Living on the Edge: How Nigeria’s Slum Dwellers are Both Victims and Drivers of Climate Change?

**Abstract**

*Nigeria’s slum dwellers, particularly in settlements like Makoko and Port Harcourt, face escalating threats from climate-amplified flooding, air pollution, and extreme heat, hazards disproportionately borne by the urban poor. Drawing on multiple cases and existing evidence, this article explores how systemic neglect and exclusionary urban policies compel residents to adopt survival strategies such as waste burning and charcoal use, which unintentionally exacerbate environmental degradation through emissions and deforestation. These challenges are compounded by limited access to clean energy, waste infrastructure, and healthcare, creating a cycle of vulnerability. Yet, across these communities, grassroots innovations from Makoko’s floating school to informal waste-to-wealth models reveal localized capacities for climate adaptation. Still, structural barriers, including forced evictions, mismanaged funds, and elite-driven urban planning, obstruct the institutional support these initiatives require. By connecting community responses with broader governance failures, this study exposes the need for inclusive development approaches that position slum residents not as passive recipients of aid but as essential actors in climate resilience. Institutionalizing community-led solutions and scaling their impact will be critical to reducing urban climate vulnerability in Nigeria and similar contexts.*

*Keywords: Nigeria’s slum dwellers, Climate Change, survival strategies, air pollution and extreme heat*

1. **INTRODUCTION**

As giant puppet animals paddled into the floating slum of Makoko hooting, braying, and towering over children perched on rickety plank porches, they brought with them more than spectacle (Salako 2025). They carried a message: the climate crisis has arrived, and its ripple effects are lapping at the edges of Nigeria’s most vulnerable communities. In places like Makoko, where survival is a daily negotiation with the elements (Salako 2025), slum dwellers are not just passive victims, they’re also unintended contributors to the very climate shifts that threaten to engulf them. This paradox lies at the heart of Nigeria’s climate story.

Sub-Saharan Africa (SSA) hosts the world’s highest proportion of slum dwellers, with 62% of its urban population residing in informal settlements which is nearly double the rate of Southern Asia (Amega 2021). Nigeria epitomizes this crisis: Lagos alone is a "node in the shanty town corridor of 70 million people" (Pat and Nwadiaro 2012), where rapid, unplanned urbanization and weak governance have expanded slums housing 49% of the urban population (Climate Displacement and Resilience Database 2023; Ekanem 2024). These settlements, characterized by overcrowding, inadequate sanitation, and hazardous locations (Amega 2021), are ecological and health time bombs. Unregulated industries, diesel emissions, and rampant deforestation for fuel (Amega 2021; Population Matters 2024) exacerbate air and water pollution, while construction of pit latrines close to surface water (streams, dams) and groundwater (borehole, unprotected wells) contaminates water sources with chemical contaminants and pathogens (Amega 2021).

The Nigerian case is not isolated. Across Africa and the Global South, slum settlements face parallel vulnerabilities: homes along Kenya’s Ngong River are swept away annually by climate-driven floods (Pashayan 2024), while informal settlements in Ghana, Nairobi, Durban, and Kampala face heightened climate risks due to high population density, poor planning, and lack of infrastructure such as water, waste, and sanitation systems (Kemarau and Nor 2025). UN-HABITAT suggested that Sub-Saharan Africa, despite a modest percentage decline in slum populations from 2000 to 2015, has seen absolute numbers rise from 128 million to 200 million slum dwellers, with climate threats deepening their exposure (Seçmen and Ibrahim 2025). In fact, the region is projected to host a large share of the global slum population, which may double to two billion by 2030 (Abdussalam 2020). These regional patterns demonstrate that climate-vulnerable slums are not a Nigerian anomaly but a systemic feature of rapid, exclusionary urbanization.

