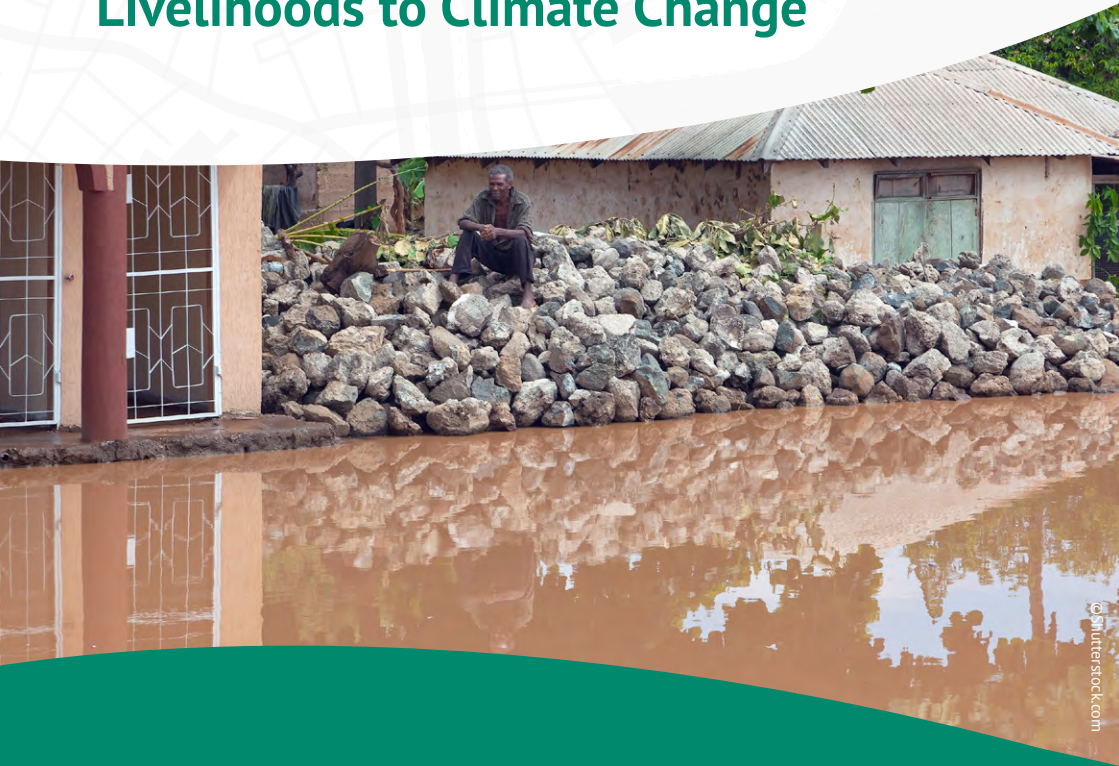




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Resilient Urban futures: Adapting Livelihoods to Climate Change



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Summary

East African cities face growing climate-related challenges, exacerbated by rapid urbanisation. Issues such as rising temperatures, erratic rainfall, droughts, and flooding put significant pressure on infrastructure, livelihoods, and social well-being. The Leiden-Delft-Erasmus East Africa Research Network (LEARN) convened a policy dialogue involving policymakers, academics, researchers, and community leaders from Uganda, Tanzania, Burundi, Rwanda and Kenya to explore strategies for addressing these challenges the dialogues focussed on climate impacts on livelihoods in East African cities. Key findings highlight physical, socio-economic and socio-cultural vulnerabilities to climate change in cities across the regions. The dialogue proposes practical climate resilience strategies such as enhancing community-based adaptation and developing sub-national climate financing mechanisms among others. The recommendations provided offer a roadmap for policymakers, urban practitioners, and other stakeholders to foster sustainable, climate-resilient futures for East African cities. As a call to action, the dialogue emphasised the need for a paradigm shift in tackling climate challenges by breaking away from pipeline process conditioning, promoting local leadership and ownership of climate initiatives, reframing Africa's climate narrative, and reducing dependency on donor funding.

