# POLICY BRIEF | LUSAKA
## WATER SUPPLY & SANITATION

FRACTAL
FUTURE RESILIENCE FOR AFRICAN CITIES AND LANDS

## INTRODUCTION

A majority of the population in Lusaka does not have access to clean and safe water. The low income and unplanned areas, where more than half of the city's population reside, are serviced by kiosks. In most cases these kiosks receive intermittent supply from the utility, which leaves a great number of people still relying on shallow wells. These areas are the most affected in terms of short supply and limited access to clean and safe water. These areas are also characterized by low access to improved sanitation services (e.g. conventional sewerage system, improved on site sanitation infrastructure like septic tanks, and ventilated improved pit latrines).

The population of Lusaka has nearly tripled since the independence era and is estimated at 2.4 million. It is expected to double by 2035 [1]. Lusaka is one of the fastest growing cities in Africa - between 2010 and 2015 its annual rate of population growth was 4.15%. Increased population means more demand for water supply. Expanding urban areas will also be environmentally affected by climate change and the increased unpredictability of extreme weather events. The larger population results in land use changes, which require more water and increase the interaction of human beings with natural recharge areas. The inadequate quality and low level of reliability from surface water resources has led the Department of Energy and Water Development to consider the development of groundwater supply as a useful future option. In Lusaka, borehole drilling and abstraction of Lusaka's groundwater resources has increased due to population growth, economic development and variable rainfall.

Lusaka's current water demand is exceeding what the Lusaka Water and Sewerage Company (LWSC) and available water resources are formally able to supply [2] - a lack of water treatment and distribution infrastructure means that the service provision is inadequate. The formal water supply comes from the Kafue River and the Lusaka groundwater aquifer and is treated at the Iolanda water treatment works. However, the age of the facilities reduces the working ratio of the water plant. There is a lack of capital for expansion of infrastructure that could improve the quantities and the hours of service. Lack of funding also threatens groundwater resources because the sewerage infrastructure is inadequate to meet the needs of Lusaka's growing population. Furthermore, over abstraction of surface and groundwater resources poses a threat to sustainability, and pollution of these resources can affect entire ecosystems - sometimes worsened by poorly managed wastewater and solid waste removal. Finally, though groundwater is slightly safer because of soil filtration, in Lusaka it is only disinfected through chlorination with no filtration or sedimentation undertaken.

## KEY MESSAGES

- It is every citizen's job to conserve and use water sparingly for sustainable use.
- There is a need to expand the infrastructure and hours of service delivery.
- Climate change and weather variability is threatening water supply in Lusaka.
- Land use and lack of proper sewerage infrastructure is threatening groundwater supply.
- Low coverage of conventional sewerage systems and lack of standard on site sanitation is also threatening groundwater supply.
- Most of the city's population lives in peri urban areas and uses traditional and unsafe pit latrines, which further escalate the risks.
- 60% of Lusaka's population is dependent on domestic boreholes or shallow wells and is not serviced by the water utility company.

- The trade-offs between the water co-dependent sectors of energy and food within Lusaka and the Kafue Flats calls for effective water governance.

## POTENTIAL RISKS AND IMPACTS

- Potential reduction in groundwater quantities due to reduced rainfall negatively affecting access to water supply.
- Health risk of drinking contaminated or untreated water is affecting the productivity of the city.
- Most of the areas with poor access to adequate water supply, have women and children as the most vulnerable as they are the ones responsible or more likely to spend time collecting water.
- Increased vulnerability to loss of livelihood and education due to time spent collecting water.
- High financial cost implications due to having to mitigate against or contain disease outbreaks.
- A lack of coordination, and institutions being fragmented, will slow down the implementation of policy, and will create undefined mandates making it difficult to enforce existing regulations that support the management of water resources.

## AFFECTED AREAS IN THE CITY

The entire city is at risk. Some parts are serviced for water delivery but not for sewerage. This leads to high potential for contamination of water supply. Particularly vulnerable are the low income households living in peri urban areas because they cannot afford alternative interventions. The city's water offtake from the Kafue Flats will be under pressure as the population continues to grow. These pressures will be worsened if the volume of non-revenue water does not significantly decrease and infrastructure is not expanded. Migration to Lusaka and the Kafue Flats region, whether climate or socio-economically related, will further stress the water resources given the all of the competing uses.

Iolanda Treatment Plant (left) and Shaft 5 (right)


Water kiosk (left) and Lumumba Water Reservoir (right), which is one of the tanks supplied by Shaft 5 | Photo: Peoples Process on Poverty and Housing

## RECOMMENDATIONS FOR FUTURE ACTION

- Increase capacity and amount of water abstracted, treated and available for use and consumption by Lusaka water and sewerage.
- Increase and improve access for people getting clean drinking water in peri urban areas where most of the people in the city of Lusaka reside at affordable rates.
- Establish and enforce standards of en suite sanitation through a building code enacted by LCC.
- Access to sufficient, good quality water should be treated as a right.
- Conservative use of water at a household level because demand for increased abstraction is based on increased usage, and there is limited supply.
- Accurately assess the current surface water and groundwater potential.
- Integrate climate adaptation into national plans and policies to mainstream adaptation into the development context. The mandates of relevant institutions need to be strengthened to improve water management.
- A nexus approach to adaptation is important for finding solutions that are applicable in the water, and water-dependant sectors, to meet demands without compromising sustainability.

**References**

[1] Central Statistical Office (CSO) Zambia (2011) **2010 Census of population and housing**

[2] Beekman, H. (2016) **Water Risks and Solutions Assessment for the Lusaka Water Security Initiative - Zambia Situation Analysis** **Water Risks and Solutions Assessment for the Lusaka Water Security Initiative - Zambia Situation Analysis** Lusaka, Zambia

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