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## Background Paper

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# Exploring transformative urban climate adaptation in Harare, Zimbabwe

Transform | make a marked change in the form and nature of

Adapt | adjust to new conditions

Climate | atmospheric conditions prevailing in an area over a long period



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The *Transforming southern African cities in a changing climate* project aims to better understand the pathways to transformative adaptation in southern African cities as a response to climate change that promotes equality, inclusiveness and justice. The project is part of the Leading Integrated Research for Agenda 2030 in Africa (LIRA2030) programme, which seeks to increase the production of high quality, transdisciplinary, solutions-oriented research on global sustainability by early career scientists in Africa. LIRA2030 is funded by the Swedish Development Agency (Sida), run by the International Science Council (ISC) in partnership with the Network of African Science Academies (NASAC)

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## Introduction

Having reviewed the international literature on transformative adaptation (see accompanying Working Paper), we turn attention to the two southern African cities in which this LIRA 2030 project (*Transforming southern African cities in a changing climate*) is working to understand the potential for and makings of transformative adaptation: Durban in South Africa and Harare in Zimbabwe. This background paper presents the findings from reviewing published and grey literature on climate adaptation processes in the city of Harare, focussing particularly on addressing water-related hazards and impacts.

Findings from this review formed the foundation for engagements with stakeholders in case study cities (Durban and Harare). The LIRA2030 team acknowledges the gaps in available literature and the immense amount of knowledge that was still to be gained during the engagement phase.

## Climate adaptation context in Harare

The upper Manyame sub-catchment where the city of Harare lies is already facing erratic rainfall, prolonged droughts and an increase in mean temperatures (Masimba, 2016). Climate projections indicate decreases in precipitation and an increase in temperature in the next forty years (Masimba, 2016). A decrease in rainfall points to the need for coming up with adaptation measures to reduce the impacts of climate change (Masimba, 2016). Urban water supply is affected by droughts, and floods are also known to damage water infrastructure (World Bank, 2015). There is need for sustainable water development and management as water is an important resource for economic development and especially so in sectors such as health (World Bank, 2015).

There is a dearth of literature on direct efforts towards climate adaptation in Harare. Rather, there is an indication that there are efforts towards general improved service delivery in the city as opposed to climate adaptation per se. Rehabilitation of water infrastructure has been the main focus of projects in Harare (Mtisi and Prowse, 2012). This is mainly because the city of Harare operates using infrastructure which was established before independence in the 1980s to cater for 300,000 people and yet the population has continued to grow to 1,485,232 people (Nhapi, 2015). Water demand management has also been employed in order to improve efficiency (Mtisi and Prowse, 2012). However, demand continues to outstrip supply, and this is likely to be worsened by climate change (Mtisi and Prowse, 2012).

There have been a few initial efforts to develop sectoral and local climate adaptation agendas and associated actions within Zimbabwe, including in Harare. One notable example is a consultative process undertaken in November 2017 on the implementation of the National Adaptation Plan (NAP), with the aim of engaging local authorities to improve resilience to climate change (Mutingwende 2017). The workshop was spearheaded by the

Transforming southern African cities in a changing climate, Harare background paper (June 2019)

United Nations Development Programme (UNDP) Zimbabwe and the Ministry of Water and Climate. During the workshop, local authorities were urged to embrace climate change adaptation as the impacts of climate change will likely continue to add on to existing problems such as urbanisation (Mutingwende, 2017).

National institutions and discourses in Zimbabwe have been shaped by the growing global importance ascribed to climate change (Dodman and Mitlin, 2015). The Climate Change Department in the Ministry of Environment, Water and Climate, and the National task team have been put in place so that climate change issues can be fully addressed in the country. This led to the release of a National Climate Policy that addresses (1) Weather, Climate Modelling and Change, (2) Vulnerability and Adaptation, (3) Mitigation and Low Carbon Development and (4) Enablers/Cross Cutting Issues. The government also crafted the economic blueprint known as the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZimAsset), which established an enabling environment for sustainable economic empowerment and social transformation in Zimbabwe (Government of Zimbabwe, 2013). Within the ZimAsset there are different clusters that focus on development issues. The social services and poverty eradication cluster focuses on enabling the government of Zimbabwe to improve living standards of citizens (Government of Zimbabwe, 2013). ZimAsset recognises that there has been a decline in public services and deterioration of infrastructure therefore the social services cluster aims to improve access to water and sanitation in cities (Government of Zimbabwe, 2013).

## The need for transformative adaptation in Harare

The concept of transformative adaptation has not yet been used or applied in the context of Harare. To date, there does not seem to be any literature that overtly highlights the need for transformative adaptation in Harare. However, there is a small body of research work that finds the presence of a number of factors pointing to a need for a transformative approach to climate adaptation, including:

- weak institutional capacity amongst government agencies in Harare for municipal adaptation;
- livelihoods of the urban poor being threatened by limited infrastructure and public services, which makes them more susceptible to climate impacts;
- inequitable and political motivated practices of allocating resources and services to those willing to pay the most;
- the lack of adequate public participation in city decision making processes.
- the literature suggests a need to understand the political economy of development and climate change within both local and national contexts (Dodman and Mitlin, 2015; Chirisa et al., 2016; Masvaure, 2016).