Introduction

Rapid urbanisation in East Africa amplifies climate change vulnerability thereby threatening urban livelihoods, infrastructure, and social well-being. Cities across the region are increasingly experiencing rising temperatures, extreme heat, erratic rainfall, droughts and frequent flooding, which place significant strain on urban systems and weaken overall urban resilience. These climate risks underscore the urgency to better understand urban livelihoods and explore ways in which urban communities in the region can successfully adapt to rising economic, social, health and environmental vulnerabilities in the face of climate change.

The urgency to address these challenges is compounded by the region's growing population and the disproportionate vulnerability of urban communities, particularly those in informal settlements, which house an estimated 58%¹ of the urban population. These communities bear the disproportionate brunt of climate impacts due to their precarious living conditions, fragile livelihoods, and lack of adequate social safety nets. Addressing their vulnerabilities, alongside other urban communities, is essential for building inclusive resilience and ensuring East African cities adapt, thrive, and sustain growth amid future uncertainties.

To promote policy discourse on these issues, the Leiden-Delft-Erasmus East Africa Research Network (LEARN) convened a policy dialogue at Makerere University, Kampala. The forum brought together urban practitioners, policymakers, academics, researchers, and community representatives from Burundi, Rwanda, Uganda, Tanzania, and Kenya to discuss climate impacts on urban livelihoods in East African. It explored strategies for addressing the challenges posed by climate change while identifying opportunities to strengthen urban resilience. This policy brief outlines the key findings and recommendations from that dialogue.

Climate Risks and Vulnerabilities

The dialogue identified common climate risks and vulnerabilities in East African cities and categorised them as follows:

Physical Risks and Vulnerabilities

East African cities face varied physical climate risks due to the region's geographical location, dependence on climate-sensitive sectors such as predominantly rain-fed agriculture, and a growing population that stresses its infrastructure and natural resources². Such risks manifest in extreme weather events, erratic rainfall patterns, rising temperatures and sea level, which impact both ecosystems and human livelihoods.

In the recent past East African cities have experienced prolonged droughts such as in Kenya and Ethiopia, leading to water shortage and food insecurity. Severe flooding in cities such as Dar es Salaam, Nairobi and Kampala have caused displacement and infrastructure damage, with the worst affected being informal settlements located in low-lying, hazard-prone areas such as river valleys. Coastal cities, especially Dar es Salaam and Mombasa face sea-level rise and erosion, threatening tourism and marine ecosystems. Additionally, East Africa has warmed by 1-1.5°C³ due to human-induced climate change, with more frequent and intense hot extremes, aggravating heat stress, water scarcity and biodiversity loss.

On top of these risks, East African cities face physical vulnerabilities that increase their exposure to the impacts of climate change as highlighted below:

- i. **Geographic vulnerabilities:** Many cities, like Bujumbura (Burundi) and Kigali (Rwanda), are located in hilly areas, making them prone to landslides.
- ii. **Informality:** More than half of the urban population in East African cities live in informal settlements where poor housing, overcrowding, contaminated water sources, and inadequate waste management exacerbate climate risks and impede disaster response.
- iii. **Improper planning:** Outdated planning frameworks fail to accommodate the growing population's needs, thereby overstressing existing infrastructure such as storm water drainage, roads, sewer, and water systems. This results in frequent flooding, water shortages, waterborne diseases, and traffic congestion.
- iv. **Institutional shortfalls:** Weak and/or non-existent laws and enforcement mechanisms hinder effective city planning for disaster and climate change responses. Consequently, many residents live in geographically fragile areas like wetlands, hilltops, and floodplains, increasing their exposure to flooding and landslides.



Socio-Cultural Vulnerabilities

Socio-cultural vulnerabilities to climate change arise from an interplay of social and cultural factors that increase communities' exposure to climate impacts. These vulnerabilities affect how communities experience and respond to climate risks. According to the dialogue, they include:

