

Urban Green Spaces Brief

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1. Introduction

To achieve sustainable development goals, ecosystem degradation must be stopped and ecosystem restoration undertaken on a large scale. Accordingly, the United Nations (UN) has declared the years 2021-2030 to be the decade of ecosystem restoration. The decade offers significant opportunities for and challenges to restoration, in particular for Africa. Africa is urbanising rapidly, with a high incidence of informal urban sprawl on the natural landscape of cities. For cities to meet the needs of their residents, urban development needs a green perspective (Gulati & Scholtz 2020). Urban green spaces are part of this process, as they are essential to creating sustainable, healthy and liveable cities. Urban green spaces refer to areas within urban environments that are intentionally designed, developed, or preserved as natural or semi-natural spaces with vegetation, trees, plants, and open areas. This brief outlines some good practices for developing green spaces in African cities, with an emphasis on plant cover.

2. Urbanisation in Africa and its environmental implications

Urbanisation in Africa started later than in other regions of the world, and the continent remains the world's least urbanised region. However, due to persistently high fertility and decreasing mortality rates, it is predicted that sub-Saharan Africa's population will have doubled between 2022 and 2050 (UN 2022). Relatedly, the population of cities in sub-Saharan Africa is expected to grow by 2.5% to 3.5% per year between 2015 and 2055, while the world's urban population is likely to grow by 1.44% to 1.84% between 2015 and 2030 (WHO 2015). This situation has environmental effects on the continent.

Urban growth has increased pressure on natural environments and decreased green spaces in African cities. The combined effect of a growing urban population and a higher per capita demand for resources is intensifying the pressure on natural resources and green spaces in African cities. Moreover, the malfunctioning of urban planning regulations and socio-economic and political challenges create an environment of tension and uncertainty, which makes the management of green spaces more complex. With the introduction of sustainable development in the past few decades, a new impetus was given to green spaces as a possible response to the negative impacts of the city. It has become an essential element in meeting environmental requirements and in responding to society's desire to return to nature and improve the quality of life.

3. Benefits and forms of urban green spaces

Promoting green spaces in African cities is vital for the well-being of residents, environmental sustainability, and the creation of resilient and liveable urban environments. Green spaces provide many benefits, including improved air quality, biodiversity conservation, enhanced health and well-being, social interaction, and economic opportunities. These are summarised in the table below:

Environmental benefits	<ul style="list-style-type: none"> • Mitigate the effects of urbanisation and climate change • Help reduce air pollution • Improve air quality • Cool urban temperatures through shading and evaporative cooling
Biodiversity conservation	<ul style="list-style-type: none"> • Serve as important habitats for local flora and fauna • Provide habitats for a variety of plant and animal species • Support local biodiversity • Help protect and restore native flora and fauna
Health and well-being	<ul style="list-style-type: none"> • Have a positive impact on the physical and mental well-being of residents. • Offer spaces for relaxation, socialization, and stress reduction • Provide opportunities for physical activity • Improve overall quality of life
Social cohesion & community engagement	<ul style="list-style-type: none"> • Serve as gathering places that encourage social interaction, community involvement and a sense of belonging. • Can serve as venues for community events, cultural celebrations.
Educational & learning opportunity	<ul style="list-style-type: none"> • Can serve as outdoor classrooms for schools and universities, providing hands-on learning experiences about ecology, sustainability, and environmental conservation. • Can host educational programs, workshops, and guided tours to raise awareness about nature, biodiversity, and the importance of ecological balance.
Economic benefits	<ul style="list-style-type: none"> • Can contribute to economic development by boosting tourism and enhancing property values. • Create employment opportunities in landscaping, maintenance, and eco-tourism sectors. • Income generation and economic opportunities through urban agriculture.

The classification of urban green spaces is often based on a number of variables such as size, value (function), nature of the green spaces, facilities and ownership.

