

Pursuing more equitable access to urban green spaces

Engaging with social equity in urban planning
in low- and middle-income countries

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The Nakuru River in Kaptembwa, an informal settlement in Kenya © Cynthia Sitati / SEI

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Key messages

- Lower-income and marginalized communities in urban areas often have limited access to quality urban green spaces and their benefits – particularly in low- and lower-middle-income countries where cities are growing rapidly, and unplanned, informal settlements are common.
 - The priorities for the amenities of urban green spaces in lower-income areas may differ from the priorities in higher-income areas and countries.
 - As a result, traditional top-down planning may fail to address the needs of local populations.
 - Measures should be undertaken to foster community-led initiatives to plan, maintain, restore and expand urban nature spaces.
 - Fostering inclusive and socially equitable participation in such processes will require measures that deliberately seek to bring in a diverse group of local community residents, including women, youth, and people with disabilities.
 - Processes that bring in local community residents can help facilitate greater access to nature, expand awareness of the potential benefits for mental and physical health, and help address negatives, such as a fear of crime and illegal waste dumping in green spaces.
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Introduction

The World Health Organization recommends that all people live within 300 meters of green space, yet evidence from European cities shows that residents in lower socio-economic areas are likely to have access to less and lower quality green space (European Environment Agency, n.d.). In Asia and Africa, the densification and expansion of urban areas are negatively impacting the environment through habitat and biodiversity loss, pollution, disruption of water and nitrogen cycles (Cilliers et al., 2013). As cities grow, there is pressure on green and natural spaces from increasing development (Douglas, 2018), formal and informal (Sultana & Alam, 2023). Community resources such as green space, which lower-income populations may rely on for ecosystem services, may become restricted.

Urban green structures (UGS), which Mensah (2014, 1) defines broadly as “all public and private open spaces and vegetation in urban areas that citizens use directly (e.g. active recreation) or experience indirectly via positive or negative impacts upon them”, are multifunctional. These spaces provide a range of ecosystem services including reducing pollution, providing respite from heat, alleviating floods, and offering benefits for health and wellbeing. The effects of urban green spaces have received less attention in low- and middle-income countries. For example, a review of green spaces and health in Latin America identified only 19 studies on the subject – with none focused on low-income or socio-economically deprived populations (Rojas-Rueda et al., 2021). Research on the subject in Africa has largely focused on South Africa (Cilliers et al., 2013).

There is also a research gap related to equity of access to urban green spaces. Access is often socially determined through factors such as income, ethnicity, race, age,

gender and (dis)ability (Byrne & Wolch, 2009). This environmental justice issue has implications for public health (Dai, 2011; Boone et al., 2009).

Research on inclusive governance of urban green spaces is also lacking. Involving local communities in the design and management of green space can foster a sense of ownership and promote the use of these green spaces (European Environment Agency, n.d.). However, typical urban planning processes used in many low- and middle-income countries worldwide may neglect or pay only limited attention to the needs of local communities, especially people living in informal settlements. Buijs et al. (2016) specifically highlight the need for systematic literature reviews to explore “the diversity of governance arrangements and their associated impacts” (p. 5), e.g. effects on equity, resilience and sustainability (Razzaghi Asl & Pearsall, 2022).

To help fill these gaps, this report reviews existing literature from cities in Africa, Asia and Latin America (where top-down planning approaches are commonplace), and incorporates insights from the authors’ experiences working on issues related to nature areas near a river running through an informal settlement in Kenya. The report discusses the following:

- What are the positive and negative impacts of urban green spaces on different groups of people?
- How can diverse population groups be empowered to offer a complementary pathway to top-down approaches for implementing urban nature planning, maintenance, restoration and expansion?
- What barriers hinder community-led initiatives from achieving their full potential?

