POLICY BRIEF SERIES | #1

Climate Resilient Transition in Southern African Cities through Local Law and Policy Action†

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1. Background

We live in an urban era to the extent that "(a) century ago, only 1 in 10 people lived in an urban area; today, for the first time in recorded history, the majority of the world's population lives in cities".[1] This era has ushered in a new understanding of the pressures that humanity executes on the Earth system, and evidence suggests that this life-sustaining system is being irreversibly degraded at an unsustainable rate. Perhaps the starkest signs of the damage humanity has caused over many generations are the climatic disturbances and the intensity of the global climate change experienced today. From the IPCC 6*th* *Assessment Report* (AR 6) published

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1 Hirschl *City, State* 1.

in 2022 we know that many changes due to past and future greenhouse gas emissions are irreversible for centuries or millennia to come.

It is of concern that: "(a) growing number of climate scientists, philosophers, environmental activists, decision-makers, politicians, social scientists and public at large are beginning to realise the inadequacy of the current urban paradigm to be fit to meet the likely scenarios of the climate emergency".[2] This reality is forcing scholars of law and governance as well as policy makers, planners and legal practitioners to critically consider the interplay between urban (local) governance and global developments; to ask questions about the responsible and liable actors and about the multilevel governance processes necessary to help mitigate the damage and impacts. The tangible outcomes of the thoughts and deliberations going into these questions are visible in Sustainable Development Goal 11, the United Nations New Urban Agenda, the Paris Climate Agreement and most recently, the Glasgow Pact (2021), for example.

In this Policy Brief, we turn to the *Southern African* context - a sub-region of the exceptionally fast-urbanising African continent. More specifically, we focus on South Africa, Namibia, Botswana and Zimbabwe when we ask how these countries, and two cities in each,[3] have been going about the globalisation of urban governance and the so-called "local turn" in global action against the ecological crisis. In other words, how have local level governance instruments in these four countries been reformed and recreated to serve the purpose of helping to mitigate and adapt to the global ecological crisis as most visible through climate-related change.

We have looked at national and sub-national law and policy responses in these countries through the lens of local climate action (governance). We have asked what has been or continues to be done and who are involved in doing things? What remains to be done? What we found was that cities in the Southern African region offer a mixed bag of mostly erratic local law, policy and programmatic developments in the process of climate resilient transition and that a single consistent summary of the progress made would be impossible and unfair.

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2 Carrillo and Garner *City Preparedness* xxiv.

3 South Africa (City of Cape Town and eThekwini Metropolitan Municipality); Namibia (Windhoek and Swakopmund); Botswana (Francistown and Gabarone); and Zimbabwe (Harare and Bulawayo).

Regardless, each of the countries and cities under investigation revealed insights relevant for better understanding the potential and limits of cities in Southern Africa concerning realistic and lasting city-level law and policy action for climate resilient transition and governance. These insights and what they suggest for future research and action are the focus of this Policy Brief.

2. Research method

Our research findings result from an Alexander von Humboldt-funded project that used a mixed research method. Due to Covid-19 and related restrictions imposed by the project funder, the study was confined to a desktop review and a literature (law and policy) analysis. The literature considered included primary and secondary sources of law as well as natural and social science materials on climate change, urbanisation, the global ecological crisis and multilevel governance as applicable to the Southern African urban context and the countries of South Africa, Zimbabwe, Namibia and Botswana specifically. The study further ventured into basic statistics and available details on the socio-economic and governance make-up of eight cities in these countries namely: Durban, Cape Town, Harare, Bulawayo, Swakopmund, Windhoek, Francistown and Gaborone.

The city-specific insights draw on a systematic process of collecting available national and local level information on the actions that the four countries and the eight specified municipalities have undertaken in recent years. The information collection process was heavily reliant on information that is accessible online; e.g. on official government websites and law databases. The researchers further informally engaged with local government officials, academics and practitioners from South Africa, Botswana, Zimbabwe and Namibia for the purposes of cross-checking the validity of the information found and for clarification where it was needed.[4]

[4] This was done by email, telephone and a virtual stakeholder workshop held in March 2022.

Box 1 Limits of this study

This study was limited to an analysis of the *status quo* of national and local law, policy and projects – the project did not look into questions of implementation or effectiveness, for example.

As a next step, future multidisciplinary empirical research should venture into critically interrogating the implementation and impact of the identified national and local laws, policies and programmes towards climate resilient transition and governance.

Box 2 CLES / KAS / AvH Online Depository

The city-level and national documents located as part of this research project appear in a special online collection of the University Library of the North-West University.

The *CLES / Konrad-Adenauer Foundation / Alexander von Humboldt Foundation (AvH) Online Depository of Climate Action Law and Developments in Municipalities of Southern Africa* is open-access and freely available at: https://collections.nwu.ac.za/dbtw-wpd/textbases/law/cles.html.[5]

3. Why law and policy transformation towards climate resilient development in Southern African cities?

In general, law and policy respond to phenomena that impact on the relationships between people, and between people and things (such as nature). Climate change and the vulnerability it causes is one such phenomenon from which law and policy-makers cannot escape. Climate change causes vulnerability among people and ecosystems, and it threatens human and ecological health as well as bodily, financial and other forms of security. Climate change is further indicative of the ways in which human conduct impacts on the carrying capacity of the Earth and its supporting systems. It also holds true that cities are "extremely fragile

[5] NWU Library Date unknown https://collections.nwu.ac.za/dbtw-wpd/textbases/law/cles.html.

complexes, card castles comprising diverse subsystems each subject to its own hazards. When several of these get disrupted at once, the whole city life crumbles".[6] This may not be too difficult to comprehend, but why a need for *law and policy transformation* towards climate resilient development in Southern African cities?

