

ARTICLE

City-Level Law and Action for Climate-Resilient Development in Southern Africa

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Abstract

This article studies eight cities in four countries in the southern African region (Namibia, Zimbabwe, South Africa, and Botswana) to explore whether and how local governing authority has been channelled towards local climate-resilient development. The authors undertook a desk-based identification and review of available primary and secondary legal sources and normative documents while also drawing on scientific papers and policy documents for statistics and information about urbanization, climate change, politics, and governance in the selected countries. The analysis is interested in the law but is not strictly of a legal nature in the sense that the authors did not aim for a critical analysis of the regulatory detail in the relevant legal instruments. Instead, the article provides an evaluation of the political, de facto choices made by selected local governments as to how and to what extent to utilize their governing authority (legislative and executive) towards climate-resilient development. The authors explore if and how local government powers in the four southern African countries are currently leveraged for local climate action, and comment on the possible reasons for the status quo by comparing the four jurisdictions.

Keywords: City-level law, Climate change law, Cities, Local climate governance, Urban areas, Southern Africa

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1. INTRODUCTION

Rapid urbanization in Africa and the impacts of global climate change on the continent's cities affect livelihoods, economies, and development trajectories.¹ Research on the extent of this is proliferating. Economists, geographers, planners, climate scientists, environmentalists, and financiers are now shifting their focus to the African context in studies that have long been focused on the global north.² Collectively, these experts are interested in questions of population growth, urban and climate migration, land-use planning, resource exploitation, technological innovation, water scarcity, environmental disasters, biodiversity loss and deforestation, energy governance, mobility, public health, and unpredictable impacts on agriculture (food security). They are further interested in the state of investment, finance, and economic growth against the backdrop of pervasive poverty, marginalization, a history of colonization, and the desperate need on the continent for long-term just transitions.³

With the exception of legal scholars analyzing decentralization in a selection of African countries⁴ and others reflecting on specific developments in national climate change law regimes,⁵ very few (if any) *legal* scholars have contributed to the discourse on cities and decentralized climate action in southern Africa.⁶

¹ See United Nations Economic Commission for Africa (UN ECA) & African Union Commission, 'African Union Climate Change and Resilient Development Strategy and Action Plan (2022–2032)', 2022, pp. 14–6, available at: <https://repository.uneca.org/handle/10855/47738#:~:text=This%20African%20Union%20Climate%20Change,long%20term%2C%20climate%20resilient%20development;D.S.Olawuyi,%20Nature%20and%20Sources%20of%20Climate%20Change%20Law%20and%20Policy%20in%20the%20MENA%20Region>; D.S. Olawuyi, 'Nature and Sources of Climate Change Law and Policy in the MENA Region', in D.S. Olawuyi (ed.), *Climate Change Law and Policy in the Middle East and North Africa Region* (Routledge, 2022), pp. 1–18, at 4.

² See, e.g., A. Tandon, 'Analysis: The Lack of Diversity in Climate Science Research', *Carbon Brief*, 6 Oct. 2021, available at: <https://www.carbonbrief.org/analysis-the-lack-of-diversity-in-climate-science-research>.

³ This is also evident from the African Union's first continent-wide strategic plan for climate change mitigation and adaptation: UN ECA & African Union Commission, n. 1 above, pp. 14–6. See also S. Croese & S. Parnell (eds), *Localizing the SDGs in African Cities* (Springer, 2022); G. Maggio, N. Sitko & A. Ignaciuk, *Cropping System Diversification in Eastern and Southern Africa: Identifying Policy Options to Enhance Productivity and Build Resilience* (FAO, 2018), available at: <https://www.fao.org/3/ca1562en/CA1562EN.pdf>; and Organisation for Economic Co-operation and Development (OECD), UN ECA & African Development Bank, *Africa's Urbanisation Dynamics 2022: The Economic Power of Africa's Cities* (OECD, 2022).

⁴ See, e.g., C.M. Fombad & N. Steytler (eds), *Decentralisation and Constitutionalism in Africa* (Oxford University Press, 2019); J. de Visser et al. (eds), *Constitution-Building in Africa* (Nomos, 2015).

⁵ See, e.g., T. Humby et al. (eds), *Climate Change Law and Governance in South Africa* (Juta, 2016); O.C. Ruppel, 'Climate Change *De Facto* and *De Jure*: Legal and Regulatory Aspects Relevant to Namibia', in O.C. Ruppel & K. Ruppel-Schlichting (eds), *Environmental Law and Policy in Namibia: Towards Making Africa the Tree of Life*, 4th edn (Hans Seidel Foundation, 2016), pp. 561–602; O. Rumble, 'Climate Change Legislative Development on the African Continent', in P. Kameri-Mbote et al. (eds), *Law | Environment | Africa* (Nomos, 2019), pp. 33–60, at 45–56.

⁶ See, however, J. van Wyk & M. Oranje, 'The Climate Change Mitigation and Adaptation Imperative in South Africa's Spatial Planning and Land Use Management Act, 2013', in A. van der Berg & J.M. Verschuuren (eds), *Urban Climate Resilience: The Role of Law* (Edward Elgar, 2022), pp. 254–76; A. van der Berg & A. du Plessis, 'Shared Mobility Towards Urban Climate Resilience in the City of Johannesburg', in Van der Berg & Verschuuren (eds), *ibid.*, pp. 325–57, which address very specific aspects of law and local climate governance in South Africa.

In this article we study eight cities in four countries in this region⁷ to explore whether and how local governing authority has been channelled towards local climate-resilient development.⁸ We do so through the prism of (i) the general interest in the rise of cities as global climate change actors⁹ and as a fast-emerging force in international (climate change) law,¹⁰ as well as (ii) the functions and governing authority of subnational governments in the countries under study.

In terms of the research method, we undertook a desk-based identification and review of available primary and secondary legal sources and normative documents, while also drawing on scientific papers and policy documents for statistics and information about urbanization, climate change, politics, and governance in the selected countries. The present analysis pertains to the law but does not intend to provide an exact legal evaluation, as we do not seek to conduct a scrutinizing examination of the regulatory minutiae contained in the legal instruments.¹¹ The analysis is interested in the law but is not a strictly legal one in the sense that we do not aim for a critical analysis of the regulatory detail in the relevant legal instruments. It is rather an evaluation of the political, de facto choices made by the selected local governments as to how and to what extent to utilize their governing authority (legislative and executive) towards climate-resilient development.¹² We explore if and how local government powers in the four countries are currently leveraged for local climate action, and comment on the possible reasons for the status quo by comparing the four jurisdictions.

The first part of the article (Section 2) reflects on the rise of cities as global climate change actors and what this suggests in more tangible terms for cities in southern Africa generally. Section 3 describes local (urban) climate governance and some of its typological manifestations. The discussion then turns to the functional responsibilities and the governing authority of local government in the four countries (Section 4). Thereafter attention shifts to the local impacts of climate change and a functional

⁷ Harare and Bulawayo (Zimbabwe); Windhoek and Swakopmund (Namibia); Gaborone and Francistown (Botswana); and Cape Town and eThekweni, Durban (South Africa).

⁸ J. Lin, *Governing Climate Change: Global Cities and Transnational Lawmaking* (Cambridge University Press, 2018), p. 71 (stating, with reference to Koh, that there are causal connections between practices at the global and local levels in a system of ‘transnational legal process whereby norms and practices are “uploaded” and “downloaded” from the international to lower levels of governance and vice versa’).

⁹ See A. du Plessis, ‘Climate Change Law and Sustainable Development’, in J. Nijman & H.P. Aust (eds), *Research Handbook on International Law and Cities* (Edward Elgar, 2021), pp. 187–200.

¹⁰ See, e.g., B. Oomen, M. Baumgärtel & E. Durmus, ‘Accelerating Cities, Constitutional Brakes? Local Authorities between Global Challenges and Domestic Law’, in E.H. Ballin et al. (eds), *European Yearbook of Constitutional Law 2020: The City in Constitutional Law* (Springer, 2021), pp. 249–72, at 251–6; A. du Plessis, ‘SDG 11: Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable’, in J. Ebbesson & E. Hey (eds), *The Cambridge Handbook of the Sustainable Development Goals and International Law* (Cambridge University Press, 2022), pp. 281–303.

¹¹ The primary legal sources and policies that were sourced for the purposes of this study have subsequently been added to the open access online depository of the NRF South African Research Chair in Cities, Law and Environmental Sustainability on Climate Action Law and Developments in Municipalities of Southern Africa, available at: <https://collections.nwu.ac.za/dbtw-wpd/textbases/law/cles.html>.

¹² This methodology is not strange in subnational constitutional law studies; see, e.g., R.F. Williams, ‘Foreword: Comparative Subnational Constitutional Law’, in P. Popelier, G. Delledone & N. Aroney (eds), *Routledge Handbook of Subnational Constitutions and Constitutionalism* (Routledge, 2022), pp. xv–xxvi, at xviii.

comparative analysis of city-level action in the eight cities (Section 5). The article concludes with what the research suggests on the extent to which local law, policy, projects, and political choices in these cities gravitate towards local (urban) climate governance. We also reflect briefly on the research that remains to be done.

2. THE GLOBALIZATION OF URBAN GOVERNANCE AS RELEVANT TO CLIMATE ACTION IN SOUTHERN AFRICA

Global urban governance offers a conceptual framework for trying to understand the complexity in multilevel global governance structures and the fit therein of subnational authorities.¹³ The globalization of urban governance also presupposes some kind of standard for local government practice (operations, institutional design, municipal institutions, rules and policies generated by local authorities, etc.).¹⁴ The discourse on the globalization of urban governance has developed predominantly around countries, cities, city networks, and city-centred activities that are very much rooted in the cultural, social, economic, and political contexts of the global north.¹⁵ Despite this, the discussion remains highly relevant and appropriate. For instance, city leadership has been recognized as crucial in the response to contemporary global challenges, as demonstrated by the global-local reactions to the COVID-19 pandemic and its interconnection with international urban migration.¹⁶ Further, quasi-localized policy responses have increasingly proven effective in addressing global governance issues.¹⁷ This is partly because city governments are willing to push the boundaries of their competence and seek to take a leading role by meeting internationally agreed standards, thereby addressing some of the great issues of our time such as migration, inequality, the violation of human rights, and climate change.¹⁸ We know that cities possess a unique advantage in addressing global issues as a result of their close proximity to their constituents and direct exposure to the challenges arising from such issues. Ignoring such challenges is not a luxury that cities can afford, as they may have the potential to affect local realities and communities.¹⁹

¹³ See, e.g., the discussion by E. Arban, 'Constitutional Law, Federalism and the City as a Unique Socio-economic and Political Space', in Ballin et al., n. 10 above, pp. 323–45, at 328–31.