Need for not just adaptation but transformative adaptation is also apparent in the city context of water resources and water service delivery challenges. Harare has over the years experienced increased occurrence of flooding, high temperatures, drought and pollution, all of which have not even been overtly addressed in a way to conform to the

principles of adaptation (Mupedziswa, 2011). By the year 2012, access to safe and reliable water and sanitation had declined to approximately 40-60% nationwide and Harare was supplying only half of its daily water demand which is 1200 Mega liters per day (Brown et al., 2012). In a survey of 22 sub-Saharan cities, water supply coverage in Harare had declined at a rate of 0.7% from the period of 2001 to 2012, and the city had 15 to 30% households which spent 30 minutes or more fetching water (Hopewell and Graham, 2014). This decline in water provision is closely linked to economic decline and illustrates how socio-economic status can affect adaptive capacity of a city (Muller, 2016).

In addition to general under-provision of water, Harare also suffered long periods of severe water shortages that resulted in cholera outbreaks in 2008 and 2009, said to have been the highest ever recorded in Africa (IPCC, 2014). During that period there were 98,585 reported cases and an estimated 4,000 deaths (Guneo et al., 2017). From October 2011 to January 2012, there were 1,078 reported cases of typhoid in Harare linked to use of contaminated water from unprotected sources. In January 2017, the Health and Child Care Ministry reported 200 cases of typhoid (Daily News, 2017).

There have been few if any deliberate efforts towards climate adaptation in Harare. Rather, the focus is on quelling the negative trends in basic service delivery and economic decline. Harare is said to have evolved from being a 'bread basket' to a 'basket case' and the challenges that the city is currently facing, coupled with climate change seem to be catastrophic (Brown et al., 2012).

## Investigating transformative adaptation in Harare with a focus on water provision

Due to the water supply challenges in Harare, many people have resorted to using boreholes and wells for water supply. This has implications on depleting groundwater supply and creating health risks, as some of the wells are not protected and thereby water gets contaminated. An increase in the occurrence of extreme weather events due to climate change coupled with decision-making challenges is likely to exacerbate the water and health problems within the city.

There is a multiplicity of challenges to potable water service delivery in Harare; some of which are attributed to politics, decision making and policy implementation (Mupedziswa, 2011; Muller, 2016; Muchadenyika and Williams, 2016). One such example was the decision to move water management powers from the City of Harare to the Zimbabwe National Water Authority (ZINWA) which contributed to the devastating cholera outbreak of 2008 and 2009 (Cuneo et al., 2017). The severity of the outbreaks were attributed to poor governance, limited resources and poor infrastructure (Murray et al., 2012; Niang et al., 2014). Chigonda (2011) states that the ZINWA Act lacks clarity on the role of ZINWA in relation to urban water management and there is no other organization that oversees the operation of this authority. The lack of evaluation of the performance of ZINWA leaves room for loopholes and mistakes that are not often rectified. Chinamora (2002) and Musingafi

(2013) observed that there is fragmentation and lack of coordination in the water and environment legislation of Zimbabwe. The national Water Policy is currently not being fully implemented, which is attributed to lack of strategic action planning and resourcing (Mapedza et al., 2016).

More specifically, poor water and sanitation service delivery in Harare has been attributed to a combination of severe infrastructure deficit and institutional weaknesses of the legislation, institutional design, governance structures, and patronage party politics in water and sanitation management systems (Musemwa 2012; Muzondi 2014; Maodzwa 2015). The government of Zimbabwe cancelled debts owed by water users to urban municipalities ahead of the 2013 national elections and this decision affected the much-needed revenue generation for maintenance of infrastructure and supply of chemicals (Muller, 2016). The city of Harare lacks proper community participation platforms in the budget formulation process and as a result there is no accountability, openness, responsiveness and effectiveness of public participation (Masvaure, 2016). Public participation in decision making is certainly key for transformative adaptation when one considers the importance of first-hand knowledge for decisions to address social injustices. The municipality lacks the financial capacity to supply water as it has in the past received grants from the national government, which it no longer receives (Muchadenyika and Williams, 2016). This was also evidenced by failure of Harare City Council to properly purify water which resulted in protests against poor water quality in December 2017. The Council claimed that this was as a result of shortage of purification chemicals as it could not acquire foreign currency. As such, decentralization reforms have been considered futile (Muchadenyika and Williams, 2016).

Essentially, decision making processes which consider climate variability and change have not been explored in the City of Harare. There is a dearth in literature on climate-related risks and vulnerabilities, including adaptation of the water sector of the city. Most existing studies have focused on climate risks to agricultural systems in rural Zimbabwe and not on urban climate issues (Mano and Nhemachena 2007; Mubaya 2009; Muchapondwa and Sterner 2012; Jiri et al 2013; Ndebele-Murisa and Mubaya 2015; Mubaya and Ndebele-Murisa 2017). While not focussing on urban issues, this literature does highlight that climate change does not receive adequate emphasis in terms of policy and resource allocation as it is treated as a secondary issue in Zimbabwe.

## Conclusion

This review suggests a strong need for transformation in order to deal with the development challenges and climate impacts experienced in the city, and yet points to the governance and resource constraints that make transformation so difficult to achieve. Because there is not yet an urban climate adaptation agenda in Harare, in either the policy, planning or research domains, an investigation into transformative adaptation needs to engage with the development priorities and governance realities, in the case of this project with a focus on water supply and management, and explore with those involved and affected how climate risks impact on water supply systems, what plausible future scenarios are, and what might

be involved in and required to increase the climate resilience of Harare. The important yet difficult aspect of exploring the potential for transformative adaptation in Harare is to navigate all the sensitivities and complexities associated with the current political, economic and infrastructural constraints, to imagine alternative futures while paying close attention to what it might entail to unlock pathways from the current realities to preferred futures, albeit that these may be contested.

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