Climate change:

Research summary

AFRICAN CITIES RESEARCH CONSORTIUM

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Context

The latest Intergovernmental Panel on Climate Change (IPCC) report indicates that global average temperatures are already 1.1°C above pre-industrial averages, and that these increases are expected to reach 1.5°C and beyond. Africa is highly vulnerable to climate change impacts under all climate scenarios, with varying effects across the continent. The trajectory of Africa's future socioeconomic development is therefore intertwined with climate change, which poses a threat to achieving the Sustainable Development Goals (SDGs) and the Africa Union's Agenda 2063.

According to the IPCC, the vulnerability and exposure of urban areas in Africa to climate change are increasing. At the current time, approximately 70% of African cities are highly vulnerable to climate-related events. In urban areas, global temperature increases and changing precipitation patterns will be associated with more frequent and intense heatwaves, droughts, sea-level rise and storm surges (for coastal cities), and increased rainfall intensity contributing to flooding events.

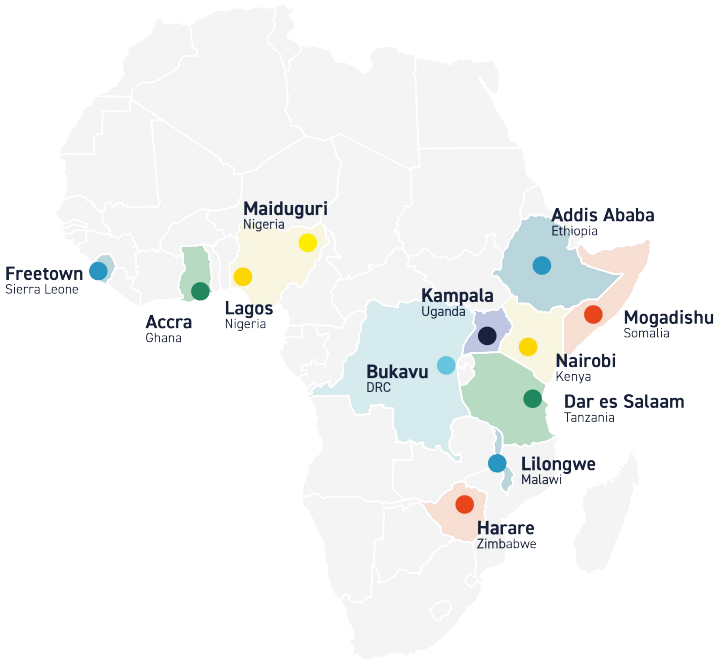
Beyond future impacts, African cities are already experiencing the impacts of changing climatic systems and associated impacts on various elements of urban life, spanning urban ecologies, infrastructure, households, businesses and resource flows.

Methods

This is a summary of a report synthesising key findings and insights emerging from the African Cities Research Consortium's (ACRC's) crosscutting climate change-focused research conducted in 12 African cities across eight urban development domains. Domains refer to fields of power, policy and practice that are relevant to solving particular problems and/or advancing specific developmental opportunities in relation to cities. They consist of:

1. Housing
2. Informal settlements
3. Land and connectivity
4. Structural transformation
5. Neighbourhood and district economic development
6. Youth and capability development
7. Health, wellbeing and nutrition
8. Safety and security

A selection of domains were studied in each of the focus cities, shown below.



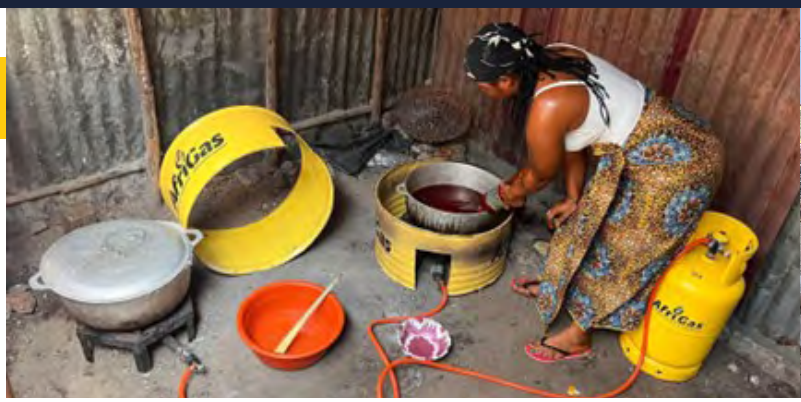
Key findings

Drawing from studies conducted in each city case, key findings from the analysis are that:

- **Growth of informal settlements with inadequate risk-reducing infrastructure and services, as well as profound political marginalisation, remains a rising challenge for all the ACRC study cities.** Informality leaves many residents exposed to precarious living and working conditions that exacerbate their vulnerability to a range of risks, including climate-related risks. Participatory planning processes that bring the voices of local residents and civil society into planning and policy decisions around urban development are one solution for building resilience to climate risks.