Positive and negative impacts of urban green spaces

Urban green structures are often multifunctional spaces, playing many roles, including offering provisioning services for people living in informal settlements and low-income neighbourhoods. For example, studies point to the higher demand in lower-income neighbourhoods for urban green space to provide resources such as food, medicine and materials, such as wood for energy (Cilliers et al., 2012; Shackleton et al. 2015). In addition, Shackleton et al. (2015) found that trees in low-income neighbourhoods in South Africa were also appreciated for their aesthetic and cultural value (especially amongst older people) and regulating services, such as cooling air currents and shade. These attributes can be important for communities with hot weather and limited access to air conditioning or electricity (Sultana & Alam, 2023). Green infrastructure, e.g. gardens, in informal settlements can also be used for growing food (provisioning services); vegetated and strategically landscaped areas can reduce flood risk (regulating services) (Douglas, 2018). Rivers provide access to water sources for domestic uses in areas where water might otherwise be limited, increasing convenience (Sultana & Alam, 2023).

Perhaps surprisingly, despite the widespread impression about the value of green spaces for human health, the results from low- and middle-income countries have

been mixed. For example, Tomita et al. (2017) found that in South Africa, a greener neighborhood “predicted significantly lower odds of incident depression among African individuals belonging to the middle-income group”. This result is in line with those of high-income countries. However, a review of urban green space and health in low- and middle-income countries found an inverse relationship between green space and health in the context of informal settlements (Shuvo et al., 2020); the authors suggest that this finding could be because residents of informal settlements do not prioritize the use of green spaces for health-related purposes, or because of the presence of lower-quality green spaces in these areas. The quality of urban green space is affected not only by its form and maintenance, but also the quality of other public services and user behaviors. Zain et al. (2022) highlight that in low- and middle-income countries, urban green infrastructure, water management and waste management are interlinked issues that require recognition in both green space design and maintenance plans.

Poor management of green spaces can also lead to other negative impacts. For example, in some low-income urban areas, green spaces are perceived as being a dangerous, with women particularly fearful of being crime victims (Shackleton et al., 2015); the authors conclude that poorly managed green spaces makes them off-putting and contributes to the negative impression. A review of literature in Latin America found that urban residents felt less safe using parks frequented by adolescents, compared to those parks frequented by families and older people, and those parks that have guards (Wright et al., 2012). Ensuring that green infrastructure meets these demands for multi-functionality requires the participation of a range of actors, including residents, in the planning and maintenance (Zain et al., 2022).

Patterns of access to urban green spaces

Access to urban green spaces can be very unequal, both geographically and socio-economically. Generally, provision and accessibility of green spaces are better in high-income than in low-income neighbourhoods (Cilliers et al., 2013), as evidenced in Cali, Colombia, (Hong et al., 2021), and in Shanghai (Shen et al., 2017). This pattern is not always straightforward, however, as underscored by the different relationships between socio-economic disadvantage and greenspace provision in inner and outer areas of Shanghai (Li & Liu, 2016). In Dar es Salaam, research has shown that though residents of informal settlements actively value the green structures (parks, cemeteries, beaches, rivers, quarries, orchards and roadside plantations) that are a part of their daily life, the communal lands that provide ecosystem services in these areas are being lost and fragmented for new development, and their quality is decreasing (Roy et al., 2018a). Inequalities in access can result from political history (such as apartheid in South Africa), biophysical factors, planning or the lack of planning, resource availability, tenure, and plot size to enable tree planting (Shackleton et al., 2015).

Equity in access to green space is an environmental justice issue (Wolch et al., 2014; Shen et al., 2017). The inequities and impacts of accessibility to green areas extend to groups within individual informal settlements. For example, Sultana & Alam (2023) find that while residents of informal settlements in Bangladesh value riparian areas for a range of ecosystem services, access to these benefits is limited both by landscaping initiatives and by status within the community, with preferential access for older

and wealthier residents over new migrants and lower-income earners in the same settlement.

Both unplanned and planned development can encroach on urban green spaces. Informal settlements can expand. Disaster risk reduction measures may require changes in the green space. Landscapes can change when they are upgraded or restored. Upgrading can also restrict access to urban green space and its benefits (Sultana & Alam, 2023). This also links to processes of gentrification, which can displace lower-income populations and/or their uses of the space. Gentrification is recognized as a risk associated with the development of urban green space in low- and middle-income countries (Hong et al., 2021; Wolce et al., 2014; Alves et al., 2021).

Ensuring participatory processes to underpin urban green space initiatives in low- and middle-income countries

Participatory processes involving multiple stakeholders can help bring about a comprehensive understanding of the relationships and local environmental processes; enhanced perceptions among different stakeholders involved in developing and managing urban green spaces; and better insights into the political, social, economic and environmental dynamics at play (Douglas, 2018).

