



RESEARCH BRIEF – FEBRUARY 2015
CLIMATE CHANGE RESILIENCE IN URBAN AFRICA
PART II: THE RESILIENCE POLICY AGENDA

EXECUTIVE SUMMARY

Local governments are increasingly confronted with challenges resulting from weather events related to global climate change. This brief examines the efforts made by ten African cities to develop resiliency to climate events. The policy systems within which the cities are embedded include national governments and an array of multilateral organizations and non-governmental organizations. These systems create opportunities as well as barriers to local government action. Although some progress is observed, local governments are generally not effectively engaged in this policy agenda as a result of inadequate authority and resources.

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The Climate Change and African Political Stability (CCAPS) program sought to assess the ability of local governance systems in large African cities to develop resilience and thereby enhance the collective well being of their populations.¹ Ten major African cities were selected for study including Accra, Ghana; Alexandria, Egypt; Cape Town, South Africa; Casablanca, Morocco; Dakar, Senegal; Dar es Salaam, Tanzania; Johannesburg, South Africa; Kampala, Uganda; Luanda, Angola; and Maputo, Mozambique.² Each city has a unique institutional structure and context (including the authority vested in local governments by national government) and a unique set of exposures to weather-related hazards. This brief, the second of a two-part series, first describes the policy system for developing urban resilience initiatives and then identifies the forces that shape local plans and initiatives to build urban resilience to the climate change hazards described in the first brief.

POLICY SYSTEMS AND URBAN RESILIENCE

The emerging role of local government in building resilience in African cities is affected by broader policy systems, including international efforts that address climate change and related issues as well as national priorities, capacities, and governmental structures. This section begins with a discussion of several elements of the international framework crucial for understanding both national and local government efforts in Africa.³

The effects of human activity on the global climate system are complex and are subject to intense and ongoing research and policy debates regarding *mitigation*, efforts to reduce the effects of human activity primarily by reducing greenhouse gas emissions, and *adaptation*, policies and plans of action to help humans and natural systems adapt to the impacts of climate change. The United Nations Framework Convention

on Climate Change (UNFCCC) is the primary forum for international deliberations and agreements with ongoing discussions occurring in the annual Conference of the Parties (COP).⁴ Projections of annual worldwide costs for adaptation in developing countries range from US\$70 to US\$100 billion by 2050,⁵ and a multitude of funding mechanisms have emerged to fund these investments.

Implementation of adaptation strategies necessarily depends on both the capacity of national and local governments and the responsiveness of local communities.

The Global Environment Facility (GEF), established in 1991, is the primary financial mechanism for the UNFCCC, among other conventions. The GEF provides grants to developing countries to address environmental issues and is funded by 183 countries, civil society organizations, and the private sector.⁶ The GEF's Least Developed Country Fund (LDCF) has provided funding for eligible countries⁷ to prepare National Adaptation Programmes of Action (NAPAs), which identify and prioritize national adaptation activities.⁸ To be eligible for funding from this fund, a country designated by the UN as a Least Developed Country (LDC) is required to submit a NAPA to the UNFCCC. Since the funds for operationalization following the COP11 in 2005, 47 LDCs have submitted NAPAs to the UNFCCC, including 33 from the African continent, five of which are included in this study.⁹ Despite the completion of these plans, resources for implementing these plans are generally not available, either through national sources or international sources.¹⁰

Other sources of funding for climate change adaptation include public-private partnerships, insurance and disaster pooling, development assistance, and foreign direct investment as well as governmental resources of individual countries.¹¹ The United Nations Human Settlements Program (UN-HABITAT) Cities and Climate Change Initiative collaborates with local governments to implement mitigation and adaptation measures.¹² Since 2008, the World Bank, the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, and the Inter-American Bank have supported adaptation strategies through Climate Investment Funds, which support “low-emission and climate resilient

development.”¹³ Many countries are adjusting their bilateral development assistance efforts to incorporate climate change considerations.

The broad, complex effects of climate change make the issue relevant to a wide range of other organizations with diverse missions. For example, the United Nations Environmental Program (UNEP) has identified climate change as one of six focal points for achieving environmental goals.¹⁴ Similarly, the United Nations Development Programme (UNDP) has prioritized increasing awareness of climate change in its diverse set of goals that include poverty reduction and achievement of the Millennium Development goals. In the arena of disaster risk management, the impacts of climate change are of increasing concern to international bodies¹⁵ such as the International Federation of Red Cross and Red Crescent Societies (IFRC),¹⁶ the UNISDR,¹⁷ and the World Bank.¹⁸ The Global Facility for Disaster Reduction and Recovery (GFDRR)¹⁹ is a World Bank-managed “partnership of 41 countries and 8 international organizations committed to helping developing countries reduce their vulnerability to natural hazards and adapt to climate change.” The Bank's funding of disaster risk assessments has been important to the development of urban resilience efforts in several of the cities in this study.