¹⁴ H.P. Aust & A. du Plessis, 'Introduction', in H.P. Aust & A. du Plessis (eds), *Globalisation of Urban Governance: Legal Perspectives on Sustainable Development Goal 11* (Routledge, 2019), pp. 3–16, at 6–9.

¹⁵ This is not meant as a point of critique but as an objective reflection on the contextual roots and evolution of this discourse. See, e.g., most case studies and jurisdictions featuring in Oomen, Baumgärtel & Durmus, n. 10 above; Nijman & Aust, n. 9 above; K. Ljungkvist, *The Global City 2.0: From Strategic Site to Global Actor* (Routledge, 2016); and T. Lee, *Global Cities and Climate Change: The Translocal Relations of Environmental Governance* (Routledge, 2016). A gradual shift in the focus of the discourse is evident in publications such as Croese & Parnell, n. 3 above; Aust & du Plessis (eds), n. 14 above; and M.F. Shilongonyane, 'Reinventing Urban South Africa through Global Africanisation: The Case of Johannesburg' (2020) 24 *City*, pp. 452–72.

¹⁶ D. Pejic & M. Acuto, 'Cities: Understanding Global Urban Governance', in T.G. Weiss & R. Wilkinson (eds), *Global Governance Futures* (Routledge, 2022), pp. 101–11, at 102.

¹⁷ Ibid.

¹⁸ Oomen, Baumgärtel & Durmus, n. 10 above, p. 250.

¹⁹ Pejic & Acuto, n. 16 above, p. 103.

In the context of climate change, the sentiment is that cities may be more democratically legitimate, and have unique capabilities in responding to the causes and effects of climate change – owing in part to subnational legislative and regulatory capacity vis-à-vis central governments.²⁰ Particularly relevant for this article are local-scale climate actions, which provide an opportunity for local stakeholders, experts and authorities to identify and respond with targeted solutions.²¹

The above said, cities in southern Africa arguably do not neatly satisfy many of the assumptions²² that underlie the prevailing understanding of why and how cities have become respected global governance actors.²³ Southern Africa's peculiarity arises from its historical and developmental trajectories that continue to have an impact on recent legal reform processes.²⁴ It is further fuelled by the recency of constitutional transitions at national level,²⁵ as well as what appears to be a tendency to effectively centralize rather than decentralize governing power,²⁶ partly in response to 'a deeper underlying fear that cities will in due course breed political opposition'.²⁷

In contrast with the city context and notable local climate governance initiatives in other parts of the world,²⁸ many cities in southern Africa are characterized²⁹ by widespread informality (housing, trade, labour, etc.), urban poverty, violent protests, high levels of inequality, low levels of social cohesion, local planning instruments designed to work for predictable futures, weak(er) governance and infrastructural assets, huge finance deficits, large-scale skill shortages, economic migration, a state of being locked in by constitutionally entrenched governing powers accompanied by a politically

²⁰ E. Shirlow, 'The Role of International Law on Enhancing Urban Climate Resilience', in Van der Berg & Verschuuren, n. 6 above, pp. 20–43, at 21–2; J. Struggles, 'Climate Disasters and Cities: The Role of Local Government in Increasing Urban Resilience' (2015) 18 *Asia Pacific Journal of Environmental Law*, pp. 91–118, at 99.

²¹ Cities Climate Finance Leadership Alliance, '2021 State of Cities Climate Finance', 30 June 2021, p. 4, available at: <https://citiesclimatefinance.org/publications/2021-state-of-cities-climate-finance>.

²² Z. Patel et al., 'Knowledge Co-production in Sub-Saharan African Cities: Building Capacity for the Urban Age', in A. Gasparatos et al. (eds), *Sustainability Challenges in Sub-Saharan Africa II: Insights from Eastern and Southern Africa* (Springer, 2020), pp. 189–214, at 190. This point is also raised in relation to the global south in general by R. Hirschl, 'Urbanization, Megacities, Constitutional Silence', in Ballin et al., n. 10 above, pp. 305–22, at 309.

²³ In terms of the 'how', Pejic and Acuto hold that global urban governance manifests in, e.g., transnational city-to-city partnerships, collaborative peer initiatives, community-driven international urban advocacy, the implementation of international agreements in cities, and formal or informal engagements of cities in multilateral processes such as international law and policy making; Pejic & Acuto, n. 16 above, p. 104.

²⁴ S. Nabukenya, 'Why do Constitutions in Africa not Stand the Test of Time? Lessons and Perspectives from Uganda', in De Visser et al., n. 4 above, pp. 293–326, at 314–7.

²⁵ Ibid., p. 294.

²⁶ See, e.g., the discussion by N. Steytler, 'Subnational Constitutionalism in South Africa: An Empty Promise', in Popelier, Delledone & Aroney, n. 12 above, pp. 224–40, at 239–40.

²⁷ H.H. Magidimisha-Chipungu & L. Chipungu, 'Southern African Cities at a Glance: An Introduction', in H.H. Magidimisha-Chipungu & L. Chipungu (eds), *Urban Inclusivity in Southern Africa* (Springer, 2021), pp. 11–20, at 18.

²⁸ See, e.g., C40 Cities Climate Leadership Group, 'Focused Acceleration: A Strategic Approach to Climate Action in Cities to 2030', Nov. 2017, available at: https://www.c40knowledgehub.org/s/article/Focused-Acceleration-A-strategic-approach-to-climate-action-in-cities-to-2030?language=en_US.

²⁹ For a discussion of current urban affairs in southern Africa, see Magidimisha-Chipungu & Chipungu, n. 27 above, pp. 13–5.

volatile intergovernmental relations environment, service delivery infrastructure that is entirely out of pace with population growth,³⁰ and the challenge of having to address residual localized damage from climate change.

In this respect, Chapter 6 of the Intergovernmental Panel on Climate Change (IPCC) Sixth 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’.³¹

It further states that an additional 2.5 billion people are projected to be living in urban areas by 2050, with up to 90% of this increase concentrated in the regions of Asia and Africa.³² These scientifically grounded assessments suggest a definite correlation between urban growth and climate vulnerability, a link of particular relevance to the African city.

The United Nations (UN) Habitat 2022 World Cities Report, *Envisioning the Future of Cities*, which reflects on urban development globally, further indicates that ‘Africa is the least urbanized, but most rapidly urbanizing, region in the world’, and further that ‘in many African countries, urbanization is occurring at lower levels of income compared with other developing regions. This phenomenon has been referred to as the weakening of the historical link between urbanization and prosperity’.³³ The report states that rapidly urbanizing cities in Africa and Asia, for example, are more vulnerable to climate change and least able to respond to its effects. As already suggested, 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.³⁴

The foregoing considerations warrant caution against a blanket celebration of ‘the city’ in the context of international law and global climate governance, as it may inadvertently homogenize cities and overlook their diverse capacities and roles. The institutional environment in which southern African cities govern continues to be shaped by the ongoing process of state formation, which is ‘hugely different in the Global North and South’,³⁵ while many African governments still find themselves ‘in the throes of an uncertain transition’.³⁶ This call for diversification and words of caution on

³⁰ See UN ECA & African Union Commission, n. 1 above, pp. 14–6; Struggles, n. 20 above, p. 99.

³¹ D. Dodman et al., ‘Cities, Settlements and Key Infrastructure’, in IPCC (H.-O. Pörtner et al. (eds)), *Climate Change 2022: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Sixth Assessment Report of the IPCC* (IPCC, 2022), pp. 907–1040, at 909.

³² *Ibid.*

³³ UN Habitat, *World Cities Report 2022: Envisaging the Future of Cities* (UN-Habitat, 2022), p. 14.

³⁴ *Ibid.*, p. 16.

³⁵ B. Mathew, S. Pellissery & A. Narrain, ‘Why is Law Central to Public Policy Process in the Global South?’, in S. Pellissery et al. (eds), *Transformative Law and Public Policy* (Routledge, 2020), pp. 1–25, at 4.

³⁶ C.M. Fombad, ‘Introduction to Decentralisation and Constitutionalism in Africa’, in Fombad & Steytler, n. 4 above, pp. 1–21, at 1.

geographical under-representation are certainly not new,³⁷ but it is an increasingly urgent issue. Inclusive consideration of how the world is and ought to be responding to climate change is particularly pressing in policy instruments and scholarship that focuses on the role of cities in *climate change governance* and the advancement of the international *climate change law* agenda. Context-specific understanding and distinction is necessary because of the constraining institutional, political, and legal environments in which many cities in southern Africa govern and plan, and are expected to transform and execute positive and sustainable influence, notwithstanding the real-life severity of the climate change impacts in the region.³⁸

3. LOCAL (URBAN) CLIMATE LAW AND GOVERNANCE

Cities can use law and legal action to drive climate change response at the local level. In a joint project of the Sabin Center for Climate Change Law³⁹ and the C40 Cities network⁴⁰ it transpired that three categories of legal intervention enable cities to drive climate action. These are litigation, legal reform initiatives, and pioneering city-level policies or legislation.⁴¹ It was found that these legal interventions may assist with the removal of legal barriers to climate action; help to clarify and obtain powers; and influence national government policy or corporate activities, enabling them to undertake more ambitious climate action.⁴² Other authors highlight very specific possibilities within one or more of these three categories. Rumble states, with reference to legal reform initiatives and governance instrumentation in general:

In the case of climate change, the extent of the challenge is only now being experienced, and the required response is anticipatory in nature. Yet legislative mechanisms can and do play a critical role in empowering governments to take action, creating certainty; powerful incentives and disincentives; structures; institutions; and mechanisms to facilitate a more co-ordinated, effective and mandatory response.⁴³

We agree that the role of legislative mechanisms and the local governance instruments provided for in law (be it national or subnational law) are particularly relevant for urban climate governance. Examples abound of how municipal spatial planning, demand management, financial (market-based) and different environmental management tools (especially in the waste sector) may be used innovatively for greenhouse gas (GHG) emissions reductions and improved community resilience.⁴⁴ In this regard,

³⁷ See, e.g., Mathew, Pellissery & Narrain, n. 35 above, p. 1; Pejic & Acuto, n. 16 above, pp. 102, 105; and Hirschl, n. 22 above, p. 309.

³⁸ Patel et al., n. 22 above, p. 190.

³⁹ More on the Sabin Center for Climate Change Law is available at: <https://climate.law.columbia.edu>.

⁴⁰ More on C40 Cities is available at: <https://www.c40.org>.

⁴¹ C40 Cities Climate Leadership Group & C40 Knowledge Hub, 'How Cities Can Use the Law to Advance Climate Action', Aug. 2021, p. 7, available at: https://www.c40knowledgehub.org/s/article/How-cities-can-use-the-law-to-advance-climate-action?language=en_US.

⁴² Ibid., p. 46.

⁴³ Rumble, n. 5 above, p. 36.