Climate resilient development may generally be described as referring to the mitigation and adaptation interventions that contribute to a fair and effective global solution to the climate change challenge while simultaneously building and maintaining opportunities for growth and competitiveness, as well as social, environmental and economic resilience to the adverse effects of global climate change, and any unintended consequences of global climate change response measures. In the micro-environment of a municipal area, climate resilient development refers to local-scale measures for low(er) carbon development and resilience building in the entire local community regardless of income, race, gender or age, for example, and which do not negatively impact on local economic development, the integrity of the immediate ecosystem(s) or the well-being of the local community. These measures can take multiple forms, ranging from conducting local vulnerability assessments and subsidising transitions to the use of solar geysers in household dwellings, to landfill-to-gas electricity projects and amending local building regulations towards greener, more energy efficient building standards.

This then brings us to cities – those in Southern Africa, specifically.

Chapter 6 of the IPCC 6*th* *Assessment Report* states with high confidence that "(i)n all cities and urban areas, the risk faced by people and assets from hazards associated with climate change has increased" and further that "(g)lobally, the most rapid growth in urban vulnerability and exposure has been in cities and settlements where adaptive capacity is limited, especially in unplanned and informal settlements in low- and middle-income nations and in smaller and medium-sized urban centres".[7] It further states that an additional 2.5 billion people are projected to be living in urban areas by 2050, with up to 90 per cent of this increase concentrated in the regions of Asia and Africa.[8] These scientifically

6 Carrillo "Farewell to the Holocene City" 2.

7 IPCC 2022 https://www.ipcc.ch/assessment-report/ar6/.

8 IPCC 2022 https://www.ipcc.ch/assessment-report/ar6/.

grounded assessments suggest a definite correlation between urban growth and climate vulnerability; a link of particular relevance to Africa. The UN Habitat 2020 *World Cities Report on the "Value of Sustainable Urbanisation"*, which reflects on urban development globally, indicates that Africa's urbanisation rate is the highest in the world and that this increase is driven by natural factors, rural-urban migration and the spatial expansion of urban settlements. The report also suggests that inadequate planning structures in the sprawling areas of African cities hinder the development of agglomeration economies and the efficient provision of public goods and services. In parallel, "(r)apidly urbanising cities in Africa and Asia are more vulnerable to climate change and least able to respond to its effects. They are hampered by limited financial, human and technical resources as well as weak institutions and governance structures relating to disaster mitigation and preparedness. At the same time, these cities contribute very little to global warming, making their suffering disproportionate".[9]

Box 3 On urbanisation in South Africa, Botswana, Namibia and Zimbabwe

A series of other urban environmental concerns looms large in South Africa, including water scarcity, energy shortages and overloaded sewage treatment facilities. Inadequate capacity and poor maintenance mean that these ageing infrastructure systems are often buckling under the pressures of population and economic growth. Meanwhile, climate-change obligations require more vigorous efforts to develop alternative energy sources, reduce energy consumption, promote public transport, and recycle waste and water. South African cities have unusually large carbon footprints because of the country's heavy reliance on coal-generated electricity and private transport.[10]

The environmental impacts of urban growth on the surrounding areas, or the peri-urban environs, have also been recorded. This is because in a country such as Botswana, the environmental problems of this nature include the effects of the extraction of building materials such as sand,

9 UN Habitat 2020 https://unhabitat.org/sites/default/files/2020/10/wcr_2020_report.pdf.

10 Turok *Urbanisation and Development in South Africa* 50.

gravel poles and grass. The direct impact of the extraction of the mentioned materials usually results in environmental dereliction and the depletion of natural resources in the areas around the cities.[11]

By many standards, the continuous rapid growth of informal settlements is one of Namibia's biggest development challenges. However, relatively little information is available on the nature and characteristics of informal settlements, and their growth in towns across the country. Similarly, the absence of a national, effective effort to address informal settlement growth is visible in the rapid expansion of shack settlements in most Namibian towns.[12]

Whilst the data are currently inconclusive about the full extent of urban dynamics in Zimbabwe, there are considerable challenges of poverty and vulnerability in the country's urban areas (whether officially designated as urban or not). There is a role for the development community, whilst working to improve data on urbanisation trends, to also support the urban poor by ensuring basic needs around urban infrastructure are met, particularly in informal settlements.[13]

Cities are local-level co-governors. Local authorities in charge of cities are generally bestowed with the necessary legal authority to make decisions, to regulate and to plan in relation to their declared municipal areas. Most municipalities have the authority to make local plans, to pass local laws (regulations) and to develop and implement local public policies on matters of concern to the local community. An exception may be a country such as Botswana, where most governing power sits with the central government. Municipalities have been doing this for ages – for long periods of time during which climate change could not even be imagined to become so prominent on international, regional or local agenda. By now, we know that climate change

