

# Lake Rukwa Basin Water Board

## Hydrological Bulletin

### November 2023

#### 1. Overview

The hydrological situation in the Rukwa Basin during November 2023 was characterized by an increase in flow in some catchments as the Basin received rainfall in the reporting period.

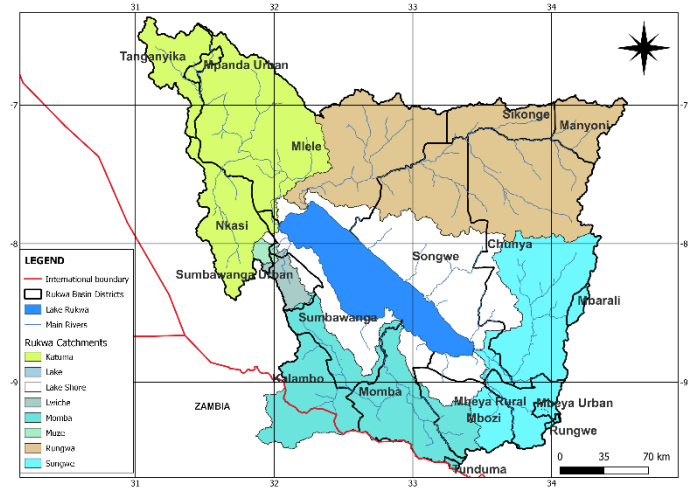
Figure 2 indicates that 98% of the area located in the Basin received less rainfall compared to the long-term average (**Figure 3**)

The flow analysis situation was carried out on Songwe catchment using the data recorded from the reference gauging stations which are Nzovwe River at Great North Road (Mbeya), Myovizi at Great North Road (Mbozi) and Ruanda River at Great North Road (Mbozi).

Figures 4 show the comparative hydrographs for the month of November 2023 with previous years.

Figure 5 shows Lake level fluctuations in November 2023 compared to previous years.

Figure 6 shows Dam level fluctuations in November 2023 compared to previous month.

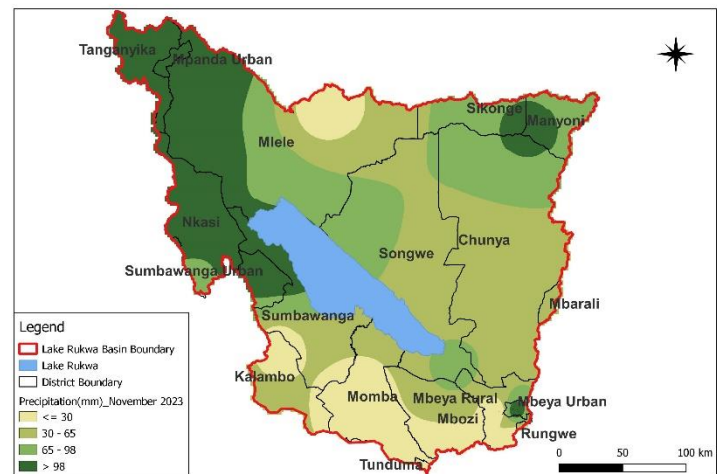


**Figure 1: Catchments of Lake Rukwa Basin**

#### 2. Rainfall Trend in the Basin

The monthly distribution of rainfall over the basin is characterized by unimodal rainfall patterns (End of November to Mid of May).

In November 2023, all parts of the basin were received less rainfall (**Figure 2**) with a decrease 47.35% compared with the long-term average 1985-2021(**Figure 3**).



**Figure 2: Rainfall variation in November 2023**

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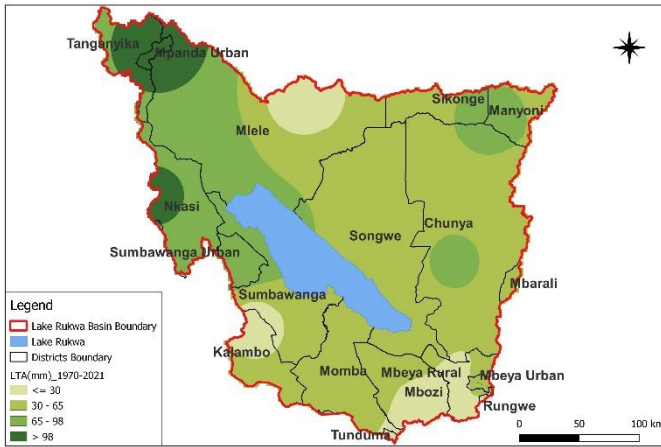