⁴⁴ See, e.g., the collection of case studies on 'Adapting Cities to Climate Change: City Case Studies' in *Environmental and Urbanisation*, available at: <https://journals.sagepub.com/page/eau/collections/>

Van der Berg and Verschuuren draw on specific examples to explain how local law and policy instruments can be used for so-called ‘coping adaptation’ (for example, collaborative local rehabilitation and recovery schemes), incremental adaptation (for example, open space reserves to limit the heat island effect), and transformational adaptation or climate resilience.⁴⁵ There are also reports and case studies that reflect on cities using pioneering local policies or legislation to limit carbon-intensive energy consumption, to regulate how buildings are designed and built to withstand climate shocks and decarbonize, as well as to incentivize people to use modes of transport other than road vehicles.⁴⁶ In other documented examples we see how cities make use of collaborative city projects or initiatives (soft and hard measures)⁴⁷ to experiment with climate change mitigation and adaptation.⁴⁸ However, while most of these projects and experiments are highly innovative and encouraging, and are testimony to the bold steps that cities are willing to take to address climate change, their legal status, rights-based and justice implications, as well as their longevity, remain under-explored.⁴⁹

What interests us, though, is that ‘development in many countries suggests that municipalities do not fully exploit their authoritative powers and are reluctant to apply authoritative modes of governing through regulatory measures and strategic planning’.⁵⁰ In the remainder of this article we look into the extent to which eight cities in four countries in southern Africa appear to be empowered. We are interested in determining whether and how local law and policy powers have thus far been leveraged towards climate action at the local level, what the status quo suggests in terms of the hype around cities and their role in global climate governance, and the research left to be done in the region. The cities of Harare and Bulawayo (Zimbabwe), Windhoek and Swakopmund (Namibia), Gaborone and Francistown (Botswana), and Cape Town and eThekweni (Durban) (South Africa) were all selected on the basis of their being some of the largest urban centres in the countries under study.⁵¹

[virtual-special-issues/climate_change_and_cities/adapting_cities_to_climate_change-city_case_studies](#); M. Sethi et al., ‘Climate Change Mitigation in Cities: A Systematic Scoping of Case Studies’ (2020) 15 *Environmental Research Letters*, article 093008.

⁴⁵ A. van der Berg & J.M. Verschuuren, ‘Introduction to Climate Resilient Cities and the Law’, in Van der Berg & Verschuuren, n. 6 above, pp. 1–20, at 9.

⁴⁶ C40 Cities Climate Leadership Group & C40 Knowledge Hub, ‘Introducing Spotlight on Legal Action’, Aug. 2021, available at: https://www.c40knowledgehub.org/s/article/Introducing-Spotlight-On-Legal-Action?language=en_US.

⁴⁷ Soft measures include, e.g., local strategies and educational activities, while hard measures refer to, e.g., new or updated city infrastructure; see ICLEI-Local Governments for Sustainability World Secretariat et al., ‘Boosting Subnational Climate Action Through New Climate Governance’, Nov. 2017, p. 15, available at: <https://iclei.org/e-library/boosting-subnational-climate-action-through-new-climate-governance-11>.

⁴⁸ See generally H. Bulkeley, V.C. Broto & G.A.S. Edwards, *An Urban Politics of Climate Change* (Routledge, 2015); CDP-Disclosure Insight Action, ‘Nine Innovative Ways European Cities Are Taking Climate Action’, available at: <https://www.cdp.net/en/cities/cities-case-studies/innovative-climate-action-in-europes-cities>.

⁴⁹ See, e.g., Bulkeley, Broto & Edwards, n. 48 above, p. 222.

⁵⁰ K. Kern & G. Alber, ‘Governing Climate Change in Cities: Modes of Urban Climate Governance in Multi-level Systems’, in OECD, ‘International Conference on Competitive Cities and Climate Change’, Milan (Italy), 9–10 Oct. 2009, pp. 171–96, at 171.

⁵¹ There are obvious other major cities in South Africa, but in the two we have selected climate awareness manifests most evidently in local governance.

4. FUNCTIONAL RESPONSIBILITY AND GOVERNING AUTHORITY OF CITIES IN SOUTH ZIMBABWE, NAMIBIA, BOTSWANA, AND SOUTH AFRICA

An increasing number of African countries – such as Kenya, Uganda, Nigeria, Rwanda, and South Africa – are in the process of developing, or have already developed, *national* climate change laws or amended sectoral legislation. These legislative developments advance the objectives and vision of climate change policy and the nationally determined contributions (NDCs) regime under the 2015 Paris Agreement.⁵² The potential of *subnational* law and policy reform processes, however, should not be gainsaid, as we have hoped to argue thus far. Below, we take this argument one step further as we reflect on the status, functional responsibilities, and governing authority (agency) of eight cities in Zimbabwe, Namibia, Botswana, and South Africa relative to that of national and other levels of government. This general analysis is later used to contemplate whether and how local governing power has translated into city-level climate change action in the respective countries thus far.

4.1. Zimbabwe

The Constitution of Zimbabwe is a decade old and provides for three government tiers: national, provincial, and local.⁵³ Local government comprises urban and rural local authorities. Within a system theoretically designed for cooperative government, clear provision is made to protect local democracy, although the Constitution does not explicitly guarantee any other basic features of local autonomy. The Constitution provides very generic powers and functions of local government, the detail of which depends on national legislation, including the Urban Councils Act.⁵⁴ For example, the Constitution does not explicitly give local authorities the power to raise revenue; nor does it limit the national executive's oversight of these local authorities. That said, the intent to devolve power, responsibilities, and resources is a clear feature of the Constitution and promises a local government that is better empowered than the one Zimbabwe historically had.

The Constitution envisages local authorities exercising devolved powers and not only delegated powers. This is promising from the perspective of local environmental and climate governance, yet it remains the case that Acts of Parliament detail local government authority and powers.⁵⁵ Consequently, in the absence of clear constitutional allocation and division of authority, the national sphere of government remains capable of centralizing power. As alluded to above, the national government also fulfils a supervisory role, which reportedly has been exploited – cities run by opposition parties are said to be easily declared dysfunctional and their autonomy undermined and

⁵² Paris (France), 12 Dec. 2015, in force 4 Nov. 2016, available at: https://unfccc.int/sites/default/files/english_paris_agreement.pdf; Rumble, n. 5 above, p. 43.

⁵³ Constitution of Zimbabwe Act 1 of 2013 Amendment 20 (Constitution of Zimbabwe), s. 5.

⁵⁴ Urban Councils Act 24 of 1995 Third Amendment (Urban Councils Act).

⁵⁵ Constitution of Zimbabwe, n. 53 above, s. 276(2).

denied.⁵⁶ The current central government led by the Zimbabwe African National Union – Patriotic Front (ZANU–PF) is also characterized as anti-devolutionist and is perceived to be determined to weaken devolution of governing power.⁵⁷

Be that as it may, the Urban Councils Act empowers local councils to engage in several environmentally relevant functions such as the collection, treatment and disposal of sewage and stormwater, water supply and water pollution control, as well as land-use planning and natural resource conservation.⁵⁸ Councils are empowered to make bylaws on matters specified in the Act or on anything that is incidental to or connected with a matter so specified.⁵⁹ This suggests that for the sector areas (functions) mentioned above, bylaws may be passed by local authorities. Notably, though, the Minister of Local Government must approve these.⁶⁰

Moreover, under the provisions of the Regional Town and Country Planning Act, planning authorities, including Urban Councils and Rural District Councils, are required to create master and local plans for development.⁶¹ These plans, however, must be approved by the national Department of Physical Planning. Depending on the innovative interpretation of this function, these local governance instruments arguably could also be directed at environmental outcomes and climate response action at the local level.

4.2. Namibia

The Constitution of Namibia⁶² does not stipulate city-level functions. This is despite the constitutional recognition of local authorities (alongside their powers to make bylaws). Instead, municipal functions are determined by Acts of Parliament,⁶³ as is the case in Zimbabwe. The Namibian Constitution further makes no explicit mention of intergovernmental cooperation, and it is also not made explicit in national legislation (with the exception of references to decentralization). However, Namibia has a comprehensive legal framework aimed at establishing, enforcing, and regulating decentralization through various instruments, ostensibly aimed at improved intergovernmental cooperation.⁶⁴ The most prominent instruments include Chapter 12 of the

⁵⁶ M. Pieterse, 'Devolution, Urban Autonomy and Local Governance in Cities of the SADC' (2020) 28(4) *African Journal of International and Comparative Law*, pp. 612–34, at 631. See also S. Mashamba, 'The Powers and Functions of Local Government Authorities', in J. de Visser, N. Steytler & N. Machingauta (eds), *Local Government Reform in Zimbabwe: Policy Dialogue* (Community Law Centre, 2010), pp. 101–38, at 107.

⁵⁷ P. Moyo & C. Ncube, 'Devolution of Power in Zimbabwe's New Constitutional Order: Opportunities and Potential Constraints' (2014) 18 *Law, Democracy and Development*, pp. 289–304, at 300.

⁵⁸ Urban Councils Act, ss. 168, 183(1), 187, 216. See also the Second Schedule to the Act on 'Powers of Council'.

⁵⁹ Urban Councils Act, s. 227.

⁶⁰ Mashamba, n. 56 above, p. 107.

⁶¹ Regional Town and Country Planning Act 22 of 1976, ss. 13–21.

⁶² Namibian Constitution Third Amendment Act 8 of 2014 (Namibian Constitution).

⁶³ *Ibid.*, ss. 111(1), (4)–(5).

⁶⁴ Republic of Namibia, 'Brief on the Status of Decentralization Policy Implementation: Debate in Parliament on Decentralization', 21 June 2016, available at: <https://www.parliament.na/wp-content/>

Constitution concerning regional and local governments, the Local Authorities Act,⁶⁵ the Regional Councils Act,⁶⁶ and the Decentralization Enabling Act.⁶⁷

Although decentralization in Namibia has been on the cards since its independence in 1990, it has not attained much success and is an ongoing process (evidenced by the 2016 Brief on the Status of Decentralization Policy Implementation).⁶⁸ Furthermore, the issues concerning intergovernmental cooperation and decentralization are complex and multifaceted.⁶⁹ A large portion of the decision-making power remains in the hands of central government, as only certain functions relating to health, education, social services, land, public works, and rural water supply and sanitation have been decentralized.⁷⁰ The limited number of functions allocated for delegation and the absence of devolved functions over the last three decades have been said to allude to stagnation in Namibia's decentralization process.⁷¹ There is also limited fiscal decentralization, worsened by restricted revenue-generating powers and resource allocations devolved by central government in comparison with the transfer of administrative functions.⁷² Furthermore, poor human capital in local and regional authorities affects their ability to perform functions transferred to them from central government.⁷³

Namibia's Local Authorities Act defines the powers, duties, and functions of local authorities.⁷⁴ An analysis of the latter instruments shows no substantial legislative or other powers in relation to land-use planning or disaster risk management, for example, but cities do have extensive powers related to the supply and management of water,⁷⁵ and the regulation, restriction, prohibition, and control of the use, sinking or maintenance of wells or boreholes necessary or conducive to the supply of water to residents.⁷⁶ The Act further provides for the powers and functions of cities regarding

[uploads/2021/08/Brief-Statement-on-the-status-of-decentralisation-policy-implementation-june-21-2016-Hon-Minister-of-Urban-and-Rural-Dev-min.pdf](https://www.knowledge-uclga.org/IMG/pdf/uploads/2021/08/Brief-Statement-on-the-status-of-decentralisation-policy-implementation-june-21-2016-Hon-Minister-of-Urban-and-Rural-Dev-min.pdf).