11 Sebego and Gwebu 2013 *International Journal of Sustainable Built Environment* 206.

12 Weber and Mendelsohn *Informal Settlements in Namibia* 11.

13 Infrastructure and Cities for Economic Development 2017 https://assets.publishing.service.gov.uk/media/59521681e5274a0a5900004a/ICED_Evidence_Brief_-_Zimbabwe_Urban_Trends_-_Final.pdf 6.

scenarios are very important in city planning and development as infrastructures and urban areas are laid out for the next 30 years or longer. It is, therefore, important to incorporate climate change in the design of urban planning to avoid construction in flood-prone areas, to mitigate areas that will be flood prone in the future, and to design flood paths and cooling of the city. It is furthermore important to perform integrated urban planning that incorporates all impact sources, such as rising water levels from lakes and rivers (inland flooding) and increased storm surges.[14] However, while urban planning focuses on systematically improving decision-making in cities, municipal governance encompasses *all* interventions, incentives, knowledge, institutions, behaviour and decision-making that occurs at city-level.[15] It is against this background that the question has since become how to rethink, adapt and use municipal legal powers, and local laws and policies, in ways that could help facilitate climate-resilient decision-making by other organs of state.

Literature (drawing mainly on the Global North city context)[16] suggests that generally, cities can opt for government by experiment or transformative governance in their approach to responding to climate change. However, in most instances, municipalities would not be aware of this conceptual distinction when initiating or developing a law, policy, plan or programme for local climate action.

Box 4 Government by experiment

Government by experiment (experimental governance) in this context denotes socio-technical interventions towards specified outcomes. It is also called "strategic urbanism" and involves a process of provisional goal setting and revisions based on lessons drawn from local experiences and from "learning by doing" and "learning by monitoring".

14 Wejs "Unprecedented Challenge" 16.

15 Mannetti "Down Scale Agency" 41.

16 See, for example, Bulkeley 2019 https://www.oecd.org/cfe/regionaldevelopment/Bulkeley-2019-Managing-Transition-Cities.pdf.

Box 5 Transformative governance

Transformative governance in this context refers to deliberate institutional changes and interventions such as the adoption and amendment of municipal bylaws and local policies. It involves the "renegotiation" of regulative arrangements in a municipal area as triggered by science, visible climate impacts, etc.

4. *Status quo* in South Africa, Botswana, Namibia and Zimbabwe

The assessment of the **national law, policy and projects** towards climate resilient development in the four countries revealed the following:

1. South Africa and Zimbabwe have constitutionally entrenched environmental rights; the constitutions of Botswana and Namibia do not contain such rights.
2. South Africa is the only country of the four that explicitly provides for a constitutional right to access to sufficient water (section 27(1)(b)).
3. Climate change action competes with pressing socio-economic priorities such as poverty alleviation, energy security, food security and an urban housing crisis across the region.
4. Addressing the above socio-economic priorities is relevant to addressing climate vulnerability among people in Southern Africa and is therefore not irrelevant from a local climate governance perspective.
5. The national authorities acknowledge the climate change challenge and are involved in international action such as the submission of Nationally Determined Contributions (NDCs) that are at the heart of the Paris Climate Agreement. The degree to which the four national governments are taking up domestic law and policy climate action varies.
6. As far as it concerns an integrated national policy or plan for climate action, South Africa has a National Climate Change Response White Paper (2011), a National Climate Change Adaptation Strategy (2020) and National Greenhouse Gas Emissions Reporting Regulations (2017), for example. Namibia has a National Policy on Climate Change for Namibia (2010) and the National Climate Change Strategy and Action Plan (2013 – 2020). Botswana has a National Climate Change Strategy (2018) and a National

Adaptation Plan Framework (2020). Zimbabwe has a National Climate Change Response Strategy (2019) as well as a National Adaptation Plan Road Map for Zimbabwe (2019). These central policies serve to indicate that there is public sector appreciation of climate change as a complex problem that requires an integrated response suitable for local conditions.

7. Only South Africa has thus far embarked on a process to legislate on climate change action at a national level and it is also the only country where climate change-related cases have appeared before the courts.[17]
8. The national authorities have submitted and since updated their NDCs (Botswana – 2016, Zimbabwe – 2021, South Africa – 2021 and Namibia – 2021).
9. South Africa has dedicated national government structures responsible for matters of climate action such as the Department of Forestry, Fisheries and the Environment (DFFE) with a dedicated division for Climate Change and Air Quality Management. In Namibia, it is the Ministry of Environment, Forestry and Tourism that serves as the lead national authority on climate governance. In Botswana, the Department of Meteorological Service in the Ministry of Environment, Natural Resources Conservation and Tourism is responsible for climate governance. In Zimbabwe, the Department of Lands, Agriculture, Fisheries, Water, Climate and Rural Development appears to be responsible for climate governance at a national level.
10. Some progressive national-level developments include the Carbon Tax Act of 2019 and the Green Transport Strategy 2019-2050 in South Africa, the National Drought Policy and Strategy (1997) and the National Renewable Energy Policy (2017) in Namibia, the Biomass Energy Strategy (2009) in Botswana and the Biofuels Policy (2020) and the National Renewable Energy Policy (2019) in Zimbabwe.
11. Local government is explicitly recognised only in the constitutions of South Africa and Zimbabwe. The Namibian Constitution mentions local government in Chapter 12, albeit without expanding on the scope of powers of municipalities.

[17] See the Sabin Center Database on South Africa: Sabin Center for Climate Change Law 2022 http://climatecasechart.com/climate-change-litigation/non-us-jurisdiction/south-africa/.