Figure 3: Long-term average rainfall November

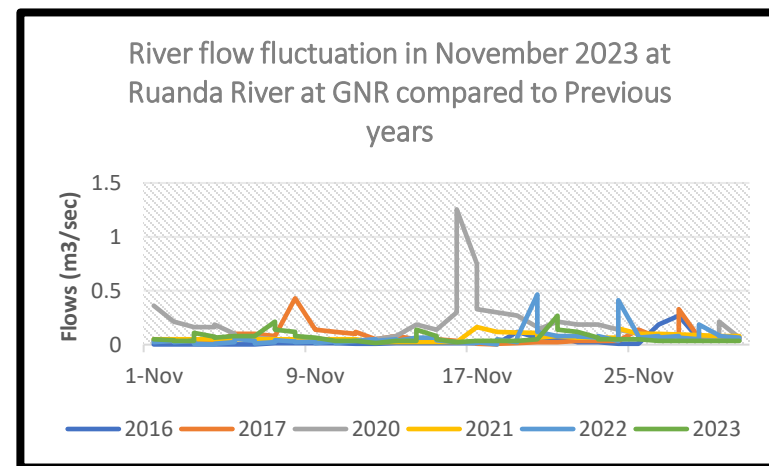
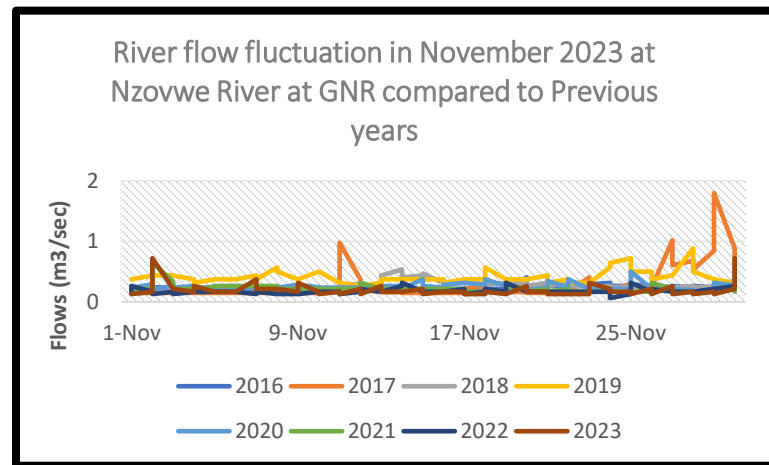
### 3. Flows in Rivers

At all stations representing the mentioned catchments above, the hydrological situation during the month of November 2023 was characterized by the ongoing decrease in river levels compared to previous month due to shortage of rainfall in the reporting period for most parts of the Basin.

At Nzovwe station, the maximum and minimum daily flow observed was 0.723m<sup>3</sup>/s and 0.129m<sup>3</sup>/s respectively in November 2023. The monthly mean flow which passed across the station was 0.197m<sup>3</sup>/s.

At Ruanda station, the maximum and minimum daily flow observed was 0.268 m<sup>3</sup>/s and 0.015 m<sup>3</sup>/s respectively in November 2023. The monthly mean flow which passed across the station was 0.061 m<sup>3</sup>/s.

At Myovizi station, the maximum and minimum daily flow observed was 5.321m<sup>3</sup>/s and 0.742m<sup>3</sup>/s respectively in November 2023. The monthly mean flow which passed across the station was 1.256m<sup>3</sup>/s.