Resident involvement in the co-management of natural resource management has been applied to local forests, and could be applied to other types of common municipal land (Shackleton et al., 2015). Indeed, community-based management of publicly owned green spaces has been seen as offering opportunities for “targeted greenspace improvement” and for a pro-poor urban-planning approach to improve accessibility of green spaces in ways that incorporate more than landscaping and construction matters (Roy et al., 2018a). In Africa, local and international NGOs are active in green infrastructure-related projects for climate risk reduction. Many projects combine this with efforts to devise solutions to conflicts in land use (space for water, space for living, space for use). For example, the Kounkuey Design Initiative project in Kibera, an informal settlement of Nairobi, has placed the community at the centre of its multi-stakeholder engagement with community groups, the local government and the private sector. Along the river, its projects serve multiple purposes: managing waste, mitigating floods, protecting the ecology, providing public space, reducing river pollution, providing water and sanitation services, generating incomes, and offering social initiatives (KDI, n.d.). The projects undertaken, including planting river banks and creating new drainage channels, were proposed by the residents, who have tended to avoid demolition of existing structures, feature income-generating aspects, and reflect an understanding of the complexity of Kibera’s context (Afrikt, 2016). Even in successful cases such as this in which external NGOs bring resources that enable on-the-ground changes sought by the community, there is a risk of alienating communities if local ownership is not strong enough (Douglas, 2018).

Wolff et al. (2022) discuss both co-design and transformative nature-based solutions initiatives, differentiating according to their ability to “revise the projects’ goals,

values, and expectations” through collaborative design, and the use of implementation processes that focus on the needs of the local community (e.g. informal settlement residents).

Barriers to more socially inclusive green space planning

Studies have identified several challenges to community involvement in urban green spaces in low- and lower-middle-income countries. First, public authorities have limited resources (financial and institutional capacities) to deal with rapidly changing cities in general. Though community participation can enhance the quality of planning, it competes for resources, including time, with the actual substance of projects. Urban environments undergo continuous change, which both affects and is affected by how areas are used and maintained. For example, resident behaviour can impact the extent of local flooding from thunderstorms if garbage or construction blocks drains and culverts. At the same time, economic and social equity also play a role; litter often accumulates in lower-income and informal settlements as the result of inadequate access to waste management infrastructure.

Further, even though informal settlements impact urban development, they are technically outside city authorities’ remit (Zingoni et al., 2005), making it easier to overlook the need to engage with residents in these areas. Meaningful engagement is a challenge for urban planning overall. Highly participatory or community-based projects for urban green spaces are resource intensive due to related land-use conflicts that may arise (e.g. encroachment and flood mitigation on floodplains in Africa) (Douglas, 2018), and the need to coordinate with and develop capacities of the local communities so that they can equally engage. New community-led approaches, which do not have a predetermined outcome, require negotiation among diverse stakeholder interests for resilience planning (Harris et al., 2017). This contrasts with current practices and funding structures.

Second, the involvement of external actors can raise tensions over whether projects they support are led by local people or outsiders. NGOs or other outside organizations are often required to fill funding gaps and address shortcomings in capacities. For example, in Kibera, an informal settlement of Nairobi that has often been cited as a success story for urban green space projects involving NGOs, local activist voices have critiqued the NGO led initiatives. Local Kibera writer Asha Harun Jaffar, put it this way:

“The world wants to help, and the organizations come here, sending their proposals under the name of ending poverty. However, we are being commercialized rather than being ‘helped’. Kibera is just a place for people to fill their bank accounts, and a lot of organizations do not know the importance of involving people in their work. How do you end poverty without involving the poor who you are trying to help?” (Vo, n.d.).

According to Jaffar, projects should be led by local community leaders, rather than outside NGOs (Douglas 2018). The combination of NGO-led and project-based work

can lead to discontinuous and uncoordinated efforts that depend on external agents. Roy et al. (2018a) contend that the ad hoc nature of urban green space projects decreases local support for them. However, Douglas (2018) argues that the presence and activity of long-term resident and local community groups enable collective and long-term action that can help overcome the low level of concern for the local environment associated with areas characterized by insecure tenure.

