WAMI/RUVU BASIN WATER BOARD

MONTHLY HYDROLOGICAL BULLETIN:

MAY, 2020

1. INTRODUCTION

Wami/Ruvu Basin **(Fig. 1)** covers an area of about 66,820 square kilometres. The Basin is located in the Eastern side of Tanzania which lies between longitudes 35^0 30' 00" to 40^0 00' 00" E and latitudes 05^0 00' 00" to 07^0 30' 00". The Basin is sub divided into three catchments known as Ruvu, Wami and Coast.

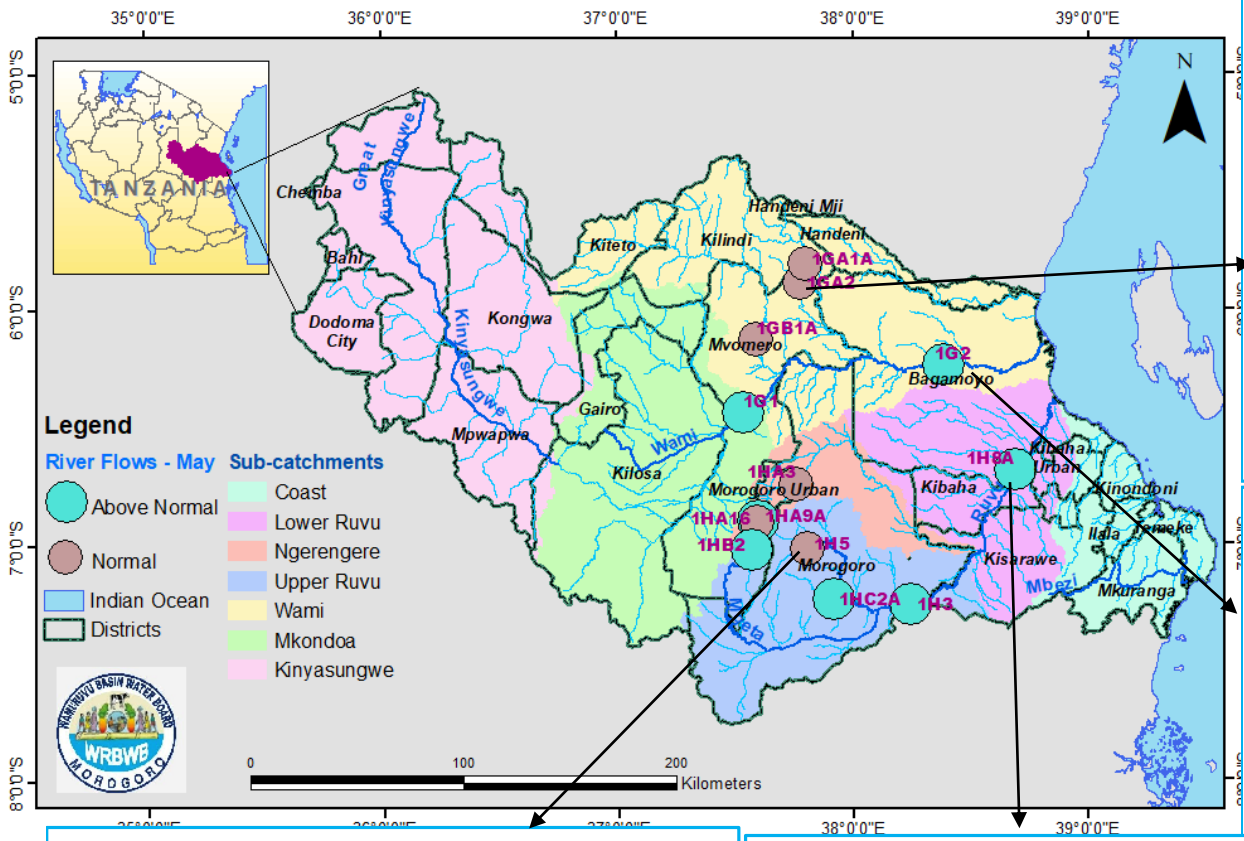
Hydrological flow situation in the Basin during the month of May was characterized by decrease of surface runoff compared to the month of April. This may be due to low rainfall observed in most parts of the Basin. However; the most representative stations in Ruvu and Wami Catchments show the flows were Above Normal when compared to the Long-Term Average (LTA) except for the five stations had Normal flows **(Fig.1).** The flow analysis situation was carried out based on rainfall trends, flow variations in rivers and water level in reservoir.

