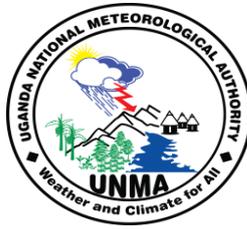


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UGANDA NATIONAL METEOROLOGICAL AUTHORITY

Ref: SCF/JJA2021

7th June, 2021

THE SEASONAL RAINFALL OUTLOOK FOR JUNE TO AUGUST 2021 OVER UGANDA

1. OVERVIEW

The June, July, August (JJA) period is normally dry season over most parts of South western, Central, Lake Victoria basin and parts of Eastern region but a continuation of rainy season for northern Uganda. It usually marks the end of the first rainfall season and a harvesting season for crops in most parts of the country.

It has been observed that the major physical conditions likely to influence the weather conditions over Uganda and the rest of the countries in the Greater Horn of African region for the forecast period of June to August 2021 are:

- i) The neutral state of El Nino-Southern Oscillation (ENSO) over tropical Pacific Ocean
- ii) The current neutral and weak negative Indian Ocean Dipole (IOD) expected to develop for July to August period 2021
- iii) The influence of regional circulation patterns, topographical features and large inland water bodies

Based on the above considerations as well as details of the climatology of Uganda and scientific tools used for climate analysis and prediction, Uganda National Meteorological Authority (UNMA) has come up with the following detailed seasonal rainfall outlook for JJA 2021 as follows:

1.1. General forecast

Overall, there is an increased likelihood of normal with tendency to above normal (enhanced) rainfall conditions over the northern and eastern parts of the country while the remaining areas are expected to experience near normal conditions, as shown in Figure1 below:

Rainfall Outlook for June to August (JJA) Season 2021

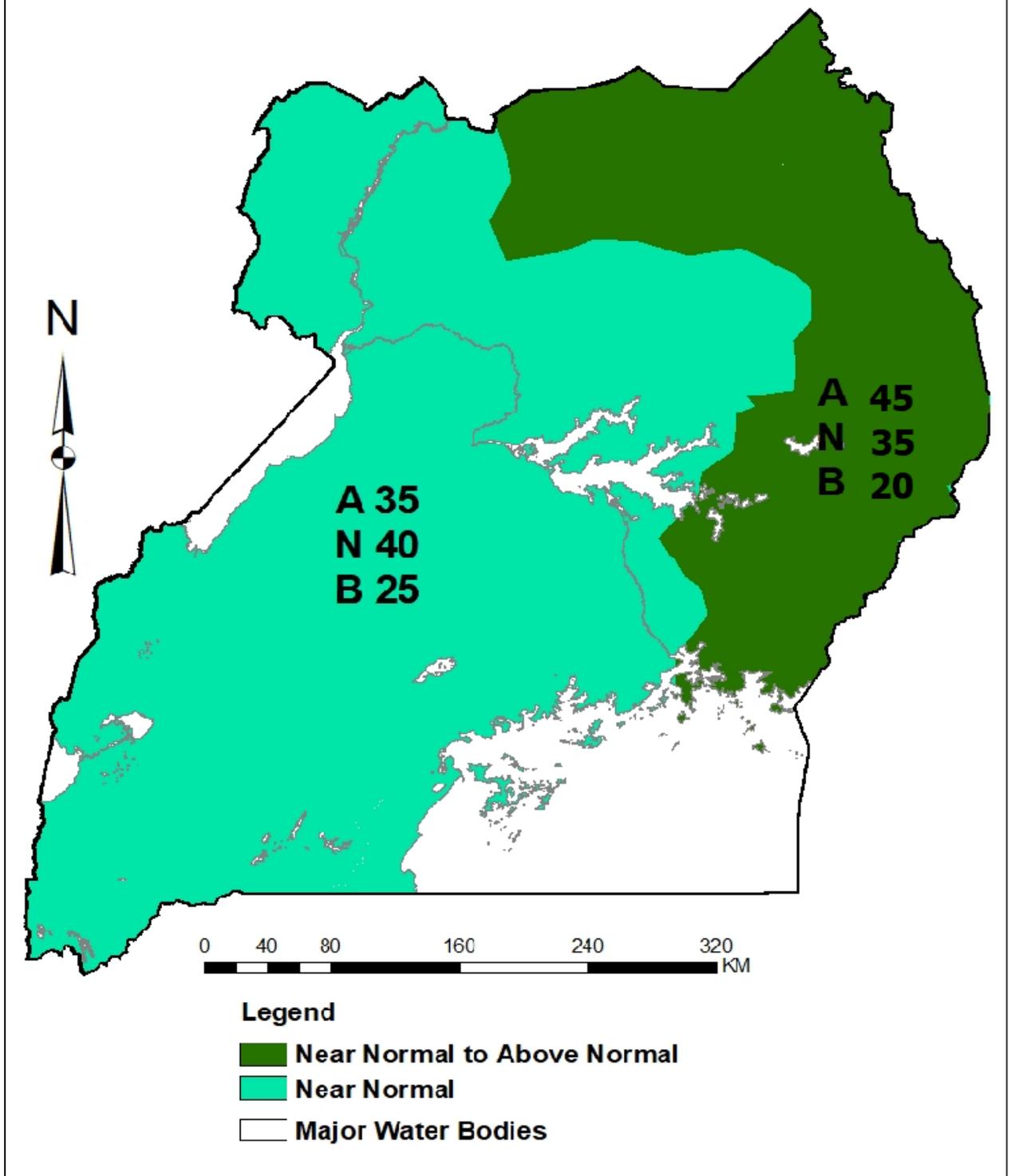


Figure 1: Map of Uganda showing spatial distribution of rainfall forecast for the June to August (JJA), 2021 season.

2. The Breakdown of the Forecast for each region

2.1. Western region

2.1.1 Central Western (Bundibugyo, Ntoroko, Kabarole, Bunyangabu, Kyenjojo, Kyegegwa, Kamwenge, Masindi, Buliisa, Hoima, Kakumiro, Kagadi, Kikube and Kibaale) districts

This region has been experiencing dry conditions since mid-May which is expected to persist up to late June to early July when occasional rainfall is expected to set in and continue up to the end of the forecast period. Overall, near normal (near average) rainfall is expected to prevail over most parts of this region.

2.1.2 South Western (Kisoro, Kabale, Rubanda, Rukiga, Rukungiri, Kanungu, Ntungamo, Ruvampara, Kazo, Mbarara, Kiruhura, Isingiro, Ibanda, Bushenyi, Buhweju, Mitooma, Sheema, Rubirizi, Kitagwenda and Kasese) districts

Dry conditions have been prevailing over this region since mid-May which are expected to continue up to early / mid-July, thereafter, occasional showers are expected to set in and continue until the end August. Overall, near normal (average) with tendency to below normal rainfall is expected over most parts of the region.

2.2 LAKE VICTORIA BASIN AND CENTRAL REGION

2.2.1 Northern and Southern parts of Central (Nakasongola, Luwero, Nakaseke, Kyankwanzi, Kiboga, Mubende, Kasanda, Lwengo, Lyantonde, Sembabule, and Rakai) districts.

This region has been experiencing isolated rainfall showers and thunderstorms which is gradually reducing with dry conditions expected to set in around mid-June up to early July. Thereafter, occasional rainfall punctuated by some dry spells is expected to prevail and continue up to the end of the season. Overall, there are high chances of near normal (near average) rainfall over most parts of the region.

2.2.2 Eastern parts of Central (Mukono, Buikwe, Kayunga, Buvuma) districts.

The region has been experiencing occasional rains which are expected to continue until mid to late June when relatively dry conditions are expected to prevail till mid-July. The occasional rainfall is expected to prevail towards the end of forecast period. Overall, there are high chances of near normal (near average) rainfall conditions over most parts of the region.

