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Lessons from South Africa on how parks and community gardens can help cities adapt to climate change

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The Moja Gabedi food garden and therapeutic space in Tshwane, South Africa.
Courtesy Tlamele Mojaphoko

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Climate change is affecting cities more and more. This creates major challenges, but it also gives fast-growing cities, especially in sub-Saharan Africa, the chance to adapt to global warming in new and better ways.

Cities rely on roads, pipes and flood barriers to work well when a climate disaster strikes. This is physical infrastructure. But they also rely heavily on social infrastructure. This is the public spaces, relationships, and community networks that help people connect, organise and respond collectively to crises.

Read more: [We mapped green spaces in South Africa and found a legacy of apartheid](#)

Parks, squares and community gardens are social infrastructure. They're more than just places to relax. They help cities cope with climate change by lowering temperatures, providing cool spaces during heat waves, and reducing flooding.

We are a team of town planners and architects who studied how parks, squares and community gardens help communities in [Tshwane](#), South Africa's fourth biggest city by population, cope with climate change. We looked at three spaces to understand how good design and planning can make neighbourhoods greener, safer and able to cope with hotter weather, heavy rain and flooding.

Read more: *Parks versus people? Challenges facing the South African capital's greening efforts*

Our [study](#) found that these spaces do much more than help cities cope with heat and flooding. They bring people together, strengthen community ties and provide places for support programmes that help vulnerable residents, like unhoused people.

Involving marginalised groups and local communities in creating and maintaining the green spaces also helps build a stronger sense of belonging and shared responsibility.



Muckleneuk Commons. Courtesy Kyla Smith

We also [found](#) the most effective public spaces for climate change adaptation are those that are created with communities, not just for them. Creating these spaces together means they can change over time as the climate and people's needs change, with local residents and leaders working together to set up what works best in the local area.

How three public spaces are helping Tshwane adapt to climate change

Tshwane is projected to become increasingly [hotter and dryer](#). It's also experiencing increasing urbanisation pressures due to migration from rural areas.

Our first case study was [Moja Gabedi](#), a former derelict and illegal dumpsite and now a food garden and therapeutic area. This space had been rehabilitated and in 2020, urban farming was introduced. A wide variety of crops are now grown there, ranging from vegetables and fruit to herbs.

Read more: [Growing more plants and trees can cut down the heat in Nigerian cities](#)

We found, after visiting the site several times and interviewing the people involved in the development and maintenance of the park, that the site supports food security and the social reintegration of vulnerable individuals.

At the time of the study, Moja Gabedi provided fresh food for a transitional shelter for people recovering from drug addiction who were previously homeless. The park also accommodated psychological and social services helping those individuals to reintegrate into society. It helps the surrounding area too, as it is highly vegetated and includes ponds that cool the immediate environment.

Read more: [The loss of vegetation is creating a dangerous heat island over Nairobi](#)

The second case study was [Muckleneuk Commons](#). It is a small, community park, specifically planned along a central route through which commuters walk to and from work. It has a drinking fountain, central gathering space and iconic sculpture in an indigenous garden, where pedestrians can rest on their journey.

Burgers Park. Courtesy Nombuso Mnguni

The third case study was [Burgers Park](#), the first municipal park established in 1874 when Tshwane was [Pretoria](#). This park is still managed by the municipality today. It follows a typical classic Victorian layout with a series of historic trees and buildings on site.

This park has experienced many changes over time, from being the first botanical garden in the city, to accommodating support services for unhoused people. However, our research found that the local community had not been drawn in enough to run the park. Social support projects were not happening as much as they could be. Despite this, Burgers Park remains a vital refuge for many users, including the local unhoused community.

Read more: [Why urban greening isn't a panacea for extreme weather under climate change](#)

Together, these case studies show that public spaces play an important role in building [transformative resilience](#). This is where green spaces help cities recover from shocks such as floods or heatwaves, and also where the need to adapt to climate change becomes a chance to create stronger, more equitable communities.

By studying these public spaces and speaking to the people who created and manage them, we found that they help cities function better and also support local initiatives that bring about positive change.

People are the key to climate-ready public spaces

Because adapting to climate change happens at the local level, public spaces can help communities prepare for and respond to its impacts. They bring people together, strengthen neighbourhoods and create a sense of belonging. When people feel connected to a place, they are more likely to look after it and support one another during difficult times.

Community workshop in Moja Gabedi. Courtesy Jan Hugo

A key finding of our study is that how public spaces are created is just as important as what they look like. The decisions about what happens there, who is involved and how the space will be used shape its success. The best public spaces are created with local communities and are based on a deep understanding of the area's history, people and needs.

Including local communities in developing green spaces that help cities adapt to climate change is essential. When we involve people in the process of making places in our cities, we allow individuals to connect to these places. When people feel strongly connected to a place, they are more likely to care for it and support one another during difficult times.

Read more: [*Climate change is making cities hotter. Here's how planting trees can help*](#)

Our research found that local champions are essential. These are people who share a clear vision for a place and help turn it into reality. They are also willing to learn, adapt and respond quickly as people's needs change or as floods, heatwaves and other pressures affect the community, helping the place and the community continue to grow and thrive over time.

Cities can unlock the potential of their communities to regenerate public spaces and help the city adapt to climate change. But to do this, cities need to stop focusing on green spaces as purely physical or environmental and recognise them as social infrastructure. In this way, public spaces will evolve to meet the changing needs of society through ongoing [co-creation](#) and collaboration.

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