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MINISTRY OF ENVIRONMENT

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Climatological Bulletin of April 2020

1. INTRODUCTION

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

2. HIGHLIGHTS

- **Rainfall performance in April 2020:** The accumulation of rainfall observed during this month was above the Long Term Mean (LTM) in all parts of the country.
- **Rainfall expected during May 2020:** During this month of May, light to moderate rainfall ranging between 50mm and 250mm is expected over the country.
- **The impact associated with both observed and predicted climate conditions:** The observed rainfall for April 2020 was very heavy over the whole country which led to damage of different infrastructures and loss of life due to landslides and floods. The expected rainfall for May 2020 will be fairly widespread over the country which may result into improved pasture and foliage for livestock as well as good performance of crops.

3. CLIMATE PATTERNS

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

3.1 Rainfall amounts in April 2020

During the month of April 2020, rainfall amount recorded over Rwanda was ranging between 152.7mm and 376.1mm. High rainfall of 376.1mm was recorded at Byimana station in the Southern Province. The Northern Province and Southern Province in Muhanga, Kamonyi and Ruhango Districts recorded 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 315.5mm and 202.2mm respectively. Nyamagabe and Byimana weather stations of the Southern Province received 236.9mm and 376.1mm respectively. The Western Province also received 176.4mm over Rusizi, Rubavu (152.7mm), Rubengera (250.2mm) and Bugarama recorded

231.7mm. Gicumbi, Busogo and Musanze weather stations of the Northern Province have received 372.4mm, 329.2mm and 263.2mm respectively.

The Eastern Province received rainfall ranging between 182.8mm (over Nyagatare), 232mm (over Ngoma) and 261.5mm over Kawangire. The enhanced rainfall during this month of April 2020 was a result of strong convergence and increased moisture content over the region where Rwanda is located.

3.2 Rainfall performance as compared to the Long Term Mean

Comparing the performance of the rainfall in the month of April 2020 with the Long Term Mean for the same period, it is observed that the cumulative rainfall for April 2020 was above the LTM (Long Term Mean) in all parts of the country.

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

Stations	April 2020	Apr_LTM
Kigali	202.2	162.9
Gitega	315.5	100.1
Nyamagabe	236.9	172.1
Byimana	376.1	184.4
Gicumbi	372.4	166.5
Busogo	329.2	184.5
Musanze	263.4	187.1
Bugarama	231.7	145.9
Rusizi	167.4	159.9
Rubavu	152.7	146.9
Rubengera	250.2	121.2
Ngoma	232	170.3
Kawangire	261.5	161
Nyagatare	182.8	103.4