⁶⁵ Local Authorities Act 23 of 2000.

⁶⁶ Regional Councils Act 22 of 1992.

⁶⁷ Decentralization Enabling Act 33 of 2000. The objectives of decentralization in Namibia include to enhance, extend, and guarantee participatory democracy; to safeguard and ensure rapid sustainable development; to transfer power to regional councils and local authority councils; and to improve the capacity of the latter councils to plan, implement, manage, and monitor service delivery to communities: Republic of Namibia, n. 64 above, p. 4.

⁶⁸ Republic of Namibia, n. 64 above, generally. See also Association for Local Authorities in Namibia, 'Integration of Namibia Local Authorities in the European Cooperation Programming Process 2021–2027: Analytical Report', Dec. 2020, pp. 4–8, available at: http://www.knowledge-uclga.org/IMG/pdf/alan_analytical_report_2020.pdf.

⁶⁹ See generally the comprehensive report on the issue by K. McGirr, 'Regional Government in Namibia: Is Decentralisation a Reality?', Briefing Paper, Institute for Public Policy Research, Hans Seidel Foundation, Sept. 2021, pp. 1–30, available at: https://ippr.org.na/wp-content/uploads/2021/09/IPPR_Decentralisation_WEB.pdf.

⁷⁰ Decentralization Enabling Act 33 of 2000, s. 3; McGirr, n. 69 above, pp. 14–5.

⁷¹ McGirr, n. 69 above, p. 15.

⁷² *Ibid.*, p. 26.

⁷³ *Ibid.*, p. 21.

⁷⁴ Local Authorities Act 23 of 1992, Preamble.

⁷⁵ *Ibid.*, ss. 34–37.

⁷⁶ Local Authorities Amendment Bill of 2016, s. 10.

sanitation, waste management,⁷⁷ electricity distribution, the creation of housing schemes,⁷⁸ as well as the provision and maintenance of sewerage and draining systems⁷⁹ (including public sewers, sewage works, and stormwater drains within or outside its area).⁸⁰ In the context of stormwater discharge into public watercourses, local authorities possess the power to demand that an owner of immovable property lacking adequate provision for sewage disposal construct a private sewer, for example. Local authorities may also take appropriate measures to ensure the owner's compliance with this requirement within a 30-day timeframe.⁸¹ This may be perceived as further evidence of the role of cities in safeguarding water sources in Namibia.

Namibian local authorities are also engaged primarily in providing electricity and overseeing issues pertaining to its distribution. The Local Authority Act provides cities with the power to supply electricity (or gas) to residents as well as any person other than a resident in its area.⁸² Notably, the Public and Environmental Health Act provides for important and related duties that concern cities and their role in the prevention of the outbreak of diseases and the managing of environmental health challenges.⁸³ The Act states that local authorities must take precautions to prevent the outbreak or prevalence of infectious, communicable, non-communicable, and contagious diseases, and promotes primary health care programmes in local authorities.⁸⁴ Furthermore, the Act suggests several environmental health duties.⁸⁵ Given the specific impacts of climate change that Namibia faces, each of the aforementioned functional areas could play a significant role in formulating local-level responses.

4.3. Botswana

Botswana operates a two-tier government system consisting of central and local government, with no provision being made for cooperative government as is the case with

⁷⁷ *Ibid.*, s. 30(1)(c). With regard to waste services, local authorities in Namibia are afforded the power to provide and maintain the destruction or removal of nightsoil, slop water, garden and stable litter, rubbish, abandoned vehicles, animal carcasses, and any refuse or unhealthy matter.

⁷⁸ *Ibid.*, ss. 30(1)(i), 57(1)(a), 57(1)(b)–(c), 58. It is noteworthy that the establishment of the housing scheme requires prior endorsement from the Minister and must comply with any conditions prescribed in that respect. Particularly, the Act determines that cities may construct, acquire, maintain, sell, or let dwellings. The latter powers also extend to the granting of loans to persons to access housing as envisioned in the Act; to assist banks to grant loans to persons to acquire or construct accommodation; and to establish a housing fund alongside housing schemes. Albeit seemingly incidental, these provisions may prove valuable in terms of future mitigation and adaptation strategies of Namibian cities, particularly in providing adequate housing for vulnerable communities affected by climate change.

⁷⁹ Local Authorities Act 23 of 1992, s. 30(1)(b).

⁸⁰ *Ibid.*, s. 38(1)(a).

⁸¹ *Ibid.*, s. 38(3)(a)–(b).

⁸² *Ibid.*, ss. 30(1)(f), 53.

⁸³ Public and Environmental Health Act 1 of 2015, s. 3.

⁸⁴ *Ibid.*, s. 3(1)(a)–(b).

⁸⁵ Such as maintaining hygienic conditions, preventing water pollution intended for human consumption, and the promotion of the health of persons, among other duties; see Public and Environmental Health Act 1 of 2015, s. 3(2).

Zimbabwe and South Africa, for example.⁸⁶ Instead, local government in Botswana is perceived as the creation of central government, which culminates in the latter dictating to the former.⁸⁷ Unlike the situation in Zimbabwe and Namibia, the Constitution of Botswana⁸⁸ makes no provision for local government; nor does it assign any powers to local authorities. Local government autonomy is very limited, aggravated by its dependency on central government for revenue. Local government matters are regulated under the Local Government Act,⁸⁹ which establishes local authorities (known as councils), for each administrative district.⁹⁰ They must perform and exercise their functions to promote the health, safety, and well-being of the areas in which they have been established.⁹¹ The functions of local authorities are set out in Schedule I of the Act and include, but are not limited to, safeguarding and promoting public health, waste management, and the provision of water. Section 11(2) of the Act, however, empowers the Minister of Local Government and Rural Development to bestow additional functions or substitute any of the mentioned local government functions.⁹²

Although the Act allows local government to publish bylaws, the exercise of local legislative power is subject to central government approval. For instance, section 45 of the Act provides that the Minister of Local Government and Rural Development must approve all municipal bylaws. If a bylaw concerns service and users' fees for services, for example, the Minister must consult other relevant Ministries.⁹³ Thus, the autonomy of local government and its power to legislate is somewhat restricted. In fact, according to Maundeni, central government in Botswana is extensively involved in the running of local government affairs, effectively wrestling out local authorities.⁹⁴ The situation is further perpetuated by poorly defined relationships between the authorities.⁹⁵ Notwithstanding express provision for intergovernmental cooperation and relations between the two tiers of government, some scholars argue that the local and central authorities have worked well over the years.⁹⁶ This may bring some

⁸⁶ N. Madala & M. Phrinyane, *Strengthening Local Government Service Delivery Through Open Government Initiative: The Case of Botswana* (Botswana Institute for Development Policy Analysis, 2016), p. 3, available at: <https://www.africaportal.org/publications/strengthening-local-government-service-delivery-systems-through-open-government-initiative-case-botswana>.

⁸⁷ K. Mooketsane, K. Bodilenyane & B. Motshekgwa, 'Is Decentralisation in Botswana a Democratic Fallacy?' (2017) 9(5) *African Journal of Public Affairs*, pp. 47–60, at 48; R. Hope, 'Decentralisation and Local Governance Theory and the Practice in Botswana' (2000) 17(4) *Development Southern Africa*, pp. 519–34, at 524.

⁸⁸ Constitution of Botswana of 1966.

⁸⁹ The Local Government Act 18 of 2012 consolidates the Local Government (District Councils) Act (date unknown) and the Township Act (date unknown) and repeals the same in terms of s. 93.

⁹⁰ An 'administrative district' is a district, city, town or township.

⁹¹ Local Government Act, 2012, s. 10.

⁹² M. Pieterse, 'Devolution, Urban Autonomy and Local Governance in the Cities of the SADC' (2020) 28(4) *African Journal of International and Comparative Law*, pp. 612–35, at 623.

⁹³ Local Government Act, 2012, s. 45(2).

⁹⁴ Z. Maundeni, *Mapping Local Democracy in Gaborone City* (Botswana Association of Local Authorities, 2004), p. 20.

⁹⁵ Mooketsane, Bodilenyane & Motshekgwa, n. 87 above, p. 49.

⁹⁶ *Ibid.*, p. 48.

de facto relief in a system where local government's power to govern in the realm of the environment and climate change is marginal.

4.4. *South Africa*

Following apartheid, the Constitution of South Africa established a system of so-called wall-to-wall local government comprising three categories of municipalities (local, district, metropolitan).⁹⁷ These operate in a nested quasi-federal government system made up of a national, provincial, and local government sphere. Local government has significant autonomy with executive⁹⁸ and legislative⁹⁹ authority on matters (i) set out in Chapter 7 and Schedules 4B and 5B of the Constitution, and (ii) that may have been assigned to it. Some of the matters listed are air pollution control, building regulations, electricity and gas reticulation, municipal planning, municipal health services, municipal public transport, domestic waste management, and water and sanitation services.¹⁰⁰ The Municipal Systems Act¹⁰¹ is a national statute that reiterates local government's constitutional executive and legislative authority. Under the Act, municipalities may exercise legislative and executive authority by developing and implementing bylaws, policies, plans, strategies, and programmes, and by setting targets for delivery, for example.¹⁰² One of the most influential governance instruments at the disposal of local authorities is the so-called 'integrated development plan' with which municipalities can set and plan for strategic objectives, including environmental objectives. Quite a few national environmental sector Acts,¹⁰³ and the soon-to-be passed Climate Change Bill,¹⁰⁴ compel municipalities to adopt local sector plans (such as local waste management plans, biodiversity management plans, estuarine management plans, climate change response implementation plans) as part of their integrated development planning.

The democratic government design further makes ample provision for cooperative government and the Constitution lays down explicit principles in this respect,¹⁰⁵ fortified by the national Intergovernmental Relations Framework Act.¹⁰⁶ The emphasis falls on cooperation among organs of state albeit without compromising the autonomy of, for example, municipalities. The law provides for national and provincial oversight and monitoring of the work of local government as part of a system of checks and balances

⁹⁷ Constitution of the Republic of South Africa, 1996 (Constitution of South Africa), s. 40.

⁹⁸ *Ibid.*, ss. 151(1) and 156 read with Sch. 4B and 5B.

