

REPUBLIC OF RWANDA



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## Climatological Bulletin of 11-20 September 2019

### 1. INTRODUCTION

This bulletin has three main components which are: (i) The review of climate conditions observed over Rwanda during 2<sup>nd</sup> dekad of September 2019, (ii) The prediction of the rainfall in the 3<sup>rd</sup> dekad of September 2019 and (iii) The highlights on the socioeconomic impact associated with the both observed and predicted climate conditions.

### 2. HIGHLIGHTS

- Rainfall performance of the 2<sup>nd</sup> dekad of September: The accumulation of rainfall observed was above the Long-Term-Mean (LTM) over most stations across the country, except stations of Rubavu, Nyamagabe, Bugarama and Musanze.
- Rainfall during the 3<sup>rd</sup> dekad of September: it is expected to receive rainfall within the range 20 mm to 50mm from 26<sup>th</sup> September to the end of the month over most parts of the country.
- The impacts is associated with both observed and predicted climate conditions: the soil moisture is continuously increasing, with improved pasture and crop conditions leading to a good prospective performance of crop and livestock.

### 3. CLIMATE PATTERNS

This section provides the climatological summary of rainfall and temperature in terms of amount for the 2<sup>nd</sup> dekad of September 2019 of the observed rainfall performance compared to the Long Term Mean for the same period.

#### 3.1 Rainfall amounts in the first dekad of September 2019

During the second dekad of September 2019, rainfall recorded over most parts of the country was ranging from 6.2mm to 87.2mm. The Nyagatare and Rubengera weather stations recorded much higher rainfall compared to other stations and LTM where 87.2 mm and 77mm were recorded for two respective stations.

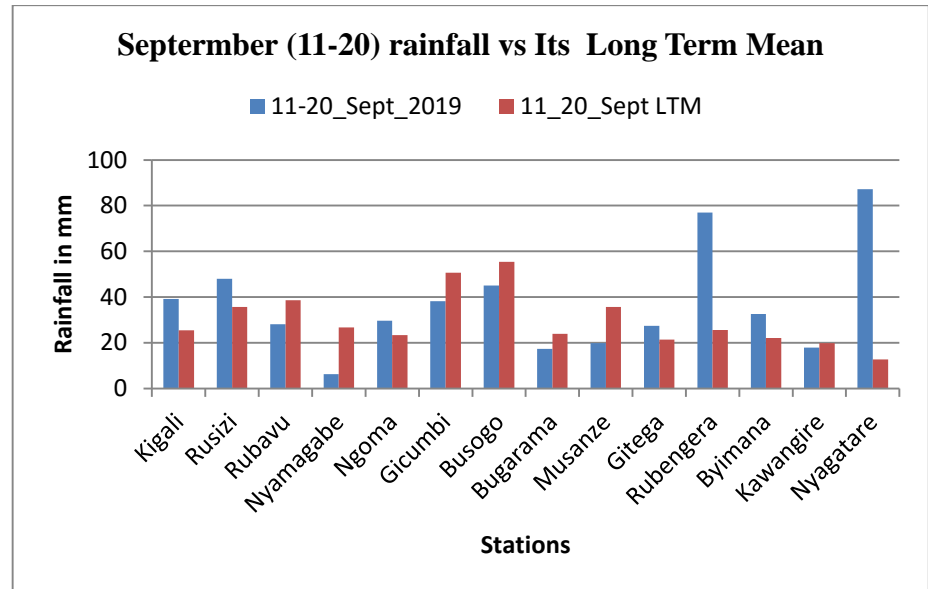
The Northern Province received rainfall ranging from 45.1mm to 19.8mm. The central region which is represented by Kigali and Gitega, the rainfall recorded was 39.1mm and 27.4mm respectively. Nyamagabe and Byimana stations also received 6.2mm and 32.2mm respectively.

### 3.2 Rainfall performance as compared to the Long Term Mean

The second dekad of September 2019 showed that the cumulative rainfall over localized places within the country was above the Long-Term Mean (LTM) where some parts of Rubavu, Nyamagabe, Bugarama, Musanze, Kawangire, Busogo and Gicumbi station, the observed rainfall which was below the Long Term Mean(LTM).

The Table and histogram below indicate the rainfall performance as compared to the (Long Term Mean).