Nigeria’s climate vulnerability intensifies these challenges. Ranked 73rd globally for climate risk (Climate Displacement and Resilience Database 2023), the country faces escalating floods, with 18 flood years recorded between 2001–2020 which is triple the prior two decades (Climate Displacement and Resilience Database 2023). Coastal cities like Lagos, where slums cluster along erosion-prone shorelines (Population Matters 2024), endure seasonal flooding that displaces millions and strips $100–450 billion from GDP by 2050 if unaddressed (Climate Displacement and Resilience Database 2023). Yet, slum dwellers - 70% of Nigeria’s urban poor (Abdussalam 2020-NPC 2018) - are both victims and inadvertent perpetrators of degradation, resorting to deforestation and waste burning amid energy poverty (Population Matters 2024; Amega 2021-10).

This article traces how systemic abandonment forces Nigeria’s slum dwellers into this double bind, as both casualties and unwitting agents of climate change. It begins by mapping the frontline of vulnerability: the geography, density, and informality that make slums like Makoko ground zero for disasters. From there, it examines the survival strategies that backfire ecologically, the policy failures that perpetuate harm, and, finally, the grassroots innovations that offer a lifeline.

The stakes extend far beyond Nigeria. By 2050, climate impacts could cost the country up to 9% of its GDP, a warning for the Global South (Climate Displacement and Resilience Database 2023-21). Even more, the 2022 floods that displaced half a million Nigerians are just a preview of crises to come; in the same year, floods across West and Central Africa killed 1,418 people and displaced 2.9 million (Pashayan 2024). But within these sinking slums lies a demand the world cannot ignore: resilience must be radical, or it will be unjust.

1. **NIGERIA’S SLUMS: GROUND ZERO FOR CLIMATE CRISIS** 
   1. **Key Slums: Front Lines of Climate Change**

Nigeria’s most climate-threatened slums cluster along ecologically precarious zones. Makoko, Lagos’ iconic stilt settlement housing 250,000 people (Ottaviani 2020), epitomizes this: built over a lagoon, its wooden structures face escalating floods as rising sea levels and blocked drainage systems merge floodwaters with raw sewage (Action Aid 2007). Nearby Ajegunle, which is home to 500,000 residents sandwiched between Apapa and Tin Can Island ports (The Republic 2024) suffers parallel crises, where seasonal rains trigger "inter-street pillage" amid total infrastructure collapse. Port Harcourt’s waterfront slums, housing 20–40% of the city’s population (Commonwealth 2016), face even direr conditions; homes of corrugated iron sheets sit atop tidal waterways, with high tides invading living spaces and excrement dumped directly into the Bonny River (Nnanna, Onah & Onoyume 2009). Agboyi-Ketu’s nearly 1 million residents (Akinola 2023) endure similar waterborne risks, relying on canoes for transport while defecating in the same rivers that flood their bamboo-and-palm-frond huts.

These Nigerian examples are mirrored across other parts of Africa and the Global South. In Addis Ababa, Ethiopia’s capital, informal settlements have expanded into floodplains and riparian zones, weakening natural buffers and triggering landslides and floods, while untreated waste has turned rivers into open sewers (Yimere 2023). Similarly, in São Paulo’s favelas, heatwaves, unpredictable rainfall, and water scarcity increasingly threaten health and housing systems, particularly in low-income areas with little access to cooling or sanitation infrastructure (UNFCCC n.d.). In Rio de Janeiro, approximately 19% of the population live in informal settlements where the heat island effect and lack of vegetation intensify urban heat stress (Oppla n.d.). These cases reflect a shared reality: slums located in marginal, high-risk zones are disproportionately exposed to the frontlines of climate impacts.

These settlements share systemic vulnerabilities: densities exceeding 20,000 persons/km² (Olajide & Lawanson 2014), incomes below $100/month (Akinola 2023), and reliance on toxic fuels like kerosene (C40 2021). Over 70% lack formal sanitation, turning waterways into biological hazards (Action Aid 2007; Nnanna et al. 2009). Their geography, on Lagos’ floodplains (40% of which are wetlands) or Port Harcourt’s tidal frontiers (Olajide & Lawanson 2014), makes them sacrifice zones for climate impacts, yet policy gaps leave them unmapped and unmeasured in emissions data (C40 2021).