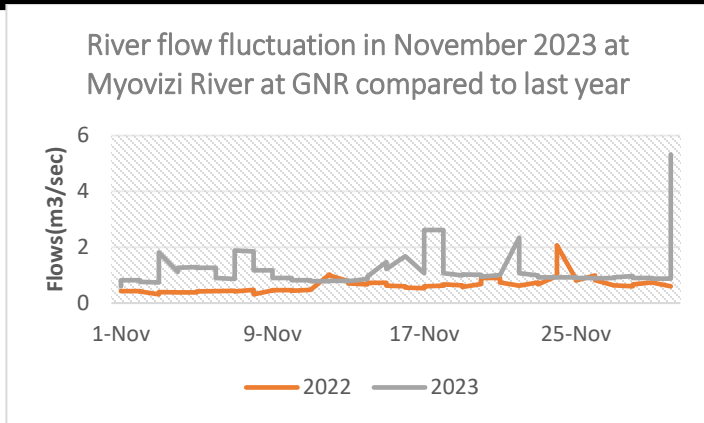




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**Figure 4: River flows fluctuation**

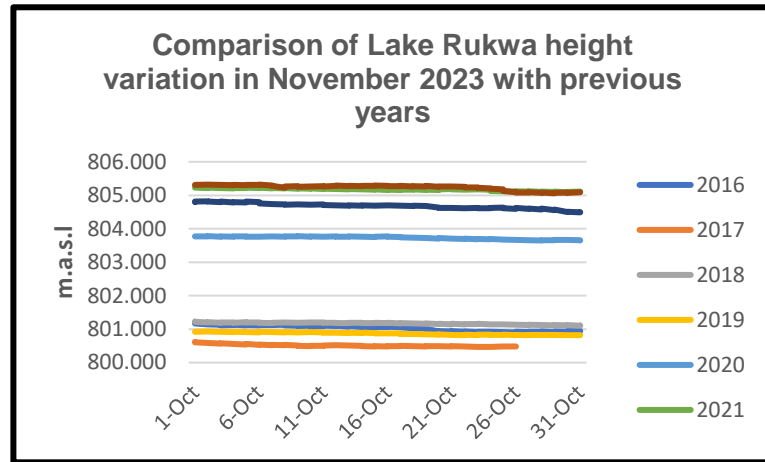
#### 4. Water level in Lake Rukwa

The main source of water for Lake Rukwa is the main rivers that depend on rainfall for its survival, the lake height for November 2023 is seen to be high compared to previous years as indicated in **Figure 5**.

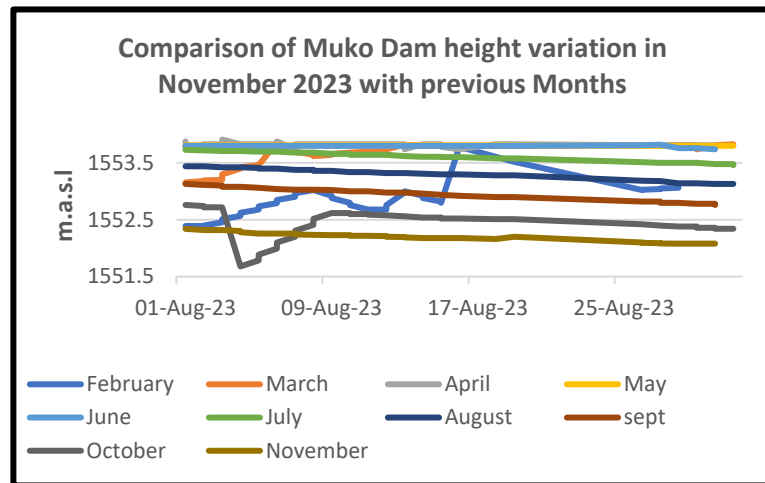
#### 5. Water level in Muko Dam

Muko Dam is one of the reservoirs in the Basin which was constructed January 2023 for the purpose of storing water for various human uses such as domestic and other commercial uses.

The source of water for Muko Dam is the river and streams that depend on rainfall for its survival, the Dam height for November 2023 is seen to be low compared to previous months as indicated in **Figure 6**.



**Figure 5: Water level in Lake Rukwa at Mbangala**



**Figure 6: Water level in Muko Dam at Mengo Village**

#### Conclusion

The hydrological situation from November 1<sup>st</sup> to 30<sup>th</sup>, 2023 is characterized by the continued fall in the water level in all compartments of the Momba, Songwe, and other Catchments, leading to a rapid decrease in flows on the main course of the rivers and its tributaries. It is recommended to continue to take precautions for the rainy season which we are about to start soon by leaving the areas of waterways and flood areas to avoid any disaster.



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