- i. **Cultural lifestyles:** Like many cities worldwide, urban lifestyles in East African cities lead to increased consumption of resources, such as energy and water, resulting in higher greenhouse gas emissions, especially from transportation, energy production and industrial activities. Waste generation is another major concern, as single-use practices such as food and fast fashion products create significant waste that strains inadequate waste management systems and contributes to pollution. Furthermore, cultural attitudes that idealise city life contribute to widespread rural-urban migration, contributing to unplanned city expansion and proliferation of informal settlements in environmentally fragile areas that are highly susceptible to climate risks.
- ii. **Land tenure issues:** Urban communities living in marginalised places such as informal settlements face the constant threat of evictions due to lack of exclusive land ownership rights. They, therefore, develop semi-formal or informal housing that is vulnerable to the extreme effects of climate change.
- iii. **Homelessness and displacement:** East African cities host migrants, internally displaced persons (IDPs), street families, and refugees, who largely lack adequate shelter. These vulnerable populations are consequently exposed to the severe impacts of heatwaves, extreme rainfall, and flooding.
- iv. **Disruption of social networks:** Climate induced disruptions can force people to relocate or cause displacement of those affected. Affected communities may face challenges in maintaining cohesion and support systems in the face of environmental stressors, which can limit their collective adaptability to climate change.

Socio-Economic Vulnerabilities

Socio-economic vulnerabilities in East African cities are driven by a combination of local conditions and systemic issues which intensify exposure to climate change. The following vulnerabilities were identified during the policy dialogue:

- i. **The informal economy:** East African cities are hubs of robust informal economies, which employ a significant share of the region's urban population. For instance, Kampala (Uganda) has 86%⁴ of its workforce in informal employment, while Kigali (Rwanda) has between 40-60%⁵ of its workforce employed in the informal sector. However, informal sector workers are disproportionately vulnerable to climate risks leading to job loss and economic disruption. They often lack the necessary resources or safety nets to recover from extreme weather events. The lack of formal recognition further limits access to financial services making it difficult for them to invest in adaptive strategies or recover after disasters such as flooding.

- ii. **Poverty:** The poor people living in cities are most vulnerable to the impacts of climate change partly because their geographic locations tend to be in areas that are highly exposed to climate disasters. They also have less ability to deal with climate change impacts because the financial strains, limited access to skills and weak political voices. In some cases, they heavily rely on climate sensitive sectors such as fishing as their source of livelihoods.
- iii. **Economic growth:** East African cities have witnessed significant economic growth due to urbanisation and industrialisation. However, this growth is often unevenly distributed leading to significant disparities among populations⁶, further causing marginalisation of some communities. This marginalisation hinders their ability to adapt their livelihoods to the impacts of climate change. Furthermore, many cities in the region prioritise economic growth by investing in activities that, while boosting the economy, increase greenhouse gas emissions. For instance, the public transportation sector across cities in Kenya, Uganda, Tanzania, Rwanda and Burundi rely heavily on fossil-fuel-powered vehicles, contributing significantly to air pollution and carbon emissions.
- iv. **Access to resources:** Communities tend to settle in areas where they can easily access water, employment, or business opportunities. However, this drives many, particularly low-income groups to live in unplanned, environmentally fragile places like wetlands or floodplains, which are highly susceptible to climate risks.



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Climate Adaptation Challenges

Stakeholders involved in the dialogue acknowledged that East African cities are confronted with a myriad of climate resilience challenges, which are compounded by social, economic, and institutional barriers. The key barriers hindering climate resilience efforts were highlighted as follows:

- i. **Adaptation divide:** Different groups within and across urban communities possess varying degrees of vulnerability and adaptive capacity. Various factors such as gender, social status, wealth, ethnicity, access to natural resources, and religion all influence individuals' ability to respond to climate challenges. Developing effective strategies that address these diverse dimensions can be challenging as it requires a comprehensive understanding of the specific needs and challenges faced by each group, which can be resource-intensive and time-consuming.
- ii. **Institutional constraints:** Institutional challenges present a significant barrier to climate resilience. Fragmented governance and a lack of coordination among different sectors and stakeholders result in institutional silos and policy disconnect. This disjointed efforts often lead to inefficient climate adaptation actions.
- iii. **Lack of relevant, context-specific climate data:** Access to reliable, context-specific climate data is crucial for effective decision-making and adaptation planning. However, many East African cities lack detailed, localised climate information, which hinders their ability to implement targeted adaptation strategies. Data deficiency limits the understanding of specific climate risks and the tailoring of interventions to community needs. Also, without reliable data, policymakers struggle to prioritise resources and engage stakeholders effectively thus undermining the overall impact of climate adaptation initiatives.
- iv. **Limited financial and technology resources:** Insufficient funding and technology hinder efforts to implement adaptive strategies, such as flood defences and sustainable housing.
- v. **Development deficit:** Many East African cities are poorly prepared to cope with the increasing frequency of climate-induced disasters due to inadequate urban planning, poor infrastructure, and insufficient essential services. As urban areas expand rapidly, the lack of resilient infrastructure systems heightens community vulnerability, regardless of economic status, threatening their livelihoods and overall well-being.
- vi. **Unequal access to climate finance:** Whereas international climate finance mechanisms exist, the dialogue pointed out that local communities face barriers such as complex application processes, limited awareness and co-financing requirements. These challenges hinder access to funding for community-based climate adaptation initiatives, further reinforcing existing inequalities. This hampers their ability to build resilience, ultimately threatening their livelihoods.



