

Wami/Ruvu Basin Water Board

Monthly Hydrological Bulletin

September, 2022

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1.0 OVERVIEW

The Month of September was mainly characterized with cold and sunshine in most parts of the Basin whereby the Maximum temperature recorded was between 30°C -35°C, and hence Maximum average temperature recorded to be 32.5°C in Coast area while the low temperature recorded was 9.5°C in Uluguru Mountain (Mvomero District). The coast area and parts of upper Ruvu catchment (Ulugulu Mountain) received slight rainfall compared to other parts of the Basin.

The current available water is not enough to satisfy the total demand in Ruvu and Wami catchments, although recession flow regime in Wami and Ruvu River were Below Normal when compared to the year 2021 and Long-Term Average (LTA) of 1950-2020 (**Figure 2 & 3**). Groundwater levels was also decreasing especially in Mzakwe (Dodoma). Mindu Reservoir stocks for Morogoro water supply decrease slightly but was below normal compared to log term average. In addition, the river flow prediction for Wami and Ruvu in the next month (October) indicates that the flows will continue to decrease which may lead to water use deficit to fulfil the demand required (water abstraction) Unless god bring rainfall.

2.0 RAINFALL TRENDS

Rainfall trends in September were decreased towards the north-western direction of Wami catchment (**Figure 1**). Actually, the most parts of the basin received little or no rainfalls as observed in **Figure 1**.

The maximum record in Sept, 2022 was 116.7 mm while in Sept 2021 was 124.8 all these observed in Uluguru Mountain areas in Ruvu Catchment where the the minimum record was 0 mm in both years.

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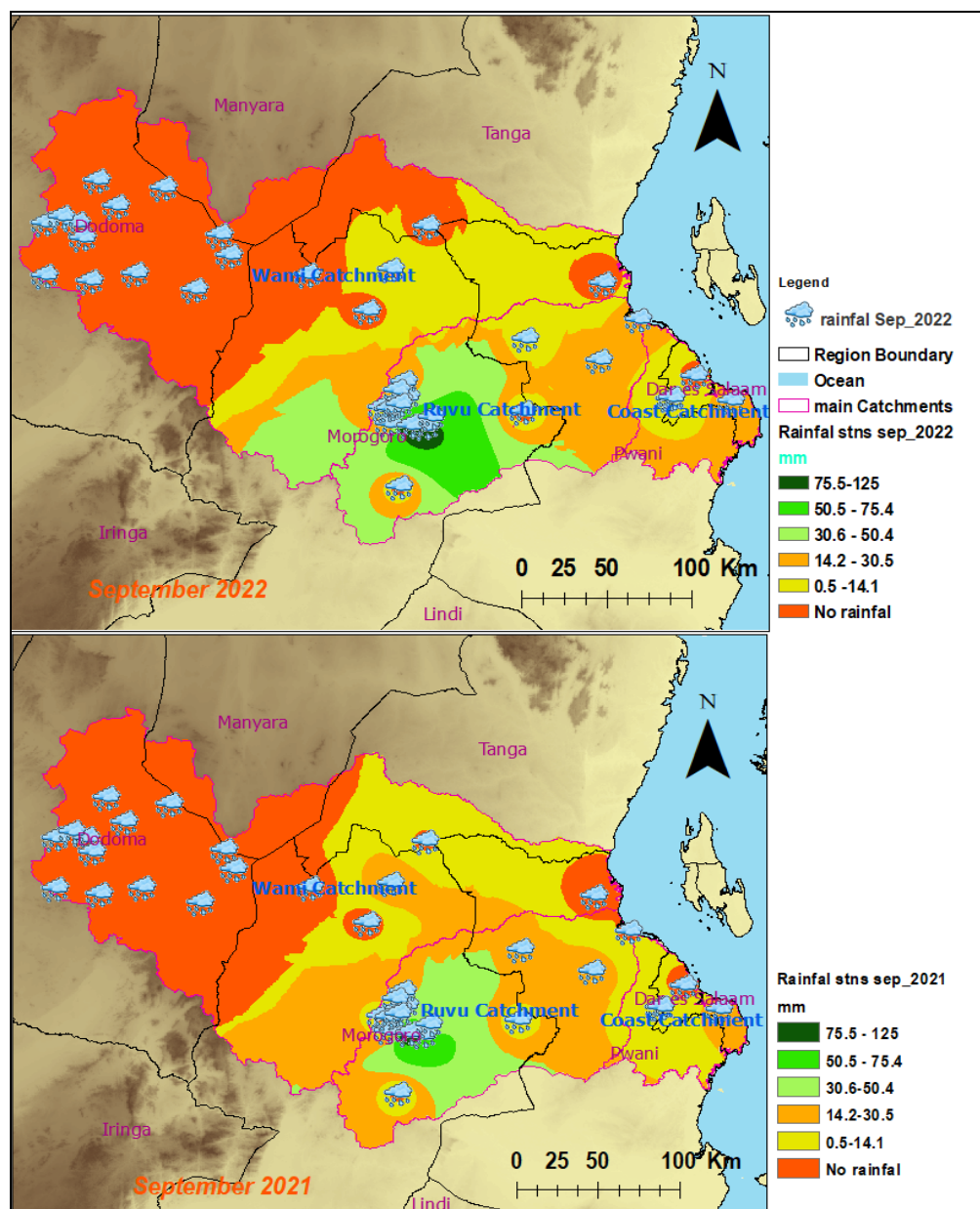


