



Climatological Bulletin of August 2020

1. INTRODUCTION

The bulletin has three main components, which include: (i) the review of climate conditions observed over Rwanda in August 2020, (ii) the prediction of the September 2020 rainfall and (iii) the highlights on the socio-economic impacts associated with both observed and predicted climate conditions.

2. HIGHLIGHTS

- **Rainfall performance in August 2020:** The accumulation of observed rainfall during this month was above the Long Term Mean (LTM) in the country.
- **Rainfall expected during September 2020:** During the month of September 2020, accumulated moderate rainfall ranging between 10mm and 100mm expected over whole country.
- **The impact associated with both observed and predicted climate conditions:** Over the country, the light to moderate rainfall was observed in August 2020, which may lead to poor performance of crops where irrigation is not applicable. Due to the wet weather, conditions expected in September 2020, this will increase soil moisture and water availability among others.

3. CLIMATE PATTERNS

This section provides the climatological summary of the temperature and rainfall for August 2020 in comparison to the Long Term Mean over Rwanda.

3.1 Rainfall amounts in June 2020

During the month of August, rainfall amount recorded over Rwanda was ranging between 0.9mm and 41.2mm. High rainfall of 41.2mm was recorded at Rubengera station in the Western Province. The Western Province was wet comparatively to the rest parts of the country even though the whole month was dry compared to the LTM while Kigali City was dry compared to other parts of the country.

The central region represented by Gitega and Kigali International Airport weather stations of Kigali City recorded 3mm and 0.9mm respectively. Nyamagabe and Byimana weather stations of the Southern Province recorded 22.2mm and 14.2mm respectively. The Western Province also recorded 33.2mm over Rusizi station, Rubavu (24.6mm), Rubengera (41.2mm) and 24.1mm recorded at Bugarama station. Gicumbi, Busogo and Musanze weather stations of the Northern Province recorded 17.4mm, 26.9mm and 21.7mm respectively.

Eastern Province recorded rainfall ranging between 4mm over Kawangire, 23.5mm over Ngoma and 18.2mm over Nyagatare stations.



3.2 Rainfall performance in comparison to the Long Term Mean

Comparing the performance of the rainfall during the month of August 2020 with the Long Term Mean for the same period, it was observed that the cumulative rainfall of August 2020 was in below normal range of Long Term Mean (LTM) in all parts of country.

The Table and histogram below indicate the rainfall performance of August 2020 compared to the Long Term Mean for the same period over many years.

Stations	Aug 2020	Aug LTM
Kigali	0.9	34.6
Gitega	3	17.9
Nyamagabe	22.2	39.5
Byimana	14.2	39.8
Gicumbi	17.4	57.1
Busogo	26.9	77.6
Musanze	21.7	55.6
Bugarama	33.2	44.3
Rusizi	24.6	71.2
Rubavu	24.1	21.7
Rubengera	41.2	42.7
Ngoma	23.5	24
Kawangire	4	28
Nyagatare	18.2	47.7