Climate Resilience Strategies

To address the challenges identified during the discussions, stakeholders participating in the dialogue articulated the following strategies for enhancing the resilience of urban livelihood to climate change:

- Support climate-resilient enterprises such as briquette production, urban agriculture, and crafts, providing urban communities with sustainable income streams.
- Preserve cultural heritage by documenting traditional climate adaptation and disaster risk response strategies to ensure that valuable indigenous knowledge is not lost. Additionally, establish community knowledge hubs and learning centres to share this information and build collective resilience.
- Develop collaborative networks by fostering partnerships between communities, the private sector, and public agencies to create an integrated response to climate adaptation challenges.
- Simplify climate policies by making international and national climate policies accessible and understandable for all demographic groups to ensure widespread engagement.
- Expand and strengthen community-based early warning systems to enhance their capacity and scope, improving preparedness for climate risks.
- Embed Community-Based Adaptation practices into national climate resilience frameworks to promote broader replication and government support.
- Develop sub-national climate financing mechanisms to ensure deeper reach and accessibility for community-driven climate adaptation initiatives.
- Integrate climate resilience strategies into broader sectoral and national development plans to align with social and economic goals.
- Downscale climate weather information by localising climate data and models to reflect context-specific dynamics, making climate data more actionable for communities.

Recommendations

The policy recommendations from the dialogue emphasised the need for inclusive, locally driven, and innovative approaches to climate adaptation in East African cities. Key recommendations include:

i. Foster local knowledge exchange and innovation

- Build on local knowledge and experiences to design and implement climate adaptation initiatives that resonate with community needs and capacities.

ii. Strengthen community-led adaptation

- Strengthen local capacities through participatory planning, capacity enhancement, and localised knowledge dissemination.

- Leverage community-based Innovations by providing technical support and funding to enhance community-led adaptation innovations.
- Encourage the scaling of local initiatives that convert climate challenges into livelihood opportunities, such as urban agriculture, waste-to-resource enterprises.

iii. Leverage informality

- Informality is often seen as problem areas, but it also presents opportunities for adaptation. Innovative approaches such as waste recycling and energy briquette production can turn challenges into adaptive solutions.

iv. Enhance climate governance and institutional coordination

- Foster multi-stakeholder collaboration among various stakeholders including, government, private sector, civil society, and communities to facilitate better decision-making and coordinated resource allocation to support urban resilience and sustainability.
- Facilitate the co-creation of climate adaptation policies with communities to ensure they reflect the lived realities and priorities of urban residents.

v. Foster economic resilience through diversification

- Support the diversification of urban livelihoods by promoting climate-resilient enterprises and vocational training tailored to emerging climate challenges.
- Encourage public-private partnerships to provide financial and technical support to small-scale entrepreneurs in climate adaptation.

vi. Enhance climate education and awareness

- Launch city-wide sensitisation campaigns that target urban communities, policymakers, and professionals to promote a holistic understanding of climate adaptation.
- Include climate resilience modules in educational curricula and community training programs to build long-term adaptive capacities.

vii. Invest in climate-resilient infrastructure and preparedness

- Prioritise investments in infrastructure that reduces vulnerability to climate risks, such as improved drainage systems, flood protection, and green corridors.
- Incorporate nature-based solutions (e.g., urban greening, ecosystem restoration) to address urban heat islands and flooding.

