



PROGRAM ON
WATER GOVERNANCE 



EDGES

ENVIRONMENT & DEVELOPMENT
GENDER, EQUITY, SUSTAINABILITY

Resilience in South Africa's urban water landscape

Lucy Rodina

Corresponding Author: l.rodina@alumni.ubc.ca

Leila Harris

Rodina L., & L.M. Harris (2016, June 14). [Resilience in South Africa's urban water landscape](#).
Opinion piece, published in [The Conversation Africa](#).

Citations of this work should use the final version as noted above

RESILIENCE IN SOUTH AFRICA'S URBAN WATER LANDSCAPE

Resilience is becoming a core concept in water governance. It refers to the ability of communities, cities or regions to withstand the challenges posed by an increased intensity and frequency of floods and droughts.

Resilience often involves adopting diverse, flexible, adaptive and redundant or supplemental systems. This pertains to both physical infrastructures and governance arrangements. Resilience in the urban water sector also focuses on restoring and maintaining water ecosystems, such as wetlands, rivers or streams.

The [Stockholm Resilience Centre](#), the [Resilience Alliance](#) and other Euro-American institutions have largely driven the frameworks for resilience. However, they are now increasingly being applied in African cities. For example, Accra, Cape Town, Dakar, Durban, Enugu and Kigali are all participating in the Rockefeller Foundation's [100 Resilient Cities](#) initiative. Each city appoints a [Chief Resilience officer](#) to lead action on addressing its specific resilience challenges. For [Cape Town](#) these include civil unrest, rainfall flooding, infrastructure failure and disease outbreaks.

Another example from southern Africa is the [Future Resilience for African Cities and Lands](#) programme. It engages decision-makers and officials in cities like Cape Town, Windhoek, Maputo and Lusaka to develop plans for resilience to climate change.

[Our research](#) looks at the meaning, application and utility of resilience in urban water governance in African contexts. We focus specifically on Cape Town, in South Africa's Western Cape province.

An African focus

African cities are often sites of rapid or unplanned growth, with poorly coordinated or spotty development. This has important implications for resilience planning in the face of floods and droughts. It requires addressing both formal and informal forms of urban development.

The Western Cape faces additional challenges. The projected impacts of [climate change](#) include increasing mean annual temperatures, changes in precipitation patterns and decreasing winter rainfall in the western parts of the region. More intense storms are also expected. This will likely lead to flooding, which already poses serious concerns in the region.

Addressing urban resilience also requires meaningful engagement with historical patterns of colonial development and apartheid legacies. Cape Town is a stark example of persisting high levels of social, spatial and structural inequalities. This is despite various efforts to address these issues.

Key dimensions of water resilience

Our ongoing research focuses on the question: what does resilience mean – or what should it mean – in Cape Town's urban water sector?

Preliminary literature and policy analyses show a few key factors of water resilience.

- Resilience in [water governance](#) comes from a mix of government structures, watershed groups and various stakeholders. Effective coordination, little conflict and working partnerships between government and stakeholders are key drivers of resilience. For Cape Town, this means increased collaboration between government, civil society and other key actors.
- Healthy watersheds and high biodiversity contribute to resilience in the face of climate change. Natural systems like wetlands provide [many mitigation services](#). These include temporary floodwater storage, ground water recharge and storm water purification. This calls for deeper integration of hydrology and ecology in water management policies.
- Resilience often means living and dealing with floods. It requires accepting certain levels of flood risk, preparing for the unexpected and adopting more innovative approaches. These include natural flood retention systems and other soft approaches to flood protection. This requires addressing informal urbanisation, which often happens in sensitive watersheds.
- For disaster response, resilience calls for proactive approaches. This means that cities should focus on building capacity to deal with disasters as opposed to relying on relief when they happen.
- Building community resilience to floods, droughts or other water risks is a crucial aspect. Livelihood diversification, flexible settlement options and greater reliance on community level planning are some of the proposed strategies. This requires capacity building in various areas, including in impoverished and informal settlements.
- Flexibility in governance and infrastructure systems is also necessary to manage different conditions of water availability or water-related risks. This means learning, reflection and experimentation should be built into governance and planning processes.

Embracing African urbanism

Some of these insights seem rather obvious but it remains unclear how effective they'll be in the context of the high levels of informality, poverty and inequality.

In terms of flooding, some informal settlements in Cape Town are located on or near wetlands or flood detention ponds. These are designated areas for absorbing excess water to protect against flooding. During floods, these [settlements are highly vulnerable](#).

Flood detention ponds can increase overall urban resilience to floods but they may also increase the vulnerability to flooding of informal settlements located on these sites. Unfortunately impoverished urban residents do not have the capacity or resources to plan where to build their communities. Informal settlements are often built on an ad hoc basis.

Addressing urban inequalities is central to formulating water resilience strategies. Embracing endemic, non-Western or [more organic](#) forms of urbanism is crucial. This means working with, rather than against informality. It is also important to build governance capacity to help address these issues.

The complexities of African urbanism and persistent social and environmental concerns should be central in defining and planning for resilience. Resilience in an African urban context should adopt a transformative character. This can be done by building on diverse governance and development processes, including informal ones.

Citation: Rodina L., & L.M. Harris (2016, June 14). [Resilience in South Africa's urban water landscape](#). Opinion piece, published in [The Conversation Africa](#).