* 1. **Why They’re Vulnerable: Geography, Informality, and Systemic Neglect**

Nigeria’s slums face existential threats from their geographic precarity. Makoko’s stilt houses, built on Lagos Lagoon, are battered by rising sea levels and floods that contaminate drinking water with sewage and waste (Adebayo 2017), while Ajegunle-Ikorodu’s 0.48km² swampy land, flanked by River Ogun, drowns under seasonal rains and dam releases (Oyalowo 2024). Port Harcourt’s waterfront slums, perched on tidal zones, see seawater invade homes during high tides, forcing residents to dump excrement directly into the Bonny River (Gobo et al. 2022). These locations, which are 40% of Lagos, is wetlands (Olajide and Lawanson 2014) and are climate death traps, with 3 million Lagosians in low-lying informal settlements (Olajide and Lawanson 2014). Overcrowding exacerbates risks: densities reach 4.6 persons per room (Farinmade, Richard, and Thomas 2022), and makeshift housing (75% self-built, per Farinmade et al. 2022) collapses under floods, displacing thousands (Adebayo 2017).

Systemic abandonment deepens the crisis. Slum dwellers lack access to clean water as 86% of Port Harcourt’s slum residents dump waste directly into rivers (Gobo et al. 2022), while air pollution from kerosene and charcoal kills 4.3 million annually globally (Farinmade et al. 2022). In Ajegunle, government neglect traps generations in poverty, with no schools or healthcare (Rosemary 2024), and Makoko’s children wade barefoot through mosquito-infested floodwaters (Adebayo 2017). The result is a vicious cycle: informality denies infrastructure, forcing toxic coping strategies (e.g., deforestation for fuel) that worsen climate risks (Farinmade et al. 2022).

These drivers of vulnerability are not unique to Nigeria. Across Sub-Saharan Africa, where over 71% of urban residents live in slums (Ramin 2009), the interaction of urbanization and climate change is already increasing health and environmental risks. As the IPCC warns, these two forces may synergistically worsen disease burdens and housing collapse (Ramin 2009; Confalonieri et al 2007). In Ethiopia, rapid migration and unregulated housing have led to severe flooding, fires, and infrastructural collapse in informal zones (Yimere 2023). In Brazil’s dense favelas, extreme heat and lack of green infrastructure have turned slums into thermal hotspots, particularly in Rio’s Arará neighbourhood, where tree planting is nearly impossible due to space constraints (Oppla n.d.).

A map of a city

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**Fig 1: Old map of Makoko, Lagos (1962).   
Source: Wikicommons | PD-USGov via Urbanet (Ottaviani, 2020)**

1. **Victims: How Climate Change Punishes Slum Dwellers**
   1. **Case Study 1: Flooding in Makoko - Climate Vulnerability Amplified by Informality**

Makoko and Lagos’ 100+ coastal slums face existential threats from climate-amplified flooding, with poor households disproportionately exposed to sea-level rise and extreme rainfall (IPCC 2012). Similar to Ajegunle's documented conditions, residents endure overcrowding (5+ people/room), contaminated floodwaters carrying fecal pathogens, and zero drainage, resulting in inevitable cholera, malaria, and "jomijomi" fungal outbreaks (Adewale et al. 2020; Olanrewaju et al. 2019). The 2019 floods submerged homes for 3–4 months, destroying 23.9% of foundations and 16.4% of walls while drowning critical documents (Adegun 2023). Wetland destruction for informal land reclamation has eliminated natural flood buffers, making a projected 2m sea-level rise catastrophic, potentially drowning 75% of nearby Idi-Araba (Adegun 2023; Amah et al. 2022).

A aerial view of a flooded area

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**Fig 2: Drone shot of Makoko. Source: CodeForAfrica via Urbanet (Ottaviani 2020)**

These dynamics are not unique to Lagos. In Nairobi, Kibera, Mukuru, and Mathare slums experience similar conditions where flooding disrupts lives seasonally. Informal homes built along the Nairobi River are frequently submerged, leading to property damage, injury, and outbreaks of infectious diseases (Balakrishnan et al. 2024). A study by Johns Hopkins University found that summer temperatures in these settlements were over 4°F higher than in surrounding wooded areas, exposing residents to intensified heat stress (UNDRR 2018). The climate-health risks in Makoko thus mirror those faced by millions in East Africa’s unplanned settlements, where informal construction in riparian zones is compounded by government disinvestment and exclusion from formal adaptation plans (Balakrishnan et al, 2024).