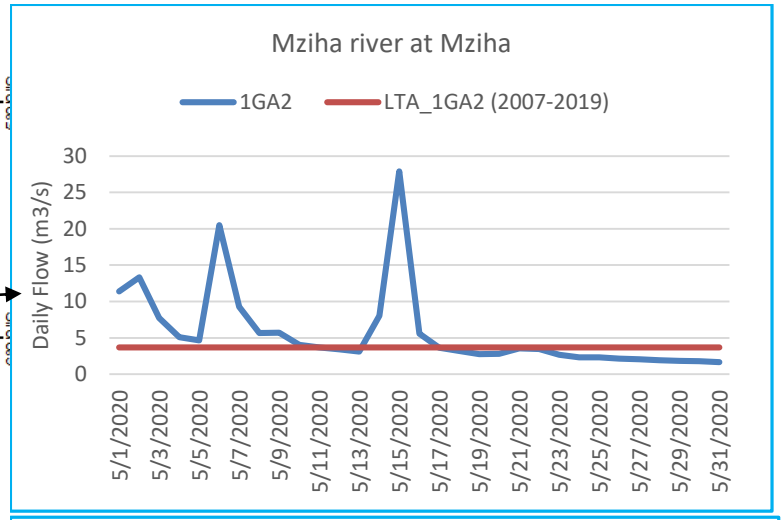
2. FLOW VARIATIONS IN RIVERS

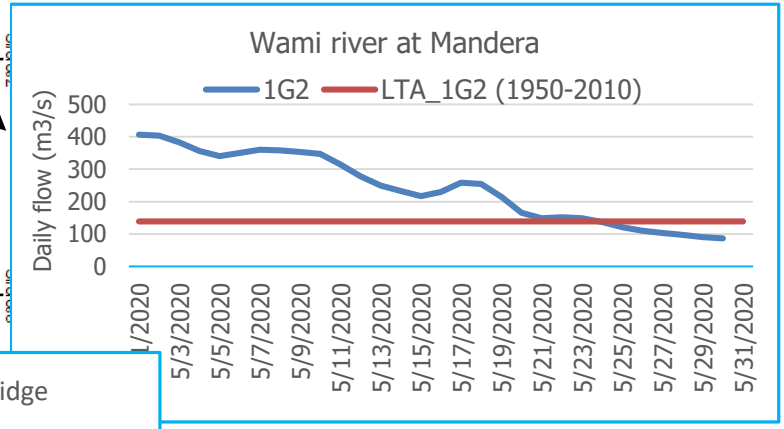
2.1. WAMI CATCHMENT

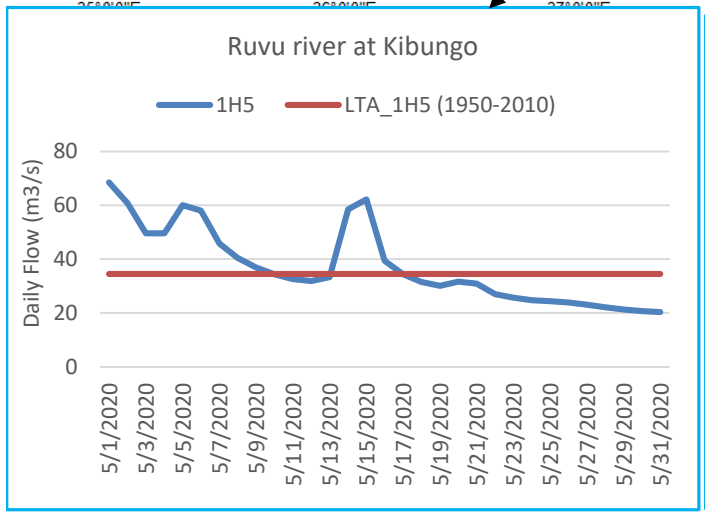
Wami, Mkondoa and Kinyansungwe sub-catchments represent Wami catchment. Wami river at Dakawa (1G1), Wami river at Mandera (1G2), Mziha river at Mziha (1GA2), Lukigula river at Kimamba (1GA1A) and Diwale river at Kimamba (1GB1A) are the representative stations within the catchment (**Fig. 1**).

