



Bulletin N°01/2021

Issued on 05 February 2021

Climatological Bulletin of January 2021

1. INTRODUCTION

The bulletin has three main components, which include: (i) the review of climate conditions observed over Rwanda in January 2021, (ii) the prediction of the February 2021 rainfall and (iii) the highlights on the socio-economic impacts associated with both observed and predicted climate conditions.

2. HIGHLIGHTS

- **Rainfall performance in January 2021:** The accumulation of observed rainfall during this month was above the Long Term Mean (LTM) in most parts of the country except at Byimana and Gisenyi Airport stations that recorded below normal rainfall.
- **Rainfall expected during February 2021:** During the month of February 2021, accumulated rainfall ranging between 50 and 200mm expected over the country. The expected rainfall is in the range of Long Term Mean in most parts of the country and slight above the Long Term Mean in Southwestern part .
- **The impact associated with both observed and predicted climate conditions:** in January 2021, above normal rainfall was observed in most parts of the country, and this led to good performance of rain-fed agriculture which was in maturity to harvesting period but also led to poor performance of localized late planted crops. February 2021, is the continuity of short dry season, which experience decreased soil moisture content, shortage of water level and high evaporation among others.

3. CLIMATE PATTERNS

This section provides the climatological summary of rainfall and temperature of January 2021 in comparison to the Long Term Mean over Rwanda.

3.1 Rainfall amounts in January 2021

During the month of January, rainfall amount recorded over Rwanda was ranging between 41.0mm and 217.0mm. High rainfall amount of 217.0mm recorded at Kamembe Airport station in the Western Province. The southwestern part and Kigali city were wet comparatively to other parts of the country. The Central region represented by Gitega and Kigali International Airport weather stations of Kigali City recorded 138.1mm and 164.6mm respectively.

- Weather stations of the Southern Province recorded rainfall as follows: Nyamagabe and Byimana stations recorded 138.5mm and 86.1mm respectively,
- Weather stations of the Western Province also recorded rainfall as follow: Kamembe Airport 217.0mm, Gisenyi Airport 41.0mm, Rubengera 148.6mm and 138.9mm recorded at Bugarama stations,



- Weather stations of the Northern Province recorded rainfall as follows: Gicumbi 84.0mm, Busogo 144.5mm and Musanze Airport stations recorded 112.2mm respectively,
- Weather stations of the Eastern Province recorded rainfall ranging between 124.2mm at Ngoma-Kazo, 122.8mm at Kawangire and 77.2mm at Nyagatare stations.

3.2 Rainfall performance in comparison to the Long Term Mean

Comparing the performance of the rainfall during the month of January 2021 with the Long Term Mean (LTM) for the same period, it's was observed that the cumulative rainfall of January 2021 was above normal range of Long Term Mean (LTM) in most parts of the country.

The Table and histogram below indicate the rainfall performance of January 2021 compared to the Long Term Mean for the same period over many years.

Stations	Jan. 2021	Jan. LTM
Kigali Aero	164.6	77.2
Gitega	138.1	83.4
Nyamagabe	138.5	125.3
Byimana	86.1	105.6
Gicumbi	84	76.8
Busogo	144.5	71.6
Musanze Aero	112.2	77.8
Kamembe Aero	217	148.1
Gisenyi Aero	41	78.5
Bugarama	138.9	128.1
Rubengera	148.6	132.2
Ngoma-Kazo	124.2	87.9
Kawangire	122.8	34.5
Nyagatare	77.2	29.5

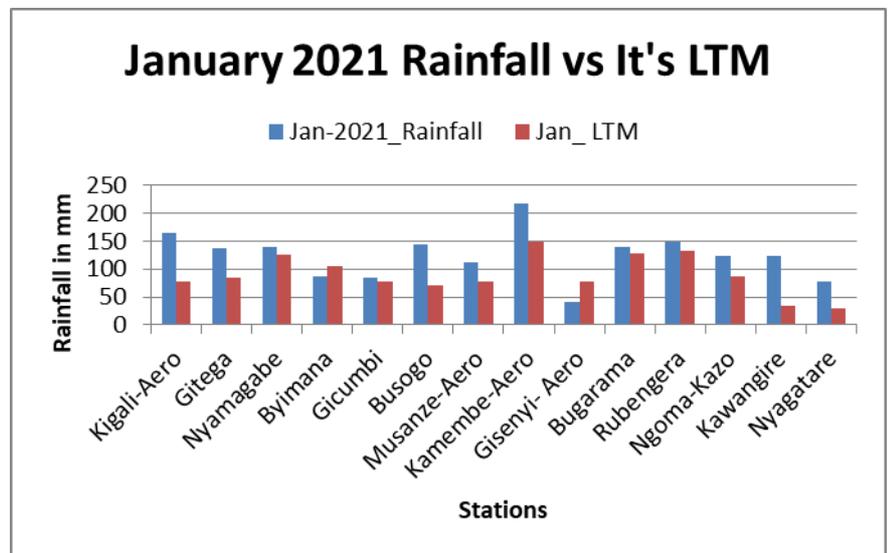
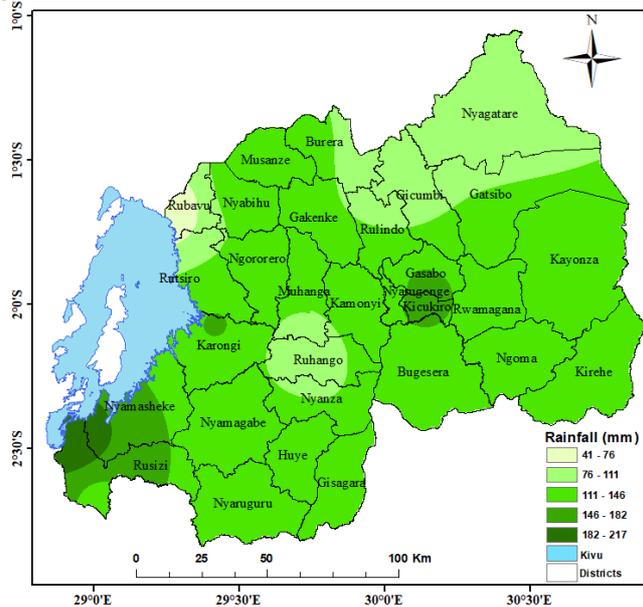