⁹⁹ *Ibid.*, ss. 43(c), 151(2), 156(2). Local government can make and administer bylaws on matters falling within the competency of the local government.

¹⁰⁰ *Ibid.*, Sch. 4B.

¹⁰¹ Local Government: Municipal Systems Act 32 of 2000.

¹⁰² *Ibid.*, s. 11.

¹⁰³ See J.G. Nel, A. du Plessis & W. du Plessis, 'Instruments for Local Environmental Governance', in A. du Plessis (ed.), *Environmental Law and Local Government in South Africa*, 2nd edn (Juta, 2022), pp. 3-1–3-86, at 3-62–3-67.

¹⁰⁴ Climate Change Bill (B9-2022).

¹⁰⁵ Constitution of South Africa, n. 97 above, Ch. 3.

¹⁰⁶ Intergovernmental Relations Framework Act 13 of 2005.

for municipal service delivery and a healthy developmental-oriented local government. National and provincial intervention in the affairs of local government is permissible when specified requirements are met;¹⁰⁷ such intervention has become quite widespread in the face of severe municipal service delivery failures.¹⁰⁸ A relevant and interesting development is the changing features of local party politics of recent years whereby more and more coalition governments are formed as the ruling African National Congress (ANC) party seems to be losing ground at municipal level.¹⁰⁹ The long-term impacts of municipal coalition governments on the effective execution of municipal legislative and executive authority for environmental, climate change and other outcomes remain to be seen.

5. LOCAL IMPACTS AND A FUNCTIONAL COMPARATIVE ANALYSIS OF CITY-LEVEL ACTION

A review of the climate change-specific and sectoral local laws and policies in two cities in each of the countries under consideration casts light on how local government powers and intergovernmental relations complement or constrain city-level climate action. It also allows for a comparative analysis of whether and how cities in the southern African region use the powers they have, and how this measures up against some of the documented city-level climate change initiatives elsewhere in the world.¹¹⁰

5.1. *Zimbabwe: City of Harare and City of Bulawayo*

The City of Harare is the capital of Zimbabwe with an urban population of approximately 2.4 million.¹¹¹ Its climate change profile is distinguished by a persistent rise in temperature and a trend of reduced and unpredictable rainfall.¹¹² Climate projections for the next 40 years signify a decline in precipitation and a further increase in the mean temperature, portending the possibility of persistent droughts in the area.¹¹³ The impact of

¹⁰⁷ See, e.g., Constitution of South Africa, n. 97 above, s. 139 (which provides for provincial intervention in local government).

¹⁰⁸ See the discussion generally in J. Wright, F. Dube & A.A. du Plessis, 'Judicial Enforcement of Mandatory Provincial Interventions in Municipalities in South Africa' (2022) 55(1) *Verfassung und Recht in Übersee*, pp. 105–25.

¹⁰⁹ See J. Mawere, M. James & K. Titos, 'Coalition Governments and Service Delivery in South Africa: A Case Study of Tshwane, Johannesburg and Ekurhuleni Metropolitan Municipalities' (2022) 57(2) *Journal of Public Administration*, pp. 272–83.

¹¹⁰ As explained at the beginning, this research is doctrinal in nature and the authors did not conduct interviews or any other form of empirical study. This may be seen as a limitation of the article as, for example, it prevents the authors from reflecting on the ideals, experience, and mindset of local government officials and political office bearers.

¹¹¹ D. Dodman et al., 'Climate Change and Informal Workers: Towards an Agenda for Research and Practice' (2023) 48 *Urban Climate*, pp. 1–10, at 5.

¹¹² C. Mubaya et al., 'Exploring Transformative Urban Climate Adaptation in Harare, Zimbabwe', June 2019, p. 1, available at: https://www.csag.uct.ac.za/wp-content/uploads/2021/05/LIRA2030_Harare-background-paper_June-2019.pdf.

¹¹³ O. Masimba, 'An Assessment of the Impacts of Climate Change on the Hydrology of Upper Manyame Sub-Catchment, Zimbabwe' (Unpublished Master's thesis, University of Zimbabwe Harare, June

climate change in Harare is placing a considerable strain on already limited water supply, an effect that is compounded by rapid expansion of the city's population.¹¹⁴ The latter challenge has had a consequential effect on the wetlands in the city area, which had previously served as vital natural purification systems, which helped to avert disease outbreaks.¹¹⁵ Consequently, the increased risk of infectious diseases such as typhoid and cholera is an unwelcome reality.¹¹⁶ The main climate risks and vulnerabilities in the City of Harare include extreme heatwaves, floods, epidemics, food insecurity, and inadequate working and living conditions.¹¹⁷ Vulnerable communities, such as those residing and working in the city's informal areas, are particularly affected. The unintended consequences of climate change in the area include reduced economic and urban agricultural activity, among others.¹¹⁸

The climate vulnerability of Bulawayo, the second-largest city in Zimbabwe, is primarily as a result of its semi-arid climate.¹¹⁹ Climate change has caused a considerable reduction in precipitation and an increase in atmospheric pressure, leading to new seasonal patterns in the area.¹²⁰ The ramifications of climate change – such as decreased rainfall, extended dry spells, and heatwaves – have had a profound impact on food security, economic activity, and public health in the city.¹²¹ The latter situation significantly affects community resilience, and is further attributable to a historical dearth of water and acute water stress in the area.¹²²

Neither the City of Harare nor the City of Bulawayo have local climate change laws or policies in place. However, several sectoral local laws and policies of potential relevance exist; they mirror the functional areas of local government in Zimbabwe, referred to earlier. The City of Harare, for example, has local laws on water,¹²³ spatial

2016), pp. 43–56, available at: https://ir.uz.ac.zw/bitstream/handle/10646/3411/Masimba_Impacts_of_climate_change_on_the_hydrology.pdf?sequence=3&isAllowed=y.

¹¹⁴ M.R. Ndebele-Murisa & C.P. Mubaya, 'Policy Brief: Decision-Making and Climate Resilience in the Water Sector of Harare', 2019, p. 5, available at: <https://www.fractal.org.za/wp-content/uploads/2019/02/Harare-Policy-Brief.pdf>; M. Musemwa, 'Urban Struggles over Water Scarcity in Harare' (2021) 150(4) *Daedalus*, pp. 27–47, at 29.

¹¹⁵ Ndebele-Murisa & Mubaya, n. 114 above, pp. 5–6.

¹¹⁶ *Ibid.*, p. 6.

¹¹⁷ Dodman et al., n. 111 above.

¹¹⁸ *Ibid.*

¹¹⁹ T. Dube, S. Sibanda & P. Chiwara, 'Adapting Peri-Urban Agriculture to Climate Change in Bulawayo, Zimbabwe: A Qualitative Assessment' (2021) 7(1) *Cogent Social Sciences*, article 1944486, p. 5.

¹²⁰ *Ibid.*, pp. 9–11.

¹²¹ B. Ngwenya et al., 'Emerging Heat-related Climate Change Influences; A Public Health Challenge to Health Care Practitioners and Policy Makers: Insight from Bulawayo, Zimbabwe' (2018) 27 *International Journal of Disaster Risk Reduction*, pp. 596–601, at 597–600; T. Chagutah, 'Preventing and Resolving Future Climate and Natural Resource-related Conflicts in the Zambezi Basin: A Study of Bulawayo and Chinde Districts', South African Institute of International Affairs, SAIIA Occasional Paper No 155, Sept. 2013, 17 Oct. 2013, p. 13–5, available at: <https://saiia.org.za/research/preventing-and-resolving-future-climate-and-natural-resource-related-conflicts-in-the-zambezi-basin-a-study-of-bulawayo-and-chinde-districts>.

¹²² Chagutah, n. 121 above, pp. 13–7.

¹²³ Several Water Regulations and Water Amendment Regulations documents were found ranging from 1947 to 1998, as well as Water Restriction Bylaws 432 of 1951; Waterworks, Drains etc. Bylaw 1998; and Well and Borehole Bylaws 319 of 1998.

planning,¹²⁴ building standards and codes:¹²⁵ sectors that are generally known to play an incidental but important role in managing the effects of climate change. In the case of Zimbabwe, these local instruments date back many years, and none mention climate change expressly. Similarly, the City of Bulawayo has local plans in place concerning water and sanitation, which provide regulations on, for instance, protection of water-courses, pollution of streams, and irrigation water.¹²⁶ Given that Bulawayo is located in a semi-arid area, and its water sources are placed at further risk because of the effects of climate change,¹²⁷ the latter plans could prove valuable for the city in the management and safeguarding of water resources. Of further relevance is the Urban Agriculture Policy. This policy provides for various objectives concerning the use of water and land for urban agriculture, and promotes water conservation and anti-pollution policies (such as that, wherever possible, rainwater should be harvested for urban agricultural use, and that drip irrigation methods to conserve water should be employed in cases where groundwater is used).¹²⁸ The fostering of sustainable urban agricultural practices may be considered innovative in the context of the often drastic effects of climate change on the agricultural sector and water availability in the country.

There are some, mostly ad hoc, local climate change projects in these cities. For example, in the City of Harare, a zero-waste project was initiated by the community and is supported by the city council.¹²⁹ Of the two cities, the City of Bulawayo boasts arguably the most innovative project entailing multiple uses of land, specifically via developing solar farms over its cemeteries.¹³⁰

5.2. Namibia: City of Windhoek and Municipality of Swakopmund

The effects of climate change in the City of Windhoek, the capital of Namibia, poses significant risks to the city's environmental, social, and economic well-being.¹³¹ Windhoek, because of its semi-arid location, already faces water scarcity issues. This problem is further intensified by the severe droughts and increasing temperatures

¹²⁴ Use and Occupation of Land and Buildings (Adoption) Bylaws 737 of 1970.

¹²⁵ Building (Adoption) Bylaws 363 of 1979, corrected by 472/1979; Building (Adoption) (Amendment) Bylaws 345 of 1985.

¹²⁶ Sewerage, Drainage and Water Bylaws 1980; Protection of Lands and Natural Resources Bylaws 1975; City of Bulawayo, 'Urban Agriculture Policy', Feb. 2008, available at: <https://foodsystemsplanning.ap.buffalo.edu/wp-content/uploads/sites/68/2017/06/Urban-agriculture-policy-Bulawayo-Zimbabwe.pdf>.

¹²⁷ Dube, Sibanda & Chiwara, n. 119 above, p. 5.

¹²⁸ City of Bulawayo, n. 126 above.

¹²⁹ The project is aimed at recycling materials and using them to transform and beautify the city, while simultaneously cleaning up the natural environment of the city; see P. Tsaha, 'Transforming Harare into a Zero Waste Society', 5 Mar. 2021, available at: <https://web.archive.org/web/20211230080551/https://hararecity.co.zw/news/read/transforming-harare-into-a-zero-waste-society>.

