisions made in their absence, which is a central concern of Environmental Justice Theory. This theoretical framework calls for procedural equity (inclusion in decision-making), distributive equity (fairness in burden-sharing), and recognition equity (acknowledging the rights and values of affected groups), all of which are currently lacking in many Nigerian urban planning scenarios (Ogunbode et al., 2020; Ede et al., 2022; Ajibade & Agunbiade, 2021).

#### **4. Conclusion**

This study has critically assessed the implications of mortuary siting and environmental compliance on human and environmental wellbeing in Nigeria. The findings reveal that the unregulated or poorly planned location of mortuary facilities especially in close proximity to residential areas, schools, and water sources poses significant risks to public health, environmental quality, and social stability. Issues such as exposure to biohazards, groundwater contamination from embalming fluids, and psychosocial discomfort among residents are compounded by systemic failures in urban planning and environmental oversight. Moreover, many mortuaries operate without full compliance with national environmental standards and guidelines, including Environmental Impact Assessment (EIA) protocols and waste management regulations. These challenges are further exacerbated by weak institutional enforcement, corruption, and lack of public awareness, which together contribute to the persistence of environmental injustice in affected communities. The study underscores the urgent need to integrate environmental justice principles into urban development and health infrastructure planning in Nigeria. By highlighting the intersection between land use, regulatory compliance, and community wellbeing, this research contributes to a growing body of literature advocating for equitable and sustainable urban governance. Addressing the issues identified requires multi-level interventions that not only enforce compliance but also prioritize the voices and rights of vulnerable populations disproportionately affected by environmental hazards.

#### **5. Recommendations**

1. Relevant authorities such as NESREA and state-level environmental protection agencies should enhance the enforcement of environmental compliance regulations related to mortuary operations, including regular inspections, sanctions for violations, and mandatory Environmental Impact Assessments.
2. Urban development policies should explicitly incorporate environmental justice frameworks to ensure that mortuary siting decisions are equitable and do not disproportionately burden marginalized communities.
3. Community consultation and participation should be mandatory in the siting of mortuary facilities. Residents must be informed and involved in decision-making processes to ensure transparency and social acceptability.

4. Environmental and public health officers should receive ongoing training on monitoring mortuary waste, risk communication, and environmental assessment procedures to enhance institutional effectiveness.
5. Mortuaries should be mandated to implement modern, eco-friendly waste management and ventilation systems to reduce pollution and limit health risks associated with biological and chemical waste.
6. Government and civil society organizations should engage in continuous sensitization programs to educate the public on the environmental and health implications of poorly managed mortuary facilities.

## References

1. Abiola, T. M., Yusuf, A. M., & Odugbemi, T. S. (2021). Toxicity of formaldehyde in environmental compartments: Risk assessment and implications for public health. *Nigerian Journal of Environmental Toxicology*, 11(1), 38–52.
2. Abubakar, M. A., & Iluno, T. C. (2023). Ecological degradation linked to mortuary expansion in southern Nigerian floodplains. *Journal of Eco-Geographical Studies in Africa*, 5(1), 41–59.
3. Adebanjo, R. A., & Udo, M. J. (2022). Health infrastructure inequality in Nigeria: Mortuary service distribution across geopolitical zones. *African Journal of Spatial Development*, 5(1), 67–82.
4. Adebayo, A. I., Musa, G. O., & Danjuma, L. K. (2022). Airborne risks from embalming chemicals in urban Nigerian mortuaries: A public health perspective. *African Journal of Environmental Health*, 13(1), 45–58.
5. Adefemi, F., & Awoyemi, O. (2021). Urban land use planning and public health infrastructure in Nigeria. *Journal of Environmental Planning and Policy*, 12(1), 33–47.
6. Adeleke, B. A., & Omotoso, O. J. (2023). Institutional weaknesses and environmental enforcement in Nigeria: A governance perspective. *Journal of African Environmental Law*, 12(2), 57–74.
7. Adepoju, A. A., Oladipo, M. O., & Ajibade, B. (2022). Living with the dead: Environmental and psychosocial impacts of mortuary proximity in urban Nigeria. *African Journal of Public Health*, 18(4), 299–310.
8. Adewole, M. B., Oseni, M. O., & Alabi, B. (2019). Urban Planning and Environmental Health Challenges in Developing Countries: A Nigerian Perspective. *Journal of Environmental Health and Sustainability*, 6(2), 45–56.
9. Agbo, P. C., & Hassan, I. A. (2022). Institutional corruption and the siting of public health facilities in Nigeria. *Journal of Governance and Development Studies*, 9(2), 45–60.
10. Ajibade, I., & Agunbiade, M. E. (2021). Urban injustice and environmental governance in Nigerian cities: A review of land use conflicts and policy failures. *Journal of African Urban Studies*, 3(2), 45–61.
11. Akande, T. M., & Ajayi, K. M. (2022). Mortuary facilities and urban public health risks in southwestern Nigeria. *International Journal of Environmental Health Research*, 32(2), 121–134.
12. Akinbile, C. O., & Oladoja, N. A. (2020). Assessment of Groundwater Pollution Risk Near Urban Mortuaries in South-Western Nigeria. *Environmental Monitoring and Assessment*, 192(3), 172.