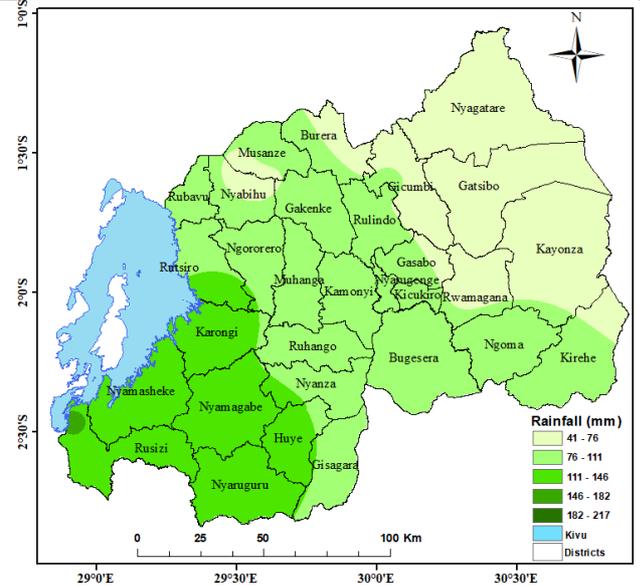
Figure 1: Rainfall performance as Compared to the Long Term Mean

Table 1: Cumulative rainfall recorded as compared to the LTM

Map 1 & 2 below show rainfall distribution during January 2021 and the Long Term Mean for the same period.



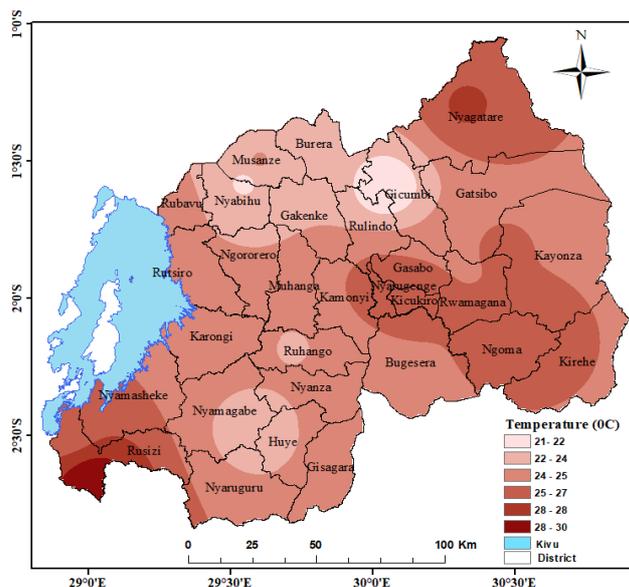
Map1: Rainfall distribution of January 2021



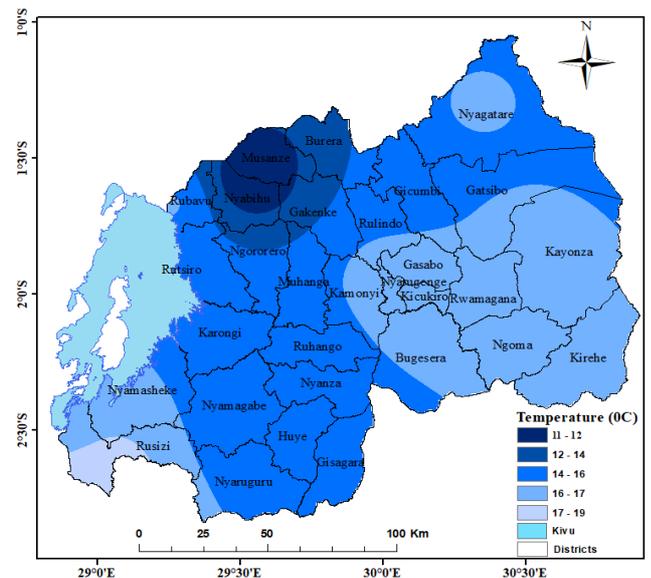
Map2: January Long term mean rainfall distribution