2.2.3. Central and Western Lake Victoria Basin (Kalangala, Kampala, Wakiso, Masaka, Mpigi, Butambala, Gomba, Kalungu, Bukomansimbi, and Mityana) districts

The region has been experiencing occasional rainfall with dry conditions over most parts which are expected to continue up to the end of June. Thereafter, isolated showers are expected to prevail until end of the forecast period. Overall, near normal (near average) rainfall is expected over most parts of this region.

2.2.4 Eastern Lake Victoria Basin: (Jinja, Bugiri, Busia, Mayuge, Namayingo and Tororo) districts.

Isolated rainfall showers that are being experienced over several parts of this region are expected to continue until late-June. Thereafter, occasional rains punctuated by dry spells are expected to continue up to the end of the forecast period. Overall, near normal (average) rainfall with a tendency to above average (wetter than usual condition) is expected over most parts of this

region.

2.3 EASTERN REGION

2.3.1 South Eastern: (Iganga, Kamuli, Luuka, Namutumba, Buyende, Kaliro, and Butaleja) districts

The current dry conditions with isolated showers being experienced over this region are expected to continue up to late-June when occasional rains are expected to set in and prevail until the end of the season. Overall, there are high chances of this area receiving normal (average) with a slight tendency to above normal rainfall conditions.

2.3.2 Eastern Central: (Pallisa, Budaka, Butebo, Kibuku, Mbale, Sironko, Manafwa, Bududa, Bulambuli, Kapchorwa, Kween, Bukwo, Bukedea, Kumi, Kaberamaido, Kalaki, Serere and Soroti) districts.

The region has been experiencing dry conditions punctuated with isolated showers, which are expected to continue until mid-July. Thereafter, rainy conditions punctuated by some dry spells are expected up to the end of the season. Overall, there are higher chances of this region experiencing near normal (near average) tending to above normal rainfall.

2.3.3 North Eastern: (Amuria, Kapelebyong, Katakwi, Nabilatuk, Moroto, Kotido, Nakapiripirit, Abim, Napak, Amudat, Kaabong and Karenga) districts

The region has been experiencing occasional rains which are expected to continue up to late June when steady rains are expected to set in up to the end of forecast period. Overall, near normal with a tendency to above normal rainfall is expected over most parts of this region.

2.4 NORTHERN REGION

2.4.1 North Western (Arua, Maracha, Terego, Koboko, Yumbe, Moyo, Adjumani, Obongi, Madi-Okolo, Zombo, Nebbi and Pakwach) districts

The occasional rains which are being experienced over this region are likely to continue up to late-June when the steady rains are expected to set in and progress up to the end of the season. Overall, near normal rainfall conditions are to prevail over most parts of the region.

2.4.2 Eastern Northern Parts: (Kitgum, Lamwo, Agago, Lira, Otuke, Pader, Alebtong, Kole, and Dokolo) districts

Most parts of this region have been experiencing occasional showers which are expected to continue up to late-June. Thereafter, steady rains punctuated by some dry spells are expected to get established until the end of the forecast season. Overall, there are high chances for this region receiving near normal with a slight tendency to above normal rainfall

2.4.3 Central Northern Parts: (Gulu, Nwoya, Amuru Apac, Oyam and Kiryandongo) districts

The region has been experiencing isolated rainfall conditions which are expected to continue up to late-June. These rains are likely to relax around mid to late July. Thereafter, steady rains are expected to set in and continue up to the end of the season. Overall, there are high chances for near normal with slight tendency to above normal rainfall (wetter conditions) over this region.

EXPLANATORY NOTES ON TERMINOLOGIES USED

Above Normal: This is when the total rainfall is above 125% of the long - term -mean (LTM). Impact on socio-economic activities is mostly boosted especially in the modest degrees of above average.

Normal: This is when the total rainfall is in the range of 75% to 125%of the LMT. This range of rainfall is expected to adequately support the normal socio-economic activities for the various sectors.