Third, local communities' views about projects may create challenges. For example, Adu Boateng et al. (2023) finds that the low level of residents' awareness of the potential of nature-based solutions (such as rain gardens and rain harvesting) to reduce climate-related risks hinders uptake of such measures around residents' homes in Ghana. These authors also note that, in many cases, residents tended backyard gardens and collected rainwater, but that these actions did not serve the purpose of risk mitigation. In Angola, residents' negative perceptions of green areas as unsafe changed only after lighting and fences were added and sensitization programs were held to help residents value, use and benefit from these areas (Pedrosa et al. 2021). These insights could also be extended to address residents' stewardship of and maintenance of urban green spaces.

Finally, although community engagement is required for equitable outcomes, it does not guarantee project success. Engaging fully in such circumstances requires that authorities commit to participatory processes and recognize that residents might reject seemingly important environmental efforts. For example, this is reflected in the case of urban greening projects in Kibera. Also, in Dar es Salaam engagement with local, lower-income residents in a government effort to construct a park to implement a citywide integrated water management measure along the river failed due to social opposition (President's Office - Regional Administration and Local Government, Tanzania Rural and Urban Roads Agency, and Tanzania National Road Agency 2021). A more recent participatory attempt to relocate residents for more comprehensive river flood resilience ran into difficulties when some residents ultimately rejected the offered compensation for losses for being displaced (Kolumbia, 2023). After adjusting its original offer and agreeing to provide all residents with some level of compensation (Pani et al. 2024), the government moved ahead with its plans (Mwendapole, 2024); nevertheless, it is unclear whether the initiative is socially accepted by residents.

Insights from work in the Nakuru River area

Based on previous work in SEI's City Health and Wellbeing Initiative in the slum area of Kaptembwa, Nakuru, we identified the chain of impacts related to waste management, flooding, and riverine pollution as a complex local problem where top-down solutions were unlikely to be effective. As a preliminary step in exploring whether other governance approaches might be more effective, we conducted eight interviews with key stakeholders involved in the management and restoration of the river in Nakuru, Kenya. The aim was to gain an understanding of the barriers and opportunities for community-led management of urban green structures. The stakeholders included representatives of a public university, an NGO, a water resource user authority, a national water resource agency, a regional development authority, and a community-based organization.

With regards to the barriers that can prevent community-led initiatives from achieving their full potential, we found three key issues:

1. **Involving key stakeholders is extremely challenging, particularly given the rapid, unplanned nature of development and impacts and the many organizations and government agencies involved.** Financing shortfalls, the temporal nature of projects, and low levels of understanding of key issues are barriers to more effective involvement of stakeholders. Though efforts have been made to engage diverse groups of citizens through community-led water resource user associations, no community was perceived as having led work on related issues. The management of river areas is complex, involving these associations, watershed and basin authorities, climate change committees, and regional development authorities. The riparian area is also home to various ethnic groups who do not always get along. It is hard to gauge how inclusive and representative efforts to involve community stakeholders have been, how effective the management structure is, and whether enforcement of any relevant measures is adequate. For example, conflicts have arisen over differences in opinion about what communities can and cannot do in the riparian area – suggesting that basic policies are unclear.
2. **Though many entities are involved, responsibilities are unclear.** For example, Nakuru and its urban services are managed by the City Board under the authority granted by the County Government, which provides policy guidance. However, waste is managed through a combination of public and private contracted services, depending on the urban area. Interviewees view the public authorities as an important stakeholder due to their role in law enforcement, waste management, and other support, despite their failure to address these issues along the river. The government's bottom-up approach to the management of the riparian reserve area creates challenges that stem from insufficient initiatives from local community groups, a lack of local knowledge related to conservation, and, according to an interviewee, a lack of a sense of stewardship among informal settlement residents. Though the community-led water resource user association has tried to step in, it lacks authority and capacity to halt problematic behaviour; moreover, some of its representatives live farther away, which decreases their managerial legitimacy among other stakeholders. Though Ward Climate Change Committees across Nakuru County were set up to initiate bottom-up change to support climate adaptation, there are conflicts between the community and the committee (according to one interviewee).
3. **Many community-level problems are driven by wider, systemic issues.** For example, stakeholders identified specific behaviours and societal issues as key drivers of riverside problems for the environment and safety. They cited logging, domestic washing in the river, poor waste management, and a lack of sanitation services, for example, along with larger issues, such as high levels of unemployment in the area, and the encroachment of activities and structures on riparian areas. For example, the lack of waste management in informal settlements leads to illegal dumping or the transfer of waste (especially with floods) over land and ditches to the river. This leads to poor water quality, soil erosion, and flooding. These degraded riparian areas are also associated with criminal activity, which is driven by the lack of employment opportunities. While awareness raising, capacity building and tree planting were suggested as solutions to these issues,

