

Lake Rukwa Basin Water Board

Hydrological Bulletin

September 2023

1. Overview

The hydrological situation in the Rukwa Basin during September 2023 was characterized by a decrease in flow in all catchments as the Basin received much less rainfall in the reporting period.

Figure 2 indicates that 82% 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 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 September 2023 with previous years.

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

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

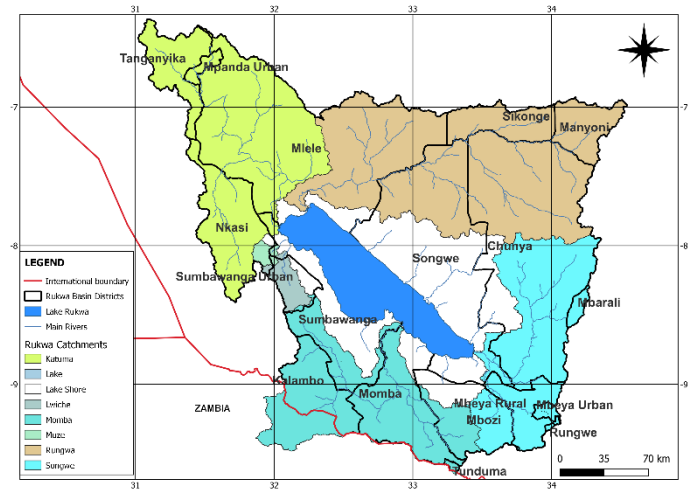


Figure 1: Catchments of Lake Rukwa Basin

2. Rainfall Trend in the Basin

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

In September 2023, all parts of the basin less rainfall were received (**Figure 2**) with a decrease of 60.9% compared with the long-term average 1985-2021 (**Figure 3**).

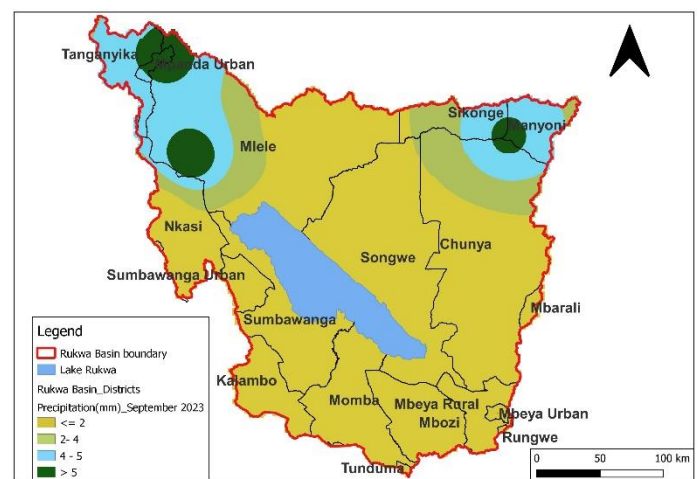


Figure 2: Rainfall variation in September 2023

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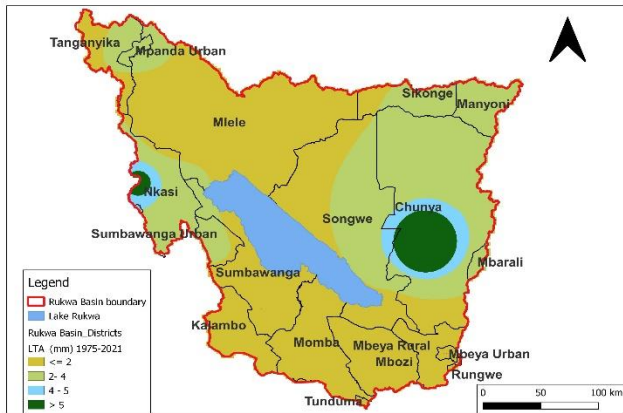


Figure 3: Long-term average rainfall distribution for September

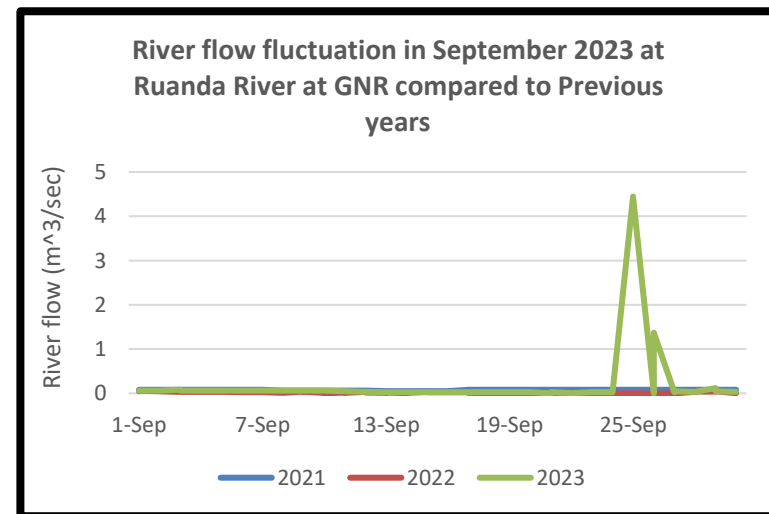
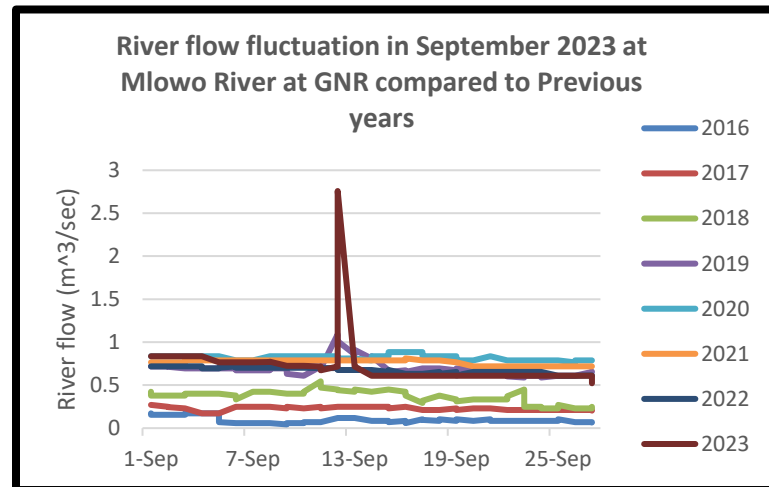
3. Flows in Rivers