Figure 1: Comparison of Rainfall Maps for the month of September, 2022 and September, 2021

3.0 FLOW VARIATION

The monthly mean flow for Wami and Ruvu were Below Normal when compared to the year 2021 and Long-Term Average (LTA) of 1950-2020 (**Figure 2 & 3**). It was observed that, in September, 2022, the flow for Wami and Ruvu river was 6.6 m³/s and 7.7 m³/s respectively. This indicate that, the available flow was enough to Satisfy the irrigation, Industry and domestic demands expect Environmental requirements (**Figure 2 & 3**).

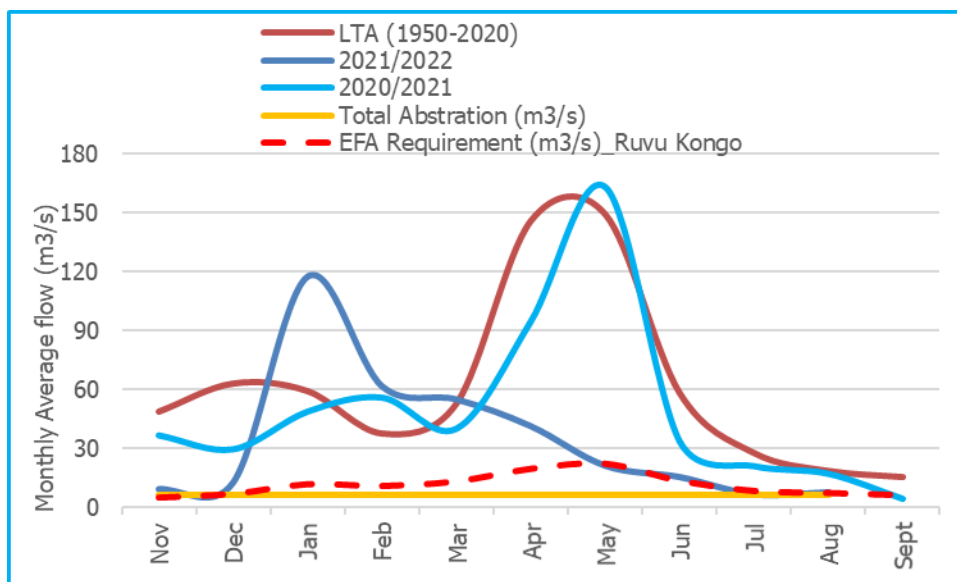


Figure 2: Flow comparison for 2020/21, 2021/22 and LTA in Ruvu river

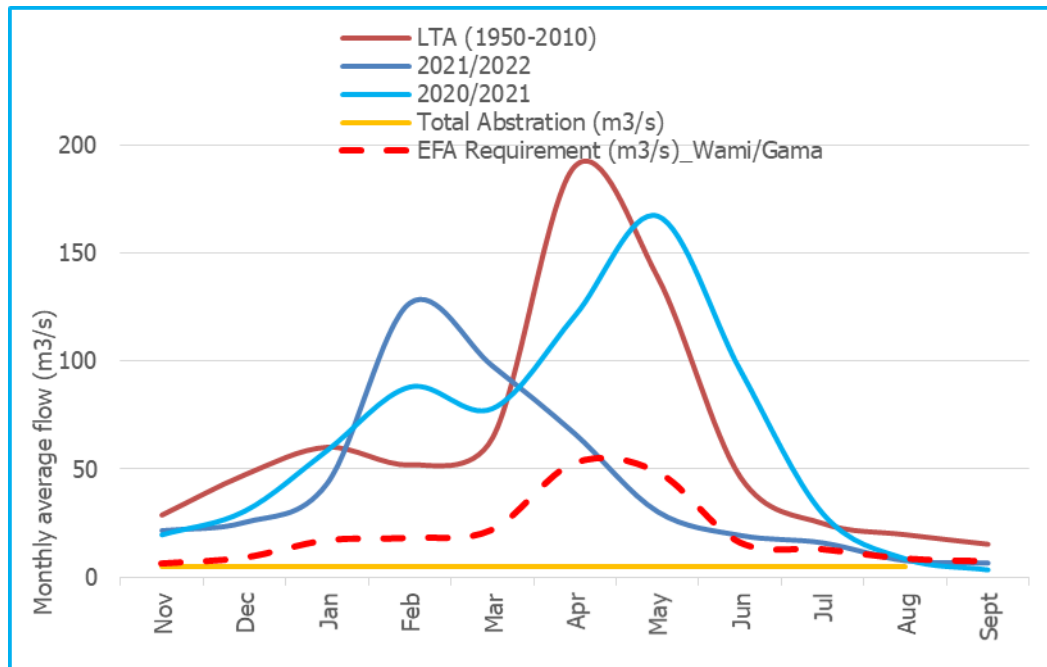


