

REPUBLIC OF RWANDA



MINISTRY OF ENVIRONMENT

B P: 898, Kigali

Toll free : 6080

E-mail: [bulletin@meteorwanda.gov.rw](mailto:bulletin@meteorwanda.gov.rw)

Website: [www.meteorwanda.gov.rw](http://www.meteorwanda.gov.rw)



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## Climatological Bulletin of March 2020

### 1. INTRODUCTION

This bulletin has three main components which are: (i) the review of climate conditions observed over Rwanda in March 2020, (ii) the prediction of the rainfall in April 2020 and (iii) the highlights on the socio-economic impact associated with the both observed and predicted climate conditions.

### 2. HIGHLIGHTS

- Rainfall performance in March 2020: The accumulation of rainfall observed during this month was above the Long Term Mean (LTM) in most of weather stations across the country, leaving few stations with above LongTerm Mean compare to the March 2020 observed rainfall.
- Rainfall during the April 2020: It is expected to receive moderate rainfall in all districts of the country with the amount ranging between 150mm and 450mm.
- The impact associated with both observed and predicted climate conditions: The observed rainfall for March was fairly widespread over the whole country with no extremes and the expected rainfall for April 2020 will result into improved pasture and foliage for livestock; good performance of crop..

### 3. CLIMATE PATTERNS

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

### **3.1 Rainfall amounts in March 2020**

During the month of March, rainfall amount recorded over Rwanda was ranging between 91.3mm and 322.1mm. High rainfall of 322.1mm was received at Nyamagabe station in the Southern Province. The South western region, Southern and a part of the northern region received much rainfall compared to the rest of the country. The central region represented by Gitega and Kigali International Airport weather stations of Kigali city recorded 214mm and 261.2mm respectively. Nyamagabe and Byimana weather stations of the Southern Province received 322.1mm and 242.4mm respectively. The Western Province also received 226.1mm over Rusizi, Rubavu (91.3mm), Rubengera (286.1mm) and Bugarama recorded 156.3mm. Gicumbi, Busogo and Musanze weather stations of the Northern Province have received 306.1mm, 138.4mm and 170.3mm respectively.

The Eastern Province received rainfall ranging between 140.8mm (over Kawangire), 214.9mm (over Ngoma ) and 252.6mm over Nyagatare . The enhanced rainfall activities during this month of March was a result of the positive Indian Ocean Dipole and convergence of winds that both led to the increase in air moisture over Rwanda.

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

The performance of the rainfall in the month of March 2020 shows that the cumulative rainfall over Rwanda was above as compared to the LTM (Long Term Mean) in many parts of the country leaving Rubavu and Busogo with below normal rainfall compared to the (LTM) long term mean.

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

Stations	Mar_2020	Mar_LT M
Kigali	261.2	111
Rusizi	226.7	168.4
Rubavu	91.3	127.3
Nyamagabe	322.1	137.7
Ngoma	214.9	137.5
Gicumbi	306.1	149.1
Busogo	138.4	149.4
Bugarama	156.3	144.4
Musanze	170.3	139.1
Gitega	214	94.7
Rubengera	286.1	170.6
Byimana	242.4	114.1
Kawangire	140.8	132.2
Nyagatare	252.6	104.9