- **Decent and affordable housing offers increased resilience for vulnerable groups to climate-related risks, while also contributing to crime prevention, linking to the safety and security domain.** However, limited access to affordable housing options and housing finance means that low-income communities predominantly live in low-quality housing located in low-cost neighbourhoods, increasing their exposure and vulnerability to climate-related risks. Widespread lack of tenure security also affects people's ability to invest in their property and/or neighbourhoods, which interrelates with the land and connectivity domain. There is a need to better understand the factors hindering access to finance; to demonstrate that affordable housing finance can positively impact decent housing; and to develop standards and building codes for decent, affordable housing that is climate resilient and has a decreased carbon footprint, whilst keeping the cost of housing down.

- **Addressing the issue of mitigation within the land and connectivity domain is imperative, given the transport sector's significant contribution to greenhouse gas emissions.** Transport microenterprises (such as rickshaw taxis) play a critical role in moving goods and people to markets and workplaces not served by public transport. Coordinated training, proper identification of riders, institutional regulation, planned integration of transport microenterprises within the public transport system, and incentives to transition existing transport modalities to more environmentally friendly ones (such as bike taxis) are possible interventions for neighbourhood and district economic development, which could also enhance security and efficiency in cities.



- **Widespread insecurity, worsened by climate change, demands community-led security solutions.** This could start with hybrid community security structures, wherein people protect their community with support from relevant authorities (such as the police). Many of the case cities highlight the role of youth in crime and violence – both as perpetrators and victims. Therefore, involving marginalised youth in hybrid community structures may contribute towards their empowerment, while also improving security. Education on the links between climate-related hazards and safety and security risks is key to increasing understanding amongst both residents and the authorities in order to mitigate spikes in these risks.

- **Within the youth and capability development domain, examination of the case studies highlights how youthful populations in African cities present significant opportunities for economic and social development.** However, a range of risks influence this potential, including inadequate education and high youth unemployment, among others. The cases suggest the need to invest in education, training, economic development, entrepreneurship and technology access for youth; this investment should be conducted in a way that 1) would allow youth in African cities to position themselves at the forefront of nascent green economies, and 2) can solve critical problems, such as waste management.

- **Climate change has major implications for food and nutrition security and yet, there are few linkages made in cities between urban nutrition issues and the diversity, quantity and quality of food production under climatic changes (which affects both food and nutrition security).** Greater investment in domestic food production and distribution is likely necessary and further consideration needs to be given to how the resilience of the agriculture and fishery sectors might be affected by climatic changes, how these sectors affect greenhouse gas (GHG) emissions, and what can be done in this regard.

Overall, one of the common denominators of the ACRC city cases is the high proportion of low-income residents, particularly those who reside in informal settlements, who are most at risk from climate change. Poverty alleviation through local job creation/employment is critical to reduce exposure and vulnerability to climate-related risks, and efforts to improve labour productivity in African cities must explicitly address the challenges and opportunities of climate change. The nexus between incremental housing production, building materials and the local employment and skills development of youth presents a significant opportunity, offering considerable potential for upscaled training and education in environmentally friendly, energy-efficient and climate-resilient housing construction which is both decent and affordable. In order to simultaneously meet poverty alleviation, adaptation and mitigation goals in urban Africa, the role of micro- and small-scale goods and service providers – particularly in the informal sector – cannot be overlooked. These goods and services can be highly relevant to the climate change sphere, as is exemplified, for instance, by the case of the informal waste sector.

Implications for urban reform

The ACRC cases highlight how cities' planning needs to incorporate participatory and inclusive processes to effectively address their priority complex problems (understood as the processes that are blocking or preventing the achievement of poverty reduction and/or economic development, and/or exacerbating the climate emergency) as well as the implications of climate change on these problems. The cases also highlight the importance of locally led actions, such as building coalitions that can advocate and lobby for the informal sector. Furthermore, the cases suggest the need for integrated and multisectoral approaches, as well as the need for collaborative governance arrangements. City governments and residents cannot always resolve the challenges they face alone. Addressing the priority complex problems of cities also requires access to and/or unlocking finance, for example, to improve neighbourhoods, supply necessary infrastructure and incrementally upgrade low-quality units to improve the housing sector.

The report concludes by presenting some key avenues for future research that could enhance urban resilience and sustainable development across the key domains:

1. Investigating the efficacy of integrated multisectoral intervention;
2. Exploring joint approaches to systems and domains;
3. Exploring the success, challenges and scalability of resilient strategies in informal settlements;
4. Examining how climate action intersects with socioeconomic development;
5. Assessing the strategic role of diverse institutions in climate resilience;
6. Examining regulatory frameworks in the context of urban resilience;
7. Conducting further research into sustainable building materials and practices;
8. Researching climate-resilient urban food systems; and
9. Investigating the gaps and emergent issues in climate education.

About this summary

This is a summary of a Working Paper, written by the African Cities Research Consortium (ACRC) climate change crosscutting theme team: Hayley Leck, Zakiyya Atkins, Luka Dreyer, Yakhuluntu Dubuzana, Clara Marais, Lorena Pasquini, Tashi Piprek, Meggan Spires and Kate Strachan.

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