


Understanding climate adaptation and transformation challenges in African cities

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Highlights

- African cities are underrepresented in assessments of successful adaptation initiatives.
- CC research remains disproportionately concentrated in a few large cities.
- African CC research reflects diverse mixtures of local priorities and international trends.
- Weaknesses include gendered understandings, environmental valuation, and climate/environmental justice.
- Implementational challenges include resource/capacity constraints, policy integration and effective governance.

This critical assessment of climate adaptation and transformation challenges, agendas and actions across Africa draws on the principal findings and analyses of the papers in this special issue of COSUST. Situated in the context of the broader conceptual and comparative literature, we structure our analysis around three themes, namely conceptual and analytical approaches; the research environment; and challenges of implementation. African climate change research reflects diverse mixtures of local priorities and international trends, often with some time lag. The research reviewed and represented in this special issue reveals clear gaps and weaknesses in relation to gendered understandings, approaches to environmental valuation, and climate and environmental justice. Implementational challenges range from resource constraints and perceived conflicts between meeting immediate development needs and longer term climate change action to lack of policy integration and effective governance. The potential importance of socio-ecological and technological transformations remains very largely unexplored and a sea change in attitudes and attention is required if the adaptation challenges are to be met.

Introduction

As noted in our Introduction to this Special Issue [1], one of the limiting features of urban research and publication to date on climate change (CC) challenges in Africa has been its fragmentary nature, being overwhelmingly unilocal, often addressing narrow topics or particular areas or communities within a single city, utilizing diverse conceptual approaches or none, and concentrated within the major publishing linguistic ghettos. In this context, the central objectives of this Special Issue have been to synthesize the current state of research, knowledge, policy and practice in relation to climate change adaptation (CCA) across the continent; to reflect critically on the strengths and weaknesses of this coverage; and to identify key gaps, priorities; challenges and opportunities. Accordingly, this concluding paper seeks to identify and develop the principal themes, gaps, commonalities, distinctions and implications for future research emerging from the *Bearing the Brunt of Environmental Change* workshop¹ and the papers subsequently produced for this Special Issue.

Whereas the Rockefeller Foundation's Asian Cities Climate Change Resilience Network (ACCCRN) has undertaken a comparative and focused programme in Asian cities and CC adaptation [2, 3, 4] and UN-HABITAT's Cities and Climate Change Initiative (CCCI) [5^{••}, 6] covers

cities across the global South, there has been no equivalent in Africa, thus exemplifying further the innovation underpinning this special issue. The UN-HABITAT *State of African Cities Report 2014* [7] also provides a broader, comprehensive and up-to-date assessment, with mitigation and adaptation featuring prominently (see also Ref [8]).

Conceptually, we emphasise the potential of alternative and innovative approaches (including urban political ecology and socio-ecological systems, urban human security and livelihoods, and teleconnections/telecoupling) [9, 10, 11]. At the same time, however, we underscore the importance of empirical rigour, and appropriate policy responses across the full range of urban activities and livelihood strategies (including urban and peri-urban agriculture (UPA)), particularly for the most vulnerable social groups in the most vulnerable locations, in order to distil comparative insights and lessons. Furthermore, in policy and implementation terms, we highlight the importance of considering these against the backdrop of diverse multi-level governance contexts within which environmental or climate action is emerging in African urban areas, and which either hinder or support progress. These three elements provide the structure for this paper, which addresses them in successive sections.

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Section snippets

Conceptual frameworks and analytical approaches

The research reported in this Special Issue is signally diverse in the conceptual or theoretical framings deployed. Not unexpectedly, the academic participants tend to have more theoretically honed perspectives, which generally inform research assessing existing situations or interventions already undertaken, with perhaps some recommendations derived from those analyses. Conversely, practitioners vary in the extent to which they assess the evolution of the current situations and implications of ...