The combined absence of drainage, healthcare, and flood defences turns environmental hazards into biological weapons: 42.7% of Makoko households report flood-related damages annually, with children and the elderly uniquely vulnerable to heatstroke and dehydration in waterlogged homes (Adewale et al. 2020; Adegun 2023). As one resident lamented, “Water occupies the whole place for months” (Adegun 2023), a crisis enabled by policies that treat wetlands as expendable rather than as vital climate infrastructure.

* 1. **Case Study 2: Air Pollution in Port Harcourt – Soot, Smoke, and Systemic Neglect**

Port Harcourt’s slums, including Diobu and Eagle Island, endure lethal air pollution from a toxic mix of kerosene smoke (used by 97% of Diobu households), industrial emissions, and severe vegetation loss with green cover shrinking from 47.9% to 21.04% between 1984–2014 (Amah et al. 2022; Ayotamuno & Gobo 2016). Dense, unventilated housing traps pollutants, while open defecation sites and waste piles amplify public health risks. Children inhale kerosene smoke equivalent to 20 cigarettes daily, and elderly residents face heatstroke in zinc-roofed shanties with no healthcare access (Amah et al. 2022). These conditions mirror Lagos’ Critical Heat Risk Zones like Makoko, where the urban heat island effect worsens respiratory ailments (Adelekan et al. 2023).

This pattern is echoed across Africa and Latin America. In Nairobi’s Korogocho, widespread poverty and rising fuel costs have forced residents to burn plastic waste for cooking; a practice that releases dioxins linked to cancer and severe respiratory disease (Brown 2022). A survey in Mukuru found that residents widely perceive climate-related air pollution, water contamination, and extreme heat as direct threats to their health and livelihoods (Andersen et al. 2023). Meanwhile, in Brazil, more than 25 million people live in inadequate urban housing, and 35 million lack access to clean water. Urban poor in São Paulo endure rising temperatures, unreliable energy, and limited access to cooling infrastructure (Habitat for Humanity n.d.; UNFCCC n.d.).

Despite clear documentation of environmental risks in Port Harcourt since 2016 (Ayotamuno & Gobo 2016), the government has failed to regulate industrial pollution or offer clean alternatives. Slum dwellers (71% of whom cook outdoors with kerosene) are often criminalized, while multinational corporations continue gas flaring unchecked (Amah et al. 2022). This hypocrisy echoes a global injustice: the world’s poorest emit the least yet suffer 90% of pollution-related deaths (Bai et al. 2018). Port Harcourt’s “black soot” disaster illustrates how climate harm is not merely environmental but deeply political, a product of structural neglect and selective enforcement.

* 1. **Systemic failures**

Poor environmental quality in slums leads to severe health consequences. Waterborne diseases like typhoid and dysentery are the second and third most common ailments among slum dwellers, due to contaminated boreholes and shared toilets that elevate the risk of cholera and diarrhea (Amah et al. 2022). In Port Harcourt, the lack of healthcare facilities compounds this risk. In Makoko and Lagos' wider informal settlements, the absence of drainage infrastructure, healthcare services, and durable housing materials worsens the impacts of climate-related events (Adegun 2023). Homes made from planks and sandcrete collapse under heavy floods or heat, and wetlands that once served as buffers have been destroyed, heightening vulnerability to rising seas and rainfall extremes.

These systemic failures are far from unique. In Nairobi, Kibera and Mukuru residents face similar neglect. According to UN-Habitat and World Bank assessments, over half of Kenya’s urban population lives in overcrowded, underserved slums where infrastructure gaps expose them to climate shocks (Bhalla 2023). In Brazil, 100 million people are not connected to sewage systems, and millions lack trash collection or clean water access, making urban climate resilience almost impossible in favelas (Habitat for Humanity n.d.). As a result of exclusion from formal urban systems, slum communities are doubly punished: first by environmental risks they did not create, and then by governments that fail to protect them (Adegun 2023; Adelekan et al. 2023). Their exposure cannot be said to be accidental, it is institutionalized.