Below Normal: This is when the total rainfall is below 75% of the LTM. Under this range there are high chances for socio-economic activities being stressed, the level of stress increasing with increasing rainfall deficiency.

Accuracy: This forecast is up to 78% accurate. It is supported by useful objective forecast guidance and inputs drawn from a wide range of sources including the World Meteorological Organization's Global Producing Centres (WMO GPCs). These inputs were combined into a national consensus forecast using deterministic and probabilistic modeling alongside expert analysis and interpretation to obtain the national rainfall forecast for the June to August 2021 season.

General: The forecast is based on (3) months season (June to August 2021). However local and monthly variations might occur as the season progresses. Although sporadic heavy rainfall is most probable over locations with above normal rainfall, extended dry spells and below normal rainfall (drier than usual conditions) may occur in areas with an increased likelihood of near normal to above normal rainfall and vice versa. The degrees of wetness may also vary in regions of near normal to above normal rainfall. The Uganda National Meteorological Authority (UNMA) will continue to monitor the evolution of relevant weather systems particularly the state of the sea surface temperatures (SSTs) and issue appropriate updates and advisories to the users regularly. All users of climate information are encouraged to follow subsequent updates from UNMA website and UBC television in order to keep abreast with changes which evolve over time.



Bamanya Deus
For: EXECUTIVE DIRECTOR

ANNEX:

3.0 ADVISORIES

3.1 Sector advisories

The strategic sectors of the economy require weather and climate information to guide decision-making, planning and operations during the forecast period. There is no single season which has ever been free of weather and climate hazards yet each season offers novel challenges and therefore require sector advisories or interventions.

During this season, the potential hazards expected are: flash floods, waterlogging, mudslides, rising water lake levels over Victoria, Kyoga and Albert, gusty winds and lightning strikes

Some of these sectors for which advisories are required include the following:

3.2 Agriculture and Food security

- JJA season is often part of the normal dry season in the areas of South-western, western, parts of the eastern, and central Uganda. The farming communities in these areas are therefore advised to be vigilant during post-harvest handling by considering proper drying of the harvest on clean surfaces, use of tarpaulins and drying on racks;
- Preparation of good storage facilities of produce to avoid compromising on quality and safety;
- Channeling of the run-off water into the gardens in order to maximize on the soil moisture conservation;
- For those areas where near normal to above normal rainfall is expected (most parts of northern and eastern Uganda), farmers are encouraged to continue with regular weeding, pest and disease surveillance and control;
- Due to the expected enhanced rainfall in those areas, water logging and proliferation of fungal and bacterial crop diseases are likely to occur.
- Open drainage channels around household and gardens to reduce risks from stagnant water causing damage to root tuber crops;
- Flash floods and waterlogging are highly anticipated to occur in low lying areas expected to receive enhanced rainfall such as Katakwi and Kapelebyong. Therefore, communities are encouraged to keep watch over their crops, animals and property;
- In Karamoja sub-region, where wetter conditions are expected, the pastoral communities are advised to diversify into boosting the production of cereals (sorghum, millet, and maize), beans, and ground nuts and sustain pasture availability for livestock.

3.3 Disaster Management Sector

Under this sector, flash floods are expected in Teso, Elegu border in Amuru district, and Karamoja sub region while mudslides/landslides are likely to occur over Elgon sub region.

There is need to carry out sustained awareness campaigns on risks of flooding, lightning and mudslides.

District Disaster Management committees are advised to update their contingency plans and report any emerging incidents associated with weather and climate hazards immediately to the concerned authorities and to the Office of the Prime Minister on a toll free line of National Emergency Coordination and Operations Centre: 0800177777.

3.4 Water, Energy and Hydro-Power generation

The positive potential impacts expected are sustained reservoir inflows and availability of sufficient water for hydro power production but with a high risk of flooding and destruction of communication networks and electric power transmission poles due to expected enhanced rainfall. Besides pit latrines in low-lying areas are likely to be submerged contaminating domestic water sources.