At all stations representing the mentioned catchments above, the hydrological situation during the month of August 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 Mlowo station, the maximum and minimum daily flow observed was 2.759m³/s and 0.522m³/s respectively in September 2023. The monthly mean flow which passed across the station was 0.723m³/s.

At Ruanda station, the maximum and minimum daily flow observed was 4.447m³/s and 0 m³/s respectively in September 2023. The monthly mean flow which passed across the station was 0.211m³/s.

At Myovizi station, the maximum and minimum daily flow observed was 0.835m³/s and 0.534m³/s respectively in September 2023. The monthly mean flow which passed across the station was 0.659m³/s.





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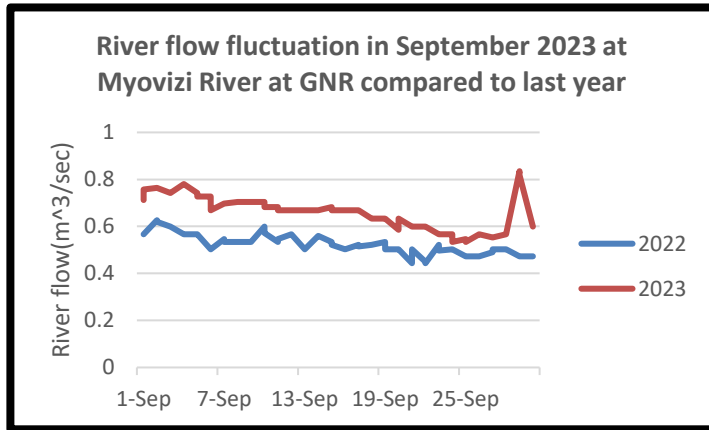


Figure 4: River flows fluctuation

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 September 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 September 2023 is seen to be low compared to previous months as indicated in **Figure 6**.

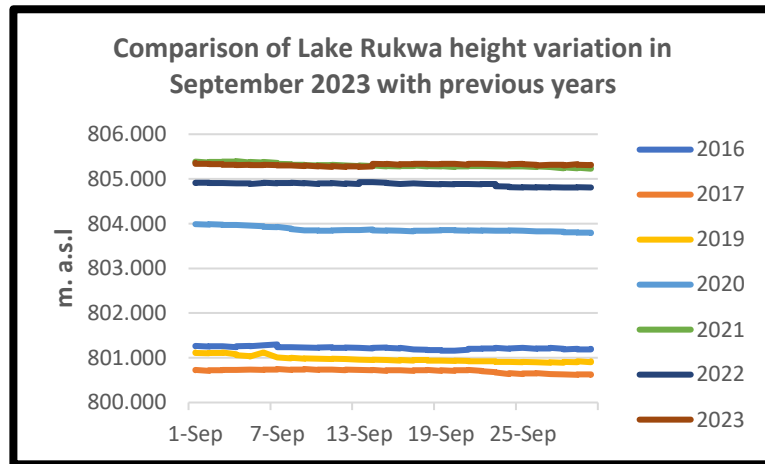


Figure 5: Water level in Lake Rukwa at Mbangala

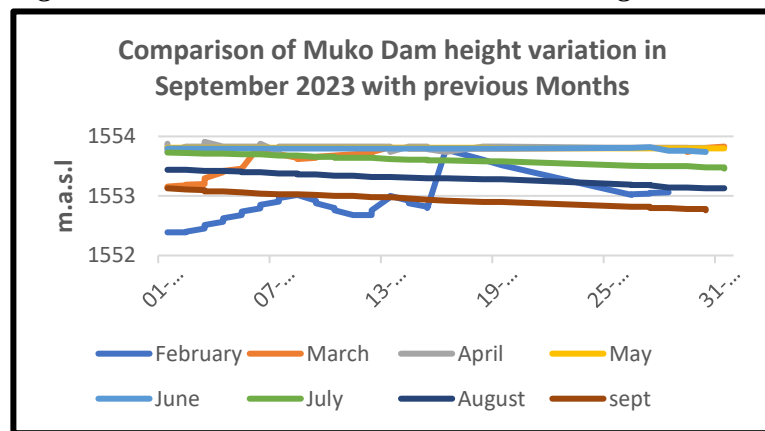


Figure 6: Water level in Muko Dam at Mengo Village

Conclusion

The hydrological situation from August 1st to 31st, 2023 is characterized by a decrease in the water level in most of the observed rivers in respective catchments, leading to a decrease in flows on the main course of the rivers and their tributaries. It is recommended to use water more efficiently and if possible, to store water for the coming months especially from September to November as the basin started the period of the dry season.