Box 6 National laws and policies relevant for climate resilient development in South Africa

Statutes and bills

Constitution

- *Constitution of the Republic of South Africa*, 1996

Local government

- *Local Government: Municipal Structures Act* 11 of 1998
- *Local Government: Municipal Systems Act* 32 of 2000
- *Local Government: Municipal Finance Management Act* 56 of 2003

Environmental management

- *National Environmental Management Act* 107 of 1998
- *National Environment Management: Air Quality Act* 39 of 2004
- *National Environmental Management: Biodiversity Act* 10 of 2004
- *National Environmental Management: Integrated Coastal Management Act* 24 of 2008
- *National Environmental Management: Protected Areas Act* 57 of 2003
- *National Environmental Management: Waste Act* 59 of 2008

Water

- *National Water Act* 36 of 1998
- *Water Services Act* 108 of 1997

Energy

- *National Energy Act* 34 of 2008
- *National Energy Regulator Act* 40 of 2004
- *Carbon Tax Act* 15 of 2019

Climate change

- National Climate Change Bill 2018

Policies, plans, strategies and reports

- National Development Plan 2030
- First Nationally Determined Contribution (updated September 2021)
- Climate Change Response Strategy 2004
- National Climate Change Adaptation Strategy 2020
- National Climate Change Response White Paper 2011
- Economic Recovery and Reconstruction Plan 2020
- National Greenhouse Gas Emissions Reporting Regulations 2017
- Green Transport Strategy (2018-2050)
- National Climate Change and Health Adaptation Plan 2014-2019
- Integrated Energy Plan 2003
- White Paper on Renewable Energy 2004
- National Energy Efficiency Strategy 2019
- Integrated Resource Plan 2019
- Drought Management Plan 2005
- National Water Resource Strategy 2013
- Presidential Climate Commission Report – Laying the Foundation for a Just Transition Framework for South Africa 2021
- Draft Framework for a Just Transition in South Africa 2022

Box 7 National laws and policies relevant for climate change resilient development in Botswana

Statutes and bills

Constitution

- *Constitution of Botswana*, 1996

Local government

- *Local Government Act* 2012

- *Town and Country Planning Act* 2013
- *Building Control Act* 1962

Environmental management

- *Wildlife Conservation and National Parks Act* 1992
- *Environmental Impact Assessment Act* 2011
- *Waste Management Act* 1998
- *Herbage Preservation (Prevention of Fires) Act* 1977
- *Petroleum (Exploration and Production) Act* 1983

Water

- *Botswana Water Act* 2009
- *Water Utilities Corporation Act* 1970
- *Waterworks Act* 1962

Energy

- *Botswana Power Corporation Act* 1973

Policies, plans, strategies and reports

- National Development Plan 11 (2017-2023)
- Vision 2036
- Nationally Determined Contribution 2019

Water

- National Water Policy 2012

Energy

- Integrated Resource Plan for Electricity for Botswana 2020
- National Energy Policy 2021
- Botswana Biomass Energy Strategy 2009

Environmental management

- National Policy on Disaster Management 1996
- National Disaster Risk Management Plan 2009

Climate change

- National Climate Change Strategy 2018
- National Adaptation Plan Framework 2020

Box 8 National laws and policies relevant for climate change resilient development in Namibia

Statutes and bills

Constitution

- *Namibian Constitution*, 1990

Local government

- *Regional Councils Act* 22 of 1992
- *Local Authorities Act* 23 of 1992
- *Decentralisation Enabling Act* 33 of 2000
- *Trust Fund for Regional Development and Equity Provisions Act* 22 of 2000
- Local Authorities Amendment Bill 2016

Water

- *Water Act* 54 of 1956
- *Water Resources Management Act* 24 of 2004
- *Water Resources Management Act* 11 of 2013

Energy

- *Electricity Act* 4 of 2007

Environmental management

- *Environmental Management Act* 7 of 2007
- *Public and Environmental Health Act* 1 of 2015

Policies, plans, strategies and reports

- Namibia Vision 2030: Policy Framework for Long-Term National Development
- Namibia's 5th National Development Plan 2017/18 – 2021/2022

Water

- Water and Sanitation Policy of 1993
- National Water Policy White Paper of 2000
- Water Supply and Sanitation Policy of 2008

Energy

- White Paper on Energy Policy of 1998
- National Energy Policy of 2017
- National Renewable Energy Policy of 2017

Environmental management

- Namibia's Green Plan (Environment and Development) 1992
- National Drought Policy and Strategy of 1997
- National Disaster Risk Management Plan of 2011

Climate change

- Climate Change Vulnerability and Adaptation Assessment 2008
- National Policy on Climate Change for Namibia 2010
- The National Climate Change Strategy and Action Plan 2013-2020
- Intended Nationally Determined Contribution 2015
- Nationally Determined Contribution Update of Namibia 2021

Box 9 National laws and policies relevant for climate change resilient development in Zimbabwe

Statutes and bills

Constitution

- *Constitution of Zimbabwe* 2013

Local government

- *Regional Town and Country Planning Act* 1976
- *Urban Councils Act* 2015
- *Rural District Councils Act* 1988