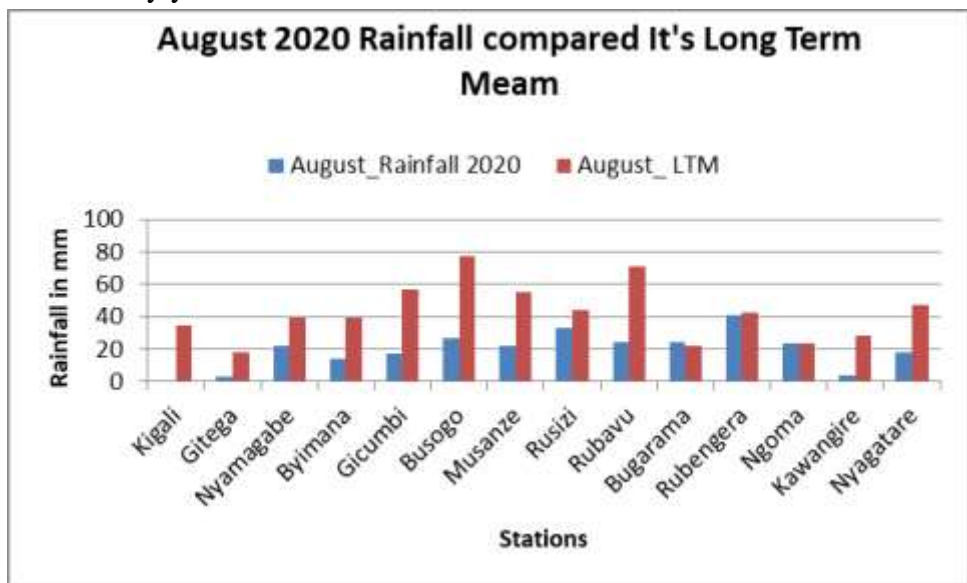
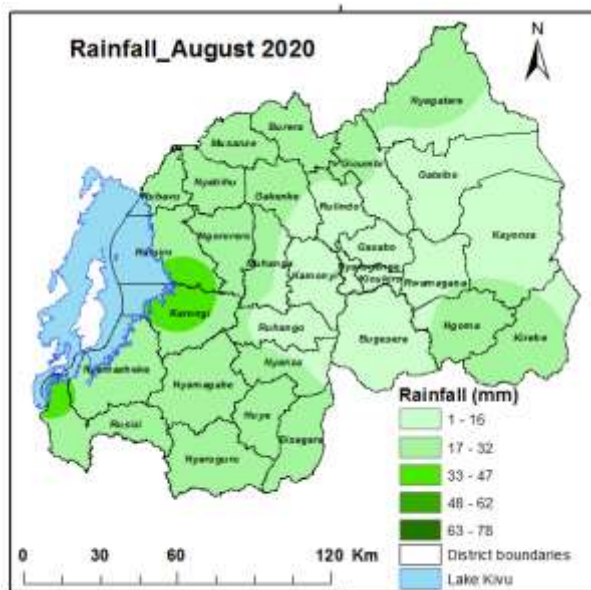


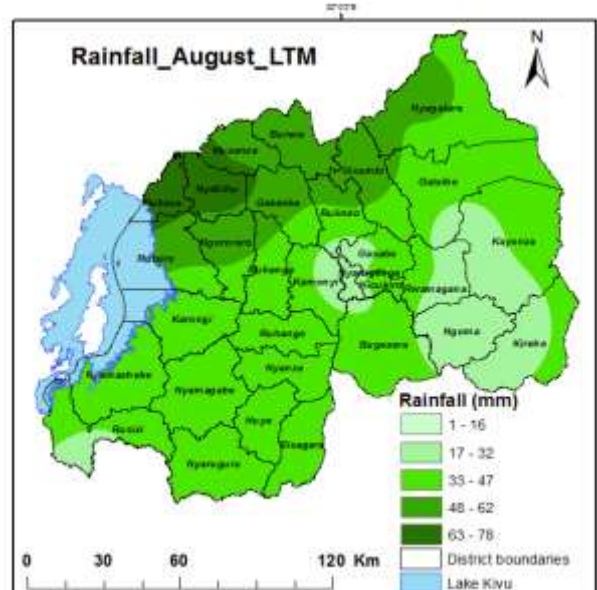
Table1: Cumulative rainfall recorded as compared to the LTM

Figure1: Rainfall performance as Compared to the Long Term Mean

Map 1 & 2 below show rainfall distribution during August 2020 and the Long Term Mean for the same period.