Figure 3: Flow comparison for 2020/21, 2021/22 and LTA in Wami river.

4.0 GROUNDWATER LEVELS TRENDS

The water level trend presented in Makutupora wells field monitoring boreholes in September 2022 has continuing to decrease compared to first weeks of September 2022 (**Figure 4**). The average water production was 60,770m³/day while maximum water production was 63,000m³/day, Usage of water has been increased due the absence of other alternative sources of water, caused by low available water within the aquifer.

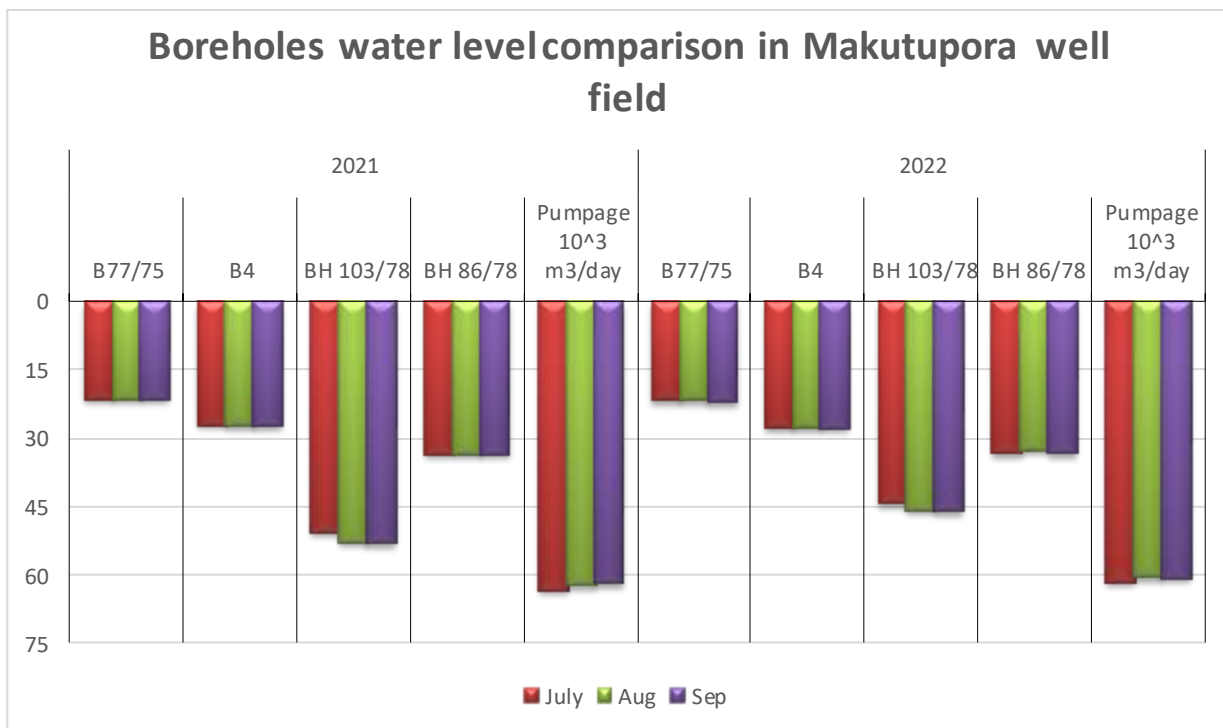


Figure 4: Comparison of water level with pump page m³/day (abstraction) in Makutopora well field in September).

