

REPUBLIC OF RWANDA



MINISTRY OF ENVIRONMENT

B P: 898, Kigali

Toll free : 6080

E-mail: bulletin@meteorwanda.gov.rw

Website: www.meteorwanda.gov.rw



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Climatological Bulletin of January 2020

1. INTRODUCTION

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

2. HIGHLIGHTS

- Rainfall performance in January : the accumulation of rainfall observed during this month was above the LTM (Long-Term-Mean) in all stations across the country leaving Rubavu station with below the long term mean.
- Rainfall during the February 2020: it is expected to receive light to moderate rainfall in all districts of the country and the amount ranging between 100 mm and 200mm.
- The impact associated with both observed and predicted climate conditions: Some areas were flooded and landslides occurred in some parts of the country; the soil moisture increased which improved the pasture and foliage for livestock, while heavy rain caused the loss of life and damage infrastructure.

3. CLIMATE PATTERNS

This section provides the climatological summary for the rainfall and temperature in terms of amount for January 2020 and Rainfall performance as compared to the Long Term Mean over Rwanda.

3.1 Rainfall amounts in January 2020

During the month of January, rainfall amount recorded over Rwanda was ranging between 48.6mm and 222.4mm. High rainfall of 222.3mm was received at Nyamagabe station. The Southern Province, Western Province and Kigali city received much rainfall compared to Northern and Eastern Province. The central region represented by Gitega and Kigali Aeroport weather stations of Kigali city recorded 166.4mm and 128mm respectively. Nyamagabe and Byimana weather station of the Southern Province received 222.3mm and 128mm respectively. The Western Province also received 161.3mm over Rusizi, Rubavu (51.5mm), Rubengera (220.7mm) and Bugarama recorded 164mm. Gicumbi, Busogo and Musanze weather stations of the Northern Province have received 105.8mm, 176.4mm and 107.5mm respectively.

The Eastern Province received the rainfall ranging between 48.6mm (over Nyagatare), 86.9mm (over Kawangire) and 106.6mm over Ngoma. The enhanced rainfall activities during this month of January was a result of the convergent winds that 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 January 2020 shows that the cumulative rainfall over Rwanda was above as compared to the LTM (Long-Term Mean) in most parts of the country.

The Table and histogram below indicate the rainfall performance of January 2020 compared to the (Long Term Mean) of January in many years.

| Stations | Jan_2020 | Jan_LTM |
|-----------|----------|---------|
| Kigali | 128 | 72.1 |
| Rusizi | 161.3 | 143.8 |
| Rubavu | 51.5 | 81.2 |
| Nyamagabe | 222.3 | 143.2 |
| Ngoma | 106.6 | 85.8 |
| Gicumbi | 105.8 | 62.7 |
| Busogo | 176.4 | 79 |
| Bugarama | 164 | 128.5 |
| Musanze | 107.5 | 69.7 |
| Gitega | 166.4 | 37.7 |
| Rubengera | 220.7 | 63.4 |
| Byimana | 153.4 | 112 |
| Kawangire | 86.9 | 71.6 |
| Nyagatare | 48.6 | 29.1 |