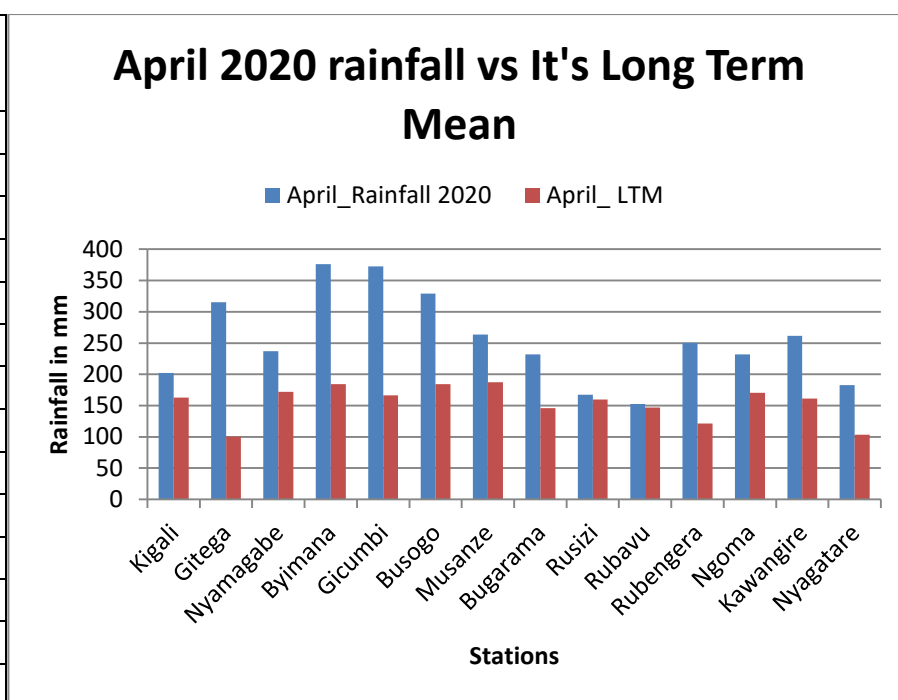
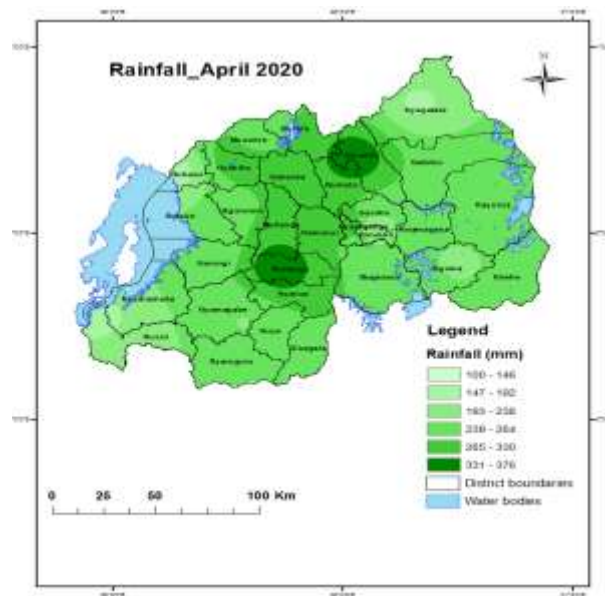


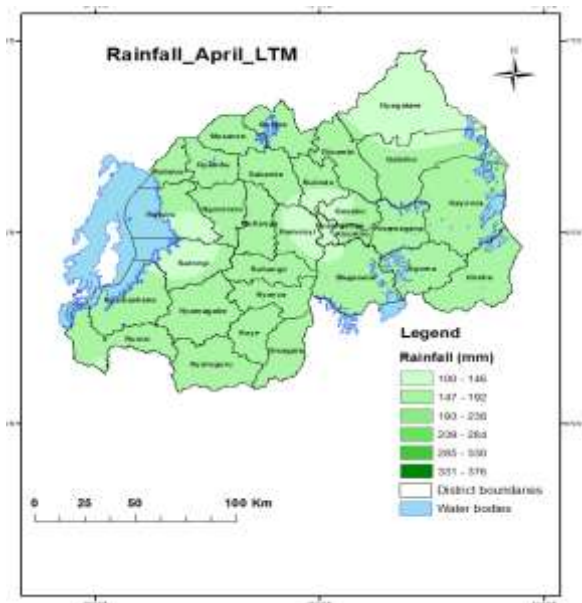
Table 1: Cumulative rainfall recorded as compared to the LTM

