



Bulletin N°09/2020

Issued on 06 October 2020

Climatological Bulletin of September 2020

1. INTRODUCTION

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

2. HIGHLIGHTS

- **Rainfall performance in September 2020:** The accumulation of observed rainfall during this month was below the Long Term Mean (LTM) countrywide.
- **Rainfall expected during October 2020:** During the month of October 2020, accumulated rainfall ranging between 60mm and 160mm is expected over the country depending on the region. The expected rainfall is within the Long Term Mean.
- **The impact associated with both observed and predicted climate conditions:** Over the country, rainfall below the LTM was observed in September 2020, which led to late planting of seeds for Agriculture season A. Due to the wet weather conditions expected in October 2020, it is expected to have increased soil moisture and water availability among others.

3. CLIMATE PATTERNS

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

3.1 Rainfall amounts in September 2020

During the month of September, rainfall amount recorded over Rwanda was ranging between 30.1mm and 120.6 mm. High rainfall of 120mm was recorded at Rubengera station in the Western Province. The Western, Southern and Northern Provinces were wet comparatively to Kigali city and Eastern Province, even though the whole month was dry compared to the LTM.

The central region represented by Gitega and Kigali International Airport weather stations of Kigali City recorded 30.1mm and 52.5mm respectively. Weather stations of the Southern Province recorded in Nyamagabe (113.8mm), Byimana (49.7mm), Kaduha (105.1mm), Rubona (53.3mm), Kibangu (38.3mm) and Gihinga-Gacurabwenge (56.5mm) respectively. Weather stations of the Western Province also recorded in Rusizi (98.4mm), Rubavu (92.1mm), Rubengera (120.6mm) and 65.6mm recorded at Bugarama. Weather stations of the Northern Province recorded in Gicumbi (109.3mm), Busogo (103.4mm) and Musanze (59mm) respectively. Eastern Province recorded rainfall ranging between 32.6mm over Ngoma, 44.5 over Zaza, 48.6mm over Nyagatare, 50mm over Nyamata and 61.0mm over Kawangire stations.



3.2 Rainfall performance in comparison to the Long Term Mean

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

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

Stations	Sept. 2020	Sept LTM
Kigali	52.5	67.9
Gitega	30.1	63.5
Nyamagabe	113.8	98.1
Byimana	49.7	82.6
Kaduha	105.1	102.5
Rubona	53.3	74.6
Gihinga	56.5	56.7
Kibangu	38.3	80.5
Gicumbi	109.3	112
Busogo	103.4	153.1
Musanze-Aero	59	125.6
Kamembe...		
Rubavu- Aero		
Bugarama	62	65.6
Rubengera	120.6	126.8
Ngoma	32.6	61.9
Kawangire	61	55.1
Nyagatare	48.6	77.5
Rubona		
Kaduha		
Kibangu		
Gihinga_Gac...		
Zaza		
Nyamata	50	61.6