3.3 Temperature analysis

The lowest value of maximum temperature was 20.8°C, observed at Gicumbi weather station in the Northern Province, the highest value of maximum temperature observed in the southwestern region at Bugarama station with 29.7°C. The minimum temperature ranged between 10.8°C at Busogo station in the Northern Province and 18.7°C observed at Bugarama station in the Western Province. The Northern and Southern Provinces were cooler compared to the Eastern, Western Provinces and Central regions of the country (Map 3 and 4).



Map3: January 2021 Maximum Temperature



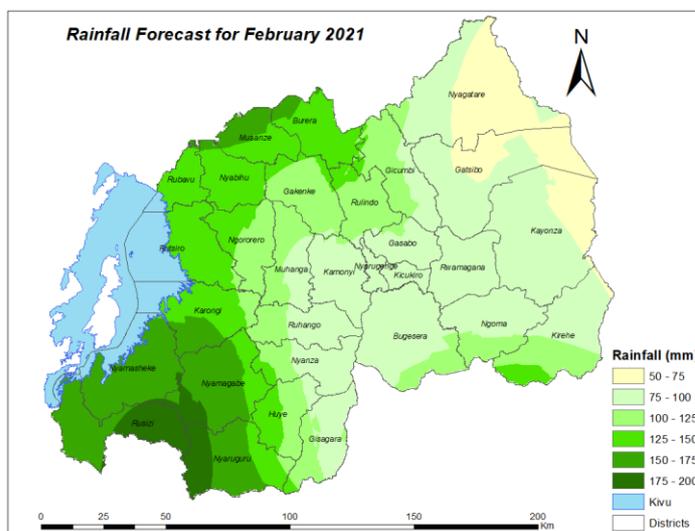
Map4: January 2021 Minimum Temperature



4. Soil Moisture Index (MI)

Comparison of soil moisture content of December 2020 and January 2021, it was observed that the soil moisture content increased during the month of January because of the wet weather conditions experienced during the observation period over most parts the country. The soil moisture will decrease in February 2021, as results of expected dry weather conditions within the forecasted period.

5. Rainfall forecast for February 2021



Map 5: Rainfall prediction for February 2021

Rainfall ranging between 50 and 200 millimeters (mm) is expected in the country during February 2021. The expected rainfall will be in the range of Long Term Mean in most parts of the country and slightly above the Long Term Mean in Southwestern part of the country. Expected rainfall is due to the increased advection of moisture from Indian Ocean supported by the local effects such as mountains, forest and lakes; rainfall is expected to enhance during second dekad of the month of February 2021

Expected rainfall amount:

- **Rainfall ranging between 50 and 75mm** is expected in eastern and central parts of Nyagatare, eastern Kayonza and eastern and northern parts of Gatsibo districts.
- **Rainfall ranging between 75 and 100 mm** is expected in Kigali City, the remaining parts of Nyagatare, Gatsibo and Kayonza, northern parts of Kirehe and Ngoma, most parts of Bugesera, Rwamagana, Kamonyi, eastern part of Ruhango, Muhanga, Nyanza, Gicumbi and central and eastern part of Gisagara districts.



- **Rainfall ranging between 100 and 125 mm** is expected in southern parts of Kirehe, Ngoma and the southern part of Bugesera district, most part of Rulindo and Gakenke districts, remaining part of Gicumbi, western Ruhango, Muhanga, Nyanza and Gisagara districts and in eastern part of Ngororero, Karongi and Huye districts.
- **Rainfall ranging between 125 and 150 mm** is expected in most parts of Burera, Rubavu, Nyabihu, Rutsiro, small part of northern Rulindo and Gakenke, northwestern Ngororero, northern and central Karongi, eastern Musanze, Nyamagabe and Nyaruguru, western Huye, small part of southern Nyanza and Kirehe.
- **Rainfall ranging between 150 and 175 mm** is expected in Nyamasheke, small part of northern Musanze, Burera and Nyabihu, southern Karongi, western Rusizi and most parts of northern, central and southern parts of Nyaruguru and Nyamagabe districts.
- **Rainfall ranging between 175 and 200 mm** is expected in eastern part of Rusizi, southwestern part of Nyamagabe and western part of Nyaruguru districts.

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 January 2021, the rainfall accumulation was above the Long Term Mean (LTM) in most parts of the country, this led to distribution of some of postharvest activities.

6.2 Potential likely impacts for February 2021.

During the forecasting period, the expected rainfall may affect post-harvest handling activities, therefore relevant authorities are advised to put in place both preventive and mitigative strategies to cope with aforementioned effects.

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).