In comparison with monthly mean river flow of April, 2020, the monthly mean flows of May were decreased by 19%. The flow trend observed in 1G1 and 1G2 stations for the month of May were Above Normal compared to LTA values except for the 1GA2, 1GA1A and 1GB1A stations which show Normal flow (**Fig. 1**)









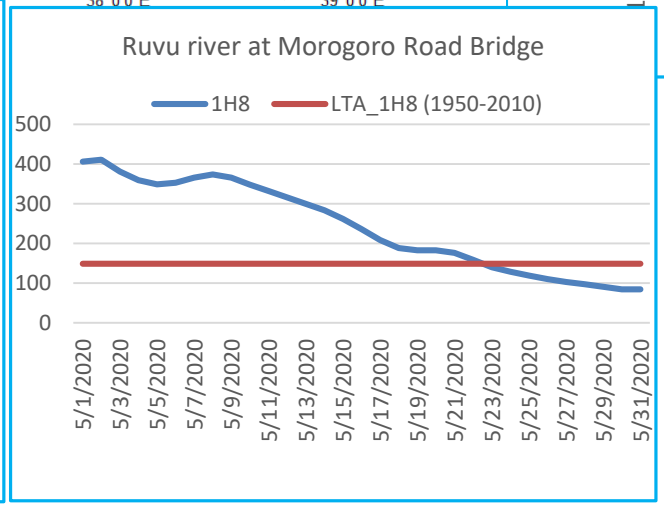


Figure 1: Basin Location in Tanzania and River Flow Analysis in the basin for the month of May, 2020

The average flow value recorded at 1G1 and 1GA2 was 101.533m³/s and 5.72m³/s while the long term monthly mean flow (1950-2010) are 52.72m³/s and 3.69m³/s respectively. The maximum flow observed was 199.019 m³/s (1G1) and 27.908m³/s (1GA2) on 2nd and 15th of May, 2020 and minimum value was 50.871m³/s (1G1) and 1.671 (1GA2) on 30th May 2020. Also, the monthly mean flow for 1G2 Station was 242.317m³/s and its monthly LTA are 138.875m³/s. The maximum flow observed was 407.119m³/s on 1st May, 2020 and minimum value was 85.980m³/s on 30th May, 2020 (**Fig. 2**).