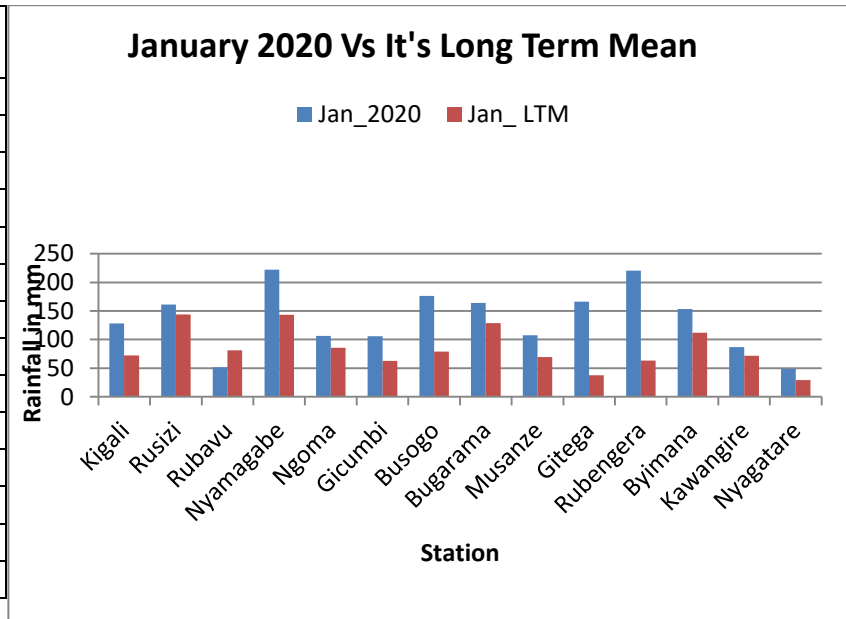


Table1: Cumulative rainfall recorded as compared to the LTM

Figure1: Rainfall performance as Compared to the LTM

Figure 2& 3 above show rainfall distribution during January and the rainfall distribution for the same period in the long term.

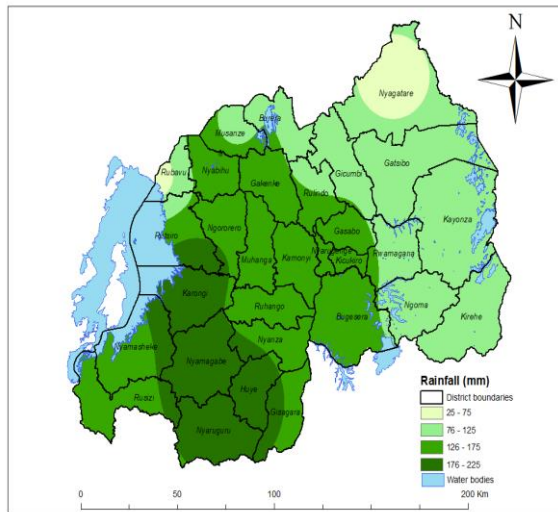


Figure2: Rainfall distribution of January 2020

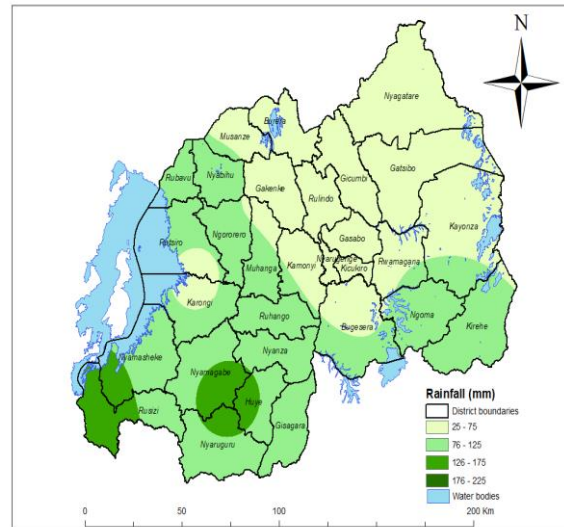


Figure3: Long Term Mean rainfall distribution

3.3 Temperature analysis

The highest average maximum temperature of 29.9°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 21.5°C.

The average of minimum temperature was ranging between 11.9 (Busogo) and 19.4°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).