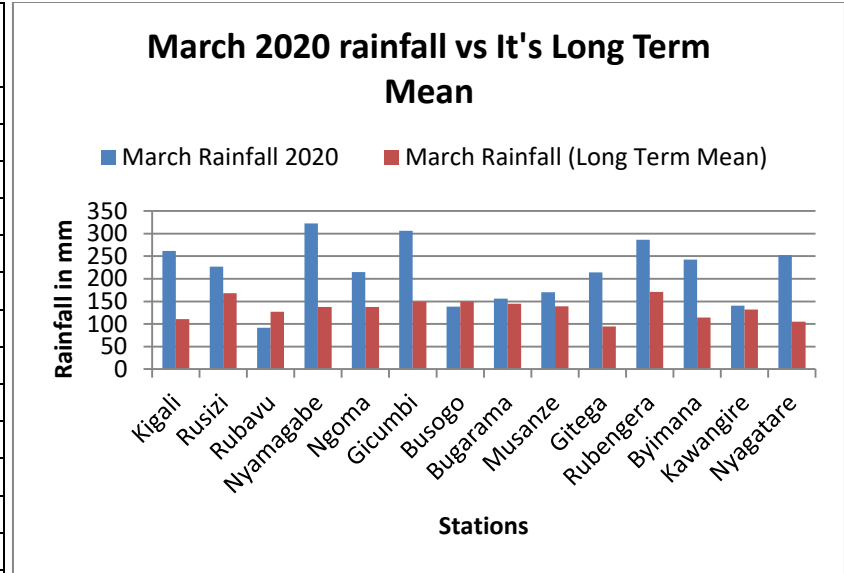
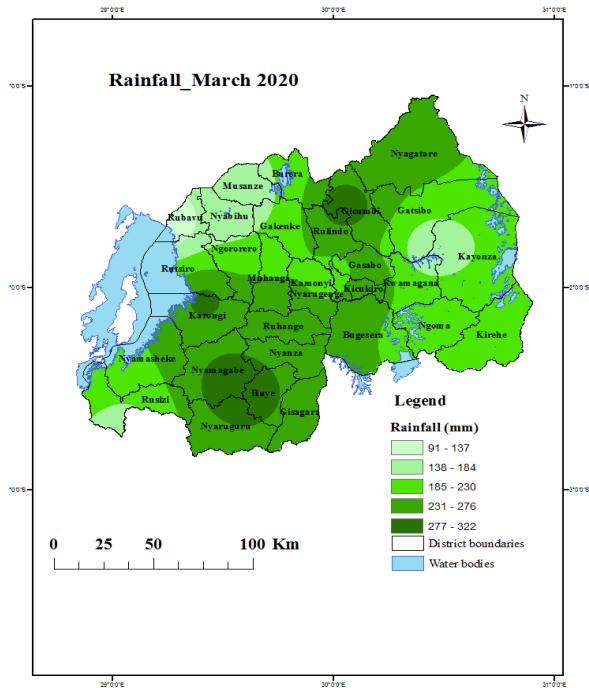


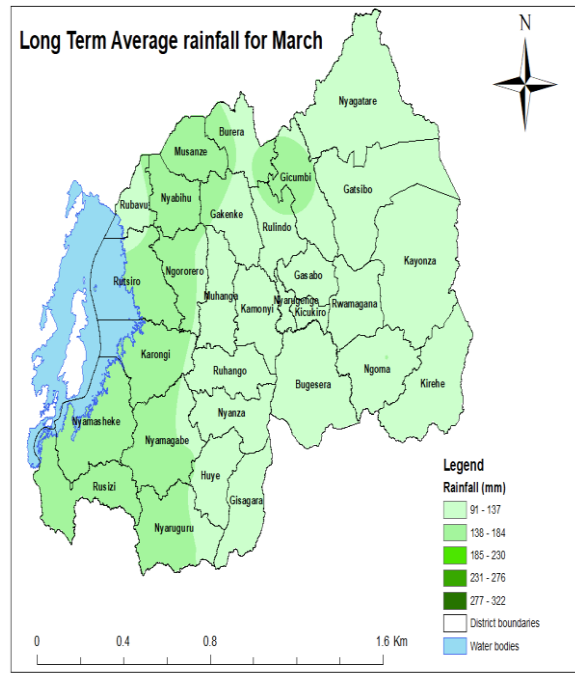
Figure 1: Rainfall performance as Compared to the Long Term Mean

Table 1: Cumulative rainfall recorded as compared to the LTM

Map 2 & 3 above show rainfall distribution during March 2020 and the Long Term Mean for the same period