13. Akinyemi, O. A., & Olarenwaju, S. M. (2021). Health risk mapping of communities near Nigerian mortuaries: A spatial epidemiological approach. *Nigerian Journal of Public Health Research*, 9(3), 89–103.
14. Aminu, M. U., Idris, S. M., & Folarin, T. B. (2021). Cadaveric contamination and aquatic health: A case study of rural Nigeria. *African Journal of Aquatic Ecology*, 8(3), 55–68.
15. Balogun, R. A., & Edem, I. N. (2023). Cultural conflict and spatial distress: The social cost of mortuary siting in Nigerian cities. *Journal of Cultural Geography and Development*, 9(2), 76–91.
16. Bamidele, T. I., & Ifeanyi, C. N. (2022). Mortuary siting and environmental injustice in Lagos Mainland: An institutional review. *Urban Environmental Governance Journal*, 7(2), 72–85.
17. Bullard, R. D. (1993). *Confronting Environmental Racism: Voices from the Grassroots*. South End Press.
18. Chidera, U. A., Etim, O. J., & Bello, F. M. (2022). Waste management gaps in mortuary operations across Nigerian cities: A meta-analytical approach. *African Journal of Environmental Systems*, 11(4), 93–109.
19. Chijioke, E. N., Uzochukwu, B. S., & Awosika, O. O. (2021). Environmental hazards of improperly managed healthcare infrastructure in Nigeria: A review. *Nigerian Journal of Public Health and Environment*, 5(4), 88–101.
20. Chukwu, A. F., & Nwankwo, E. O. (2024). Psychosocial impacts of death infrastructure in residential zones: A Nigerian case study. *Journal of Mental Health and Urban Studies*, 6(1), 33–50.
21. Ede, P. N., Onyema, M. O., & Chukwuemeka, M. T. (2022). Justice and Equity in Environmental Health: A Nigerian Perspective. *African Journal of Environmental and Social Justice*, 4(1), 19–35.
22. Ehi-Eromosele, C. O., Okiei, W. O., Ilori, M. O., & Oduyemi, K. (2015). Environmental Impacts of Mortuary Wastewater Discharge on Water Quality. *African Journal of Environmental Science and Technology*, 9(4), 306–312.
23. Ezeanya, I. T., & Oladapo, F. M. (2022). Corruption and compliance in Nigeria's environmental sector: Lessons from EIA implementation. *African Governance and Policy Review*, 8(1), 115–129.
24. Ezeh, C. O., Eme, C. B., & Uzochukwu, B. S. (2023). Institutional capacity and compliance monitoring of hazardous waste facilities in Nigeria: A critical assessment. *Nigerian Journal of Environmental Management*, 14(2), 88–104.
25. Ezekwe, U. P., & Bassey, C. E. (2023). Public health hazards of mortuary waste mismanagement in West Africa. *Global Journal of Biohazard Research*, 7(3), 101–117.
26. Fraser, N. (1997). *Justice Interruptus: Critical Reflections on the “Postsocialist” Condition*. Routledge.
27. Ibrahim, A. A., & Musa, I. K. (2021). Monitoring environmental compliance in Nigeria: Challenges and prospects for NESREA. *Journal of Regulatory Studies in Africa*, 9(3), 45–60.
28. Iroegbu, A. C., & Okonkwo, N. D. (2023). Mortuary siting, chemical waste, and groundwater pollution in Nigeria: Emerging evidence. *Journal of Sustainable Urban Development in Africa*, 7(1), 27–42.