¹³⁰ The Town Planning Department of the City Council proposed the initiative, and the solar panels are located at a reasonable height above the cemeteries to allow persons to move freely below them without interfering with the panels; see City of Bulawayo, 'Multiple Use of Land', 2019, available at: <http://www.citybyo.co.zw/News/MultipleUseofLand>.

¹³¹ B.S. Mapani, R.N. Shikangalah & A.L. Mwetulundila, 'A Review on Water Security and Management under Climate Change Conditions, Windhoek, Namibia' (2023) 197 *Journal of African Earth Sciences*, article 104749, p. 2.

that the city experiences.¹³² This, coupled with the city's precipitous population growth (currently estimated at well over 400,000 and expected to double over the next 20 years) and rapid urbanization, places its strained water supply, said to be at its upper limit in 2020, at further risk.¹³³ While the area is known for its low rainfall, an increase in intense rainfall events has been noted to cause flash floods, which affect the developmental activities of the city.¹³⁴ The aforementioned challenges detrimentally affect the large impoverished portion of the city's population, and further exacerbate living conditions in its various informal settlements where access to water and sanitation is already limited.¹³⁵

The Municipality of Swakopmund, being a coastal city, is also quite vulnerable to the effects of climate change such as sea-level rise and coastal erosion.¹³⁶ As such, the city is susceptible to flooding and storm surges, which may have an impact on its infrastructure, including roads, water supply systems, and buildings.¹³⁷ Given that Swakopmund's economic activity is highly dependent on tourism, such climate change-related consequences may prove dire.¹³⁸ Sea-level rise may further stress the city's ecosystem services and the various socio-economic sectors dependent thereon.¹³⁹ Additionally, the severe water shortages in Namibia, exacerbated by climate change, affect human settlements in coastal cities such as Swakopmund because of these cities' dependence on underground aquifers.¹⁴⁰

Research indicates that an Integrated Climate Change Strategy and Action Plan for the City of Windhoek has been developed, although the plan is not yet publicly available.¹⁴¹ The Municipality of Swakopmund does not have local laws regarding climate

¹³² Ibid.; Stockholm Environment Institute, 'Helping Windhoek Plan for Climate Change', 10 June 2019, available at: <https://www.sei.org/featured/windhoek-climate-change-plan>; A. Amunkete, 'Assessing the Role of Local Authorities in Mitigating the Effects of Climate Change: A Case Study of the City of Windhoek' (Unpublished Master's thesis, University of Namibia, Windhoek (Namibia), Oct. 2022), pp. 48–50, available at: https://repository.unam.edu.na/bitstream/handle/11070/3548/amunkete_climate_2022.pdf?sequence=1.

¹³³ Mapani, Shikangalah & Mwetulundila, n. 131 above; N.L. Brandt, 'Urban Resilience and Sustainability Challenges: A Case Study on the City of Windhoek' (Unpublished Master's thesis, Stellenbosch University (South Africa), Apr. 2019), p. 104, available at: <https://scholar.sun.ac.za/server/api/core/bitstreams/fcf84048-ed17-412b-b533-f105742a7f99/content>.

¹³⁴ Mapani, Shikangalah & Mwetulundila, n. 131 above; African Centre for Disaster Management, 'Namibia: Heavy Rain Continues, Flash Floods in Windhoek', Jan. 2021, available at: <http://africadisastermanagement.org/namibia-heavy-rain-continues-flash-floods-in-windhoek>.

¹³⁵ Brandt, n. 133 above, pp. 103–6.

¹³⁶ Republic of Namibia, 'Initial National Communication to the United Nations Framework Convention on Climate Change', July 2002, p. 42, available at: <https://unfccc.int/resource/docs/natc/namnc1.pdf>.

¹³⁷ Republic of Namibia, Ministry of Environment and Tourism, 'Sea-Level Rise in Namibia's Coastal Towns and Wetlands: Projected Impacts and Adaptation Strategies', 11 Sept. 2009, pp. 4–5, available at: <http://the-eis.com/elibrary/sites/default/files/downloads/literature/Sea-level%20rise%20in%20Namibia%202009.pdf>.

¹³⁸ T. Robertson et al., *Namibia's Coast: Ocean Riches and Desert Treasures* (Namibian Directorate of Environmental Affairs, Ministry of Environment and Tourism, 2012), p. 10.

¹³⁹ Republic of Namibia, n. 137, p. 5.

¹⁴⁰ Ibid.

¹⁴¹ S. Haukela et al., 'Moving Towards Integrated and Inclusive Climate Change Planning in Windhoek', Oct. 2019, available at: <https://www.fractal.org.za/wp-content/uploads/2020/03/IS9-Moving-towards-integrated-and-inclusive-climate-change-planning-in-Windhoek.pdf>.

change; over the years, however, both Namibian cities have developed local laws concerning water,¹⁴² energy,¹⁴³ spatial planning,¹⁴⁴ and building codes and standards.¹⁴⁵ With the exception of the Municipality of Swakopmund Structure Plan 2020–2040, none of the aforementioned instruments address climate change explicitly; nevertheless, they regulate incidental yet important sectors that play a role in the governance of climate change at the local level. These sector areas also correspond with the functional areas of competence of local government mentioned earlier.

Further, the Swakopmund Structure Plan 2020–2040 aims to assist the municipality in following an ‘integrated and holistic future-orientated planning approach that promotes sustainable use of the finite available resources (both natural and man-made), to maximise the development potential of Swakopmund’.¹⁴⁶

The Plan includes a vision for creating a climate-resilient, sustainable, liveable, and inclusive city.¹⁴⁷ The Plan is extensive and prioritizes, for example, sustainable modes of transportation and clean industries, the creation of shared open spaces, the conservation of the natural environment, cooperative governance, and informed decision making.¹⁴⁸ The Plan appears to be innovative given that its text identifies and pledges to address sectors that do not fall explicitly within the governing power of local government in Namibia.

As far as local climate change projects in the two cities are concerned, the City of Windhoek, through its Environmental Management Division, has participated in the National Greenhouse Gas Working Group aimed at compiling the country’s GHG inventory and reporting to the UN. Furthermore, the Council has engaged in the Transformational Leadership Training on Climate Change for City Executives towards mainstreaming climate change in the City’s planning and practices,¹⁴⁹ among other

¹⁴² Both the City of Windhoek and the Municipality of Swakopmund have model water supply regulations in place, specifically the Model Water Supply Regulations (GN 72 in GG 1283 of 1 Apr. 1996), regulations made in terms of the Local Authorities Act 23 of 1992 (s. 94(2) read with s. 94(1)). Furthermore, the City of Windhoek has a Water Management Plan in place: City of Windhoek, ‘Water Management Plan’, May 2019, available at: <http://documents.windhoekcc.org.na/Content/Documents/Water%20Management%20Plan%20-%202019%20-%20rev%203.pdf>.

¹⁴³ Both the City of Windhoek and the Municipality of Swakopmund have model energy supply regulations in place: Model Electricity Supply Regulations (GN 71 in GG 1283 of 1 Apr. 1996), regulations made in terms of the Local Authorities Act 23 of 1992 (s. 94(2(a)) read with s. 94(1)). The City of Windhoek published Electricity Policies & Regulations in 2000.

¹⁴⁴ The City of Windhoek has developed the following instruments: City of Windhoek, ‘Institutional Land Policy’, 2018, available at: http://www.windhoekcc.org.na/documents/6f6_institutional_land_policy.pdf; and the Spatial Development Framework (Urban Structure Plan) 2021–2041. Swakopmund Municipality has developed the Municipality of Swakopmund, ‘Municipality of Swakopmund Structure Plan 2020–2040’ (2020), available at: https://swakopmun.com/wp-content/uploads/2020/06/200619-DRAFT_SWK-Structure-Plan-2020-2040-1.pdf.

¹⁴⁵ Windhoek Town Planning Scheme of 2009; Swakopmund Town Planning Amendment Scheme of 2002.

¹⁴⁶ Municipality of Swakopmund, n. 144, p. 12.

¹⁴⁷ *Ibid.*, Ch. 5.

¹⁴⁸ *Ibid.*

¹⁴⁹ City of Windhoek, ‘Mayoral Annual Report 2016’, p. 22, available at: <http://documents.windhoekcc.org.na/Content/Documents/Mayoral%20Report%202016.pdf>.

initiatives.¹⁵⁰ On the other hand, no climate change projects could be identified in the Municipality of Swakopmund.

5.3. Botswana: Gaborone and Francistown

Gaborone has a semi-arid climate with erratic and unpredictable (and very limited) rainfall.¹⁵¹ The city has experienced severe droughts in recent years:¹⁵² in 2015–16, for instance, it experienced droughts that led to the drying up of the Gaborone Dam.¹⁵³ A recent analysis of spatio-temporal rainfall variability in Botswana predicts decreasing rainfall in Gaborone.¹⁵⁴ As in the case of the cities in Zimbabwe and Namibia, droughts and water scarcity affect the agricultural sector and food security in the area.¹⁵⁵ Studies in 2014 indicated a decline in the capacity of the Gaborone Reservoir, which supplies water to the city, such that it was impossible at the time to pump out water.¹⁵⁶ Water scarcity has also historically led to water rationing in Gaborone, which left citizens without water for some days.¹⁵⁷ The city has also been affected by heavy flood disasters.¹⁵⁸

Rising temperatures in Francistown similarly culminate in heatwaves, drought, loss of biodiversity, and extinction of certain species in the area.¹⁵⁹ An empirical study

¹⁵⁰ See the Stockholm Environment Institute, n. 132 above; A. McClure, ‘Climate Narratives: What Have We Tried? What Have We Learned? What Does This Mean for Us Going Forward?’, July 2018, available at: https://www.fractal.org.za/wp-content/uploads/2018/09/Learning_climate-narratives-briefing-note.pdf; L. Pretorius et al., ‘An Embedded Researcher Approach to Integrate Climate Information into Decision Making in Southern African Cities: Lessons from FRACTAL’, June 2019, available at: <https://www.fractal.org.za/wp-content/uploads/2019/07/Pretorius-L-et-al-Embedded-Researcher-approach.pdf>; J. Arrighi et al., ‘Dialogue for Decision-Making: Unpacking the “City Learning Lab” Approach’, 2017, available at: https://www.fractal.org.za/wp-content/uploads/2017/03/RCCC-FRACTAL_wps-7-City-Learning-Lab-V4.pdf.

¹⁵¹ G. Samuel et al., ‘Evaluation of National Disaster Management Strategy Planning for Flood Management and Impact Reduction in Gaborone, Botswana’ (2022) 74 *International Journal of Disaster Risk Reduction*, article 102939, p. 4.

¹⁵² G. Ziervogel, ‘Dealing with the Strain of Drought in Botswana’, Adaptation at Scale in Semi-Arid Areas (ASSAR), 13 June 2017, available at: <http://www.assar.uct.ac.za/news/dealing-strain-drought-botswana>.

