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Land, Governance & Settlement Transformation

Walking First. Using Public Space and Flood Resilience to Connect Informal Settlement Communities in Nairobi

This case study examines the Kibera Public Space Project in Nairobi, showing how small-scale, community-led investments in pedestrian infrastructure, public space and nature-based flood management can strengthen connectivity, improve climate resilience and support more inclusive neighbourhood development within informal settlements where walking is the primary means of daily mobility.

Design workshop for KPSP08, Anwa Junior Academy, with students. *Kounkuey Design Initiative*

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1. Executive Summary

The Kibera Public Space Project (KPSP)[1] in Nairobi demonstrates how targeted investments in public space, environmental infrastructure and pedestrian connectivity can improve housing conditions, climate resilience and equitable access to opportunity in one of Africa's largest informal settlements. Implemented by Kounkuey Design Initiative[2] in partnership with community groups and Nairobi County authorities, the programme has transformed a series of degraded sites along the Ngong River into multifunctional public spaces that integrate flood mitigation, sanitation services and improved walking routes.

In Kibera, where most trips are made on foot and road access is extremely limited, mobility constraints directly affect residents' access to employment, schools and services. Prior to the project, many routes were unsafe, poorly surfaced and frequently flooded, while crossings over the river were limited and hazardous.

The initiative addresses these challenges by combining nature-based flood management with pedestrian infrastructure, including bridges, improved footpaths and accessible public routes connecting residential areas with markets, schools and transport links. The experience demonstrates how small-scale, community-led interventions can simultaneously strengthen neighbourhood connectivity, improve resilience to climate risks, and support more inclusive access to urban opportunities. The KPSP provided real-world experiences that informed the development of the Integrated and Inclusive Infrastructure Framework (3IF)[3] for Informal Settlement Upgrading in Kenya.

The case offers practical lessons for Commonwealth cities seeking integrated approaches to informal settlement upgrading, climate adaptation and walkable neighbourhood development.

[1] Kibera Public Space Project: https://kounkuey.org/projects/kibera_public_space_project_network
[2] Kounkuey Design Initiative: kounkuey.org/mission
[3] Integrated and Inclusive Infrastructure Framework (3IF): https://www.3if.info/

2. Context and Challenge

Kibera is one of the largest informal settlements in sub-Saharan Africa, with population estimates ranging between 250,000 and 400,000 residents. Located approximately five kilometres from central Nairobi, the settlement is characterised by extremely high-density housing, limited infrastructure and restricted access to formal services.

Mobility within Kibera relies heavily on walking. Most internal routes consist of narrow footpaths that wind between housing structures and informal businesses. Most alleyways are generally too narrow for motor vehicles, and most residents depend on walking to reach water points, schools, health facilities and public transport stops connecting the settlement to the wider city.

Historically these pedestrian routes have been difficult and sometimes dangerous to navigate. The Ngong River, which flows through the settlement, frequently floods during the rainy season, washing away paths and cutting off connections between neighbourhood clusters. Informal dumping and erosion further degrade pathways, while limited lighting and poor visibility can create safety concerns.

These mobility challenges are closely connected to housing conditions. Many homes are located on marginal land close to the river and are vulnerable to flooding. When paths become impassable, residents struggle to reach workplaces, schools or health services.

In rapidly urbanising Commonwealth cities, similar conditions are found in informal settlements where the majority of residents depend on walking. Improving pedestrian infrastructure is therefore not only a transport issue but a key element of housing resilience, neighbourhood development and equitable access to opportunity.

3. Approach or Experience

The Kibera Public Space Project began in 2006 as a collaborative initiative aimed at addressing environmental degradation, lack of sanitation infrastructure and limited public space within the settlement. Working through participatory design, construction, and management the project leans into the deep social cohesion and innovation that exists in these communities. Rather than pursuing large-scale redevelopment, the programme adopted an incremental approach focused on transforming small parcels of degraded or underused land along the Ngong River.

These sites, many of which were previously dumping grounds or flood-prone riverbanks, were redeveloped as multifunctional public spaces that combine environmental improvements, community facilities and businesses, and mobility infrastructure.

A central component of the approach has been improving pedestrian connectivity across and along the river corridor. The project has constructed a series of footbridges linking neighbourhoods that were previously separated by the river. These crossings replace informal routes that often became unsafe or inaccessible during heavy rainfall.

Surrounding footpaths have also been upgraded to create more reliable walking routes between homes and essential services. Pathways are surfaced with durable materials and include steps, ramps and drainage systems designed to prevent erosion and reduce water accumulation. Importantly, the routes follow desire lines used by residents, ensuring that improvements support established patterns of movement.

Environmental interventions are closely integrated with these mobility improvements. Riverbanks are stabilised using terracing and vegetation, while drainage systems and bioswales help manage stormwater and reduce flooding. These measures ensure that pedestrian routes remain accessible during the rainy season, when flooding previously disrupted daily movement.

Public space areas created through the programme also incorporate facilities such as sanitation blocks, water kiosks, seating areas and lighting. These amenities encourage regular use of the spaces and improve natural surveillance, making nearby walking routes safer.

The project’s development process is strongly community driven. Residents participate in planning workshops, construction activities and ongoing management of the spaces. This participatory model ensures that interventions respond directly to local priorities and helps build local ownership of infrastructure.

As a growing network, the small interventions have gradually improved walkability and environmental conditions across several neighbourhoods within the settlement.

4. Insights and Lessons

The Kibera experience highlights the importance of pedestrian infrastructure as a foundation for inclusive neighbourhood development in settlements.

Reliable walking routes are essential for residents to reach employment opportunities, particularly in areas where many livelihoods depend on informal work and small-scale commerce. Improved footpaths and bridges shorten travel distances between neighbourhoods and provide safer connections to public transport stops and markets.

Integrating pedestrian infrastructure with environmental improvements has also proven particularly effective. By combining flood mitigation measures with pathway upgrades, the project ensures that mobility routes remain usable during periods of heavy rainfall. This is critical for maintaining access to work, education and health services.

Another important lesson is the value of small, incremental interventions. Rather than requiring large-scale redevelopment, relatively modest investments in bridges, pathways and public space can significantly improve connectivity and quality of life.

The project also demonstrates the importance of community collaboration in the design and maintenance of infrastructure. Local knowledge helps identify priority routes and ensures that improvements respond to everyday travel patterns.

For cities across the Commonwealth facing rapid urbanisation and expanding informal settlements, the Kibera case illustrates how investments in walkable environments can support housing resilience, local economic activity and more equitable access to urban opportunities.

5. Key Takeaways

- Walkable infrastructure is essential to housing and neighbourhood upgrading in informal settlements where walking dominates daily travel.
- Integrating flood management with pedestrian improvements helps maintain mobility during extreme weather.
- Small-scale public space interventions can significantly improve connectivity, safety and local economic activity.
- Community participation strengthens infrastructure design and long-term stewardship.
- The approach aligns with the New Urban Agenda and Sustainable Development Goal 11 on inclusive and resilient cities.

This Case Study was prepared by Mr Christiopher Martin, Managing Director of Urban Movement[4], by way of contribution to the work of the Commonwealth Sustainable Cities Coalition, March 2026

[4] Urban Movement: https://www.urbanmovement.co.uk/

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