This discussion of international policy framework for climate change leads to two observations. First, an extensive international network of organizations to assist developing countries to prepare for and respond to climate change has developed in the last decade. This network is complex and multifaceted—the result, in part, of the far-reaching nature of climate change and its potential consequences. That is, climate change consequences are germane to a multitude of policy concerns including economic development, environmental protection, disaster risk management, public health, food security, and others. This complexity leads to a second observation. National governments attempting to access resources, both technical and financial, for climate change adaptation must interface with a range of actors, each with their own priorities, protocols, and regulations, generating additional burdens for national governments with limited resources.

Most national governments in Africa recognize the importance of developing climate change policies required to respond to current challenges and prepare for future impacts. Motivated in part by international policy systems, these national policies serve the dual purpose of allowing countries to assess the varied and widespread

impacts of climate change in their countries and to identify strategies to address these impacts. Therefore, national governments must balance a climate change agenda with other national priorities and resources. But this balancing act is critical in demonstrating to international donors that the country has identified adaptation requirements and that resources can be used effectively. Implementation of adaptation strategies necessarily depends on the capacity of national and local governments and responsiveness of local communities.

RESHAPING THE RESILIENCE AGENDA IN AFRICAN CITIES

Among the ten cities examined in this project, only two local governments, in Cape Town and Johannesburg, have formally adopted climate change adaptation policies (see Table 1). As of 2012, Maputo was developing an adaptation plan. In the other seven cities, climate change adaptation has not been formally integrated into local government initiatives. But in all ten cities, a range of local government functions, including disaster response, water resource planning, and urban infrastructure and planning, are potentially affected directly by the three climate hazards examined here—flooding, sea-level rise, and drought—and local governments have adopted plans or policies for these functions. Therefore, local climate change adaptation policies are subdivided by (1) those that are explicitly adaptation policies (see column 3 in Table 1) and (2) those that address climate change impacts even if not explicitly concerned with climate change adaptation (see column 4 in Table 1). This categorization suggests that the concept of climate change adaptation has yet to be fully integrated into local policymaking processes.

National Adaptation Policy Context

Driven in part by UN and World Bank incentives designed to encourage the mainstreaming of climate change concerns into national ministries discussed above, adaptation agendas have emerged at the national level in many developing countries in recent years.²¹ These agendas, however, must be balanced with other national priorities. Consequently, national climate change adaptation policies found in eight of the nine countries studied in this project (in Morocco national policy is focused primarily on mitigation rather than adaptation) rarely address urban areas.

Five of the countries have adopted NAPAs under the auspices of the Least Developed Countries Fund

(LDCF). These NAPAs give little or no attention to adaptation in urban areas.²² For example, none of the top 15 priorities identified by Angola's NAPA address urban adaptation, and Luanda is not included among the five regions addressed by the country's NAPA vulnerability assessment. Tanzania's NAPA emphasizes the risks faced by the country's interior (water scarcity, drought, and food insecurity) but pays little attention to urban coastal areas. In Uganda, all NAPA pilot projects currently underway are located in rural areas, and none are being implemented in Kampala. The national government of Mozambique has focused its efforts on rural and agricultural adaptation and urban climate change concerns are largely ignored. National prioritization of rural climate change issues, as observed in the NAPAs, partially explains the relatively modest adaptation efforts found in the five cities in LDCs – Dakar, Dar es Salaam, Kampala, Luanda, and Maputo.

A local government's decision to engage in adaptation policymaking or planning is dictated not only by its authority to make such decisions and capacity to implement them, but also by the local political context and the demands and needs of the city's residents.

Three countries not subject to the NAPA requirement – Egypt, Ghana, and South Africa – have comprehensive national climate change policies and plans, some developed with support from international organizations or under obligations of international conventions. For example, the UNDP's African Adaptation Programme supported the development of the Ghana Plan for Disaster Risk Reduction and Climate Change Adaptation. Morocco, the fourth of the non-LDC countries, has a national plan that focuses on global warming, rather than adaptation, but it has yet to be implemented. In addition to their NAPAs, Tanzania adopted a national climate change policy in 2012, and Uganda has completed a policy that, as of 2013, was under review for adoption by parliament. On net, local governments in urban areas find little support for local adaptation policy in national policy frameworks.