Map 1: Rainfall distribution of March 2020

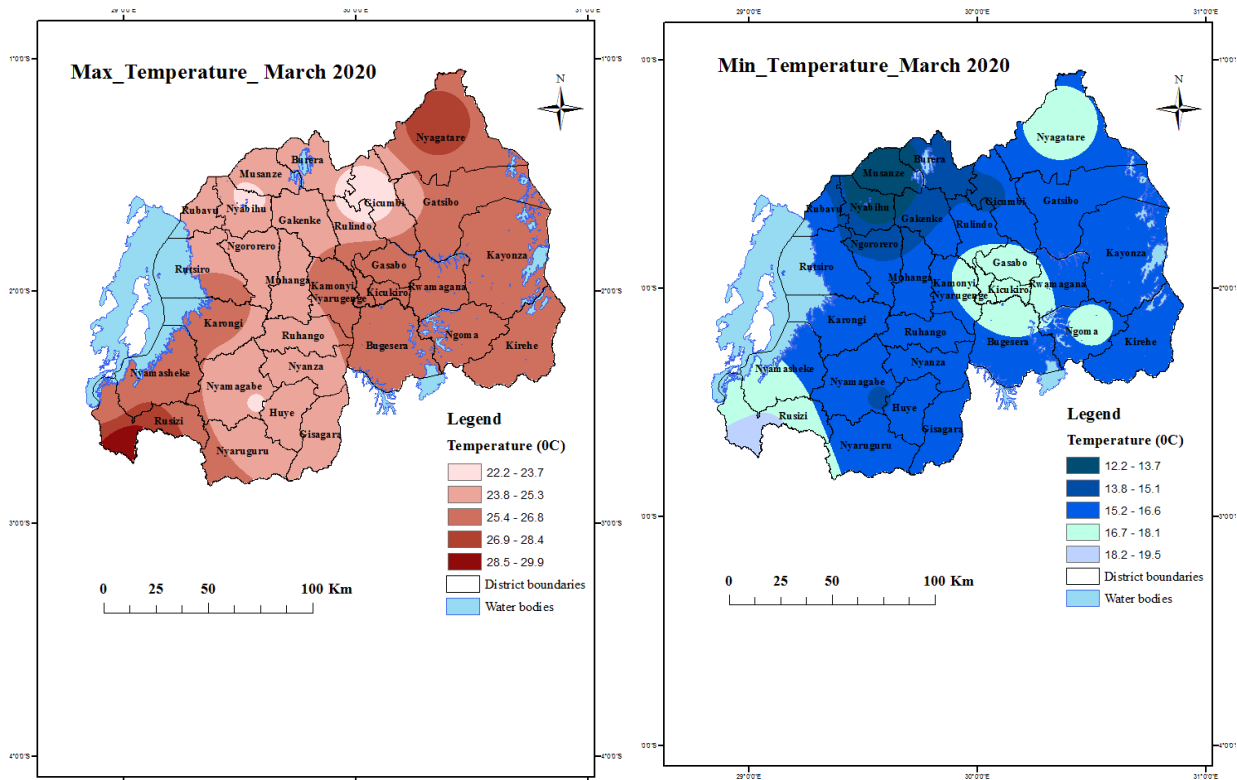


Map 2: March Long Term Mean rainfall distribution

### 3.3 Temperature analysis

The highest average maximum temperature of 29.9°C was observed in the South western region at Bugarama weather station. The lowest average maximum temperature was observed in the Northern Province at Gicumbi station with 22.2°C.

The average of minimum temperature was ranging between 12.2 (Busogo) and 19.6°C (Bugarama). The Northern and Southern provinces were cooler compared to the Eastern, Central regions and Western Provinces of the country (Figure 4 and 5).