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

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



Map1: Rainfall distribution of April 2020

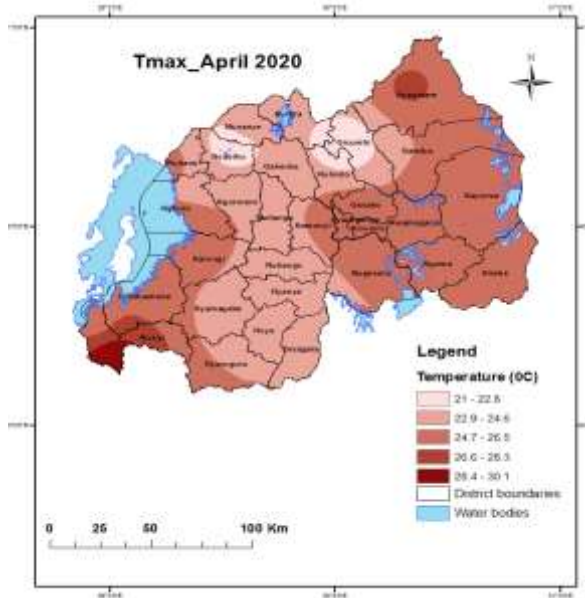


Map2: April Long Term Mean rainfall distribution

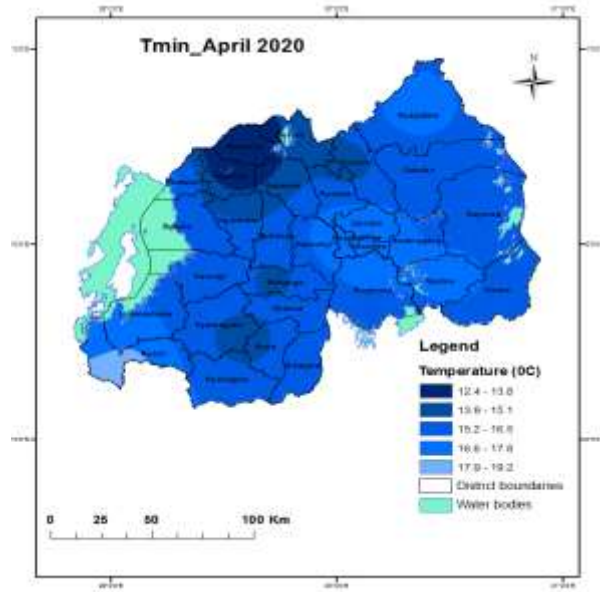
3.3 Temperature analysis

The highest average maximum temperature of 30.1⁰C 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 21.0⁰C.

The average of minimum temperature was ranging between 12.4 (Busogo and Musanze) stations and 19.2⁰C at Bugarama station. The Northern and Southern Provinces were cooler compared to the Eastern, Central regions and Western Provinces of the country (Figure 4 and 5).



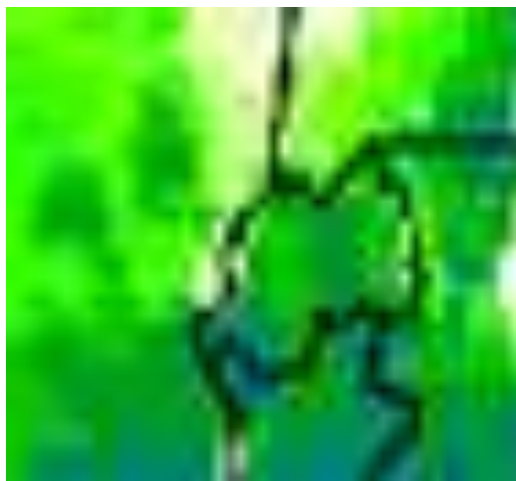
Map3: April Maximum Temperature



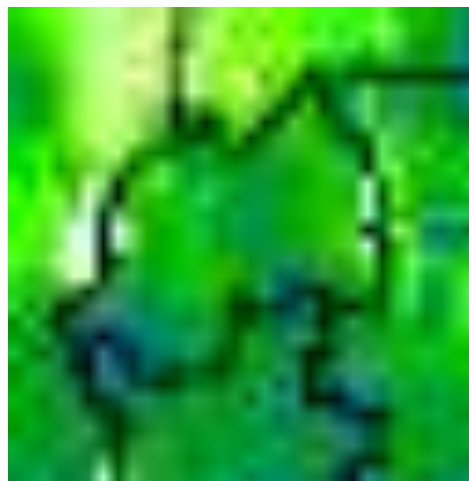
Map4: April Minimum Temperature

4. Soil Moisture Index (MI)

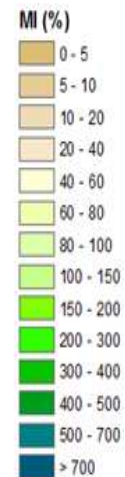
Comparing the soil moisture of March and April 2020, the satellite derived moisture is showing that the soil moisture was fair for crop as a result of wet and weather conditions observed over the country during the month of April 2020 (see **Map6 & 7**). The soil moisture is expected to increase during May 2020, as a result of expected persistent wet conditions in the forecast period.