5.0 VOULUME IN RESERVOIRS

The monthly mean volume observed in Mindu Reservoir September, 2022 was 8,400,000m³. This average volume is termed as Below average when compared with LTA (1997-2020) and 2021 (**Figure 4**). This storage satisfies the total demand of Morogoro Municipality which is 34,000m³ per day



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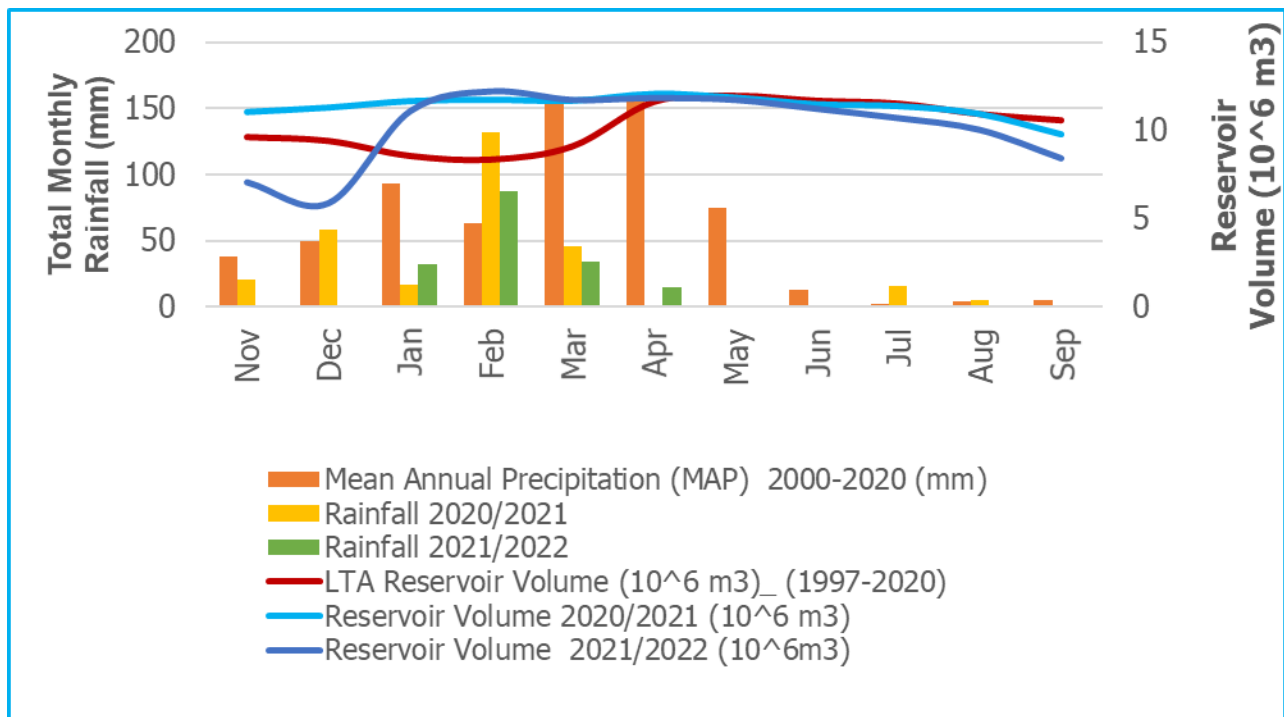


Figure 5: Comparison of monthly volume in Mindu Reservoir.

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RECOMMENDATION

The river flow prediction on the next coming month (October) for Wami and Ruvu indicates that there will be continuation of flow decreases that will probably lead water use deficient to fulfil the demand required (water abstraction). Therefore, the all-water user such as Irrigators, Water Supply Authority, Livestock keepers and tourism are alerted to take a caution for any water deficit that will happen for the next days to come to full fill their demands.

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