

# Lake Rukwa Basin Water Board

## Hydrological Bulletin

### January 2023

#### 1. Overview

The hydrological situation in the Rukwa Basin during January 2023 was characterized by the ongoing increase of flow in all catchments as the Basin received more rainfall in the reporting period as indicated in Figure 2.

Figure 2 indicates that all the regions located in the Basin received more or equal rainfall compared to the long-term average.

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

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

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

Figure 6 shows the groundwater level from three observation boreholes located at Songwe catchment.

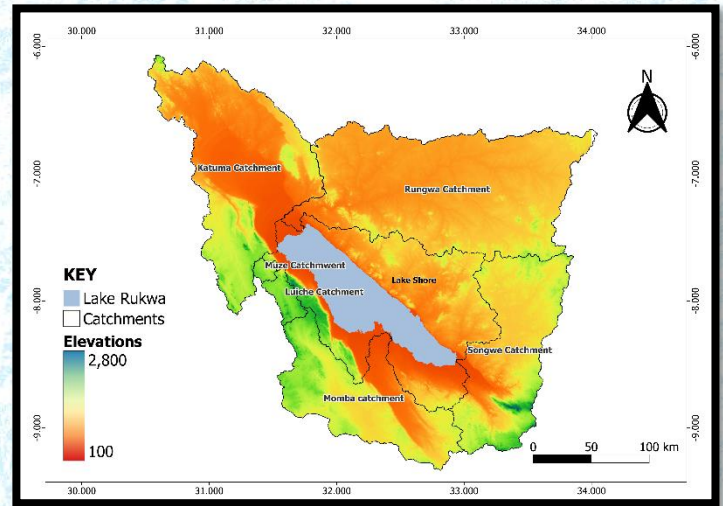


Figure 1: Catchments of Lake Rukwa Basin

#### 2. Rainfall Trend in the Basin

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

In January 2023, most parts of the basin received rainfall (Figure 2) with an increase of 0.4% compared with the long-term average (Figure 3).

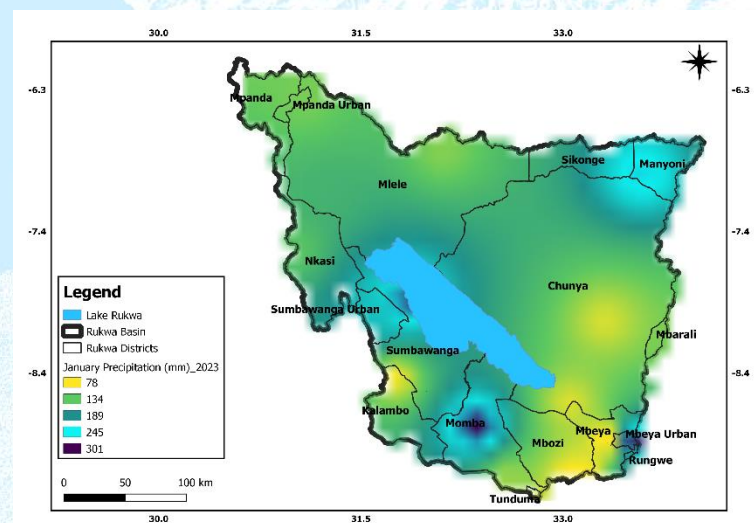


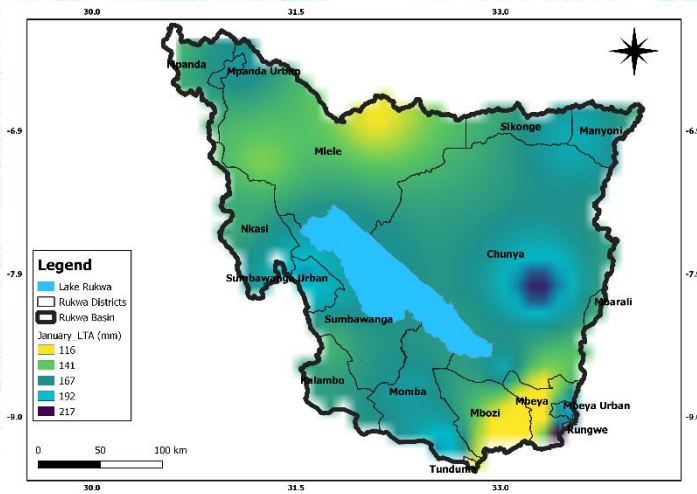
Figure 2: Rainfall variation in January 2023



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**Figure 3: Long-term average rainfall distribution for January**