Main types of urban green spaces		
Amenity green Space	Recreational green Space	Public parks and gardens
		Informal recreational spaces
		Outdoor sports areas
		Play areas
	Incidental green space	residential green space
		Other ancillary green space
Private green space	Home gardens	
Functional green space	Productive green space	Remnant farmlands
		Urban farms
		Allotments
	Burial grounds	Graveyards
		Churchyards
	Institutional grounds	School grounds
		Other institutional grounds
	Semi-natural green space	Wetlands
Marshes		
Woodlands		Deciduous woodland
		Coniferous woodland
		Mixed woodland
Other habitats		Moor/heath
		Grassland
		Disturbed ground
Linear green space		River and canal banks, Transport corridors (road, rail, cycle ways and walking routes)
		Other linear feature (cliff)

Among the various forms of green spaces, the governments of African countries, in collaboration with environmental agencies, attach great importance to tree-planting campaigns in urban areas. For example, The African Green City index indicated that in cities such as Durban, Johannesburg and Cape Town (South Africa), Lagos (Nigeria), Maputo (Mozambique), Nairobi (Kenya) and Cairo (Egypt) more emphasis was given to the growing of trees than other forms of green spaces.

4. Some greening good practices in African cities

4.1 Street tree planting and the creation of urban forests

Street tree planting in African cities is a crucial aspect of urban greening efforts. Many tree-planting projects have been and are being carried out in various African cities. Here are just a few examples:

- **Greening Campaigns in Nairobi, Kenya**

The city of Nairobi has implemented various tree-planting campaigns to address deforestation and improve urban greenery. Initiatives like the **"Adopt a Tree"** campaign encourage citizens, schools, and organizations to actively participate in tree planting and caring for newly planted trees. It is a strategy ensuring the maximum survival rate of all trees planted, with the idea that anyone can become a proud tree parent. It is a community-based program that encourages individuals, families, organizations, and businesses to take an active role in tree planting, care, and stewardship. Participants "adopt" or take responsibility for planting and nurturing a tree, often in a public space or a designated green space. This initiative engages members of the community in planting trees for them and each member is assigned a tree to look after until it reaches maturity. Each tree is named after the member who looks after it, to encourage them to get involved in looking after the trees. During a tree planting campaign, students may be asked to revisit the trees after 5 - 20 years with their children and let them understand the history of the trees they have planted.

The strategy has been employed by the UK organization "trees for cities" to plant trees in Nairobi. They planted 2,800 plants across seven schools, with 350 kids volunteering to care for their "pet trees," with duties such as watering, weeding, and assuring their survival. The children will gain vital skills and environmental awareness as a result of this strategy, and they will learn that they can create beneficial, long-term improvements to their surroundings.

- **Tree Planting initiative in South African 'cities**

South African cities have implemented various urban tree planting programs to increase the cities' green cover. Initiatives like **"Trees for All"** and **"Trees for Homes"** in South Africa are innovative and easy to implement.

- The award-winning **Trees for All** (Trees in Shared Spaces) program sustainably plants trees in public spaces for a healthier, greener environment. This initiative has an education component where

communities are taught about the benefits of trees including the role they play in offsetting carbon emissions and transforming the surrounding environment. Trees for All plants and monitors fruit and indigenous trees at schools, hospitals; parks, clinics, aged homes, and anywhere else people will benefit from, and look after, trees.

- **Trees for Homes** (TFH) is an innovative public greening initiative that contributes to more sustainable human settlements and enhanced living environments. The program provides two free trees to low-income housing settlements (townships) households. Each household receives one fruit tree and one indigenous tree. TFH is currently driving greenbelt initiatives in several townships across major South African cities and aims to transform the township into a rich urban food forest, teeming with life and biodiversity. The project also trains communities on the upkeep of the planted trees.
- **Greening the City of Addis Ababa, Ethiopia**

The city of Addis Ababa has implemented successful tree-planting initiatives as part of its efforts to increase the city's green cover. The city has set ambitious targets for tree planting, engaging citizens in mass tree planting campaigns and involving schools, community groups, and businesses in the process. These initiatives have led to a significant increase in green spaces, improved air quality, and enhanced aesthetics throughout the city.
- **Mangroves reforestation in Quelimane, Mozambique**

The Food and Agriculture Organization of the United Nations' (FAO) "green city" initiative, in collaboration with the local communities of Quelimane, with the support of the city council, is reforesting exploited mangroves. Mangroves are essential for the protection of the city of Quelimane from natural disasters, as they stem the tide and prevent flooding and soil erosion. As a result of this project, local communities have already replanted more than 1.6 hectares of mangroves.

