

Lake Rukwa Basin Water Board

Hydrological Bulletin

December 2022

1. Overview

The hydrological situation in the Rukwa Basin during December 2022 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 December 2022 with previous years.

Figure 5 shows Lake level fluctuations in December 2022 compared to previous years.

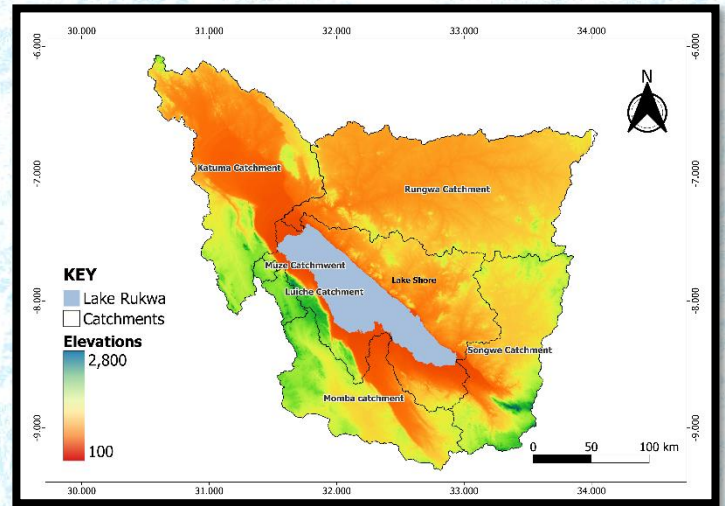


Figure 1: Catchments of Lake Rukwa Basin

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 December 2022, most parts of the basin received rainfall (Figure 2) with an increase of 19% compared with the long-term average (Figure 3).

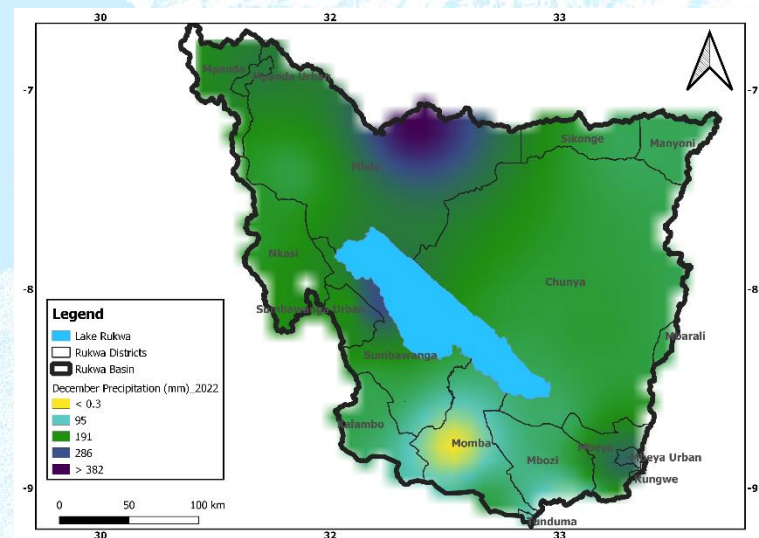


Figure 2: Rainfall variation in December 2022

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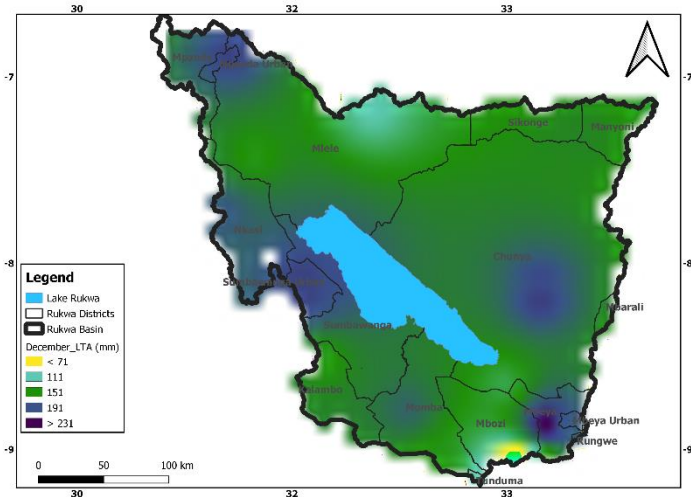