it is also recognized that effective solutions require working on larger issues, such as inadequate infrastructure and services, as well as unemployment. These are challenging issues, especially within the scope of short-term, project-based work that is not monitored for long-term impacts.

We asked those interviewed about how diverse population groups can be empowered to offer a complementary pathway to top-down approaches for implementing urban nature planning, maintenance, restoration and expansion. The following two issues surfaced:

1. **There is a need for more meaningful and wider inclusion.** Our interviews indicated that the involvement of community-led water resource user associations was perceived as addressing the matter of inclusivity. The association holds monthly public meetings with communities near the river where concerns can be raised. According to interviewees, the association works with local community organizations. Women's groups and youth groups are most active in activities such as tree-planting; indeed, the associations must comply with Kenya's two-thirds rule, which stipulates that "not more than two-thirds of the members of electoral or appointive bodies shall be of the same gender". Nevertheless, our interviews also raised questions about the extent of inclusion and diversity that has resulted. People interviewed recognized the need for everyone to be involved – young and old, women and men, and people with disabilities – and some interviewees indicated that certain groups within the community are harder to reach. Interviewees also highlighted that environmental degradation affects some people to a greater degree, as is the case with women who must go farther to collect available firewood as a result.
2. **There is a need to deal with complex, interlinked issues that stem from larger issues and forces beyond any single community's control.** While the existing tree-planting activities are an essential step to riparian area management, solutions must recognize and lay the groundwork for understanding of the complex and interlinked system-wide drivers, such as population growth in informal settlements and upstream development and management practices. These cause encroachment of activities and structures on riparian areas. According to one interviewee, while upstream communities have access to cleaner water and depend on the river for drinking water, farmers in these areas release fertilizers into the river. It was also suggested that effective solutions require providing local people such as farmers with information about "better options" rather than information that is focused solely on impacts. This approach can also be applied to many of the other socio-ecological issues concerning the area.

Knowledge gaps and conclusions

Based on our review and empirical work in Nakuru, we conclude that insufficient attention has been paid to involving the local community and the diversity of people who make up these communities in the planning and management of urban green spaces in low- and middle-income country settings and, particularly, in poor, informal settlements on the fast-growing urban fringe. Issues are many: addressing matters related to equitability of access, services communities want, concerns they have,

the degree to which they are aware of changes that are likely to occur as the climate changes, and the extent of their awareness of the potential benefits that urban green spaces can provide for physical and mental health and wellbeing.

Urban green spaces in low- and middle-income countries and in lower-income residential areas may need to serve different purposes than is the case in higher-income countries and higher-income residential areas. For example, such green spaces may need to focus to a greater degree on primary needs related to provisioning ecosystem services. The behaviours and actions that result in environmental degradation in many informal settlements need to be taken into consideration in a wider context; such behaviours are largely driven by the lack of infrastructure in informal settlements, an issue that must be addressed as part of efforts to lead to changes.

The limitations of the local authorities in providing such infrastructure must be surmounted to provide better benefits for residents who live in difficult situations that pose a threat to their mental and physical health. At the same time, the involvement of multiple other actors in trying to bridge the gap in green urban spaces in these poor residential areas is complex, with tension at times arising between the extent to which projects are led by outsiders or by local communities. Further research is needed to better understand how this constellation of actors, with communities at the centre, can work together more effectively to restore local living environments, and provide the sustainable urban spaces that support residents' health and wellbeing. Such efforts should seek to distinguish between different socio-economic groups in ways that go beyond using income as the sole distinguishing factor, to bring in people of different genders, ages, ethnicities, (dis)abilities and migrant status.

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