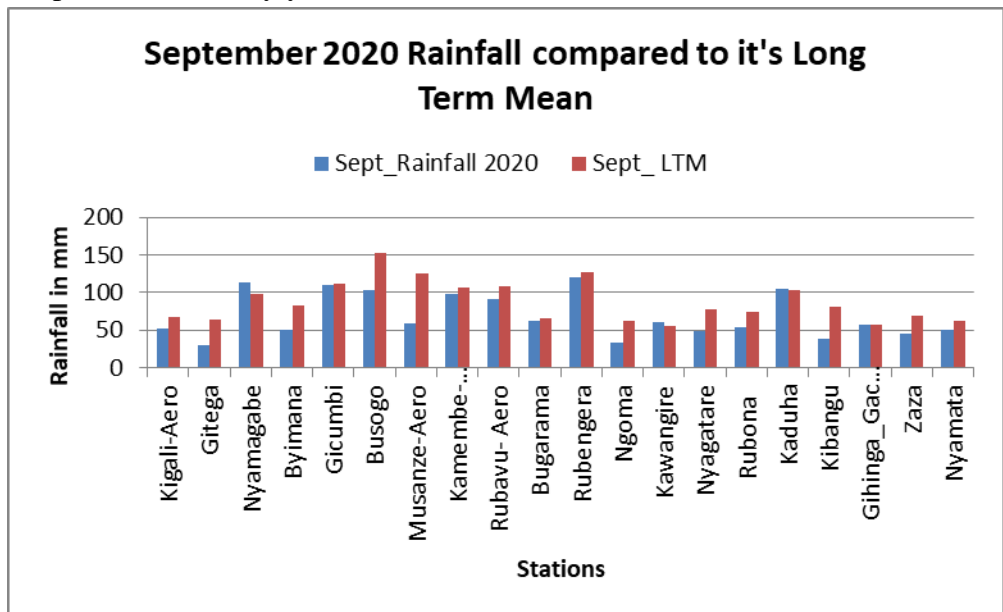
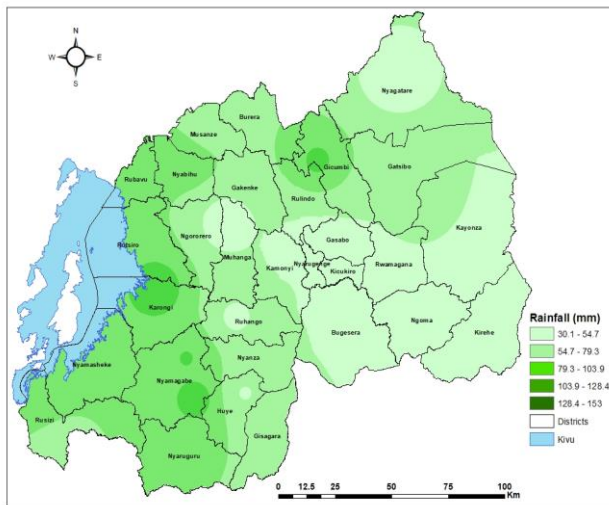


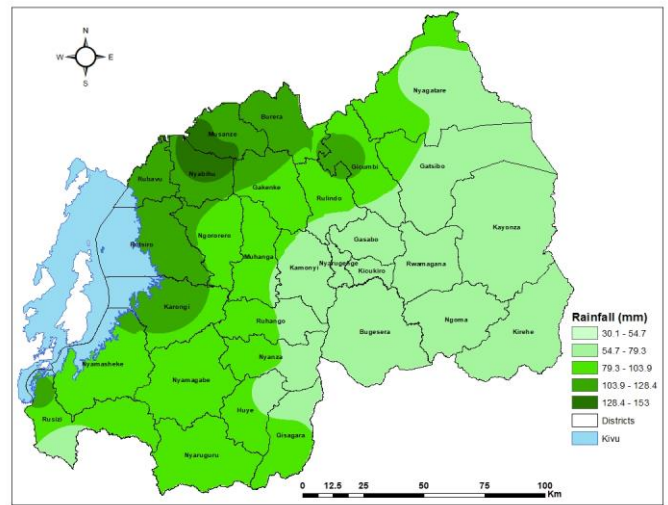
Figure 1: Rainfall performance as Compared to the Long Term Mean