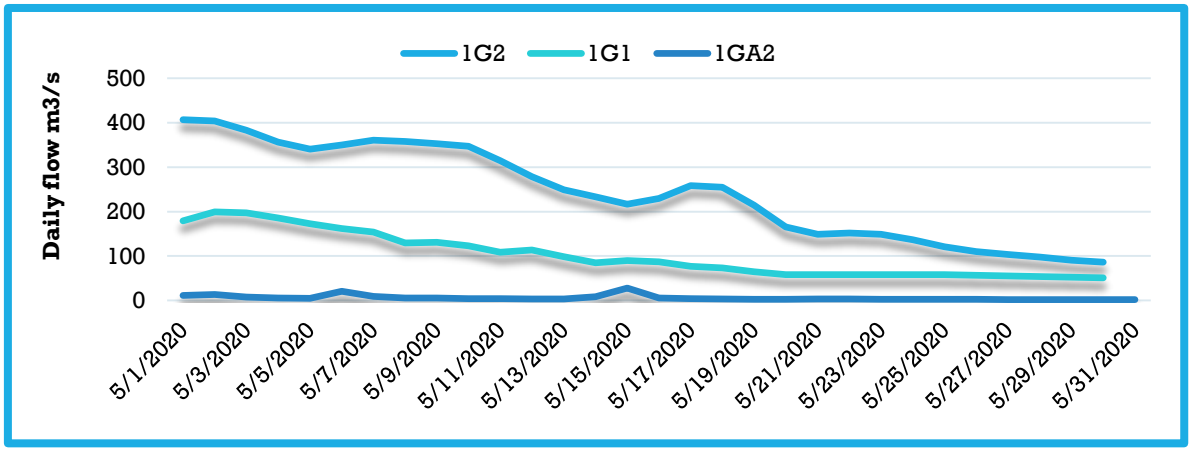


Figure 2: Flow variation recorded at representative's station Wami Catchment

2.2. RUVU CATCHMENT

Mvuha river at Tulo (1HC2A), Mgeta river at Mgeta (1HB2), Ngerengere river at Konga (1HA9A), Ngerengere river at Kingolwira (1HA3), Ruvu river at Kibungo (1H5), Ruvu river at Kidunda (1H3) and Ruvu river at Morogoro road bridge (1H8) stations represent Ruvu catchment **(Fig 1).**

In general, due to low rainfall received within the catchment, the monthly flows trend in all tributaries and main Ruvu river were decreased over the last fifteen days of May **(Fig 3).**

The maximum flows observed at 1HA3, 1HA9A, 1H5, 1H3 and 1H8A were 24.646 m³/s, 52.101 m³/s, 68.482 m³/s, 411.072 m³/s and 352.348 m³/s; while the minimum flows were 5.384 m³/s, 28.200 m³/s, 20.298 m³/s, 84.549 m³/s, and 76.921 m³/s respectively (**Fig. 3**)

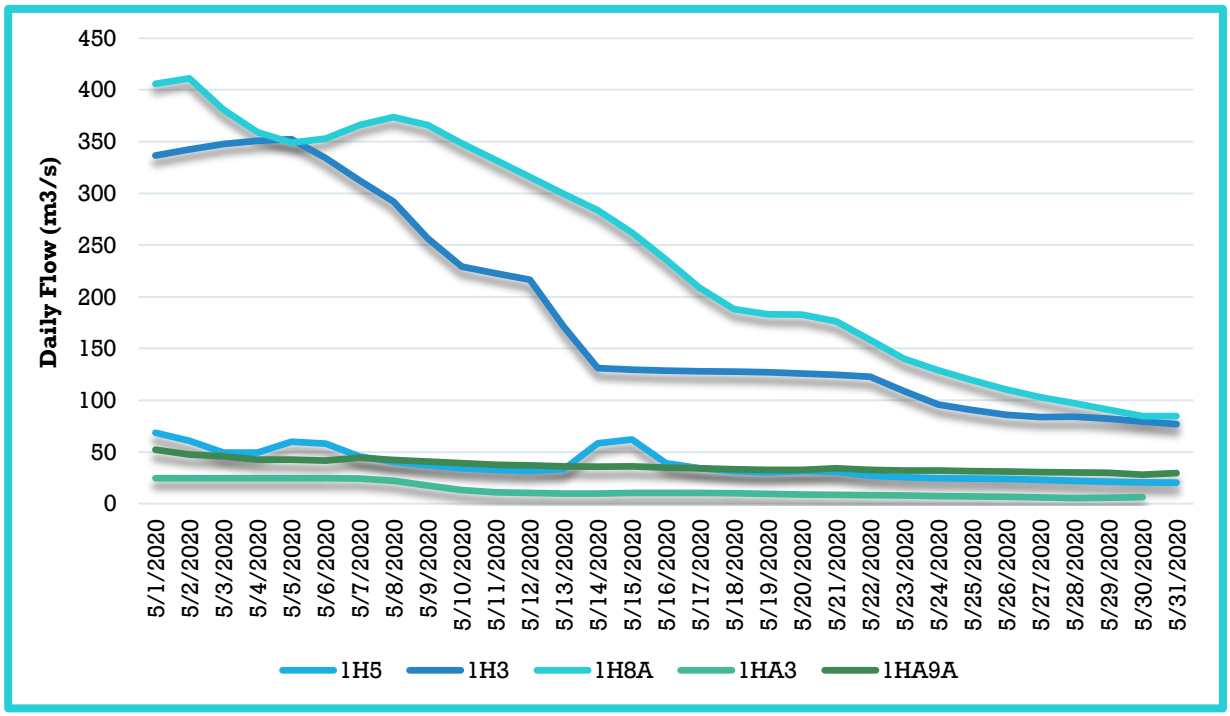


Figure 3: Flow variation recorded at representative's station Ruvu catchment

3. RAINFALL TRENDS AT SELECTED STATION

Spatial distribution of rainfall in May 2020 was characterized by low rainfall in most parts of the basin compared to the month of April (**Fig. 4**).