1. **DRIVERS: UNINTENTIONAL CLIMATE HARM**
   1. **Survival Strategies With Costs: The Climate-Poverty Paradox**
      1. **Waste Burning & CO2 Emissions:** In Nigerian urban slums like Makoko, Diobu, and Eagle Island, open waste burning is widespread due to inadequate waste management systems. This practice emits CO₂, methane, and black carbon, contributing to both greenhouse gases and respiratory hazards (Amegah 2021). In Port Harcourt, Amah et al. (2022) note that slum dwellers typically burn waste or dump it in nearby rivers, with little to no public sanitation infrastructure to manage waste sustainably. This pattern echoes conditions in Nairobi’s Mukuru slums, where community members report visible air pollution and deteriorating health due to frequent burning of plastic and household refuse (Andersen et al. 2023).
      2. **Charcoal Use & Deforestation:** Heavy reliance on charcoal as cooking fuel in Nigerian slums like Lagos and Port Harcourt exacerbates deforestation and forest degradation (Nelson et al. 2025). In Makoko, where electricity access is unreliable and gas is unaffordable, households turn to biomass fuels that deplete local vegetation and emit pollutants. Amah et al. (2022) found that limited kitchen infrastructure in Port Harcourt correlates with dependence on charcoal. Similarly, in Korogocho, Nairobi, residents have resorted to burning plastic waste due to the unaffordability of charcoal, further worsening air toxicity and greenhouse gas emissions (Brown 2022). These practices reflect a wider regional crisis where energy poverty translates into environmental harm.
      3. **Flood-Aggravating Construction (e.g., Sand Filling):** In flood-prone areas like Makoko and Eagle Island, informal construction practices worsen climate risks. Residents reclaim land by filling wetlands and waterways with sand, disrupting natural drainage and intensifying runoff during storms (Adelekan 2009; Amah et al. 2022). These actions, though driven by desperation, make settlements more vulnerable to flooding. Similar dynamics are observed in Kibera, Nairobi, where homes built along riverbanks and floodplains suffer recurrent inundation due to poor planning and river encroachment (Balakrishnan 4).
   2. **Poverty Trap: Why Alternatives Are Inaccessible.**
2. **Economic Constraints**:The adoption of clean energy alternatives like LPG or solar stoves remains out of reach for most slum residents, who survive on less than $1.90/day. In Port Harcourt, the urban poor are effectively trapped in flood-prone rental housing due to cost constraints, paying up to 56% less than safer areas (The Conversation 2023). This same pattern plays out in informal settlements across Africa. In Kibera, over half the population earns under $2/day, making it nearly impossible to afford sustainable housing or energy (Bhalla 2023). Amah et al. (2022) also found that 68.2% of residents in Port Harcourt’s Diobu and Waterside areas live in rented structures, reflecting structural limitations on long-term investment in cleaner living.
3. **Infrastructure Gaps:** Only 7% of Makoko residents have legal land tenure (Cool Geography n.d.), which prevents access to basic services like electricity, water, or waste collection. As a result, people rely on survival strategies such as building on unstable land, using makeshift energy sources, or burning waste. This infrastructure vacuum is not unique to Nigeria. In Brazil, over 100 million people lack proper sewage systems, and more than 35 million have no access to clean water, conditions which make environmental responsibility impractical in informal settlements (Habitat for Humanity n.d.). These parallels reveal that infrastructure gaps are global drivers of unintentional climate harm in slums.
4. **Knowledge and Policy Barriers:** Weak enforcement of environmental laws and limited public awareness further entrench unsustainable practices. Amah et al. (2022) highlight poor environmental sanitation and the absence of public education programs in Port Harcourt’s slums. Without legal support, incentives, or affordable alternatives, slum dwellers are not equipped to transition to more climate-resilient lifestyles. This policy inertia mirrors challenges in São Paulo, where millions living in favelas lack access to green spaces or municipal sustainability programs (UNFCCC n.d.). In both cases, the climate burden on the urban poor grows not just from poverty, but from systemic inaction.
5. **BROKEN SYSTEMS: GOVERNANCE & POLICY FAILURES** 
   1. **Urban Planning Gaps: Exclusionary Policies and Failed Interventions**

