

# Lake Rukwa Basin Water Board

## Hydrological Bulletin

### February 2023

#### 1. Overview

The hydrological situation in the Rukwa Basin during February 2023 was characterized by the decrease of flow in all catchments as the Basin received less rainfall in the reporting period as indicated in Figure 2.

Figure 2 indicates that all the regions located in the Basin received less rainfall compared to the long-term average (Figure 3)

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 February 2023 with previous years.

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

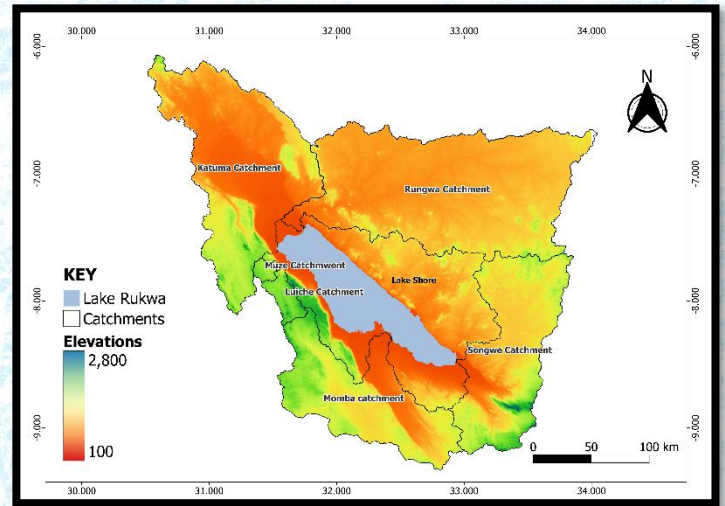


Figure 1: Catchments of Lake Rukwa Basin

#### 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 February 2023, most parts of the basin received less rainfall (Figure 2) with a decrease of 29% compared with the long-term average (Figure 3).

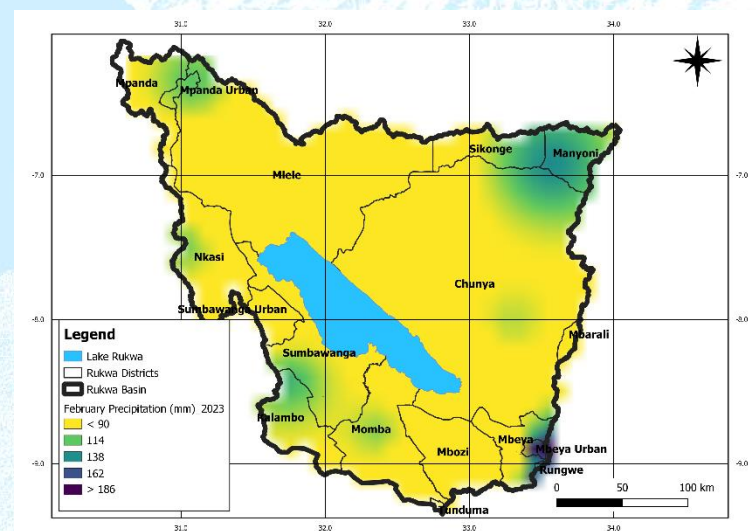
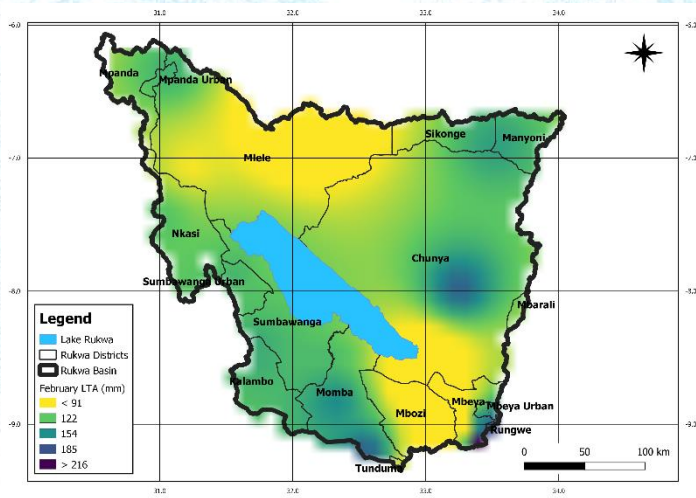