The areas of Uluguru Mountain in Ruvu catchment and the middle parts of the Basin (Gairo, Mvomero, Kilindi, Handeni) were received high amount of rainfall compared to the other part of the Basin, with an upper edge of Wami Catchment experienced low amount of rainfall.

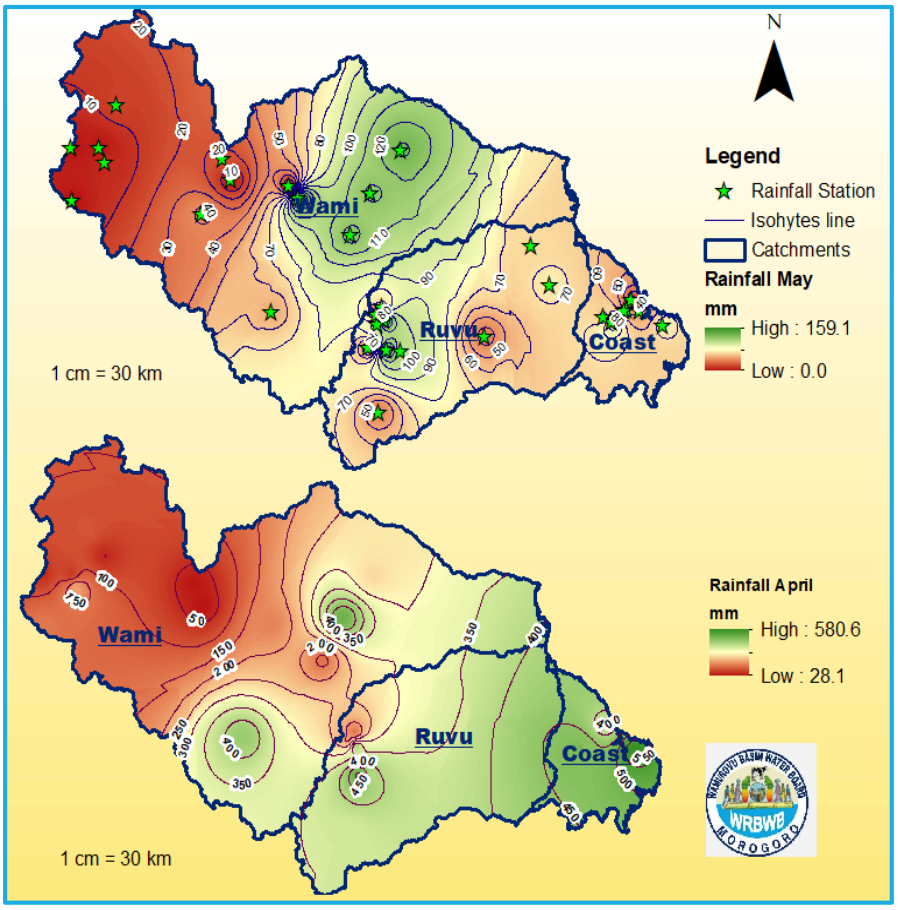


Figure 4: Spatial distribution of rainfall across the basin for the month of May, compared to the month of April, 2020.