Environmental management

- *Environmental Management Act* 13 of 2002

Energy

- *Electricity Act* 4 of 2002
- *Energy Regulatory Act* 2 of 2011

Water

- *National Water Act* 31 of 1998
- *National Water Authority Act* 14 of 2002

Policies, plans, strategies and reports

- Intended Nationally Determined Contribution 2017
- Revised Nationally Determined Contribution 2021
- National Development Strategy 2021-2025

Water

- National Water Policy 2012

Energy

- National Energy Policy 2012
- National Renewable Energy Policy 2019
- Zimbabwe Biofuels Policy 2020

Climate change

- National Climate Change Response Strategy 2019
- National Adaptation Plan Road Map for Zimbabwe 2019
- National Climate Policy 2017

As far as it concerns the eight cities considered, it is possible to summarise the findings as follows:

1. All of the cities experience some of the impacts of climate change known to the region, ranging from extreme weather conditions (floods, heatwaves and droughts; variations in the onset and end of seasons; reduced agricultural yields and increasing temperatures) to economic impacts as a result of the global drive for lower-carbon development.
2. The law and policy-making authority of cities differs across the region. In South Africa, for example, cities (municipalities) can pass by-laws and make local policies on a range of climate-related matters such as spatial planning, building regulations, the provision of water services and waste management. In Namibia, however, a local council or municipal government acquires its power to pass laws through a law of the national or regional government, which specifies what function or sector the town or city may regulate through by-laws. It is, therefore, a form of delegated legislation and specific to those regulatory areas mandated by the higher body. In Zimbabwe, the Constitution is explicit about local executive powers but states that a national act should confer law-making powers to municipalities as necessary. In Botswana, municipalities have no law-making powers by virtue of the country's Constitution, and as a result of the unitary state model municipalities have very little governing authority except for authority that is devolved. However, city councils are

empowered to make by-laws in terms of section 44 of the Local Government Act 2013 in respect of matters which include but are not limited to "maintenance of health, environment, safety and well-being" of its residents. It is reported that Botswana remains highly centralised, which report corresponds with the findings of the current research project.

3. The legal recognition of municipalities (local authorities) is inconsistent across the region. The *Constitution of South Africa*, 1996 explicitly recognises local government as the third sphere of government and bestows upon it explicit powers, functions and objectives, which is the clearest constitutional recognition among the four countries considered.
4. Except for Cape Town and Durban, the eight cities considered show limited law and policy action explicitly directed at climate resilient development.
5. All eight cities have local laws and policies that *may* potentially and indirectly feed into a local climate change response: e.g. town planning (spatial planning) laws; urban agricultural policies; water strategies and local building laws and regulations.
6. Some of the cities (such as Windhoek, Cape Town, Gaborone and Francistown) are members of international city networks such as Local Governments for Sustainability (ICLEI), United Cities and Local Government (UCLG) and C40.
7. Most of the cities do not have a dedicated department in the municipality that is responsible for climate governance or to lead the climate change response of the city. Cape Town and Durban are exceptions in this regard.
8. International agencies have been involved in setting up *ad hoc* climate change response initiatives in some of the cities, including the government of Denmark, for example.
9. Using the adoption and availability of local laws and policies as a basic benchmark, climate change resilient development is not yet mainstreamed in city-level governance in the region – the reasons for which could not be established through the research method adopted for this project.
10. The accessibility of information on climate action in the cities under consideration is of concern. It has been particularly hard to locate and verify information on the cities in Botswana and Zimbabwe. This inaccessibility of city-level information arguably has an impact on community awareness and buy-in, research and educational programmes

11. It is possible to distinguish elements of "government by experiment" and "transformative governance" on the basis of the local laws, policies and programmes that are accessible.

Box 10.1 Local laws and policies relevant for climate change resilient development in Namibia (Windhoek and Swakopmund)

1. Windhoek

- Model Water Supply Regulations 1996
- Water Management Plan 2019
- Windhoek Institutional Land Policy 2018
- Spatial Development Framework (Urban Structure Plan) 2021-2041
- Model Electricity Supply Regulations 1996
- Electricity Policies and Regulations 2000
- Windhoek Town Planning Scheme 2009
- City of Windhoek Transformational Strategic Plan 2017-2022
- Windhoek Sustainable Urban Transport Master Plan 2013
- Integrated Climate Change Strategy and Action Plan for the City of Windhoek (to be finalised in 2022)

2. Swakopmund

- Model Water Supply Regulations (Government Notice 72 of 1996, GG 1283, 1 April 1996)
- Municipality of Swakopmund Structure Plan for 2020-2040
- Model Electricity Supply Regulations (Government Notice 71 of 1996, GG 1283)
- Amendment of Standard Building Regulations 2016
- Swakopmund Town Planning Amendment Scheme (July 2002)
- Local Economic Development Strategy 2019-2023

Box 10.2 Other local initiatives relevant for climate change resilient development in Namibia (Windhoek and Swakopmund)

1. Windhoek

The Annual Windhoek Mayoral Report of 2016[18] states that, as a contribution to the national effort, the City of Windhoek engaged in climate change activities during 2016 through the Environmental Management Division. As a result, the City implemented the following climate change projects:

- The Compact of Mayors: The Compact of Mayors is known as the world's largest coalition of city leaders addressing climate change by pledging to reduce their greenhouse gas emissions, and tracking their progress and preparing for the impacts of climate change. The City of Windhoek has signed this commitment and the Environmental Management Division is implementing the activities of the project.