Figure 2: Rainfall variation in February 2023

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

### 3. Flows in Rivers

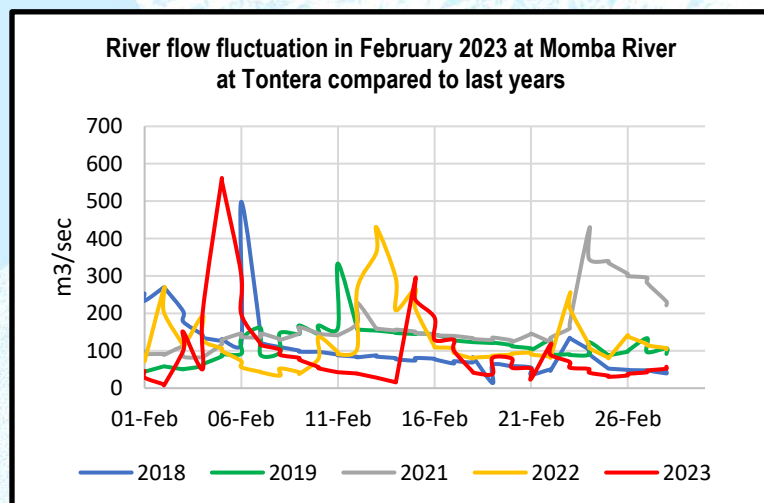
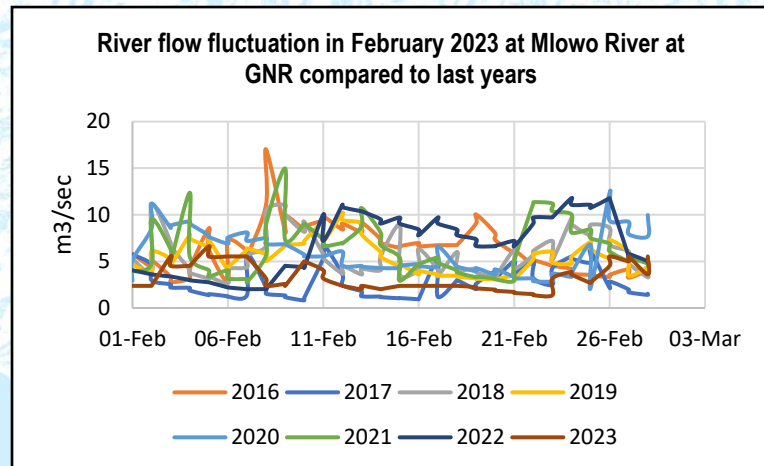
At all stations representing the mentioned catchments above, the hydrological situation during the month of February 2023 was characterized by the ongoing decrease in river levels due to shortage of rainfall in the reporting period for most parts of the Basin.

At Mlowo station, the maximum and minimum daily flow observed was 6.624m<sup>3</sup>/s and 1.373m<sup>3</sup>/s respectively in February 2023. The monthly mean flow which passed across the station was 3.291m<sup>3</sup>/s.

At Momba station, the maximum and minimum daily flow observed was 562.126m<sup>3</sup>/s and 7.254m<sup>3</sup>/s respectively in February 2023. The monthly mean flow which passed across the station was 96.475m<sup>3</sup>/s.

At Ruanda station, the maximum and minimum daily flow observed was 2.134m<sup>3</sup>/s and 0.213m<sup>3</sup>/s respectively in February 2023. The monthly mean flow which passed across the station was 0.496m<sup>3</sup>/s.

At Myovizi station, the maximum and minimum daily flow observed was 12.430m<sup>3</sup>/s and 1.700m<sup>3</sup>/s respectively in February 2023. The monthly mean flow which passed across the station was 3.586m<sup>3</sup>/s.