29. Ishola, B. K., & Zubair, M. I. (2021). Mortuary encroachment and religious sentiment in Nigerian Muslim communities. *Nigerian Journal of Religious and Social Studies*, 11(2), 67–81.
30. Lawal, M. A., & Olatunji, I. B. (2023). Land use conflict and the challenges of infrastructure siting in urban Nigeria. *Nigerian Journal of Urban Studies*, 6(1), 45–59.
31. NESREA. (2023). *Annual Report on Environmental Compliance and Enforcement in Nigeria*. Abuja: National Environmental Standards and Regulations Enforcement Agency.
32. NITP (Nigerian Institute of Town Planners). (2023). *Mortuary siting and land use compatibility in Nigerian cities: Policy brief*. Abuja: NITP Policy Series No. 5.
33. Nkereuwem, O. J., & Agada, O. D. (2023). Air pollution from medical waste incineration in Nigeria: A neglected environmental crisis. *African Environmental Science Review*, 9(1), 60–76.
34. Nnaji, C. O., Okoro, D. J., & Adebayo, R. T. (2024). Environmental Impact Assessment in Nigeria: An audit of practice and effectiveness. *Environmental Policy Research Journal*, 6(2), 89–104.
35. Nnamani, I. O., & Ogunjimi, F. O. (2022). Fear and place: Psychological reactions to mortuary proximity in Lagos suburbs. *Journal of Environmental Psychology in Africa*, 5(2), 92–106.
36. Nwachukwu, J. O., & Ezeani, P. U. (2022). Community opposition and psychosocial effects of public mortuary siting in urban Enugu. *Journal of Urban Health and Society*, 6(2), 55–70.
37. Nwosu, J. O., & Ekene, C. F. (2023). Planning without implementation: The regulatory failure behind mortuary encroachment in Nigerian cities. *Urban Policy and Governance Review*, 6(1), 55–71.
38. Obaje, A. E., & Suleiman, K. O. (2023). Private mortuary proliferation in Abuja: Spatial analysis and community perceptions. *Nigerian Review of Urban and Regional Studies*, 10(1), 48–64.
39. Ogunba, O. A., & Olatunji, S. O. (2018). Challenges of Environmental Regulation in Nigeria's Urban Centers. *Journal of African Urban Studies*, 3(1), 112–126.
40. Ogunbiyi, S. T., & Akintunde, R. A. (2023). Decentralized enforcement of environmental laws in Nigeria: A critical review. *Sustainable Development in Africa Review*, 4(1), 61–75.
41. Ogunbode, C. A., Boso, A., & Thaker, J. (2020). Public perceptions of environmental injustice in sub-Saharan Africa: Evidence from Nigeria. *Environmental Research Letters*, 15(11), 115008.
42. Ogundele, M. I., & Bakare, J. O. (2023). Institutional monitoring failures in Nigerian mortuaries: Evidence from LASEPA reports. *African Environmental Oversight Journal*, 4(3), 77–91.
43. Okafor, D. O., & Tijani, A. R. (2021). Waste management lapses in Nigerian mortuaries and their epidemiological effects. *African Epidemiological Bulletin*, 4(3), 56–69.
44. Okonkwo, I. A., Musa, R. K., & Bello, J. O. (2023). Mortuary access and rural health disparities in Nigeria: A spatial justice approach. *Health Systems Equity Journal*, 4(2), 33–49.
45. Okorie, O. E., Uchenna, L. P., & Odunze, A. C. (2022). Environmental sustainability in public health facility construction in Nigeria: Compliance with EIA protocols. *Built Environment and Health Journal*, 7(1), 22–35.

46. Okoro, T. I., & Abah, C. M. (2021). Hazardous waste management practices in Nigerian mortuaries: A policy and technical gap analysis. *African Journal of Environmental Safety*, 7(2), 144–160.
47. Oladimeji, S. O., Anene, C. U., & Owolabi, M. A. (2024). Siting conflict and public perception of mortuary facilities in South-West Nigeria. *Journal of Environmental Health and Urban Policy*, 11(1), 25–38.
48. Olatunji, L. O., & Hassan, M. A. (2022). Land use change and ecological degradation due to mortuary construction in peri-urban Nigeria. *Journal of Urban Planning and Ecology*, 5(2), 104–120.
49. Onuoha, H. I., & Etuk, B. S. (2023). Water pollution and community health risks near mortuaries in South-East Nigeria. *International Journal of Environmental Risk and Public Safety*, 9(1), 21–36.
50. Udoth, R. E., & Mbah, N. I. (2022). Pathological waste and stormwater contamination in mortuary-adjacent communities. *Nigerian Journal of Environmental Protection and Waste Management*, 6(3), 70–85.
51. UN-Habitat. (2022). *Planning for health and wellbeing: Integrating human and environmental sustainability into urban infrastructure*. Nairobi: United Nations Human Settlements Programme.
52. Usman, L. A., & Ezeanya, A. N. (2021). Spiritual boundaries and public health infrastructure: Cultural perspectives on mortuary siting in Nigeria. *African Journal of Cultural Studies*, 17(2), 99–114.
53. Walker, G. (2012). *Environmental Justice: Concepts, Evidence and Politics*. Routledge.
54. World Health Organization (WHO). (2014). *Safe Management of Bodies of Deceased Persons in the Context of Ebola*. WHO Press.