Figure 3: Long-term average rainfall distribution for December

3. Flows in Rivers

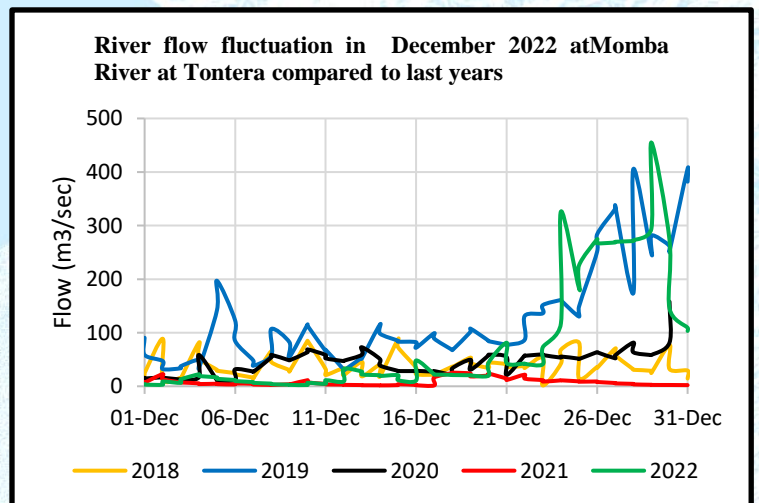
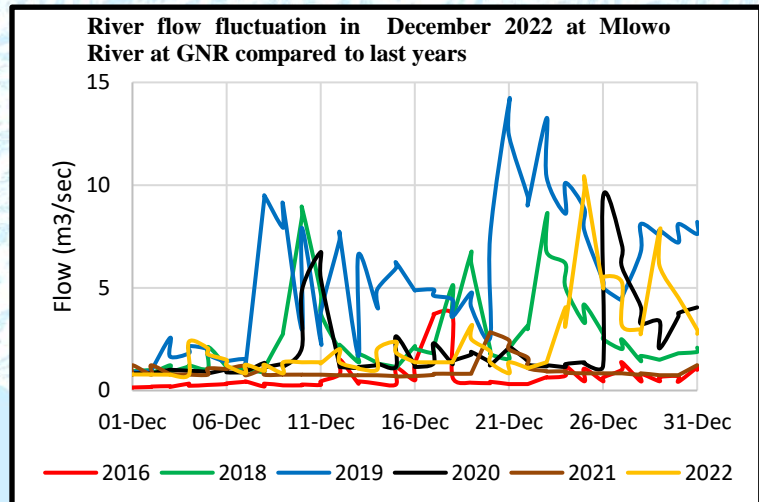
At all stations representing the mentioned catchments above, the hydrological situation during the month of December 2022 was characterized by the ongoing increase in river levels due to starting of the rainfall season.

At Mlowo station, the maximum and minimum daily flow observed was 10.381m³/s and 0.765m³/s respectively in December 2022. The monthly mean flow which passed across the station was 2.323m³/s.

At Momba station, the maximum and minimum daily flow observed was 455.177m³/s and 2.386m³/s respectively in December 2022. The monthly mean flow which passed across the station was 77.051m³/s.

At Ruanda station, the maximum and minimum daily flow observed was 4.165m³/s and 0.024m³/s respectively in December 2022. The monthly mean flow which passed across the station was 0.445m³/s.

At Myovizi station, the maximum and minimum daily flow observed was 26.242m³/s and 0.599m³/s respectively in December 2022. The monthly mean flow which passed across the station was 2.993m³/s.