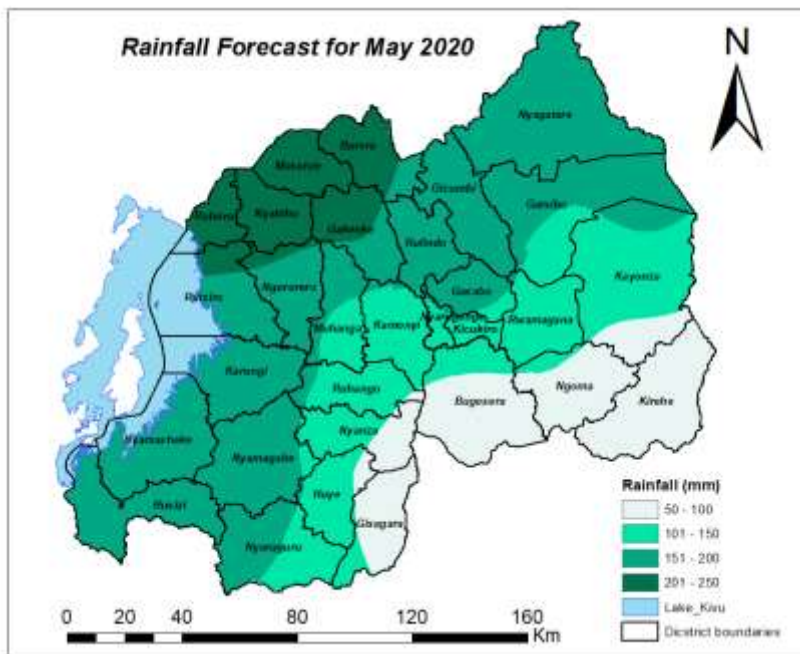
Map 5: March 2020



Map6: April 2020



5. Rainfall forecast for May



Map 7: Rainfall prediction for May

Rainfall expected during the month of May 2020 is ranged between 50mm and 250mm countrywide. The districts of Rubavu, Nyabihu, Musanze, Burera and a part of Gakenke are expected to experience rainfall ranging between 201mm and 250mm in May 2020, remaining districts of Western Province, Northern Province and districts of Nyagatare, Gatsibo, Gasabo, Nyamagabe and a part of Nyaruguru will experience rainfall ranging between 151mm and 200mm, while the districts of Kirehe, Ngoma, Bugesera, Gisagara, and part of Nyanza (Amayaga) are expected to have rainfall ranging between 50mm and 100mm. The remaining parts will experience rainfall ranging between 101mm and 150mm. (For more details about the rainfall distribution refer the Map 7 above showing rainfall prediction for May 2020).

The rainfall expected in May 2020 is within long term average range of May rainfall in the area where rainfall between 50mm and 150mm is expected and it is above normal in other parts. The long term average range of May is between 50mm and 180mm.

The expected rainfall during the month of May 2020 is likely to be more intense during the first and second dekad of May 2020 (between 1st and 20th May 2020) and will be enhanced in first dekad (between 1st and 10th). There is however expected considerable reduction of rainfall in last dekad of May 2020 (between 21st and 31st May 2020) which will be an indication of cessation of March to May rainfall season more especially in many parts of Eastern Province, Southern Province and Kigali city. The cessation of rainfall season is expected to be in the first dekad of June over many parts of Northern and Western Provinces.

The main drivers associated with May 2020 rainfall is the Inter-Tropical Convergence Zone which is overhead the region where Rwanda is located but moving toward Northern Hemisphere.

6. IMPACTS ON SOCIO-ECONOMIC SECTORS

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

6.1 Impacts of observed climate condition.

During this period of April 2020, the rainfall accumulation was above the Long Term Mean (LTM) in all parts of the country. As a result from the rainfall of April, we have seen improved; pasture and foliage conditions; floods and landslides in some areas; replenishment of water reservoirs; crop damage due to heavy rain, water logging and floods; destruction of infrastructure in some parts of the country and loss of lives.

6.2 Potential likely impacts for the May 2020.

In the month of May 2020, we expect improved water availability, improved crop and pasture conditions leading to good prospects for crop and livestock performance especially in Northern parts of 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).