Table 1. National and Local Climate Change Adaption Plans, by City

City	National		Local Government	
	Climate Change Plans	Plans Relevant to Climate Change Hazards	Climate Change Plans	Plans and Initiatives Relevant to Climate Change Hazards
Accra	<ul style="list-style-type: none"> Ghana Plan of Action for Disaster Risk Reduction and Climate Change Adaptation (DRR/CCA) National Climate Policy 	<ul style="list-style-type: none"> Ghana Shared Growth and Development Agenda 		<ul style="list-style-type: none"> Disaster Management Plan
Alexandria	<ul style="list-style-type: none"> Egypt's National Strategy for Adaptation to Climate Change and Disaster Risk Reduction [2011] 	<ul style="list-style-type: none"> National Strategy for Crisis/ Disaster Management and Disaster Risk Reduction [2010] National Law 4/1994 [Regulates such issues as integrated environmental management of coastal zones] National Crisis Management Strategy 		
Cape Town	<ul style="list-style-type: none"> National Climate Change Response Plan [2004] 	<ul style="list-style-type: none"> National Environmental Management Act [1998] National Water Act [1998] Disaster Management Act [2002] National Biodiversity Act [2004] National Spatial Development Perspective [2006] Comprehensive Plan for Development of Sustainable Human Settlements [2004] 2010-2014 National Strategy for Sustainable Development and Action Plan National Disaster Management Framework [2005] 	<ul style="list-style-type: none"> Climate Change Strategy and Action Plan [For Western Cape] Framework for Adaptation to Climate Change [2006] Climate Adaptation Plan of Action [2010] Cape Town Energy and Climate Change Strategy [2006] 	<ul style="list-style-type: none"> Biodiversity Strategy [2003] Coastal Zone Management Strategy [2005] Five-year Integrated Housing Plan [2009/10–2013/14] Integrated Metropolitan Environmental Policy [2001] Floodplain and River Corridor Management Policy [2009] Municipal Disaster Risk Management Framework [2006]
Casablanca	<ul style="list-style-type: none"> National Plan Against Global Warming 	<ul style="list-style-type: none"> Resilient Oases Plan Villes Sans Bidonville 		
Dakar	<ul style="list-style-type: none"> National Adaptation Programme of Action [2006] 	<ul style="list-style-type: none"> Plan Orsec [1999, Disaster Risk Management] Plan Jaxaay [2005, Flood response plan] Projet de Gestion des Eaux Pluviales (PROGEP) [Rainwater management program] [2011] 		<ul style="list-style-type: none"> Plan Flooding in DTK Municipality Dakar Urban Master Plan 2025
Dar es Salaam	<ul style="list-style-type: none"> National Adaptation Programme of Action [2007] National Climate Change Strategy [2012] 	<ul style="list-style-type: none"> National Strategy for Growth and the Reduction of Poverty 		<ul style="list-style-type: none"> Dar es Salaam Transport Policy and System Development Master Plan City Master Plan [Proposed 2010]

City	National		Local Government	
	Climate Change Plans	Plans Relevant to Climate Change Hazards	Climate Change Plans	Plans and Initiatives Relevant to Climate Change Hazards
Johannesburg	<ul style="list-style-type: none"> National Climate Change Response Plan [2004] 	<ul style="list-style-type: none"> National Environmental Management Act [1998] National Water Act [1998] Disaster Management Act [2002] National Biodiversity Act [2004] National Spatial Development Perspective [2006] Comprehensive Plan for Development of Sustainable Human Settlements [2004] 2010-2014 National Strategy for Sustainable Development and Action Plan National Disaster Management Framework [2005] 	<ul style="list-style-type: none"> Assessment fo Johannesburg's Vulnerability to the Global Threat of Climate Change [2008] Climate Change Adaptation Plan, City of Johannesburg [2009] Gauteng Climate Change Response Strategy and Action Plan [2012] 	<ul style="list-style-type: none"> City of Johannesburg Growth and Development Strategy 2040 City of Johannesburg: 2012/16 Integrated Development Plan City of Johannesburg Sustainable Human Settlements Urbanisation Plan [2012] Johannesburg Roads Agency Flood Management Plan City of Johannesburg Corporate Disaster Management Plan [2003]
Luanda	<ul style="list-style-type: none"> National Adaptation Programme of Action [2011] 	<ul style="list-style-type: none"> 2010 Long Term Development Strategy 		<ul style="list-style-type: none"> Master Plan Technical Project of green zones and drainage Technical Project
Maputo	<ul style="list-style-type: none"> National Adaptation Programme of Action [2008] 	<ul style="list-style-type: none"> Master Plan for the Prevention and Mitigation of Natural Disasters [2006] 	<ul style="list-style-type: none"> Local-level climate change adaptation and mitigation initiative [In development] 	

Local Adaptation Policy Context

Despite increasing international and national interest in climate change adaptation, the topic is rarely formalized in policies and plans of local governments. Several factors help explain this observation.