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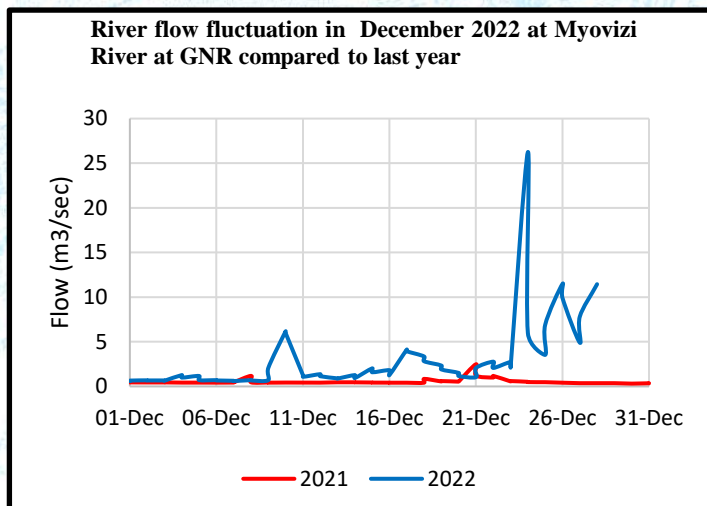
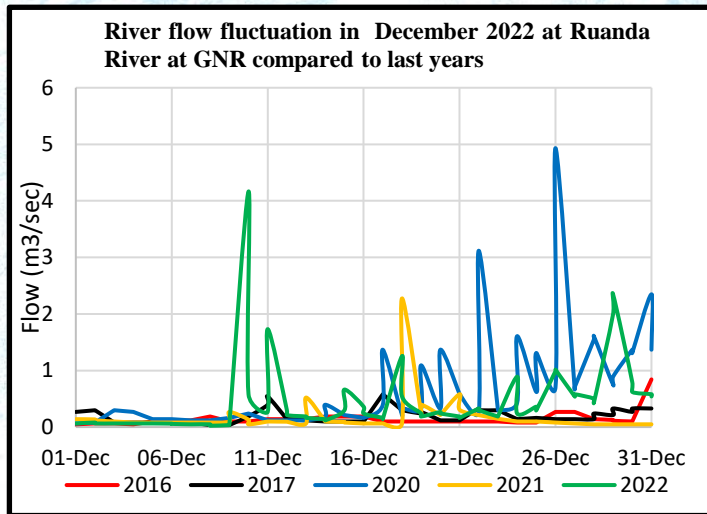


Figure 4: River flows fluctuation

4. Water level in Lake Rukwa

The main source of water for Lake Rukwa is the main rivers that depend on rainfall for their survival, the lake height for December 2022 is seen to be lower by 0.283 meters (a reduction of 0.04%) as compared to 2021 as indicated in **Figure 5**.

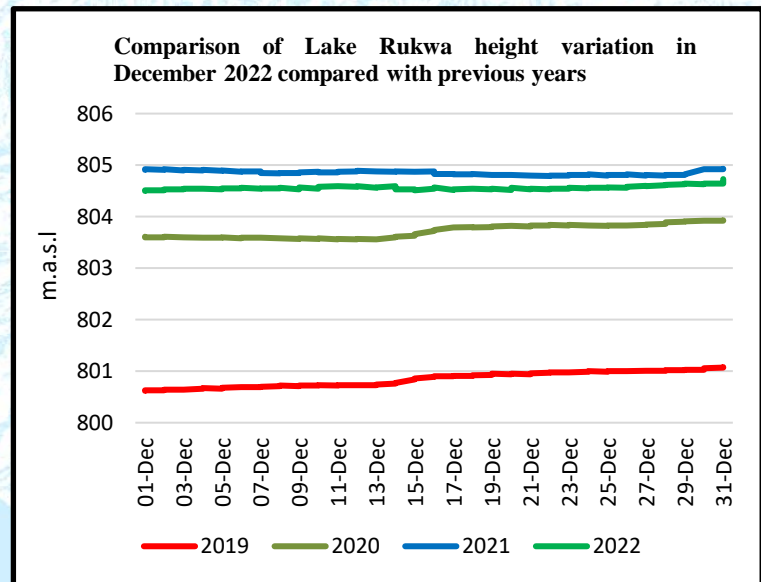


Figure 5: Water level in Lake Rukwa at Mbangala

Conclusion

The hydrological situation from December 1st to 31st, 2022 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.