¹⁵³ J. Omari et al., ‘Background Paper on Botswana’s Draft Drought Management Strategy’, ASSAR, Dec. 2017, p. 12.

¹⁵⁴ Ibid.

¹⁵⁵ See, e.g., H. Gökçekuş, Y. Kassem & L.P. Mphinyane, ‘Analysis of Spatio-temporal Rainfall Trends and Rainfall Variability in Botswana between 1958 and 2019’ (2021) 5(3) *International Advanced Researches and Engineering Journal*, pp. 444–53, at 451.

¹⁵⁶ E. Farrington, ‘The Water Crisis in Gaborone: Investigating the Underlying Factors Resulting in the “Failure” of the Gaborone Dam, Botswana’ (Bachelor thesis, Physical Geography and Ecosystems Science, Lund University (Sweden), 2015), p. 2.

¹⁵⁷ UN, ‘Drought in Botswana, A Learning Opportunity to Achieve Water Security: UN Expert’, 17 Nov. 2015, available at: <https://www.ohchr.org/en/press-releases/2015/11/drought-botswana-learning-opportunity-achieve-water-security-un-expert>.

¹⁵⁸ World Bank Group, ‘Climate Risk Country Profile: Botswana’, 2021, p. 12, available at: https://climateknowledgeportal.worldbank.org/sites/default/files/2021-05/15721-WB_Botswana%20Country%20Profile-WEB%20%281%29.pdf.

¹⁵⁹ L. Bosakeng, K. Mogotsi & G. Bosekeng, ‘Farmers Perceptions of Climate Change and Variability in the North-East District of Botswana’ (2020) 32 *Livestock Research for Rural Development*, article #12.

conducted in 2017 indicated an increase in heatwave severity in the city.¹⁶⁰ This understandably has adverse implications for agriculture and the water sector, leading to food insecurity.¹⁶¹ A recent study on spatio-temporal rainfall variability in Botswana confirmed a decrease in rainfall in Francistown¹⁶² but, as in the case of Gaborone, Francistown has also been affected by disastrous flooding.¹⁶³

Botswana does not have climate change-specific local (city-level) laws and policies, as far as could be established. Seemingly, climate change governance is the prerogative and mandate of central government. The two cities under consideration also have no climate change projects, although there could exist undocumented local climate change initiatives.

Despite its limited governing authority, the local authorities of Gaborone adopted the so-called Gaborone City Council (General) Bylaws in 1966. Francistown followed suit and published the Francistown City Council (General) Bylaws in 1967. These sets of bylaws provide for waste management, thereby prohibiting littering and the accumulation of waste, for example. The bylaws further prohibit activities such as the disposal of carcasses in an unauthorized area, and the burning of any grass, refuse or rubbish; they also prescribe building standards for the construction of bakeries, butcheries, and fishmongers. The local laws of the two cities do not explicitly mention climate change but the peripheral issues they cover may at least offer a starting point for localized climate change responses in the country.

5.4. South Africa: City of Cape Town and eThekweni

As a result of keen academic and media interest in the topic, a fair amount of research is available on the impact of climate change in Cape Town and Durban (eThekweni).¹⁶⁴ Climate change is also behind some of the most severe disasters (droughts, floods, run-away wildfires) to have hit Cape Town and Durban in recent years. Cape Town is situated in the renowned Cape Floristic Region (a global biodiversity hotspot) and is

¹⁶⁰ Ibid.; O. Moses, 'Heat Wave Characteristics in the Context of Climate Change over the Past 50 Years in Botswana' (2017) 49 *Botswana Notes and Records*, pp. 13–25, at 22.

¹⁶¹ Ibid.

¹⁶² Gökçekuş, Kassem & Mphinyane, n. 155 above, p. 451.

¹⁶³ World Bank Group, n. 158 above, p. 12. See also UN Office for the Coordination of Humanitarian Affairs (OCHA), 'Floods Cause Death, Destruction in Botswana', 9 Feb. 2000, available at: <https://reliefweb.int/report/botswana/floods-cause-death-destruction-botswana>.

¹⁶⁴ See N.P. Simpson et al., 'Climate-Resilient Development Planning for Cities: Progress from Cape Town' (2023) 3 *Urban Sustainability*, article 10; G. Ziervogel, M. Shale & M. Du, 'Climate Change Adaptation in a Developing Country Context: The Case of Urban Water Supply in Cape Town' (2010) 2 *Climate and Development*, pp. 94–110; Z. Li et al., 'The April 2021 Cape Town Wildfire: Has Anthropogenic Climate Change Altered the Likelihood of Extreme Fire Weather?' (2023) 104(1) *Bulletin of the American Meteorological Society*, pp. E298–E304; M. Jagarnath, T. Thambiran & M. Gebreslasie, 'Heat Stress Risk and Vulnerability under Climate Change in Durban Metropolitan, South Africa: Identifying Urban Planning Priorities for Adaptation' (2020) 163 *Climatic Change*, pp. 807–29; M. Steenkamp, N. Steyn & B. Anthony, 'Case Study Compendium; Local Climate Change Action in 10 South Africa Cities', 2020, pp. 1–41, at 8–16, available at: https://law.nwu.ac.za/sites/law.nwu.ac.za/files/files/Law/CLES%20CHAIR/Publications/CLES_KAS_Compndium%20on%20Climate%20Change%20Action%20in%20Municipalities_2020.pdf; M. Botes et al., 'Legislative and Policy Initiatives towards the Mitigation of Climate Change in African Cities', 2022, available at: <https://nextcloud.nwu.ac.za/index.php/s/bKKHe8o8jfxYcH9>.

further surrounded by 307 kilometres (km) of coastline. This unique environmental setting makes the city particularly vulnerable to climate change. This is so especially as it is also home to a large number of seasonal wetlands, freshwater bodies and watercourses amidst worrying socio-economic challenges such as high levels of unemployment, poverty, informality, an acute housing crisis, as well as health challenges from communicable and non-communicable diseases.¹⁶⁵ Cape Town is also a significant GHG emitter, relative to its size.¹⁶⁶

Durban is a coastal city of which the economy is very much driven by industrial activity from which significant GHG emissions cannot readily be detached. The city is projected to experience increased temperatures and periods of drought, more intense storms and flooding, together with sea-level rise.¹⁶⁷ The combination of these impacts threatens water security and water quality, posing the risk of increased vector-borne and water-borne diseases, loss of biodiversity, changes in species' migratory patterns, and negative impacts on food production.¹⁶⁸ The city's Climate Change Strategy states that these impacts 'could be compounded by other drivers unrelated to climate change like inappropriate management of built and natural infrastructure, poor planning and poor governance'.¹⁶⁹

In the context of this article's focus, Cape Town and Durban may be deemed two climate governance champions in the southern African region. There are ample examples of how the two cities have been using their legislative and executive authority to address the causes, risks, and impacts of climate change as directly relevant for these urban areas. Cape Town's Climate Change Strategy 2021, for example, states that the city's climate change-response ambition is to become a resilient, resource-efficient and carbon-neutral city, and sets out ten principles underpinning the Strategy.¹⁷⁰ The city also has a set of Carbon Neutral 2050 Commitments in which it commits to achieving carbon neutrality by 2050.¹⁷¹ By virtue of its membership of the C40

¹⁶⁵ See City of Cape Town, 'Climate Change Strategy', May 2021, p. 12, available at: https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/Climate_Change_Strategy.pdf.

¹⁶⁶ Ibid.

¹⁶⁷ Durban experienced heavy rains and devastating flooding in 2022 and (at the time of writing) continues to struggle to recover in terms of infrastructure repair and a water crisis caused by sewerage leaks; see V.G. Naidoo, 'The Most Deadly and Disastrous Floods Ever Hit KwaZulu-Natal' (2022) 115(6) *Servamus Community-Based Safety and Security Magazine*, pp. 36–7, available at: https://journals.co.za/doi/abs/10.10520/ejc-servamus_v115_n6_a13; Reliefweb, 'South Africa: KwaZulu-Natal Floods: Emergency Appeal No. MDRZA012 – Operational Strategy', 13 June 2022, available at: <https://reliefweb.int/report/south-africa/south-africa-kwazulu-natal-floods-emergency-appeal-no-mdrza012-operational-strategy>; R.E. Schulze, 'What Did Cause the April KZN Floods?', *The Water Wheel*, July–Aug. 2022, pp. 24–7, available at: <https://journals.co.za/doi/pdf/10.10520/ejc-waterb-v21-n4-a5>.

¹⁶⁸ eThekweni Municipality, 'Durban Climate Change Strategy 2022', p. 3, available at: https://www.durban.gov.za/storage/Documents/Climate/DCCS_Strategy.pdf.

¹⁶⁹ Ibid.

¹⁷⁰ City of Cape Town, n. 165 above.

¹⁷¹ City of Cape Town, 'The City of Cape Town's Carbon Neutral 2050 Commitment', p. 7, available at: https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2C%20plans%20and%20frameworks/Carbon_Neutral_2050_Commitment.pdf. See also C40 Knowledge, 'The City of Cape Town's Carbon Neutral 2050 Commitment', July 2020, available at: https://www.c40knowledgehub.org/s/article/The-City-of-Cape-Town-s-Carbon-Neutral-2050-Commitment?language=en_US.

Cities Network, the city has voluntarily committed to what may be styled ‘Cape Town’s C40 Commitments’,¹⁷² which include but are not limited to the Net-Zero Carbon Buildings Commitment and Green and Healthy Streets Declaration.¹⁷³ The City of Cape Town has also published a Climate Change Action Plan 2021, which sets out actions to implement its Climate Change Strategy 2021. The plan also defines the role of the city in responding to climate impacts while transitioning to a carbon-neutral local economy.¹⁷⁴ In addition, Cape Town’s Resilience Strategy 2019 was adopted following a severe drought of three years and aims to strengthen the city’s resilience against potential shocks such as storms and floods.¹⁷⁵

The City of Cape Town has several bylaws and local policies which are incidentally relevant to its climate response. These include, inter alia, its Air Quality Management Bylaws 2016, Electricity Supply Bylaws 2010, Stormwater Management Bylaw 2005, Integrated Risk Management Policy 2016, and Municipal Disaster Risk Management Plan 2015.

The eThekweni Metropolitan Municipality adopted its Municipal Adaptation Plan: Health and Water in 2009. The Plan sets out the city’s climate-related challenges and highlights its need for adaptation. The Plan also identifies interventions in the water and health sectors as central to the city’s adaptation response. The city later adopted the Durban Climate Change Strategy of 2014, reflecting on the city’s projected climate change responses and some goals to be achieved.¹⁷⁶ Five years later, eThekweni adopted its Climate Action Plan 2019, which highlights the climate challenges in the city area and sets out the projected impacts.¹⁷⁷ The Plan continues to set long-term targets and actions, which must be achieved by 2050; these include carbon-zero new buildings and municipal infrastructure.¹⁷⁸ The city also has incidentally relevant bylaws including, for example, its Stormwater Management Bylaws of 2020, which provide for measures to adapt to climate change and the densification of built-up areas.¹⁷⁹

Both cities have ongoing climate projects. The City of Cape Town, for example, has a project on the roll-out of free basic electricity where the local authority provides a

¹⁷² The Cape Town C40 Commitments are the climate action outcomes that the City voluntarily committed to achieve at the stipulated timeframes through its membership of the C40 City Network.