Map1: Rainfall distribution of August 2020



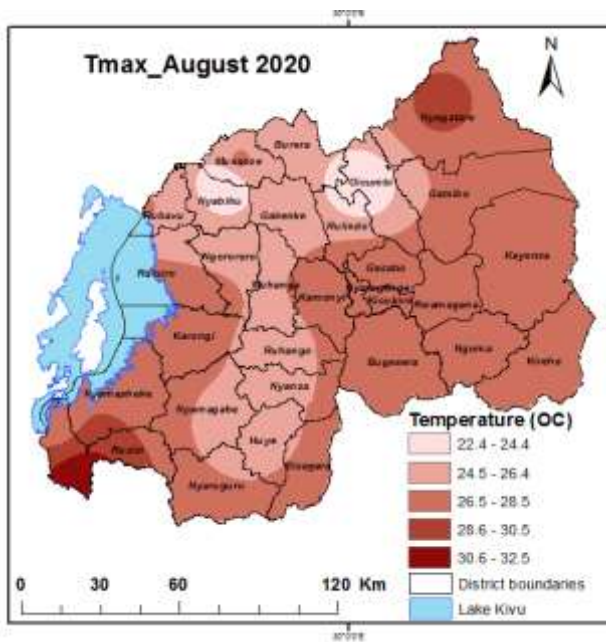
Map2: August Long term mean rainfall distribution



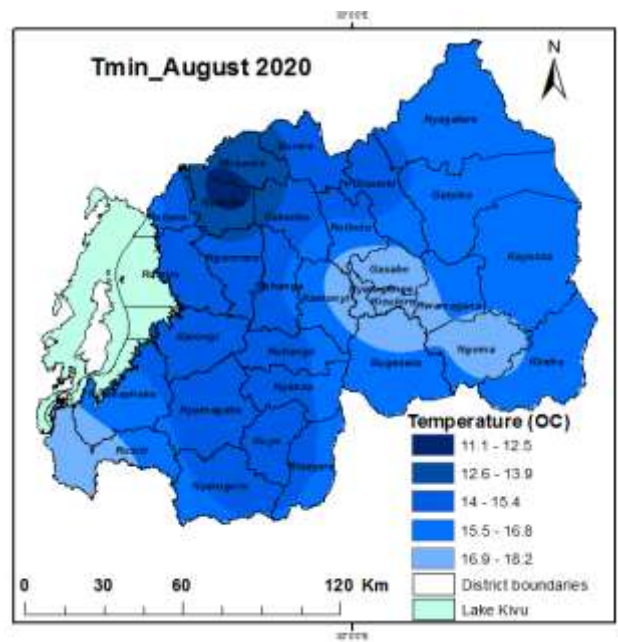
3.3 Temperature analysis

The lowest value of maximum temperature was 22.4⁰C, which was observed in the Northern Province at Gicumbi weather station. The highest value of maximum temperature was observed in the South Western region at Bugarama station with 32.5⁰C.

The mean minimum temperature was ranged between 11.1⁰C at Busogo station which is the lowest and 18.2⁰C was observed in Kigali City and Bugarama. The Northern and Southern Provinces were cooler compared to the Eastern, Central regions and Western Provinces of the country (Map 3 and 4).