- National Greenhouse Gas Inventory Working Group: Windhoek City Council is represented in this working group that is tasked with the responsibility of compiling Namibia's greenhouse gas inventory and reporting to the UN.

- Cooperation Agreements: Windhoek City Council continued to implement the Backyard Mechanics Project that is implemented in collaboration with the City of Bremen. The project aimed to reduce oil pollution caused by informal car mechanics. The activities of the project were concluded during the first quarter of 2017. The Cities of Windhoek and Bremen signed the so-called Windhoek-Bremen Climate Partnership Memorandum of Understanding in August 2017. This is a two-year project with the goal of developing a programme of action for climate change mitigation and adaptation. The programme of action was reviewed and implemented during 2018/2019. Furthermore, as a part of this project, the City of Windhoek completed the required paperwork to facilitate the recruitment of a Climate

[18] Windhoek Annual Mayoral Report of 2016 22.

Change Expert with the technical and financial assistance of the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ).

According to Future Climate for Africa (FCA), the organisation aims to generate fundamentally new climate science focused on Africa and to ensure that this science has an impact on human development across the continent. FCA's work in Namibia was carried out in the capital city, Windhoek, by the Future Resilience for African Cities and Lands (FRACTAL) consortium and led by the University of Namibia. Some initiatives from the FRACTAL consortium in Windhoek included:[19]

- The so-called "City Learning Process", which included providing climate information, assisting with water-related infrastructure planning and strengthening climate change leadership in the City of Windhoek.
- The Learning Labs process, according to the FCA, is a transdisciplinary process that involves co-producing research questions that are relevant for all actors, such as academics and practitioners, and knowledge that contributes to answering these questions. The FCA offered these Learning Lab opportunities during 2017 and 2019 in the City of Windhoek, which resulted in a shift in how the City viewed climate issues. Notably, it resulted in the reframing of the City's climate response plan into a broader response with an Integrated Climate Change Strategy and Action Plan (ICCSAP) rather than the initially envisioned sectoral Climate Change Strategy and Action Plan (CCSAP).
- The FCA also used the Embedded Researchers approach in Windhoek, aimed at bridging the science-policy divide by appointing early-career researchers from local universities in the City. The FCA reports that this approach played a vital role in Windhoek towards ensuring sustained engagements around climate issues, in particular support for the ICCSAP in the City.
- Climate Risk Narratives were developed to illustrate possible climate futures.

[19] FCA 2020 https://futureclimateafrica.org/wp-content/uploads/2020/05/fcfa_country_summary_namibia.pdf.

- Engagements led to FRACTAL informing and co-designing sections of the Windhoek ICCSAP.

2. *Swakopmund*

No relevant projects or initiatives could be confirmed. However, Swakopmund's Local Economic Development Strategy 2019-2023[20] indicates that some of its strategic objectives include certain public-private partnerships aimed at securing sustainable water supplies (through desalination plants) as well as securing sustainable electricity supplies (through wind turbines and solar farms).

Box 11.1 Local laws and policies relevant for climate change resilient development in Botswana (Gaborone and Francistown)

1. *Gaborone*

- Gaborone City Council (Public Standpipes) Bylaws (undated)
- Gaborone City Council General Bylaws 1966

2. *Francistown*

- Francistown City Council General Bylaws 1967

Box 11.2 Other local initiatives relevant for climate change resilient development in Botswana (Gaborone and Francistown)

As far as could be established, there are no local initiatives relevant to climate change resilient development in either Gaborone or Francistown.

[20] Municipality of Swakopmund 2019 https://swakopmun.com/wp-content/uploads/2020/05/LED-Strategy-Report-2019.pdf 21-22.

Box 12.1 Local laws and policies relevant for climate change resilient development in Zimbabwe (Harare and Bulawayo)

1. *Harare*

- Water Regulations 164/1913
- Water Restriction By-Laws 432/1951
- Waterworks, Drain etc 34/1998
- Well and Borehole By-Laws 319/1988
- Use and Occupation of Land and Buildings (Adoption) By-Laws 1970
- Building (Adoption) By-Laws 1979

2. *Bulawayo*

- Sewage, Drainage and Water By-Laws 1980
- Protection of Lands and Natural Resources By-Laws 1975
- Building (Adoption) (Amendment) By-Laws 1985
- Urban Agricultural Policy (undated)

Box 12.2 Other local initiatives relevant for climate change resilient development in Zimbabwe (Harare and Bulawayo)

1. *Multiple use of land: solar farms over cemeteries*

- The City of Bulawayo has opted for a model that will lead to the development of multiple uses of land, including the building of solar farms over the City's cemeteries.[21]
- The project follows global efforts to devise land management strategies that aim to harmonise the complementary goals of providing environmental, economic, and social opportunities for the benefit of present and future generations while maintaining and enhancing the quality of the land resource.

[21] See City of Bulawayo 2022 http://www.citybyo.co.zw/News/MultipleUseofLand.

- The solar panels would be located at a reasonable height above ground level, which would allow the free movement of people underneath without interfering with the panels.

2. *Zero Waste Project*

A zero-waste project has been initiated in the City by the community and supported by the city council. As per a news article on the Harare website[22] – a group of Budiriro residents has joined hands with the council in beautifying and transforming the city to a zero-waste site using recyclable material collected from illegal dumpsites in the suburb.