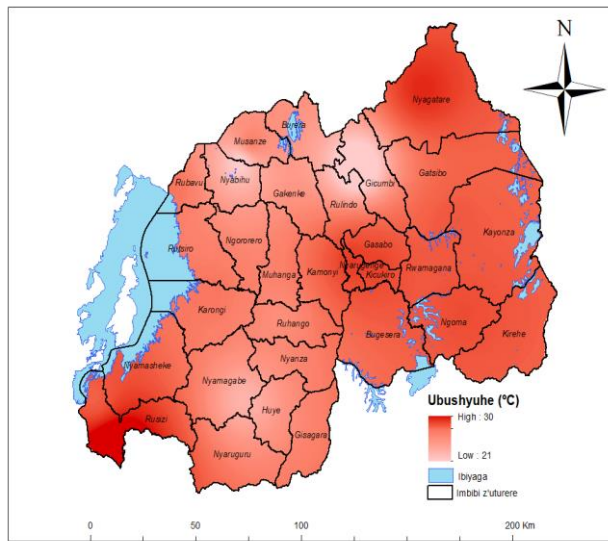


Figure4: January Maximum Temperature

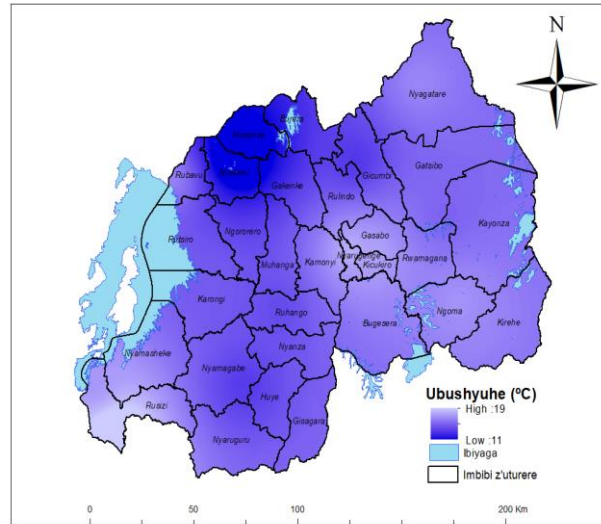
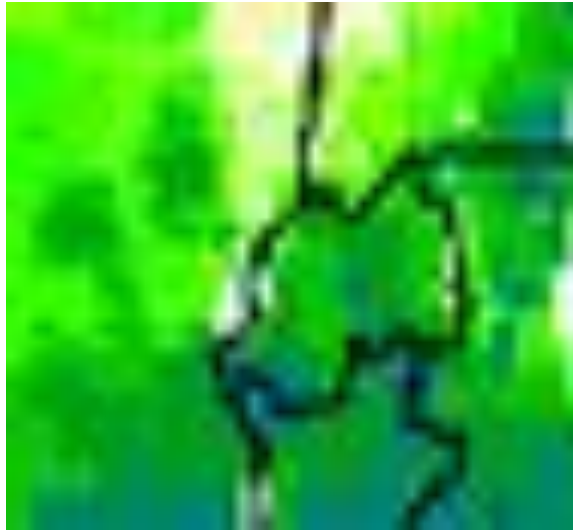


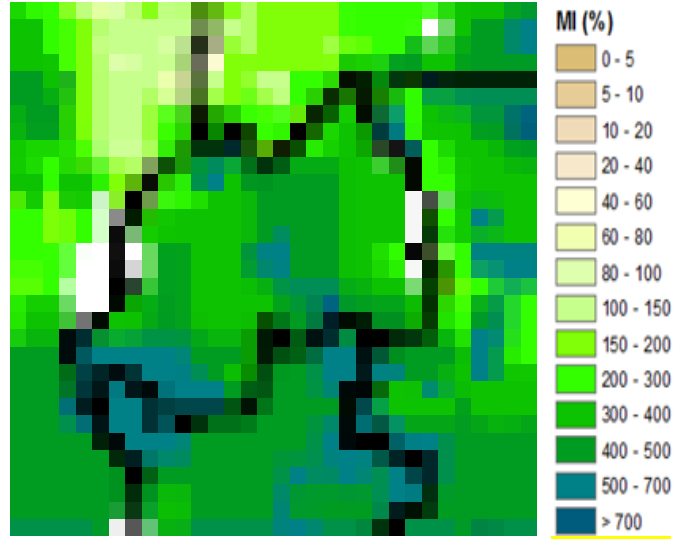
Figure5: January Minimum Temperature

4. Soil Moisture Index (MI)

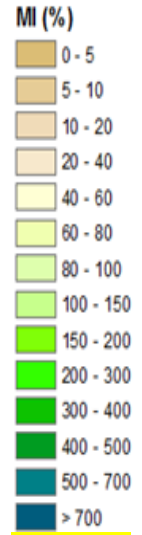
Comparing the soil moisture of December and January, the satellite derived moisture is showing that the soil moisture increased as a result of wet weather condition observed over the country during January. (see **Map6&7**).