### 3. Flows in Rivers

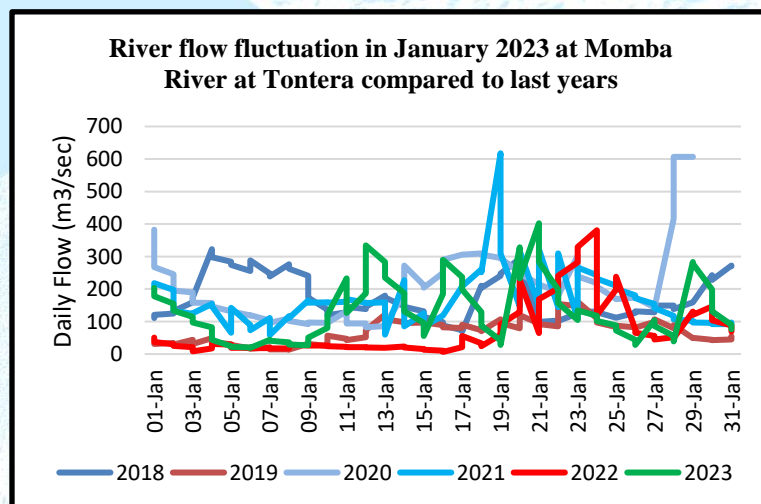
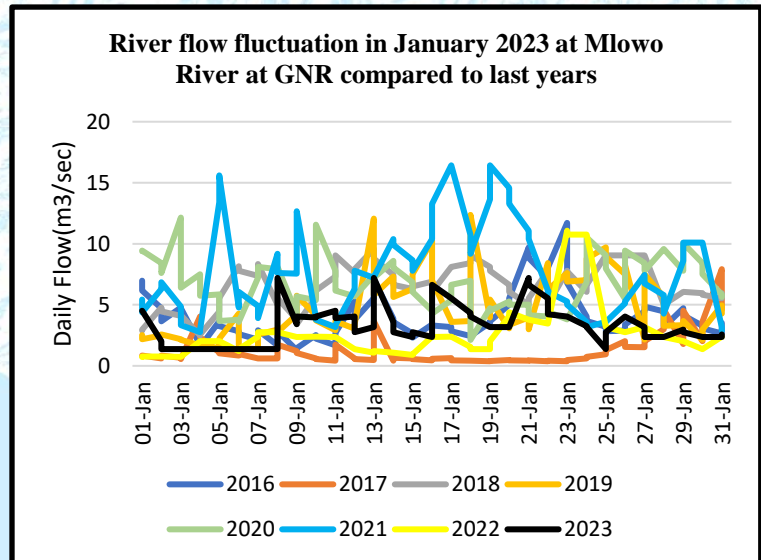
At all stations representing the mentioned catchments above, the hydrological situation during the month of January 2023 was characterized by the ongoing increase in river levels due to ongoing of the rainfall season.

At Mlowo station, the maximum and minimum daily flow observed was 7.202m<sup>3</sup>/s and 1.373m<sup>3</sup>/s respectively in January 2023. The monthly mean flow which passed across the station was 3.297m<sup>3</sup>/s.

At Momba station, the maximum and minimum daily flow observed was 402.329m<sup>3</sup>/s and 19.170m<sup>3</sup>/s respectively in January 2023. The monthly mean flow which passed across the station was 132.530m<sup>3</sup>/s.

At Ruanda station, the maximum and minimum daily flow observed was 2.722m<sup>3</sup>/s and 0.208m<sup>3</sup>/s respectively in January 2023. The monthly mean flow which passed across the station was 0.484m<sup>3</sup>/s.

At Myovizi station, the maximum and minimum daily flow observed was 17.984m<sup>3</sup>/s and 1.819m<sup>3</sup>/s respectively in January 2023. The monthly mean flow which passed across the station was 3.614m<sup>3</sup>/s.