First, the structure of governmental systems in these countries is not conducive to action originated at the local level. For example, Tanzania's national government has significant control over urban affairs, and vital local resources and services are assigned to national ministries, thereby reducing Dar es Salaam's ability to act on its own. Furthermore, three municipal counties, a city council, and at least nine ministries have jurisdiction over climate change issues in Dar es Salaam and coordination among these different bodies is both limited and inefficient. In Casablanca there is little collaboration between neighboring local jurisdictions. In Dakar, the national government has sometimes usurped the power of local

authorities, as seen in the construction of the Radisson Blu Hotel on the coastline despite the objections of city planning officials.²³

In addition to administrative centralization, many of these cities operate in fiscally centralized environments. In Maputo, local authorities are highly dependent on financial transfers from the central government, restricting the city's fiscal autonomy and policymaking capabilities. Dakar also operates in a fiscally centralized environment and irregular fiscal transfers from the central government reduce operational efficiency.

Over the last two decades, many African countries have attempted to decentralize governmental systems, allowing for greater policymaking capabilities at the local level, but with limited results.²⁴

Local governments in the two cities in this study with formal adaptation policies, Cape Town and Johannesburg,

have substantial capacity due in part to the relatively high level of national development as well as South Africa's relatively decentralized administrative system. Local government capacity in Cape Town enables coordination with a variety of local and international NGOs, academic institutions, and private sector stakeholders. These two cities benefit from a supportive national environment as South Africa tends to self-identify as a leader in addressing climate change challenges.

Prioritizing adaptation efforts for slow-onset hazards, such as water scarcity or sea-level rise, ahead of other immediate needs is highly unlikely despite the dire long-term consequences.

Next, a local government's decision to engage in explicit adaptation policymaking or planning is dictated not only by its authority to make such decisions and capacity to implement them but also by the local political context and demands and needs of the city's residents. In the cities studied here, climate change adaptation is generally not a high priority for local governments, although most are concerned with disaster response and risk management for flooding. Given the frequency and devastating effects of flooding, the prioritization of response to this hazard is not surprising. More capable local governments include flood mitigation efforts in city planning and related departments, but they do not generally define or frame this as climate change adaptation. Rather than proactive adaptation through long-term mitigation efforts, cities are more likely to be reactive. Furthermore, cities, at least in terms of policies and plans, often fail to recognize and address the projected impacts from more frequent or severe floods in the future.

Water scarcity, a widespread threat to urban areas in Africa, is a prominent hazard in Dar es Salaam, Casablanca, Johannesburg, Luanda, and, to a lesser extent, Cape Town. In Egypt, the Nile River meets Alexandria's current water supply needs of five million cubic meters per day. But as the city's population grows (by an estimated 40 percent by 2030), water supplies may be significantly strained. National governments often consider drought to be primarily a rural or agricultural issue, though water scarcity can clearly have pronounced impacts on urban areas.

Responsibilities for policies addressing water scarcity generally fall to national governments and water resource management agencies rather than local governments; in addition, a local government at the mouth of a river has little influence on water management upstream. In water scarce Johannesburg, Rand Water, a parastatal, is responsible for delivering water to consumers in Johannesburg and other neighboring local governments. It maintains reservoirs and obtains water through interbasin transfers requiring an international agreement between the government of Lesotho and the government of South Africa, represented by the Department of Water Affairs. In this arena, local governments can influence local water distribution systems and encourage water conservation, important resilience measures in their own right, but only regional water resource management agencies can ensure long-term water security by managing slow-onset water scarcity through effective long-term planning.