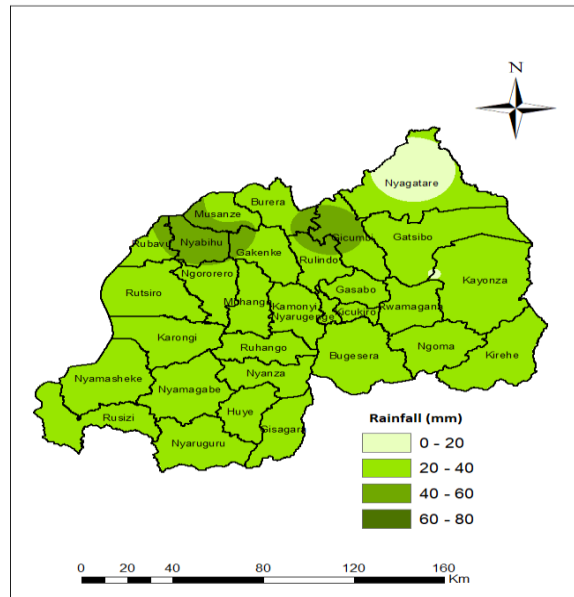
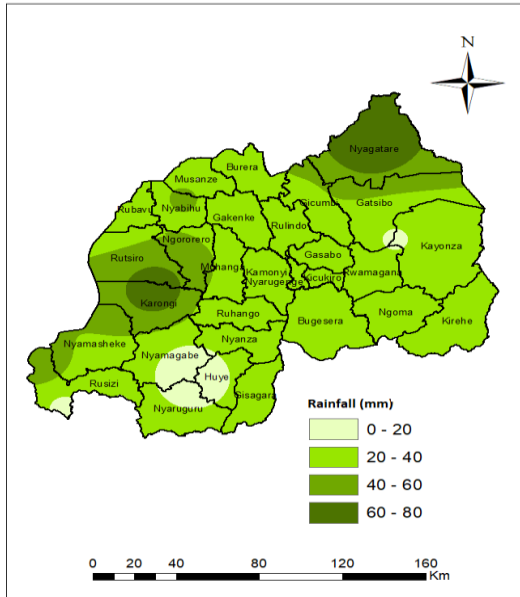
Stations	11-20_ Sept_2019	11_20_ Sep_- LTM
Kigali	39.1	25.5
Rusizi	48	35.6
Rubavu	28.1	38.6
Nyamagabe	6.2	26.7
Ngoma	29.6	23.3
Gicumbi	38.2	50.6
Busogo	45.1	55.4
Bugarama	17.3	23.9
Musanze	19.8	35.6
Gitega	27.4	21.4
Rubengera	77	25.6
Byimana	32.6	22.1
Kawangire	17.9	19.8
Nyagatare	87.2	12.7



**Figure1:** Rainfall performance as Compared to the LTM

**Table1:** Cumulative rainfall recorded as compared to the LTM

Map1&2 below shows rainfall distribution during 2<sup>nd</sup> dekad, September 2019 and the LTM rainfall



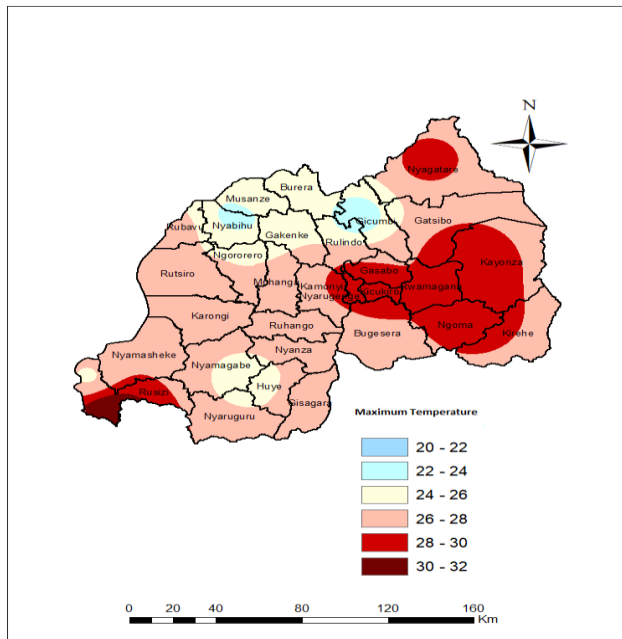
**Map1:** Rainfall distribution of 2<sup>nd</sup> dekad\_ September distribution for the same period.