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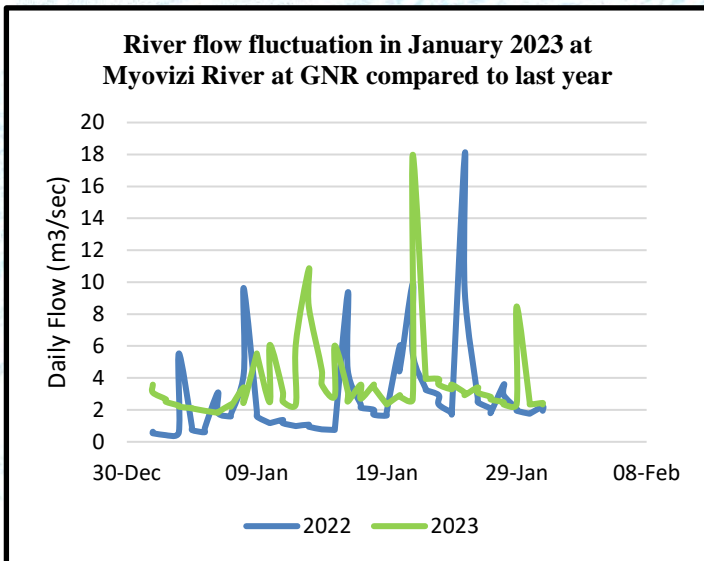
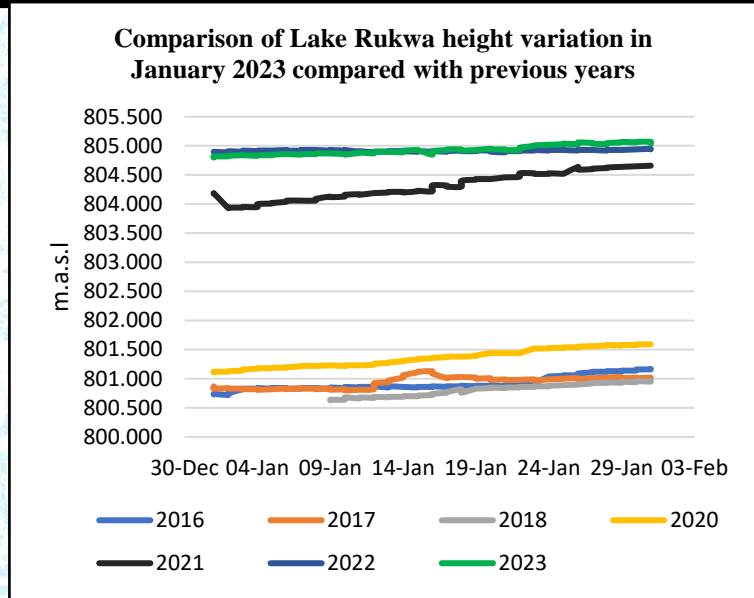
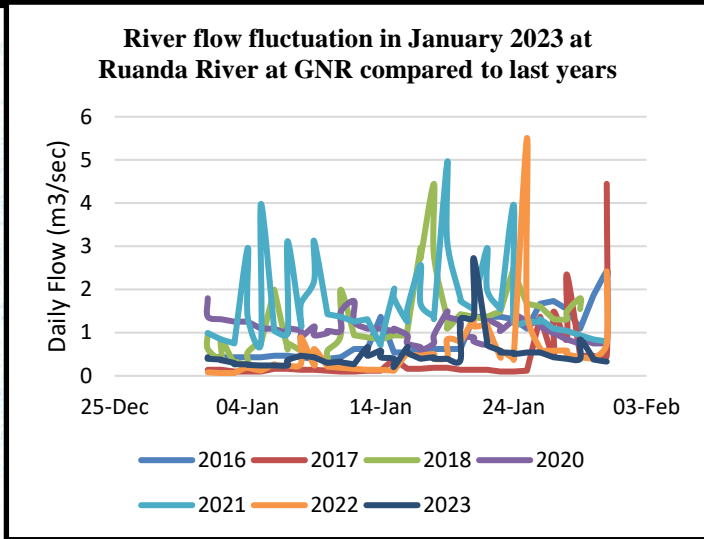


Figure 5: Water level in Lake Rukwa at Mbangala

#### 5. Groundwater levels

The observation borehole water level recorded in January 2023 was noted to increase due to rainfall season as indicated in Figure 6.

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 January 2023 is seen to be higher compared to 2021 but seen to be the same as compared to 2022 as indicated in Figure 5.

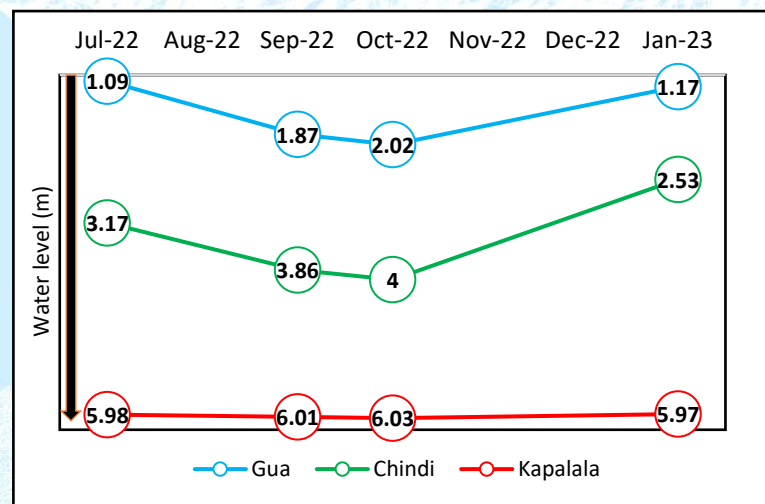


Figure 6: Groundwater level below ground surface





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#### Conclusion

The hydrological situation from January 1<sup>st</sup> to 31<sup>st</sup>, 2023 is characterized by an increase in the water level in all compartments of the Momba, Songwe, and other Catchments, leading to an increase in flows on the main course of the rivers and its tributaries.