4.2 Landscaping Urban Parks and Gardens

These green spaces' architecture highlights the importance of combining recreational amenities with environmental education, community engagement, and sustainable landscaping practices. We found a few examples that illustrate best practices in the development and management of urban parks and gardens.

- **Green Point Urban Park, Cape Town, South Africa**

This 12.5-hectare beautiful green landscape provides a visual contrast to the hardened urbanity of the surrounding city. The park comprises a network of pathways, multi-functional spaces, shade structures, a play park, an amphitheatre, signage, and park furniture. Not only does the park have a poetic landscape represented through various landforms, tree avenues, diverse vegetation, and water bodies, but it also functions as a place of learning and features a Smart Living Centre and a Green Futures Environmental Training Facility.

- **Nairobi City Park, Nairobi, Kenya**

Nairobi City Park is a historic urban park in the heart of Nairobi that has undergone successful revitalization efforts. The park was renovated to restore its natural beauty, enhance recreational amenities, and promote community engagement. The revitalization project involved infrastructure improvements, reforestation, and the creation of walking paths and picnic areas. Nairobi City Park demonstrates how revitalization efforts can transform urban parks into vibrant and inclusive spaces that cater to the diverse needs of the community.

4.3 Community gardens and urban agriculture

Community gardens and urban agriculture initiatives in Africa provide numerous benefits, including food security, community engagement, environmental sustainability, and economic opportunities. These initiatives demonstrate the potential of leveraging green spaces to create thriving and resilient urban communities. Here are a few case studies that highlight successful urban agriculture initiatives for green spaces in African cities:

- **Backyard farming (On-plot) and Open Space farming (Off-plot), Accra, Ghana**

In the city of Accra, Backyard gardening activities have become socially acceptable. It involves agricultural production and animal rearing in and around homes. Approximately 50-70 hectares of farmland are distributed across 80,000 backyards in Accra, accounting for around 60% of the city's households. These plots often consist of a few plantains, mango trees or poultry, but also a few square

metres of maize or cassava. Green vegetables are grown in the traditional way and are mainly used in stews (World Bank 2013). Men and women are also involved in backyard farming, depending on the type of crop or animals. Most irrigation water is provided by rain and domestic drainage water.

- **Urban agroforestry as part of the Great Green Wall (GGW) initiative, Ouagadougou, Burkina Faso**

The Ouagadougou green belt is an important agroforestry system that involves the intentional integration of trees with agricultural and livestock activities. The agroforestry systems typically consist of a combination of fruit trees, fodder trees, and crops grown together in a mutually beneficial arrangement. This initiative has been successful in transforming barren land into productive gardens. It focuses on sustainable agriculture techniques, water conservation, and community participation. It involves training local residents in organic farming practices, creating small plots for vegetable cultivation, and establishing cooperative structures for resource sharing. The initiative has improved food security, increased community resilience, and provided economic opportunities for participants.

4.4 Awareness, education, and community engagement

Raising awareness and involving local communities in urban greening projects is crucial for their success. Conducting educational programmes, organizing workshops, and fostering community participation create a sense of ownership and encourage sustainable practices. These programs can be targeted at schools, community centres, and local organizations.

- **Greening Schools Programme in South Africa**

The Greening Schools Programme implemented by Greenpop in South Africa aims to educate and engage students in urban greening. The programme involves interactive workshops, tree planting events, and environmental education sessions in schools. It promotes sustainable practices, biodiversity conservation, and the importance of urban green spaces.

- **Tree planting in Mombasa, Kenya**

As part of the "Green Cities Initiative" launched by FAO, the city of **Mombasa in Kenya** has involved youth in urban greening through tree planting activities in schools and urban farming lessons.

4.5 Collaboration and partnership

Fostering collaborations and partnerships between government agencies, NGOs, community-based organizations, and private sector entities is important for successful greening projects.