¹⁷³ City of Cape Town, ‘Climate Change Action Plan’, 2021, p. 13, available at: https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2C%20plans%20and%20frameworks/CCT_Climate_Change_Action_Plan.pdf. The Net-Zero Carbon Buildings Commitment concerns, e.g., the City’s ambition to have all buildings being net-zero carbon by 2050.

¹⁷⁴ City of Cape Town, *ibid.*, p. 24.

¹⁷⁵ City of Cape Town, ‘Cape Town Resilience Strategy’, Aug. 2019, p. 7, available at: https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2C%20plans%20and%20frameworks/Resilience_Strategy.pdf.

¹⁷⁶ eThekweni Municipality, ‘Durban Climate Change Strategy’, Sept. 2014, available at: <https://www.globalcovenantofmayors.org/wp-content/uploads/2015/06/Durban-Action-Plan.pdf>.

¹⁷⁷ eThekweni Municipality, ‘Durban Climate Action Plan 2019’, available at: https://cdn.locomotive.works/sites/Sab410c8a2f42204838f797e/content_entry5c8ab5851647e100801756a3/5e5e3f71469c8b00a735fbac/files/Climate_Action_Plan_web.pdf.

¹⁷⁸ *Ibid.*, pp. 29–30.

¹⁷⁹ Stormwater Management Bylaws, 2020, Preamble.

lifeline tariff for households that use less than 450 kilowatt hours (kWh) of electricity per month, receiving the first 50 kWh free.¹⁸⁰ The city and the C40 City Finance Facility further signed a Memorandum of Understanding in 2022 through which the city will undertake two projects aimed at achieving a carbon-neutral city status by 2050.¹⁸¹ The first project relates to the building of green infrastructure and the rehabilitation of waterway projects.¹⁸² The second relates to the city's pursuit of an energy efficiency programme and renewable energy generation through the building of a ground-mounted solar photovoltaics generation plant.¹⁸³

eThekwini, in collaboration with the C40 City Finance Facility, is running a so-called Transformative Riverine Management Project (programme).¹⁸⁴ The project aims to adapt the 7,400 km of streams and rivers in the city to protect against flooding, drought, and higher temperatures that are projected to occur as a result of climate change. According to the C40 City Finance Facility, this eThekwini project is nested in the original Durban Climate Change Strategy of 2014 and the most recent Climate Action Plan of 2021.¹⁸⁵

6. CONCLUDING ASSESSMENT

By now, the scientific community largely agrees on the interwoven web of causes and impacts, the amount of resources (especially of a financial kind) and high-level political commitment and coordination needed to see a meaningful and long-lasting response to climate change – at *all* levels and scales of governance.¹⁸⁶ The literature on the role of cities in global climate governance is vast, as academics, non-governmental organizations, global city networks, UN bodies, and activist organizations continue to produce reports and case studies on city-level climate initiatives.¹⁸⁷ It is agreed that the extent of the climate problem is just too far-reaching for any city or municipality to tackle it on its

¹⁸⁰ City of Cape Town, 'Understanding Residential Electricity Tariffs in Cape Town' (2022), available at: <http://resource.capetown.gov.za/documentcentre/Documents/Procedures,%20guidelines%20and%20regulations/Understanding-residential-electricity-tariffs.pdf>.

¹⁸¹ City of Cape Town, 'City Teams Up with C40 and GIZ to Explore Green and Carbon Neutral Solutions', 17 Aug. 2022, available at: <https://www.capetown.gov.za/Media-and-news/City%20teams%20up%20with%20C40%20and%20GIZ%20to%20explore%20green%20and%20carbon%20neutral%20solutions>. See also C40 Knowledge, n. 171 above.

¹⁸² City of Cape Town, n. 181 above. The Water & Sanitation and Spatial Planning & Environment Directorates would have led this project, respectively.

¹⁸³ City of Cape Town, n. 181 above.

¹⁸⁴ C40 Cities Finance Facility, 'South African Cities Learn from eThekwini's Transformative Riverine Management', 6 Nov. 2019, available at: <https://www.c40cff.org/news-and-events/south-african-cities-learn-from-ethekwinis-transformative-riverine-management>.

¹⁸⁵ *Ibid.*

¹⁸⁶ See, e.g., Pejic & Acuto, n. 16 above, p. 111; ICLEI-Local Governments for Sustainability, 'Multilevel Climate Action: The Path to 1.5 Degrees' Nov. 2018, available at: <https://e-lib.iclei.org/wp-content/uploads/2018/12/cCR-report-web.pdf>; H.-O. Pörtner et al., 'Summary for Policymakers', in IPCC, n. 31 above, pp. 3–33, at 24–5.

¹⁸⁷ Lin (n. 8 above, p. 6) traverses some of the many studies on 'cities and climate change governance' conducted by 2018. Several more publications on the topic have since seen the light; for one such collection of publications from 2018–22, see C40 Cities, 'Research and Analysis', available at: <https://www.c40.org/research>.

own, and in the limited scope of its governing authority and geographically delineated governing space.¹⁸⁸ However, the role of cities and their municipalities in climate change becomes apparent when we consider that they often oversee integral responsibilities. These responsibilities – which include air quality control, water services, domestic waste management, electricity distribution, stormwater management, and spatial planning – are fundamental components interwoven with the causes and impacts of climate change.¹⁸⁹ Yet, the climate crisis places significant pressure on local governance, intensifying the struggles of local authorities in certain regions and countries to deliver and perform basic services. This is an aspect that we left unexplored in this article. We aimed, however, to determine with reference to Botswana, Zimbabwe, Namibia, and South Africa whether and how local law and policy powers have thus far been leveraged towards climate action at the local level.

A functional comparative reading of the extent to which local law, policy, local projects and political choices in the four countries gravitate towards city-level climate responses showed a smorgasbord of developments. Firstly, there is a discernible correlation between local government agency, powers and autonomy, and the extent to which cities in Zimbabwe, Namibia, Botswana, and South Africa have thus far adopted direct and indirect climate response measures in local laws and policies. The absence of local climate action in Gaborone and Francistown matches the lack of municipal autonomy in the country's legal system, whereas the significant level of autonomy of South African municipalities and the relative local autonomy in Namibia clearly shine through in their progressive climate response measures provided for in local laws, policies, and projects. Countries such as Botswana, where local government laws and plans must be approved by central authorities, also seem to have little going at the city level.

Secondly, climate gains may be made by clearly allocating functional responsibility to different organs of state and through compliance with national laws. Without exception, the eight cities under discussion have adopted bylaws and local policies that speak to their clearly allocated functions such as water provision, waste management, and air pollution. With the exception of South Africa and, to some degree, Namibia, there seems to be limited appetite to take local climate action on top of the actions that can be integrated with the classic (traditional) functions and services of local government. This may have less to do with political will and commitment and more to do with unfunded mandates in the face of already stretched municipal budgets.

Thirdly, while our research did not venture into any specific intergovernmental arrangements and structures for collaborative public climate change governance, it would appear that cities in countries with explicit provision for cooperative governance more boldly engage in local law and policy initiatives in the functional areas relevant to climate change. The bylaws and local policies of Cape Town and Durban, for example, mention South Africa's national vision and developments for climate-resilient development, and would seem to complement efforts at the provincial and national

¹⁸⁸ See Bulkeley, Broto & Edwards, n. 48 above, p. 3.

¹⁸⁹ This point is well illustrated by the vast amount of cities and climate change governance and action research available at C40 Cities Finance Facility, n. 184 above.

government levels. Some local climate change initiatives in Windhoek and Swakopmund appear to be more policy-oriented and geared towards collaboration with central government initiatives. This is in contrast to initiatives in Zimbabwean cities, which seem more practically focused and indicative of own initiative.

Fourthly, and related to the issue of local government autonomy, fiscal autonomy and the strength of local economies seem to line up with the level of local climate action in the cities of southern Africa. While it is true that Cape Town and Durban enjoy constitutional local autonomy of a kind unknown in Namibia and Botswana, it is noticeable that these two South African cities have particularly strong mixed local economies, which makes them slightly less dependent on intergovernmental financial transfers, for example. The contrary is also true in that both South African cities have economic activities that significantly contribute to GHG emissions, which may serve as an impetus to have climate change on the local authority agenda.

Ultimately, however, (local) law and policy is what it does. We agree that cities are much more than ‘miniature republics’,¹⁹⁰ and that the real role of southern African cities in addressing the causes and consequences of climate change stretches beyond the law and policy architecture (or the absence thereof). Considerably more may in fact be going on de facto to promote the development of resilience and adaptation in local communities. At the same time, anecdotal evidence suggests there are serious discrepancies between reality and the strategic vision and objectives of local laws and policies in the region. For example, despite its progressive strategies, local policies and programmes, the relatively well-resourced metropolitan municipality of eThekweni in South Africa still battles (more than one year down the line) to repair the most basic of city infrastructure damaged during the April 2022 Durban floods. It may be necessary, therefore, to supplement the doctrinal legal study we have undertaken with on-the-ground research into the real impact of local projects, policies and bylaws, and other ad hoc-type mitigation and adaptation initiatives. The impact of political dynamics at central and subnational levels may be as important to explore.

From our perspective, there exist six additional areas in the southern African urban context that warrant further investigation. These include the relevance of climate change litigation and national legal (climate change law) reform initiatives for local or city-level law and policy action. Equally significant is the suite of authoritative modes of governing available to southern African cities, encompassing alternative or quasi-legal regulatory measures, and municipal strategic and spatial planning. Further, understanding the legal levers and barriers to collaborative urban climate governance in cities that involve public authorities and private actors alike is paramount.¹⁹¹ Another area to explore is the local-level impact of cities’ transnational engagement in climate change initiatives, especially those developed and funded by global city networks such as ICLEI and C40. Next, it is necessary to consider the potential

¹⁹⁰ See Pejic & Acuto, n. 16 above, p. 106.

¹⁹¹ For some views on this matter, see generally L. Pasquini et al., ‘Effective Collaborative Climate Governance in Urban Areas’, in F.J. Carrillo & C. Garner (eds), *City Preparedness for the Climate Crisis* (Edward Elgar, 2021), pp. 209–23.

impact of trends to recentralize governing power in southern Africa on the globalization of urban climate governance. Lastly, an exploration of the relationship between climate science, knowledge dissemination, and the priority that cities and other public authorities in the southern African region give to climate change adaptation and mitigation responses in local laws and policies is critical.