**Map2:** Long Term Mean rainfall distribution

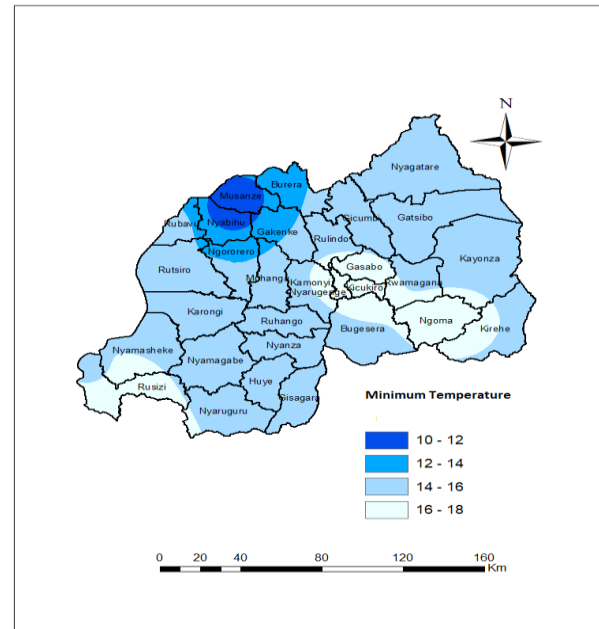
### 3.3 Temperature analysis

The highest average maximum temperature of 32.9<sup>0</sup>C was observed in the Southwest region at Bugarama station. The lowest average maximum temperature was observed in the Northern Province at Gicumbi station with 22.5<sup>0</sup>C.

The average of minimum temperature was ranging from 10.7 to 19.6<sup>0</sup>C. The Western Province and north-eastern parts of Eastern provinces had cooler temperatures compared to the South –Eastern, South- Western and Central regions of the country (Map3 and 4).



*Map3:2<sup>nd</sup> dekad\_September Maximum Temperature*

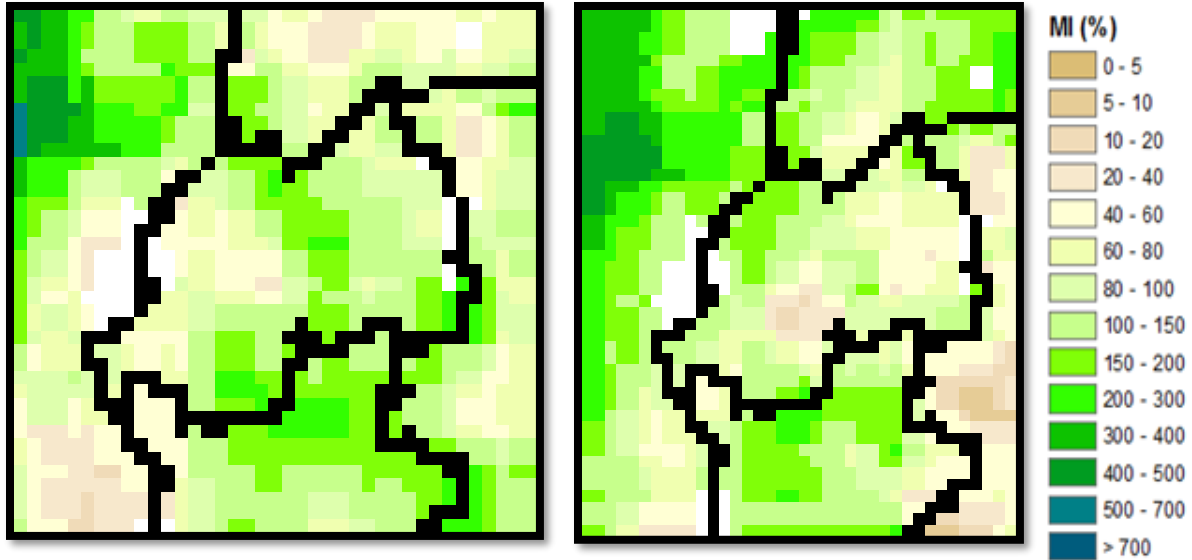


*Map4:2<sup>nd</sup> dekad\_September Minimum Temperature*

#### 4. Agricultural impact

##### Satellite images: Soil Moisture Index (MI)

Comparing the 2<sup>nd</sup> dekad and 1<sup>st</sup> dekad of September 2019, the satellite derived moisture is showing that the soil moisture is increased and continues to increase as a result of the wet conditions observed over the country. (see **Map5&6**).