5. Guidelines for successful tree planting initiative: The right tree at the right place

Successful tree planting initiatives in urban areas depend critically on the survivability of trees. Inappropriate selection or wrong placement of trees can lead among other things to potential damage from tree collapse or introduce invasive pests that can eradicate other tree species. The ICLEI Africa Cities Biodiversity experts present ten do's and don'ts for planting the appropriate tree in any place:

DO	DON'T
Plant productive trees: Plant trees that provide more than one service.	Plant invasive species, but carefully consider exotics, indigenous trees are mostly considered the best option for reforestation
Consider the root systems of trees: Solid root systems protect the soil, stop erosion, and can absorb water from rains and floods	Plant trees in the wrong kind of soil: Trees need well-aerated, moist and loose soils for healthy growth.
Plant trees in their natural biome: Trees sequester the most carbon when planted in their natural biome and surrounded by other plants	Plant thirsty trees in dry climates: It is not advisable to plant trees that consume a lot of groundwater in The western parts of sub-Saharan Africa because they are already water-scarce regions and are predicted to get dryer
Plant trees that address social needs: Identify social issues in cities that can be addressed by trees, and locate these trees where they can address the challenges	Neglect newly planted trees, it is critical to build maintenance programmes into tree-planting initiatives to ensure that the community takes responsibility for looking after the trees
Plant trees that attract local biodiversity: Given the rapid increase in urbanisation leading to a significant loss of ecosystems, planting trees and other plant species is vital to improve and protect biodiversity.	Plant trees in risky areas, due to the rapid urbanisation: it is more effective to plant trees that are already half-grown, in areas that have been specifically designated for gardens or urban green spaces

6. Some guidelines for decision-makers to promote urban green spaces

Presented below are some lessons and guidelines for local governments to promote urban green spaces, enhance the environment, improve the well-being of residents, and create sustainable and liveable urban environments.

- **Develop Comprehensive Urban Green Space Strategies.** Clearly define the objectives for developing green spaces: What type and size of urban green space is planned? Who is responsible for its maintenance and management? Can the planned urban green space be a means of enhancing a disadvantaged area?
- **Integrate Green Spaces into Urban Planning.** Incorporate green spaces into urban planning processes, ensuring that they are considered at the early stages of development. This involves allocating land for parks, gardens, and green corridors and integrating green infrastructure into infrastructure planning.
- **Adopt a Multi-Stakeholder Approach.** Engage multiple stakeholders, including community groups, non-governmental organizations, businesses, and residents, in the planning and implementation of urban green spaces. Collaboration and partnership with various actors can help ensure diverse perspectives, community involvement, and sustainable long-term management.
- **Prioritize Equity and Accessibility.** Ensure that green spaces are distributed equitably across the city, considering factors such as population density, income levels, and social disparities. Aim for accessible green spaces within a reasonable distance for all residents.
- **Foster Community Engagement and Ownership.** Involve local communities in the design, development, and maintenance of green spaces. Promote community gardening initiatives, encourage participation in tree planting events, and provide opportunities for residents to actively engage in the management and decision-making processes related to green spaces.
- **Sustainable Maintenance and Management.** Develop sustainable maintenance and management plans for green spaces, including regular maintenance of parks, tree care programs, and waste management strategies. Consider community-based models for maintenance and explore partnerships with local organizations or businesses.
- **Educate and Raise Awareness.** Conduct public awareness campaigns and educational programs to highlight the benefits of urban green spaces and encourage community involvement. Raise awareness about the importance of trees, biodiversity conservation, sustainable practices, and the role of green spaces in enhancing the quality of life

- **Secure Funding and Resources.** Allocate sufficient resources, including funding, staff, and technical expertise, to support the establishment and maintenance of urban green spaces. Explore partnerships with government agencies, private entities, and international organizations to secure additional funding and resources.
- **Monitor, Evaluate, and Adapt.** Implement monitoring and evaluation mechanisms to assess the effectiveness of urban green space initiatives. Regularly assess the quality, usage, and impact of green spaces to inform decision-making, identify areas for improvement, and adapt strategies as needed.

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