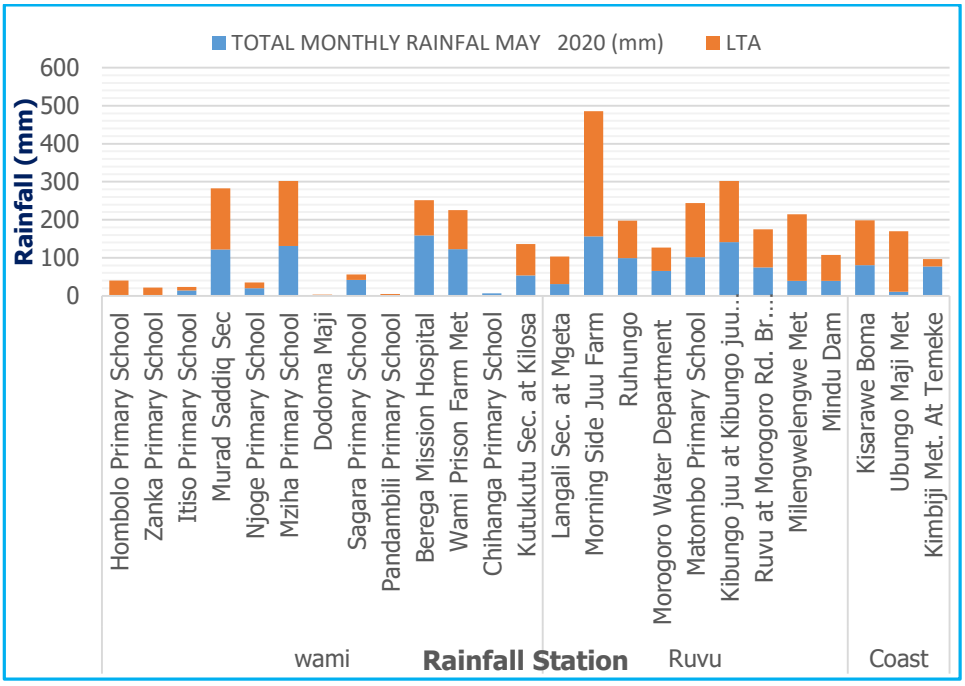


Figure 5: Distribution of rainfall based on the catchments

(*Source: WRBWB rainfall stations*)

The highest rainfall recorded was 159.1 mm in Berega Mission station (Gairo District), followed by 156.4 mm and 141 mm recorded in Morning side and Kibungo Juu stations in Uluguru mountains.

*However, no rainfalls were recorded in Hombolo, Zanka, Dodoma Maji and Pandambili stations in Wami Catchment (***Fig. 5***)*

4. MINDU RESERVOIR

Despite the decrease of water level in the reservoir during the last 6 days of May (**Fig. 6**); the water levels trends observed in Mindu reservoir in May were Above Normal compared to LTA (1997-2019). The Monthly average recorded was 507.141 masl while the maximum water level recorded on 01st May, 2020 was 507.38 masl and the minimum level was 507.09 masl on 30th May, 2020.

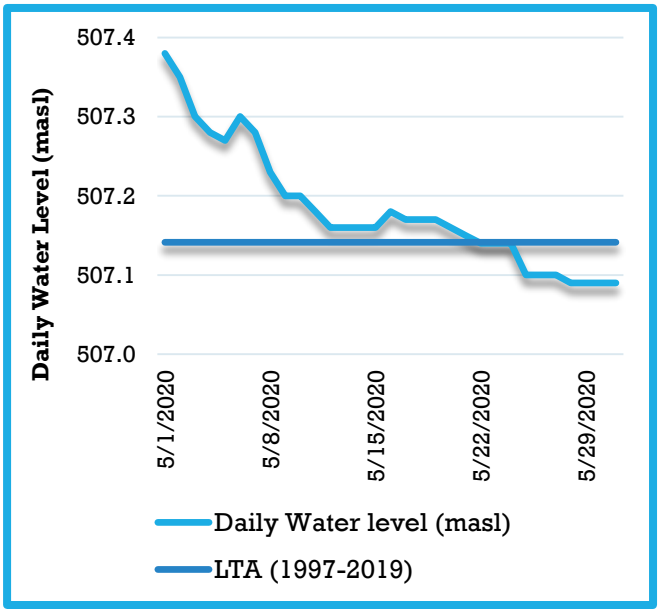


Figure 5: Mindu reservoir water level

It is important to note that, due to decrease of river flows in Wami and Ruvu Catchments, all users 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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Mito yetu, Maendeleo yetu Tuitunze