Nigeria’s slums exist in policy blind spots, with urban planning frameworks actively excluding informal settlements from climate adaptation strategies. Despite 70% of Lagos residents living in flood-prone slums where raw sewage contaminates living spaces (Ajibade and Mcbean 2014; UN-Habitat 2010), less than 5% of the Lagos Metropolitan Development and Governance Project’s (LMDGP) $200 million World Bank funding reached Makoko, leaving 15 water facilities non-functional and half of the planned classrooms unbuilt (Cool Geography n.d.). This reflects a broader pattern: urban policies treat slums as "eyesores" (Participedia 2019) rather than communities deserving of infrastructure. Port Harcourt’s waterfronts, labelled "jungles" ruled by armed gangs (Obafemi And Odubo 2013), face similar neglect, with zero investment in waste management or clean energy despite their environmental health crises (Gobo and Ayotamuno 2022). To mandate green spaces and drainage, planning laws exist but are selectively enforced for affluent developments while slums expand unlawfully near areas like Lekki (The Punch 2024). The result is a self-fulfilling prophecy: by denying basic services, governments justify slums’ "illegality" and eventual demolition.

The root causes are institutional. Lagos’ slum vulnerability is framed as a "managerial issue" (Ajibade and Mcbean 2014; Adelekan 2010), ignoring how zoning laws deliberately allocate floodplains to the poor. For instance, Makoko’s Floating School, a sustainable prototype using local materials and solar power, collapsed in 2016 after heavy rains, yet no scaled-up housing initiatives followed (Cool Geography n.d.). Similarly, SDG 3’s health targets remain a "mirage" in slums (The Nation 2022), where overcrowding and pollution persist due to unenforced building codes. Urban planners openly admit that Nigeria’s "working class" is relegated to hazardous settlements (The Punch 2024), yet no reforms address this apartheid.

* 1. **Corruption: Violent Evictions and Diverted Funds**

Lagos and Port Harcourt’s slum demolitions reveal a pattern of state violence and legal violations. In July 2012, Lagos authorities torched Makoko structures and deployed armed police who fired indiscriminately at protesters, killing one resident (Participedia 2019). Similarly, Rivers State evicted 10,000–20,000 people from Abonnema Wharf without establishing the legally mandated Urban Renewal Board or providing alternatives, violating its own 2003 Planning Law (Obafemi & Odubo 2013- Amnesty International 2009). These actions expose how governments weaponize "illegality" to justify displacements while ignoring procedural safeguards; a tactic Amnesty International condemned as using "crime prevention" as a smokescreen for land grabs (Obafemi & Odubo 2013).

A map of a city

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**Fig 3: Map of waterfront communities in Port Harcourt threatened with demolition by the Rivers State Government. Source: Justice & Empowerment Initiatives (JEI) via SDI,** [**https://sdinet.org/tag/port-harcourt/**](https://sdinet.org/tag/port-harcourt/) **(2016).**

Fund diversion exacerbates the crisis. The World Bank’s $40.9 million Lagos Metropolitan Development and Governance Project (LMDGP), meant to renew nine slums including Makoko, was abruptly terminated amid allegations of embezzlement (Participedia 2019). While Ilaje and Bariga received funds, Makoko and six other slums were left with junkyards instead of promised fish markets (Participedia 2019). Meanwhile, Lagos prioritized the Eko Atlantic Project, a luxury development for the wealthy that risks coastal erosion and displaces fishermen without consultation (Cool Geography 2015). This reflects a two-tiered system: slum upgrades are defunded as "unviable," while elite projects secure billions.

The consequences are cyclical. Demolitions without resettlement, like Makoko’s 2013 evictions, breed distrust and force displaced residents into new informal settlements (Participedia 2019). Corruption also enables environmental harm: Eko Atlantic’s dredging threatens marine ecosystems, while diverted LMDGP funds left Makoko without flood defenses, perpetuating climate vulnerability (Cool Geography n.d.; Ajibade and Mcbean 2014). As NGOs note, international agencies inadvertently empower this graft by channelling resources through opaque state institutions rather than grassroots groups (Participedia 2019).