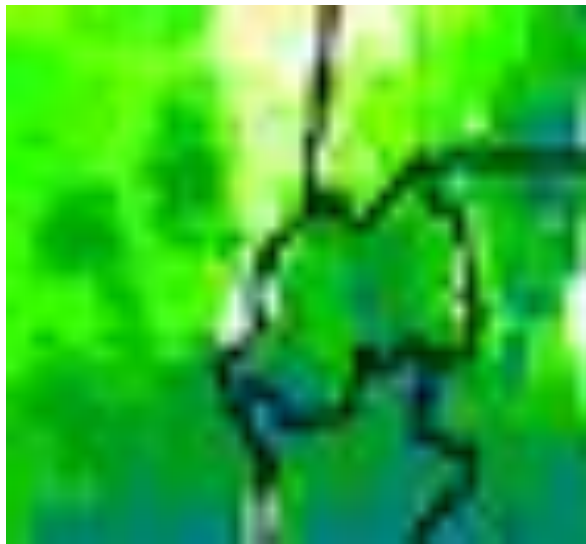


*Map3: March Maximum Temperature*

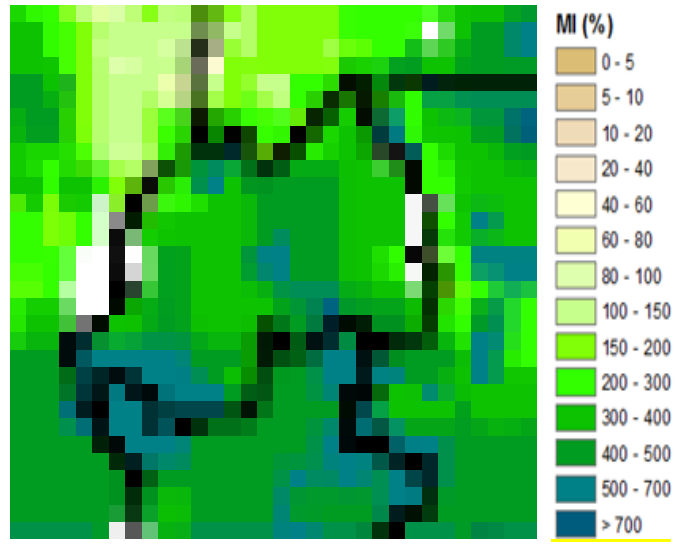
*Map4: March Minimum Temperature*

### 4. Soil Moisture Index (MI)

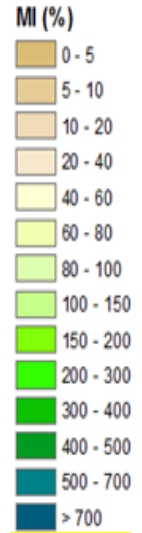
Comparing the soil moisture of February and March 2020, the satellite derived moisture is showing that the soil moisture was fair for crop as a result of wet and weather condition observed over the country during the month of March 2020 (see **Map6 & 7**). The expectation is that soil moisture will continue to increase during April 2020, as a result of increasing in wet condition the forecasted period.



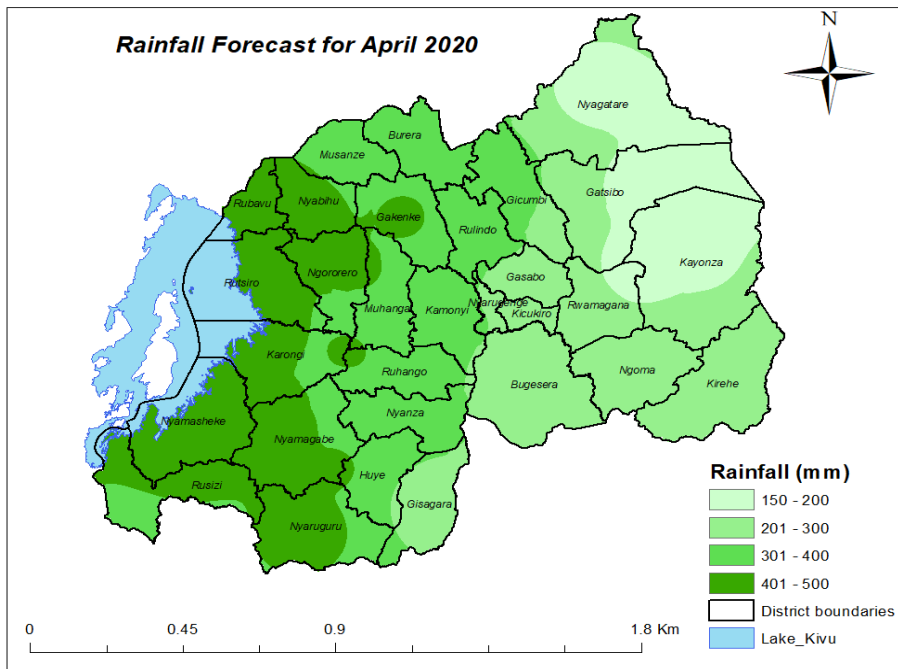
Map 5: February 2020



Map6: March 2020



### 5. Rainfall forecast for April



**Map 7:** Rainfall prediction for April

The outlook for April 2020 indicates a slight above average rainfall in most part of the Western Province; while other parts of the country shows normal rainfall for the forecasted period. Normally, the long term average rainfall of April is ranging between 150 and 400mm depending on the area.

In the coming period of thirty days of April 2020, the rainfall expected will be ranging between 150mm to 450mm as follow.

- In the Eastern province the expected is ranging between 150mm and 300mm,
- In the Kigali city the expected rainfall is ranging between 200mm and 300mm,
- In the Northern and most part of the Southern province the expected rainfall is ranging between 300mm and 400mm
- The Western province, Bugarama valley and a part of Southern province including Nyaruguru, and Nyamagabe district, the expected rainfall is ranging between 400mm and 450mm.

The normal rainfall and slight above normal rainfall in the Western Province during the forecasted period, is a result of the north – south oscillation of ITCZ, neutral phase of El Nino Southern Oscillation index (ENSO) and neutral condition of Indian Ocean Dipole index (IOD).

## **6. IMPACTS ON SOCIO-ECONOMIC SECTORS**

The socio-economic impacts associated with observed climatic conditions during the month of March 2020 are illustrated below:

### **6.1 Impacts of observed climate condition.**

During the month of March 2020, most places in the country continued to experienced wet weather conditions increasing the likelihood of good crop, water and livestock performance.

### **6.2 Potential likely impacts for the April 2020.**

In the month of April 2020, the forecasted climate is likely to improved water availability, improved crop and pasture conditions leading to good prospects for crop and livestock performance especially in southern and western part of the country.

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