Map3: August Maximum Temperature



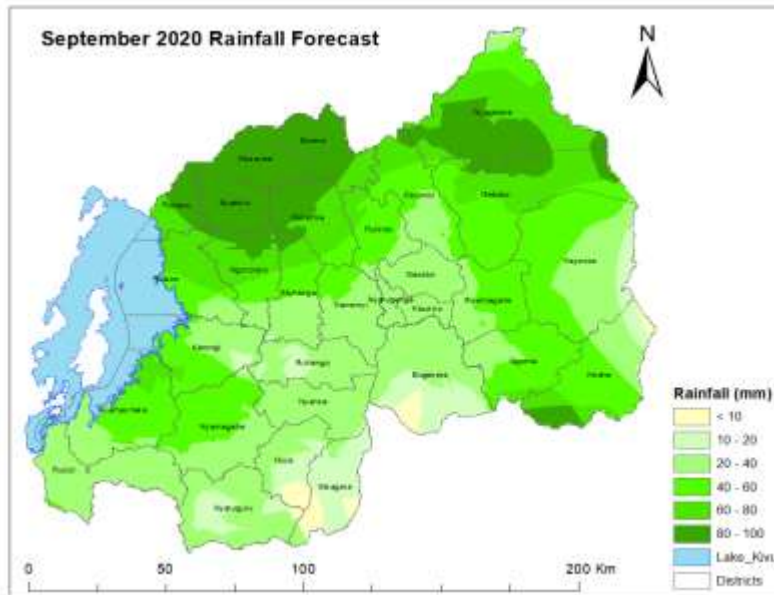
Map4: August Minimum Temperature

4. Soil Moisture Index (MI)

Comparing the soil moisture of July and August 2020, it is observed that the soil moisture decreased during the month of August as a result of persistence dry weather conditions observed during the observation period over most parts the country. The increased soil moisture is expected in September 2020, as results of expected wet conditions within the forecasted period.



5. Rainfall forecast for September 2020



Map 5: Rainfall prediction for September 2020

Rainfall expected in September 2020 is spatially distributed as shown in the map below. Rainfall ranging between 80 and 100 millimetres (mm) is expected in Burera, Musanze, Nyabihu, parts of Gakenke bordering Musanze and Nyabihu, parts of Rubavu, Ngororero and Muhanga near Nyabihu District, parts of Nyagatare bordering Gatsibo and Gicumbi and also in some parts of Kirehe District bordering Burundi. Rainfall ranging between 60 and 80 mm is expected in most parts of Nyagatare District, northern parts of Gicumbi, Rulindo, Muhanga, Ngororero, Rutsiro and Nyamashe, and southern parts of Rubavu and Gakenke Districts. It is also expected to receive rainfall ranging between 40 and 60 mm in most parts of Nyamagabe, Nyamasheke, Karongi, Gatsibo, Rwamagana, Kayonza and Kirehe Districts, southern parts of Rutsiro near Lake Kivu, some parts of Ngororero, Muhanga, Kamonyi and Nyagatare Districts.

Rainfall between 20 and 40 mm expected in Kigali City and the rest parts of Southern Province and Rusizi District. It is also expected in southern parts of Nyamasheke and in the parts of Western Province bordering Muhanga and Ruhango of Southern Province. Therefore, most parts of Gisagara, Huye and small part of Nyaruguru, Ruhango and parts of Bugesera District towards the border of Burundi, parts of Kirehe and Kayonza bordering Tanzania are expected to receive rainfall ranging between 10 and 20 mm. Whereas rainfall less than 10 mm is expected in some parts of Huye, Gisagara, Nyaruguru, Bugesera and Kirehe Districts. Rainfall expected in September 2020 is less than the Long Term Mean in many parts of the country.

The main drivers are associated with slow movement of lingering Inter Tropical Convergence Zone coupled with the westerly's drifting Congo air mass towards our country which will boost convective activities in most parts of the country, especially over the Western and Northern parts of the country during the forecasting period.



6. IMPACTS ON SOCIO-ECONOMIC SECTORS

The socio-economic impacts associated with observed climatic conditions and the likely impact in the forecasted period are illustrated below:

6.1 Impacts of observed climate condition.

During the month of August 2020, the rainfall accumulation was below the Long Term Mean (LTM) in entire country. With persistence dry conditions experienced, that led to increase pasture, poor crop performance and reduced water availability.

6.2 Potential likely impacts for the September 2020.

Considering that the month of September is one of wettest months that contribute contributing to the rainfall season of September to December, the increased water level, increased crop performance and pasture conditions and water resource availability is expected in the country.

N.B: This forecast should be used in conjunction with the Six hours, Daily (24-hour), Three (3), Five (5) Seven (7) and 10 days forecasts issued by the Rwanda Meteorology Agency (Meteo Rwanda).