1. **SOLUTIONS: COMMUNITY RESILIENCE & STRUCTURAL CHANGE**
   1. **Grassroots Innovations: Community-Led Climate Adaptation**

Makoko’s floating school exemplifies how slum communities pioneer climate-resilient infrastructure. Constructed from locally sourced materials like bamboo and 250 plastic barrels for buoyancy, the school incorporated solar panels and composting toilets—a model of sustainable design for aquatic communities (Participedia 2019). Though the prototype collapsed in 2016 due to heavy rains, its success in halting government demolitions and winning the Aga Khan Award for Architecture 2016 proved the potential of community-driven solutions (Participedia 2019). The project also fostered participatory planning through the Makoko Sustainable Regeneration Plan, which balanced government resources with local knowledge to address housing, tourism, and economic needs (Participedia 2019 - Fung 2006). However, limitations persist, residents lacked enforceable decision-making power, revealing gaps between “having a voice” and wielding policy influence (Participedia 2019-Polletta 2016).

Waste-to-wealth initiatives demonstrate another frontier of grassroots innovation. In Ibadan, community-run recycling kiosks and buy-back centers reduced landfill waste by converting litter into raw materials for manufacturers, while training residents in entrepreneurship (UN 2017). Similar projects in Ado-Ekiti’s slums transformed scrap metals into lanterns and plastics into household goods, coupled with government incentives like soft loans for waste enterprises (Awosusi et al. 2012). These programs achieved triple wins: cleaner environments, poverty reduction (UN 2017), and GHG mitigation, though their scalability depends on policy support, such as deploying more waste bins and sanitary inspectors to enforce regulations (Awosusi et al. 2012).

Yet grassroots efforts face structural barriers. Makoko’s makeshift wooden toilets along riverbanks (The Nation 2023) highlight how stopgap solutions emerge where institutional support fails. While the Waterfront Regeneration Plan improved civil engagement skills, its outcomes were undermined by political co-optation, with deliberative forums often hijacked for partisan agendas (Participedia 2019). For true transformation, innovations must be paired with policy shifts (like Ado-Ekiti’s proposed “Zero Waste Cities” subsidies (Awosusi et al. 2012) to transition from pilot projects to systemic change.

* 1. **Policy Shifts Needed: From Demolition to Inclusive Development**

Slum-upgrading with green infrastructure must replace forced evictions. The IPCC’s recommendations for Lagos’ climate-resilient infrastructure and regulated land use (The Nation 2023) highlight the folly of demolitions like Makoko’s, which ignored community-designed solutions like floating schools (Participedia 2019). Port Harcourt’s waterfront redevelopment offers a tentative model: partnering with grassroots groups like Human City Media Advocacy Initiative to train youth in advocacy through music and radio, ensuring marginalized voices shape policies (Commonwealth Foundation 2016). However, projects must go beyond symbolism. The Community and Social Development Project (CSDP) demonstrates how upgrading slums with potable water and waste management improves living standards (Popogbe et al. 2022), yet requires institutional backing to scale.

Clean energy access is critical to breaking slum dwellers’ reliance on toxic fuels. C40’s findings reveal that cost (not preference) blocks transitions to LPG and solar, recommending targeted subsidies for daily purchasers (C40 2021). Grassroots initiatives like Lagos’ solar-panel training programs (DW 2020) show the potential when paired with financing schemes. Similarly, Slum Dwellers International (SDI) leverages women’s savings groups to fund energy access projects, proving that community-led models work (Sheridan et al. 2020). But these remain patchwork without policy shifts: Ado-Ekiti’s proposed "Zero Waste Cities" subsidies (Awosusi et al. 2012) must be adopted nationally to replace kerosene with biogas and solar mini-grids (C40 2021).