Research environment

Part of the interest generated by the workshop, and reflected in this collection, reflects the novelty and importance of having brought together researcher and practitioner insights from across the African continent, literally from Algiers to Cape Town and Dakar to Dar es Salaam. As such it has contributed significantly to widening participants' networks and has fostered enhanced understanding of commonalities and divergences of focus, approach and perspective being deployed in different ...

Challenges of implementation

Many of the principal challenges facing city administrations and other agencies in relation to the implementation of CC policies and programmes identified in the workshop discussions and in this Special Issue (see also Ref [21]) are not unique to African contexts. Indeed, in different combinations they exist across the global South and beyond, the key difference between most Southern and most Northern contexts is the greater relative importance of financial, human and implementational capacity ...

Conclusions

Addressing the implications of, and possible unprecedented challenges posed by, CC meaningfully requires a sea change (a revolution of sorts) in approaches and behaviour by urban managers, planners, political leaders, firms, residents and other stakeholders, yet the capacity and tools to do this are not yet well understood and even less adequate for meeting the challenges. Ongoing urbanisation trends across Africa present new opportunities and problems or 'challenges' in the context of pressing ...

References and recommended reading

Papers of particular interest, published within the period of review, have been highlighted as:

- of special interest ...
- of outstanding interest ...

...

[Recommended articles](#)

References (66)

D. Simon *et al.*[Editorial introduction](#)

Curr Opin Environ Sustain (2015)

R. Friend *et al.*[Mainstreaming urban climate resilience into policy and planning; reflections from Asia](#)

Urban Clim (2014)

S. Kernaghan *et al.*[Initiating and sustaining action: experiences building resilience to climate change in Asian cities](#)

Urban Clim (2014)

A. Cartwright *et al.*[Climate Change at the City Scale: Impacts Mitigation and Adaptation in Cape Town](#)

(2012)

Academy of Science of South Africa (ASSAf)

[Towards a Low Carbon City, Focus on Durban](#)

(2011)

D. Simon

[The potential of the green economy in addressing urban environmental change](#)H. Van Zoest *et al.*[Taking the economic benefits of green space into account: the story of the Dutch TEEB for Cities project](#)

Urban Clim (2014)

A. Schäffler *et al.*[Valuing green infrastructure in an urban environment under pressure: the Johannesburg case](#)

Ecol Econ (2013)

L. Ricci *et al.*[Climate risks in West Africa: Bobo-Dioulasso local actors' participatory risks management framework](#)

Curr Opin Environ Sustain (2015)

[View more references](#)

Cited by (45)

[Strengthening climate change adaptation capacity in Africa- case studies from six major African cities and policy implications](#)

2018, Environmental Science and Policy

[Show abstract](#) ✓[Urban Governance and the Politics of Climate change](#)

2017, World Development

Citation Excerpt :

...Often, local governments' experiences in climate governance are best described as a "muddling through" process, in which policy makers may abandon aspirations to achieve a global, consensual vision of urban futures in favor of more pragmatic approaches that enable action (Marsden, Ferreira, Bache, Flinders, & Bartle, 2014). However, such pragmatic treatment of governance realities may represent an abandonment of transformative aspirations (Bulkeley, Castán Broto, & Edwards, 2014), particularly in contexts characterized by lack of governance capacity in the first place (Simon & Leck, 2015). The one thing that seems to apply in every case is the need to understand the multi-level nature of urban governance, and harness it for climate change action....

[Show abstract](#) ✓

The influence of urban development dynamics on community resilience practice in New York City after Superstorm Sandy: Experiences from the Lower East Side and the Rockaways

2016, Global Environmental Change

[Show abstract](#) 

Transformative capacity and local action for urban sustainability

2019, Ambio

[Show abstract](#) 

Global warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty

2022, Global Warming of 1.5°C an IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre Industrial Levels and Related Global Greenhouse Gas Emission Pathways in the Context of Strengthening the Global Response to the Threat of Climate Change Sustainable Development and Efforts to Eradicate Poverty

Equity Impacts of Urban Land Use Planning for Climate Adaptation: Critical Perspectives from the Global North and South

2016, Journal of Planning Education and Research



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