Box 13.1 Local laws and policies relevant for climate change resilient development in South Africa (Durban (eThekwini) and Cape Town)

1. *Durban*

- Water Supply By-law 1996
- Municipal Planning and Land Use Management By-Laws 2016
- Electricity Supply By-Laws 2016
- Durban Climate Change Strategy 2014
- Durban Climate Action Plan 2019
- Climate Change Municipal Adaptation Plan Health and Water 2009
- Municipal Climate Protection Programme: Climate Change Adaptation Planning for a Resilient City (undated)
- Durban Resilient Strategy 2017
- Integrated Development Plan 2020/21

2. *Cape Town*

- Water By-Laws 2010
- Municipal Planning By-Laws 2015

[22] Tshaha 2021 https://hararecity.co.zw/news/read/transforming-harare-into-a-zero-waste-society.

- Electricity Supply By-Laws 2010
- Municipal Spatial Development Framework 2017-22
- Integrated Development Plan 2017-22
- Climate Change Policy 2017
- Energy and Climate Change Action Plan 2011
- Climate Change Action Plan (undated)
- Climate Change Strategy 2021
- Carbon Neutral 2050 Commitment Plan 2020

Box 13.2 Other local initiatives relevant for climate change resilient development in South Africa (Durban (eThekwini) and Cape Town)

1. 2022 Commonwealth Games Sustainability Programme

- "eThekwini Municipality was set to be the primary host for the 2022 Commonwealth Games in Durban. The Games were to be held in July 2022 in various existing and intended upgraded sporting infrastructure."[23] Although the Games were cancelled, the City initiated the preparation.

- To prepare for the event, the City contracted a consultant who investigated and designed a Sustainability Programme roadmap for the event in order to build upon the City's previous experience of developing ecological offsetting mechanisms for hosting mega-events. According to the eThekwini Municipality, the Roadmap was developed through reviewing past greening programmes and lessons learned and reviewing the latest relevant national, local and international policies, conducting personal interviews and communication with a number of other municipal stakeholders. The research

[23] eThekwini Municipality 2022 https://web.archive.org/web/20211228004738/http://www.durban.gov.za/City_Services/development_planning_management/environmental_planning_climate_protection/Pages/Past-Projects.aspx. (The original source was accessed on the 13 April 2022).

by the consultant identified approaches and the direction that the sustainability programme would take, including enhancing "resilience" through a balanced mitigation-adaptation focus.

2. *Community Adaptation Project*

According to the eThekwini Municipality, the aim of the Community Adaptation Projects is to assess the vulnerability of local communities to climate change and how these coincide with the risks they face daily.[24] The Projects also seek to determine how communities can increase their resilience to climate change impacts. The following tasks were completed in two communities: food trials for alternative crops, a rainwater harvesting assessment and a community risk assessment.

3. *Green Roofs*

A trial green roof was developed on an existing municipal building in 2008 as part of the Municipal Climate Protection Programme.[25] This project entailed the construction of eight green roofs featuring different plants, growing mediums and green roof techniques. This pilot project led to the development of the Guideline for Green Roof Habitats for Durban in 2010. These guidelines assist with the different substrate, plant and maintenance options specific to the Durban area.

4. *Kuyasa low-cost urban housing energy upgrade project, Khayelitsha*

This is a partnership project between the Department of Environment, City of Cape Town and South South North. The pilot project "retrofitted 2,309 low-cost homes with solar water heaters, insulated ceilings and energy efficient lighting in Khayelitsha, Cape Town, South Africa."[26] Ten pilot houses were adapted in 2005, providing the practical data for an efficiency measuring system.

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[24] For detailed discussion on this project, see eThekwini Municipality 2022 https://web.archive.org/web/20220317204528/http://www.durban.gov.za/City_Services/development_planning_management/environmental_planning_climate_protection/Projects/Pages/Community-Adaptation-Projects.aspx.

[25] Futurecapetown 2022 https://www.smartcitiesdive.com/ex/sustainablecitiescollective/serious-about-green-roofs-are-cape-town-and-durban-serious/307121/.

[26] Institute for International Urban Development 2021 http://i2ud.org/2012/09/kuyasa-clean-development-project-south-africa/.

5. Free basic electricity roll-out

Cape Town provides a "lifeline tariff", where households using less than 450 KWh of electricity per month receive the first 50 KWh free.

5. Discussion

The eight cities considered showed a mixed use of (local) government by experiment and transformative local governance measures to address different aspects of climate change in a direct and indirect manner. It is not possible to categorically group the eight cities in either one of the two approaches. It is evident though that the cities in Botswana so far have shown limited appetite for government by experiment, and the limited signs of transformative governance at a national level may be attributed to international developments; e.g. in the circles of the IPCC. The South African cities show signs of government by experiment and transformative governance as a result of the work of city networks and foreign counterparts, action required in terms of national policy and planning on climate resilient development, and the initiative of the cities by virtue of their autonomous powers. The two South African cities are metropolitan municipalities that are relatively well-resourced and seem to be outliers in terms of pro-active and re-active local climate action. In Namibia, the City of Windhoek and the national authorities show signs of experimental governance and transformative governance. This appears to be as a result of own initiative and autonomy as well as the work of international city networks, for example. Zimbabwean cities have traces of government by experiment as a result of local initiative and the requirement of action by the central authorities. In summary and as indicated earlier, climate change action is not yet mainstreamed at the local level in most of the cities considered. The closest one would get to this is in Cape Town and Durban. These two cities are, however, only two of more than 270 local authorities in South Africa and cannot be deemed to be representative of local government as a whole.