Map 6: December 2019



Map 7: January 2020



5. Rainfall forecast for February

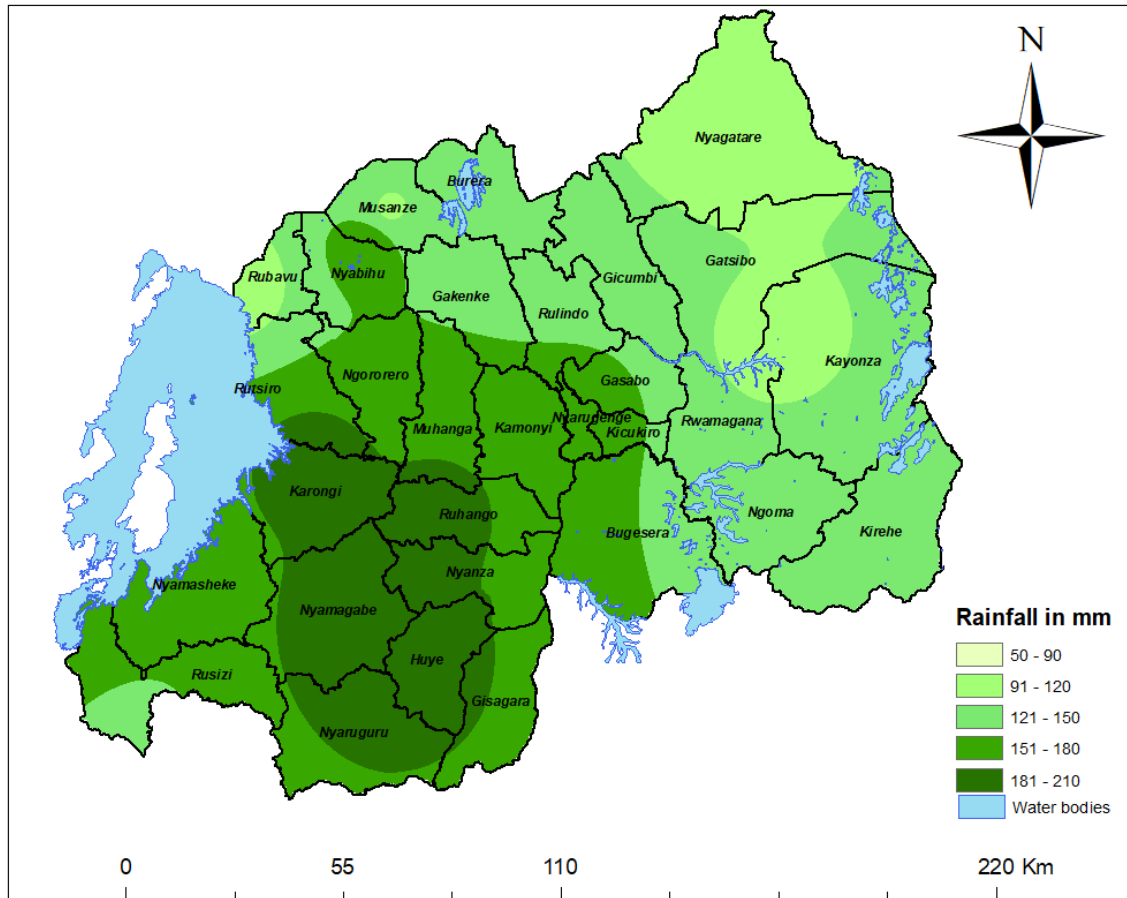


Figure 8: Rainfall prediction for February

The rainfall during February 2020; in this period of thirty days, the rainfall is expected in all districts of Rwanda, the expected range will be between 100mm to 200mm. High rainfall will be received in the beginning of the month, there will be a reduction within the month and also another pick is expected in the last week of February.

6. IMPACTS ON SOCIO-ECONOMIC SECTORS

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

6.1 Impacts of observed climate condition.

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

- Improved, pasture and foliage conditions;
- Floods and landslides in some areas;
- Crop failure due to heavy rain and floods.
- Loss of life and infrastructure

6.2 Potential likely impacts for the February 2020.

In the month of February 2020, the forecasted climate is likely to result to improved water availability, improved crop and pasture conditions leading to good prospects for crop and livestock performance.

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)