Table 1: Cumulative rainfall recorded as compared to the LTM

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



Map1: Rainfall distribution of September 2020

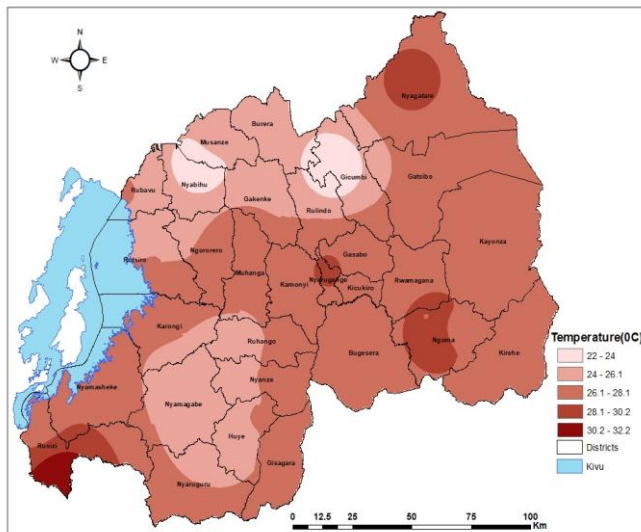


Map2: September Long term mean rainfall distribution

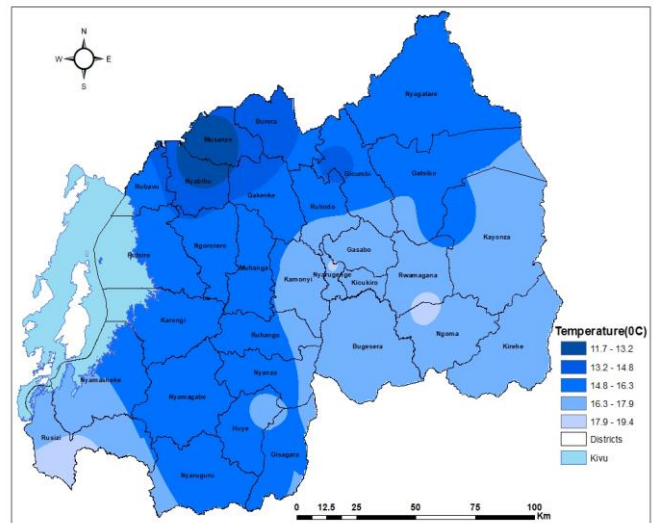
3.3 Temperature analysis

The lowest value of maximum temperature was 22.0°C, 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 32.2°C.

The mean minimum temperature was ranged between 11.7°C at Busogo station which is the lowest and 19.4°C was observed at Bugarama station. The Northern and Southern Provinces were cooler compared to the Eastern, Western Provinces and Central regions of the country (Map 3 and 4).



Map3: September Maximum Temperature



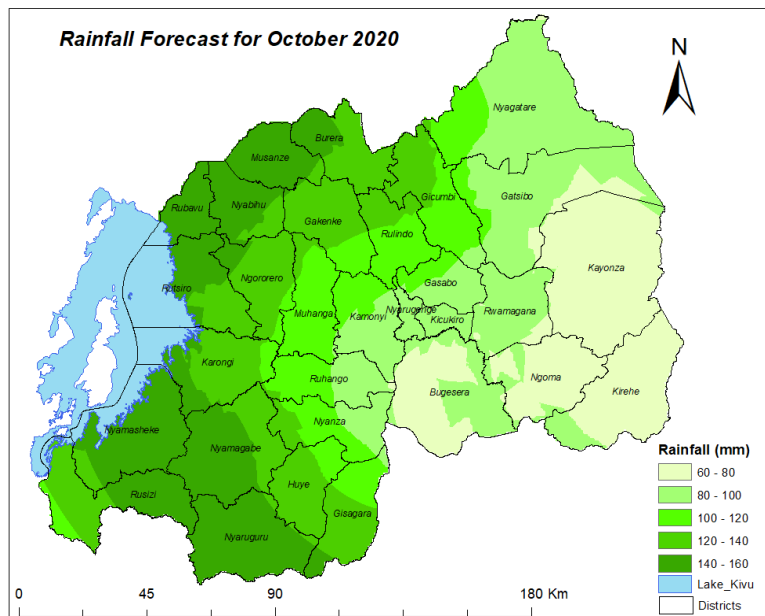
Map4: September Minimum Temperature



4. Soil Moisture Index (MI)

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

5. Rainfall forecast for October 2020



Rainfall expected in October 2020 is in the range of Long Term Average of October across the country and will be well distributed in three dekads of the month. The main drivers are associated with the location of Inter Tropical Convergence Zone over the region which will interact with mesoscale systems such as Lake Victoria and westerly's drifting Congo air mass towards our country modulated with local topography.

Map 5: Rainfall prediction for October 2020

Rainfall expected in October 2020 is spatially distributed as shown in the above map. Rainfall ranging between 120 and 160 millimetres (mm) is expected in Western Province. Rainfall ranging between 100 and 140mm is expected Northern and Southern Provinces, expect Western parts of Burera and Musanze Districts in the Northern Province, Nyaruguru and Nyamagabe Districts in the Southern province that may experience up to 160mm while eastern parts of Nyanza, Ruhango and Kamonyi Districts will get rainfall ranging between 80 and 100mm. Rainfall ranging between 60 and 100mm is expected in Kigali city and Eastern Province,



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 September 2020, the rainfall accumulation was below the Long Term Mean (LTM) in entire country. The poor performance of rainfall over the country led to late sowing of staple food crops across the country and reduced water availability.

6.2 Potential likely impacts for the October 2020.

Considering the month of October as one of wettest months that contribute 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).