

Kigali: In Mwendo, a suburb of Rwanda's Capital Kigali, Fatuma Mukamudenge has been struggling to bring water home from neighboring Nyabarongo river, which is about 45 minutes away on foot from her house.

As the domestic water demand for drinking, cooking, washing, laundering, and other household functions has grown in many of Kigali's suburbs in recent months, the mother of five was pushed to go to the river earlier in the morning to avoid greater hassle of long lines and waiting local residents later in the day.

"There has been water scarcity with local residents struggling to cope with an acute water shortage by using swamp water," Mukamudenge said.

Local residents used to line up at a few designated water collection points for their daily water needs. But as the water supply in some suburbs areas like Mwendo has became critical with drinkable taps slowly running dry, residents started relying on neighboring streams and few established boreholes for water.

In many city suburbs such as Mwendo, the water shortage has been linked partially to huge water losses caused by leakages due to an old distribution network and illegal connections.

To address this shortage, authorities are planning to establish two major reservoirs with a capacity of 2,000 and 10,000 cubic meters in a move to increase supply in the urban areas.

The government also plans to replace pipes with small diameter, which affect pressure as the old pipes of 200 diameters become overwhelmed and cannot sustain the current demand of water, according to officials from the Government's Water and Sanitation Corporation (WASAC)

### ***Urban population growth***

**Official statistics** indicate that Kigali, the capital city of Rwanda, is expected to double its population from 1.13 million people in 2012 to two million by 2020.

Municipality authorities and environmental experts agree that population growth and the expansion of the city have burdened the existing basic water infrastructure.

Some major treatment facilities which are currently serving urban residents in the capital city Kigali include Nzove I, which has been pumping 40,000 cubic meters per

day and was upgraded to produce 65,000 cubic meters, and Nzove II, which was upgraded from 25,000 to 40,000 cubic meters per day by December last year. The urban population of Rwanda, which represents 17.3 percent of the general population, has been increasing by 3.6 percent annually, but the water supply has not scaled up correspondingly, according to official statistics.

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A recent study on water quality conducted by the [\*\*Rwanda Environmental Management Authority\*\*](#) (REMA) confirmed that water quality is an issue in the country.

Between 2005 and 2020, water demand has doubled in Kigali and more than doubled for the semi-urban settlements, according to official estimates.

Without established data and standardized city indicators on climate change, it has become more challenging for Kigali city and other selected secondary urban areas to cope with the greater pressures on the availability of water resources which is directly tied to population growth.

Reports by the Rwanda Housing Authority (RHA) indicate that 48,000 households with occupants comprising mainly of low income earners who do not have the resources to rent decent houses are still established in restricted high-risk zones, which are barred from accessing the municipal water supply.

While only a tiny fraction of residents in Kigali have taps connected to the water system, official figures indicate that 70 percent of urban residents can access water in fewer than 220 meters.

Walking long distances to fetch water from natural springs remains common, and health consequences from waterborne diseases are a continuing problem, experts said.

### ***River flooding burdens water treatment facilities***

Climate change has also been a major contributor to the water supply problem, said Behailu Shiferaw, an expert working with WaterAid, an international NGO working to promote access to clean water, sanitation and hygiene under its partnership with

the Government of Rwanda.

With the population rapidly shifting from the rural areas toward the cities looking especially for decent employment, some suburb areas facing major growth have became hotspots of natural resources degradation.

Rwanda is renowned for its massive rivers flowing throughout the country. Nevertheless, as climate change has caused heavy rains and increasing floods, the existing water treatment plants have been overburdened by large quantities of muddy water, which increases treatment costs, according to Aimé Muzola, the Chief Executive Officer of WASAC.

In recent months, the Nyabarongo River upper catchments – Kigali's main source of water – have experienced heavy flooding, reducing production at Nzove and Kimisagara water treatment plants by nearly half.

“Because Nyabarongo upstream and catchments are not protected enough against erosion, soil and mud are washed away by flooding into Nyabarongo river which becomes too muddy,” Muzola said. “This problem has affected water supply for a big part of (the) City of Kigali.”

The latest statistics released by [\*\*Rwanda Utilities Regulatory Authority\*\*](#) (RURA) show that despite the number of water subscribers in urban areas having increased considerably in recent years, the quantity of water produced declined.

**[Available figures](#)** indicate that at least 120,000 cubic meters of water are needed every day to supply the growing population in the city of Kigali as of December 2019. The current capacity is 90,000 cubic meters.

### ***Cities master plans***

With the current reform agenda for the water supply in the city, Rwanda has committed itself to reaching very ambitious targets to achieve 100 percent coverage of urban water supply by 2020.

As traditional water supply systems in urban areas are typically unable to meet current demand, municipality authorities in Kigali have adopted a new water supply master plan this year that is expected to facilitate budgeting for increasing access to safe water among the population by 2021.

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**At a time when residents in Kigali have continued to experience water shutoffs for large parts of the day, the Rwandan government and partners announced this year the investment of about USD \$300 million to address the water shortage over the next three years.**  **Created by Code for Africa ©**

The [\*\*new water supply master plan\*\*](#), which is being implemented in collaboration with development partners such as Japan International Cooperation Agency (JICA) and the African Development Bank (AFDB), seeks to ensure the quantity of water needed by the urban population is met in conformity with the topographic structure in residential areas and required investment in the critical places in Kigali and other secondary cities.

The government has so far identified six urban settings to become green secondary cities: Huye (south), Muhanga (central south), Nyagatare (northeast), Rubavu (northwest), Musanze (north) and Rusizi (southwest).

Parfait Karekezi, the expert in charge of green and smart city development at the government's Rwanda Housing Authority, explained that the major focus of these new interventions to promote secondary cities is mainly the provision of affordable housing with due regard to adequate water and sanitation facilities for local residents.

Karekezi noted that that current efforts supported by the government and various stakeholders are also oriented toward helping local authorities in secondary cities adopt a set of housing standards with appropriate design for some parts such as windows to provide energy savings in electric lighting.

"One of these new approaches with secondary cities master plans seeks to address negative impacts of climate change on drinking water treatment plant design and operation," Karekezi said.

According to Rwandan officials, this master plan will help Rwanda establish green infrastructure, which is by far the cheaper option to fast track the delivery of water to all urban residents.

Now, Jacqueline Mukamusoni, a mother of three residing in Mageragere, another suburb of Kigali city in which dwellers have been complaining about increasing water shortages, said that because of the physical strain of fetching water from the

neighboring river, she has suffered back problems for the past three years.

“Many local residents are tired of hearing promises about bringing water to the village,” she said.

Every day, Mukamusoni has to go back and forth two or four times, down into the valley to the neighboring Nyabarongo River and back, each time with around 15 litres of water on her head.

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