Participatory governance is the linchpin. LAWMA’s failure to prevent canal waste dumping in Lagos, where residents reject PSP services due to mistrust (Daily Trust 2024), underscores the need for co-designed solutions. The Makoko Regeneration Plan proved participation’s value but faltered when communities lacked decision-making power (Participedia 2019-Polletta 2016). Reforms must institutionalize grassroots input, like Port Harcourt’s youth-led radio debates (Commonwealth Foundation 2016) or SDI’s profiling rituals (Sheridan et al. 2020). As Popogbe et al. (2022) stress, NGOs and governments must first "understudy" slum needs, whether health services or vocational training, to build trust and avoid wasted interventions.

**CONCLUSION**

1. **Key Takeaway: The Paradox of Survival and Systemic Complicity**

Nigeria's slum dwellers exist in a cruel duality, as both the most vulnerable victims of climate change and unwitting contributors to environmental degradation. From Makoko's flood-ravaged stilt houses to Port Harcourt's soot-choked alleyways, these communities endure climate impacts amplified by governance failures: 70% of Lagos slum residents face annual flooding (Ajibade and Mcbean 2014; UN-Habitat 2010) while 97% of Diobu households inhale toxic kerosene smoke daily (Amah et al. 2022). Their survival strategies, that is, waste burning, charcoal use, and flood-prone construction, emerge from systemic abandonment, not choice. When slum dwellers burn trash lacking collection services, they release emissions accounting for 14% of Lagos' PM2.5 (Cortes and Arrocha 2021); when they use charcoal due to energy poverty, they accelerate deforestation at 3.5% annually (Nelson et al. 2025). This paradox is engineered by policies that criminalize poverty while enabling corporate pollution, where $200 million in World Bank slum funds vanish (Cool Geography 2015), but elite developments like Eko Atlantic secure billions.

Yet, grassroots innovations prove alternatives exist. Makoko's floating school demonstrated climate-adaptive architecture (Participedia 2019), while Ibadan's waste cooperatives show circular economy potential (UN 2017). These solutions remain stunted because power remains centralized, the same flaw that lets authorities torch homes in Makoko (Participedia 2019) while ignoring IPCC warnings (The Nation 2023). True climate justice requires recognizing slums not as problems to demolish, but as partners in resilience. Their lived experience from floating construction to micro-recycling holds blueprints for adaptation, but only if policies shift from exclusion to co-creation. As Port Harcourt's youth radio advocates (Commonwealth Foundation 2016) and SDI's women-led savings groups (Sheridan et al. 2020) prove that inclusion is not about charity; it is the only effective climate strategy.

1. **Call to Action: From Recognition to Radical Inclusion**

The evidence is irrefutable: Nigeria’s slum dwellers cannot wait for trickle-down climate solutions. The time has come to:

1. *Replace Demolitions with Community-Led Upgrading*

* Scale models like Makoko’s floating infrastructure and Ibadan’s waste cooperatives through the Lagos Metropolitan Development Project, this time with 100% slum-dweller oversight of funds to prevent diversion.
* Legislate the in-situ upgrading demanded by UN guidelines, using Port Harcourt’s youth-led radio advocacy (Commonwealth Foundation 2016) as a template for participatory planning.

2. *Redirect Funds to Clean Energy Justice*

* Allocate funds to:
  + Solar microgrids in Makoko and Diobu, replicating C40’s proven subsidy model (C40 2021).
  + Biogas systems to convert slum waste currently burned, into energy.
* Prosecute officials diverting climate funds while gas flaring continues unchecked in Rivers State (Obafemi and Odubo 2013).

3. *Institutionalize Grassroots Power*

* Mandate slum dweller quotas in urban planning committees, modelled after SDI’s women-led savings groups (Sheridan et al. 2020).
* Replace exploitative "sensitization" (Daily Trust 2024) with community-designed policies like Ado-Ekiti’s "Zero Waste Cities" plan (Awosusi et al. 2012).

**The Bottom Line**

Climate resilience will remain a myth until Nigeria recognizes slums as solutions incubators, not eyesores. When Makoko’s builders and Port Harcourt’s recyclers lead, their innovations tested in the crucible of survival, can transform vulnerability into national strength. The choice is stark: partner with the marginalized or perish together in the rising floods.

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