Sea-level rise, the third hazard examined in this study, does not carry a high priority for local governments in the eight coastal cities as evidenced by the lack of plans and policies addressing this hazard. Coastal erosion, marine submersion, and saltwater intrusion have been documented as significant risks in Alexandria and in Dar es Salaam, but they have yet to be addressed by the governments of those cities in any significant way. In contrast to the short-term impacts of annual flooding, sea-level rise impacts are more likely to be experienced at some uncertain time in the future. In Maputo, the UNDP estimates that the port and railway system could be at risk of seawater inundation within 20 years. Furthermore, Maputo's beaches are at risk of literally being washed away due to coastal erosion caused by sea-level rise. Despite these risks, government officials' focus is on flooding, a more immediate and visible climate change hazard. Cape Town is the only city with a plan to specifically address sea-level rise. This plan, however, has not been implemented effectively and was described by one city official as a "communications exercise."²⁵

Local governments in Africa, generally resource constrained, are faced with many pressing problems. Prioritizing adaptation efforts for slow-onset hazards, such as water scarcity or sea-level rise, ahead of other immediate needs is highly unlikely despite the dire long-term consequences. On the other hand, the more immediate impact of other hazards, such as flooding, make local governments more likely to address them, even though these actions are not necessarily framed as climate change adaptation. Independent of differences

in public perception of the risks associated with the impacts of each of the three hazards, local governments could, and should, have service delivery and planning responsibilities to help mitigate the array of impacts. But immediate pressures and concerns shape local government priorities, thus making the onset time for a hazard an important factor in explaining the level of local government engagement.

Other Actors Supporting Local Resilience Initiatives

Non-governmental actors are developing a broad and substantial knowledge base about local climate change hazards and vulnerabilities. In Kampala, researchers at Makerere University are using rainfall data to create models that will allow them to predict flooding, with the ultimate goal of developing a plan for flood management in the city. Knowledge of climate change impacts and vulnerabilities must be developed if local governments are to develop effective adaptation policy and promoting local sources of knowledge in universities or think tanks will prove helpful.

International organizations play several roles in advancing national climate change agendas, and several engage directly with local governments, and influence local priorities. The World Bank and UNISDR provide assistance for vulnerability and risk assessments while UN-HABITAT, UNEP, UNDP, and other agencies provide technical assistance for planning. In Maputo, for example, a partnership between local government and UN-HABITAT initiated the development of a local-level climate change adaptation initiative. The UNDP is active in promoting climate change issues in Accra, Alexandria, and Luanda. The World Bank is a major contributor in Dar es Salaam, Alexandria, Dakar, Maputo, Kampala, and Casablanca. In addition to funding, international organizations may provide technical expertise and human capital. International networks such as the C40 Cities Climate Leadership Group and the Clinton Climate Initiative have influenced the climate agenda in Johannesburg as it strives to be a “world-class African city,” as its official branding claims. The variation among cities in the level of international support is explained by a variety of factors, among them the capacity of both local and national governments and the openness of governments to external assistance. But to be effective, international assistance needs to align more effectively with priorities and capabilities of local governments since a mutually shared (by international organizations and local governments) climate change adaptation framework was not found in most cities.

URBAN RESILIENCE AND LOCAL GOVERNMENT

Climate change adaptation strategies and policies are increasingly found in African countries but local governments in the large cities tend not to engage in such policies. In 2013, at the time of this research project, many local initiatives were addressing climate hazards, especially flooding, but building urban resilience in the context of potential future climate change impacts was typically not a policy priority of local governments. Awareness of and knowledge about the need to build resilience to climate change are developing and some resources, such as technical and scientific resources and studies, required to improve these efforts are present, albeit not effectively integrated into local government action.

Knowledge of climate change impacts and vulnerabilities must be developed at the local level if local governments are to develop effective adaptation policy.

African cities, like cities elsewhere in the world, face a host of challenges. Given resource constraints, the burden on local governments to provide public services, including responding to emergencies is challenging. The large number of informal settlements and high population growth make it difficult to address these issues.

Some examples of progress are observed in the efforts toward densification in Cape Town, improvement in water distribution in Luanda, and flood mitigation in Dar es Salaam and may provide models for actions in other cities. But local officials understandably prioritize immediate concerns, such as public health and safety, over long-term climate change adaptation. The urban planning shortfalls of local governments are understood and remedial action is being taken in many cities. But until local governments develop additional capacity and are provided the needed resources, their potential, and needed, role in developing resiliency to climate change hazards will not be fulfilled to the detriment of the populations living in these cities. 🇳🇬



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ENDNOTES

- 1 This policy brief summarizes the findings from *Urban Resilience to Climate Change in Africa*, eds. Robert H. Wilson and Todd G. Smith, CCAPS Working Paper No. 4 (Austin: Robert S. Strauss Center for International Security and Law, 2014). The research effort was conducted under the Climate Change and Africa Political Stability (CCAPS) program at the Robert S. Strauss Center for International Security and Law at the University of Texas at Austin.
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