viii. Enhance cross-sectoral collaboration

- Develop integrated climate resilience policies and frameworks such as adaptation plans that pervade sectoral and disciplinary boundaries of the economy, including the sub-national development frameworks.
- Strengthen partnerships between local governments, academia, civil society, and the private sector to co-produce climate solutions that are adaptable and scalable.

ix. Implement robust data systems for decision-making

- Establish comprehensive climate risk assessment frameworks that include socio-cultural, physical, and economic indicators to inform climate resilience planning.
- Use geospatial mapping, community surveys, and participatory research to generate granular data for targeted adaptation interventions.
- Localise climate information to enhance the ability of communities to prepare for and adapt to climate risks more effectively, allowing for tailored, context-specific responses.

x. Accessible climate financing

- Governments and international donors should provide accessible and flexible funding mechanisms to local development and community organisations working in climate resilience programmes.
- Establish sub-national climate financing frameworks and facilitate community access to funding to facilitate community-led adaptation initiatives.



Call to Action: A Mindset Shift Imperative

Reflecting on the policy recommendations, the dialogue emphasised a need for a bold re-thinking of current climate resilience approaches. This demands breaking away from established frameworks and patterns and adopting locally driven solutions that prioritise long-term resilience over short-term fixes. East African cities need to champion their own climate agenda, rooted in indigenous knowledge, inclusive governance and innovative financing models, turning challenges into opportunities for sustainable climate resilient trajectories. This paradigm shift requires:



Shifting from 'pipeline process' conditioning



Envisioning climate resilient urban futures in East Africa requires a shift from the entrenched "pipeline process" of addressing climate change. The dialogue recognised that this conditioning often compels African countries to adopt externally defined climate models and solutions which, while well-intentioned, may not align with the unique needs, contexts, and realities of urban communities in the region. To build resilient urban livelihoods and systems, it is essential to develop locally led strategies that reflect the complexities of East African cities, ensuring that solutions are both contextually relevant and sustainable.



Reframing Africa's Climate Narrative

There is need to shift from a narrative of poverty and vulnerability to one that recognises Africa's proactive resilience, leadership, and potential to shape its climate future. The dialogue emphasised the need to embrace innovative solutions and indigenous knowledge in developing and implementing climate adaptation and sustainable development initiatives. East African cities should harness the full potential of their populations, turning climate risks into opportunities for sustainable urban growth and climate resilient urban futures.



Reducing donor-funding dependency

The dialogue recognised that international donors and financial institutions largely control climate finance flows to Africa. These funds come with strict conditions, often tied to specific project designs that prioritise the donors' strategic interests over the recipient country's needs. While such funding is valuable for climate resilience efforts, there is need for greater flexibility and alignment with local needs. Communities and governments should have more agency in shaping climate initiatives that respond to context-specific challenges rather than conforming to external priorities. It is imperative for East African countries to reduce dependency on conditional aid by establishing their own climate funds to ensure that financing aligns with local priorities. Self-sustaining climate funds have the potential of attracting additional investments, enhance ownership and foster more homegrown innovation in climate resilience.



Breaking away from cycle of "climate projectism"

Climate initiatives are often structured around short-term, donor-driven objectives that emphasise immediate results over long-term sustainability. This piecemeal approach runs the risk of creating dependency on external funding rather than building systemic resilience. East African cities should break away from project-based models and promote long-term climate strategies that are adaptive, scalable and aligned with broader developmental goals for climate resilience.



Leveraging local knowledge and expertise

East African cities must harness their own local knowledge, skills and expertise to build resilience climate change. While external actors bring valuable knowledge and expertise, they should adopt roles as facilitators and co-learners, working in partnerships that respect and integrate local knowledge, expertise and perspectives. Collaborative engagement rather than top-down approaches fosters mutual learning and support to ensure successful, proper-fit climate adaptation initiatives.



Adopting qualitative performance indicators

Climate governance frameworks heavily rely on quantitative performance indicators to measure the impact of proposed climate resilience strategies. The dialogue called for a shift towards qualitative indicators to determine the detailed nature of the intended changes. These indicators provide deeper insights into social, cultural and behavioural dynamics within urban populations, providing more comprehensive assessments of the impacts of climate interventions.

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Endnotes

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Documents



Scaling up local actions shaping climate trajectories in East African Cities.



Resilient Urban Futures: Adapting Livelihoods to Climate Change.

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