In most cities where there has been some local action in the countries under consideration, it appears as if issues of water availability and quality, energy efficiency, waste management and "greener" governance (including greener building) have been the driving forces for local law and policy action. Issues of

public health, spatial and strategic planning towards climate mitigation and climate adaptation, urban ecosystem protection and urban agriculture seem to feature less prominently. It should, however, also be mentioned that often the existing local laws are quite dated.

The possible reasons for the slow uptake of local climate action are manifold and the impact of competing socio-economic and socio-ecological pressures as well as local politics and the division of governing authority cannot be gainsaid. The primary difficulty cities face is how to approach the impacts of rapid urbanisation, climate change, poverty and inequality at the same time.[27]

6. Proposed agenda for research and action

The research reported on in this Policy Brief was a first and still incomplete attempt to garner a better sense of the local climate governance landscape in the Southern African region. For present purposes, this "landscape" consisted only of local laws, policies, projects and institutional design in municipalities. But of course, local climate governance concerns much more than that. Only a limited number of countries and cities could be surveyed in the research project, which was undertaken by only three part-time researchers. The research did not involve an empirical inquiry, which arguably would have yielded richer results. The findings and recommendations in this Policy Brief must be read within these restrictive parameters.

Some of the pertinent questions that remain to be asked, include:

- What does "adaptive capacity" mean for local authorities and local communities in the Southern African region specifically? Does adaptive capacity exist?
- What does "climate resilient development" mean for local authorities and local communities in the Southern African region and what are the critical steps on the road to such development?
- How do cities (municipalities) in the Southern African region experience and view climate change as a global phenomenon with local reach?
- In what ways do cities engage with citizens for the purposes of assessing climate vulnerability and climate readiness, and future planning?

[27] Schaefer Caniglia "Regenerative Urban Development" 360.

- To what extent do global city networks target and collaborate with cities of different sizes in the Southern African region for the purposes of climate response project design, implementation and effectiveness assessments?
- How do national authorities in the Southern African region see the role and function of their local authorities (cities) in climate resilient development? Is it the role of initiator and innovator or is it the role of an instructed implementer?
- How does the status of local government in terms of constitutional law affect the ability of cities to address climate change through local governance initiatives?
- What function can local law and policy play in regulating relationships between people and between people and things for the (just) low(er) carbon transition?
- What function can local law and policy play in regulating emissions levels and carbon-intensive activities? Is there a need to think instead of new governance tools?
- What is the impact of the tenure and property rights regimes of countries in Southern Africa on its cities' ability to address climate change in a way that continues to support development?
- How can the engagement and communication between cities in Southern Africa be strengthened and optimised?

Box 14 The research necessary for a meaningful climate change response

Effective responses to climate change require inter- and transdisciplinary research that fosters knowledge transfer and the development of novel methodological approaches. These should account for the hybrid character of climate change across temporal and spatial scales.[28]

[28] Kieslinger *et al* 2019 Mountain Research and Development 55.

In conclusion, we suggest the following immediate to medium-term priorities for local climate law and policy action in the Southern African region:

- Stock-taking of international and national imperatives for climate resilient development of relevance to every city and town in the region that has or may in future have a carbon footprint and/ or experience climate impacts;
- Municipalities to engage with local social, natural and climate scientists (knowledge communities) to assist with assessments of vulnerability and climate resilience needs in the quest to better understand the economic, social and physical local impacts of climate change;
- Municipalities to engage with local formal and informal industries and sectors to consider the options feasible for low(er) carbon development in local economies;
- Municipalities to learn from Global North experiences, including the development that while many cities are systematically addressing climate risks, urbanisation, affordable housing, transportation needs etc, most "are not providing integrated solutions that account for the feedback loops that intimately tie these challenges together";[29]
- Municipalities to explore the extent of their law- and policy-making powers and to leverage these in combination with other governance tools for local action against the causes and impacts of climate change;
- Municipalities to focus on community engagement, participatory decision-making and the meaningful sharing of relevant and up-to-date information on local action for climate resilient development from the conception to the implementation stage;
- Cities in the region to create peer-to-peer learning opportunities for the sharing of information on challenges, opportunities, successful local experiments, successful technologies and strategies for change that show results; and
- Cities to join international and regional organisations and initiatives for the purposes of peer-learning and to provide information that may feed into the design of law, projects and plans that are suitable for the Southern African urban context and relevant to the region's vulnerability profile.

[29] Schaefer Caniglia "Regenerative Urban Development" 360.

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LIST OF ABBREVIATIONS

AvH	Alexander von Humboldt Foundation
CLES	Cities, Law and Environmental Sustainability
DFFE	Department of Forestry, Fisheries and the Environment
FCA	Future Climate for Africa
FRACTAL	Future Resilience for African Cities and Lands
ICCSAP	Integrated Climate Change Strategy and Action Plan
ICLEI	Local Governments for Sustainability
IPCC	Intergovernmental Panel on Climate Change
KAS	Konrad-Adenauer Stiftung / Foundation
NDCs	Nationally Determined Contributions
NRF	National Research Foundation
NWU	North-West University
UCLG	United Cities and Local Government
UN	United Nations