Map5 : September\_2019\_dekad1(1-10/09/2019)

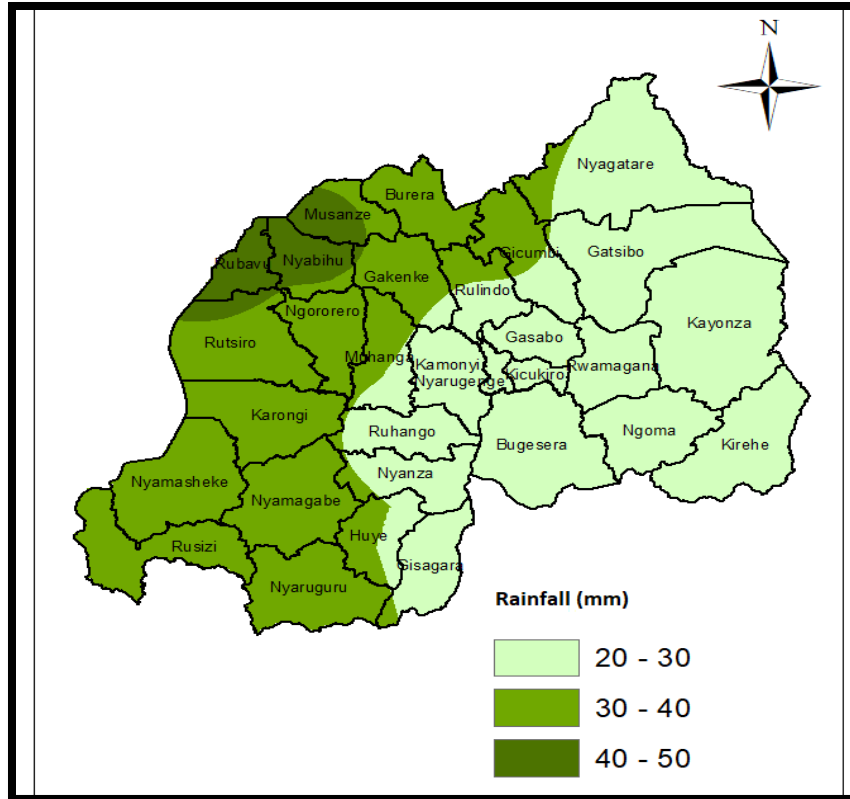
Map6: September\_2019\_dekad2 (11-20/09/2019)

### 5. Rainfall forecast for 3<sup>rd</sup> dekad of September

The rainfall during the 3<sup>rd</sup> dekad\_ September 2019; the rainfall is expected to start from 26<sup>th</sup> September 2019 up to the end of the month where different parts of the country will receive rainfall in the following ranges:

- Central region, Southeast, Eastern Southern provinces: expected to receive rainfall amount ranging from 20mm to 30mm.
- Western, Northern and Southwest provinces: expected to receive rainfall ranging from 30mm to 40mm.
- Northwest region: expected to receive rainfall ranging from 40mm to 50mm.

Map7 below shows the expected rainfall during 3<sup>rd</sup> dekad of (21<sup>st</sup> -30<sup>th</sup>) September 2019. The northern and western parts of the country are expected to received enhanced rains compared to other parts of the country.



*Map7: expected Rainfall from 21<sup>st</sup> September to 30<sup>th</sup> September 2019*

## 6. IMPACTS ON SOCIO-ECONOMIC SECTORS

The socioeconomic impacts associated with observed long term climatic conditions during the month of August are illustrated below:

### 6.1 Impacts of observed climate condition.

During this period of ten days, the rainfall accumulation was above the Long Term Mean (LTM) in some parts of the country, and impacts associated with:

- Improved crop, pasture and foliage conditions;
- Replenishment of water reservoirs;
- Inundation in wetland areas.

### 6.2 Potential likely impacts for 3<sup>rd</sup> dekad of September 2019.

The areas expected to receive light to moderate rainfall are likely to have the following impacts:

- Improvement in pasture and crop conditions leading to good prospects for crop and livestock performance;
- Improvement in water resources and replenishment of reservoirs;

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