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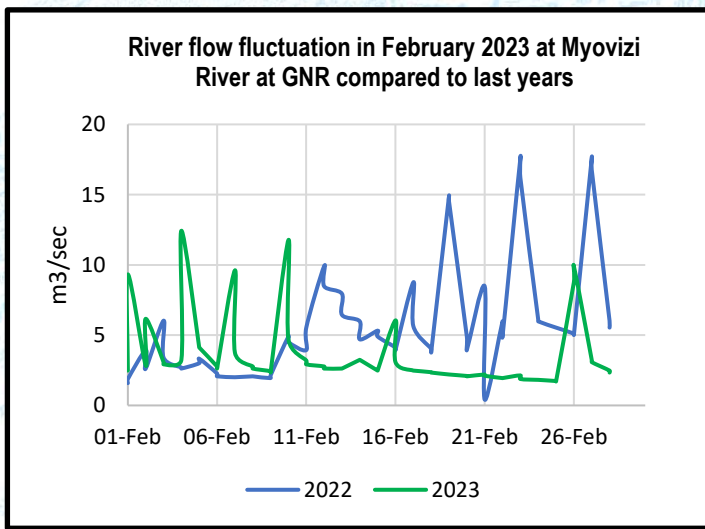
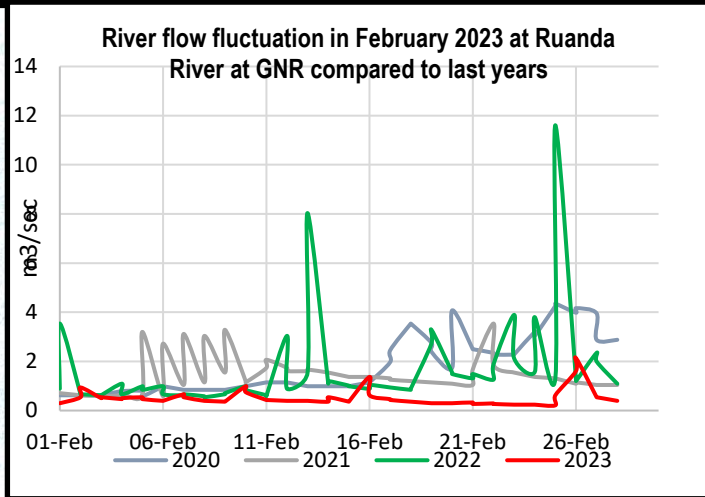


Figure 4: River flows fluctuation

#### 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 February 2023 is seen to be higher compared to previous years as indicated in **Figure 5**.

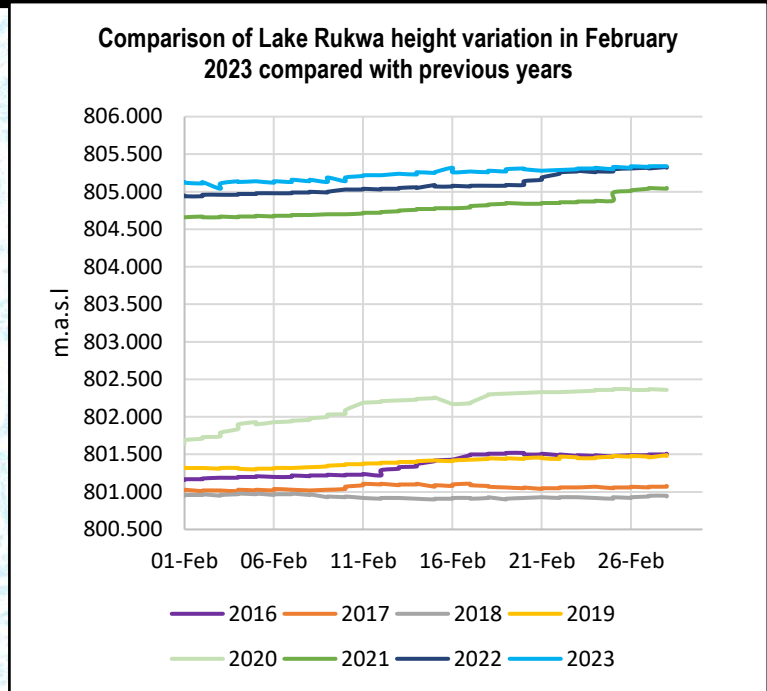


Figure 5: Water level in Lake Rukwa at Mbangala

#### Conclusion

The hydrological situation from February 1<sup>st</sup> to 28<sup>th</sup>, 2023 is characterized by decrease in the water level in most of observed rivers in respective catchments, leading to decrease in flows on the main course of the rivers and its tributaries.