This therefore calls for increased awareness campaigns over the risk of flooding for communities living adjacent to lakes and rivers including regular surveillance over electricity transmission lines. The communities should avoid consumption of contaminated water. Tree planting along riverbanks such as bamboo trees and clearing of water pathways to avoid silting should be undertaken.

Communities are advised to construct water harvesting facilities during this season in order to avert the impacts of dry spells.

3.5 Infrastructure, Works and Transport Sector

The anticipated near normal to above normal rainfall patterns are likely to be accompanied by extreme rainfall events that may lead to flash floods in low-lying areas in eastern, northern , north eastern and in urban areas. This requires urban authorities to clear and reduce blockages of the drainage systems to avoid water logging on streets. Solid waste should be disposed to safer places and authorities also need to check on sewage lines.

Ministry of Works and Transport should reposition its equipment as bridges are likely to be washed away and roads destroyed by flash floods in the areas in context. Strong/violent winds may also occur with a potential to cause structural damage to private and public buildings (blowing off rooftops) and collapse of poorly constructed buildings.

3.6 Health

There is a potential upsurge of acute water diarrhoeal diseases, cholera, dysentery and bilharzia because of water contamination with faecal matter. Malarial upsurges are also expected to occur during periods when rains relax. Yellow fever cases might go up in West Nile.

Health authorities are therefore advised to be on the lookout and equip health units with necessary drugs to deal with such situations as they may arise. They should intensify health education and awareness campaigns on the use of mosquito nets, slashing of bushes around homesteads, disposing open containers, filling up open pits, and draining stagnant water around homesteads in order to reduce breeding places for mosquitoes; Frequent health inspection in all communities is encouraged; Improve on domestic hygiene and sanitation around homes and schools to reduce on the contamination of water such as use of latrines.

The anticipated cloudy and reduced temperatures during the course of the season might pose a health risk to the vulnerable people especially those with history of Asthma and respiratory diseases among others.

4.0 REVIEW OF MARCH TO MAY 2021 SEASONAL RAINFALL PERFORMANCE

During March to May (MAM) season 2021, near normal with slight tendency to above normal rainfall conditions were experienced over most parts of the country. The rainfall distribution in terms of time and space was generally poor over most parts of the country. The rainfall conditions were characterized by episodes of flush floods in the low lying districts of Bukedi and Karamoja sub regions and also urban areas in most parts of the country, mud slides in Elgon sub region and noticeable suppressed rainfall activities in some areas especially in south western and Teso areas resulted in poor crop performance affected by dry spells within the season.

The early onset of the rain in season was observed in the Lake Victoria basin and south western sub region by late February 2021 while the rest of the country observed onset by early march to late march 2021. The peaks rains were observed during the period late April to Early May 2021 across the country.

The highest amounts of rainfall totals during the MAM, 2021 season were observed in the stations within the Lake Victoria Basin. Entebbe water Resources Institute recorded the highest amount of about 747.8mm. This was followed by Kamenyamigo station in Masaka district with 718.2mm and Jinja station with 705.1mm. The lowest totals were obtained in Western region of the country. Kasese station had the lowest record of 236.1mm followed by Mbarara, Butiaba in Bullisa district and Rubare Farm in Sheema district with amounts of 256.3mm, 259.2mm, and 276.3mm respectively.

In terms of rainfall distribution, the highest number of rainy days (days with amount greater than 1.0mm in 24 hours) during MAM 2021 season were observed at stations within Lake Victoria Basin. Kawanda weather station recorded the highest with 56 days of rainfall. This was followed by a station at Entebbe water Resources Institute with 51 days and Entebbe Airport station with 49 days. The lowest rainfall days were observed at Kotido station with 19 days and Arua station with only 24 days of rainfall.

Refer to the graphical and spatial analyses below for further details.

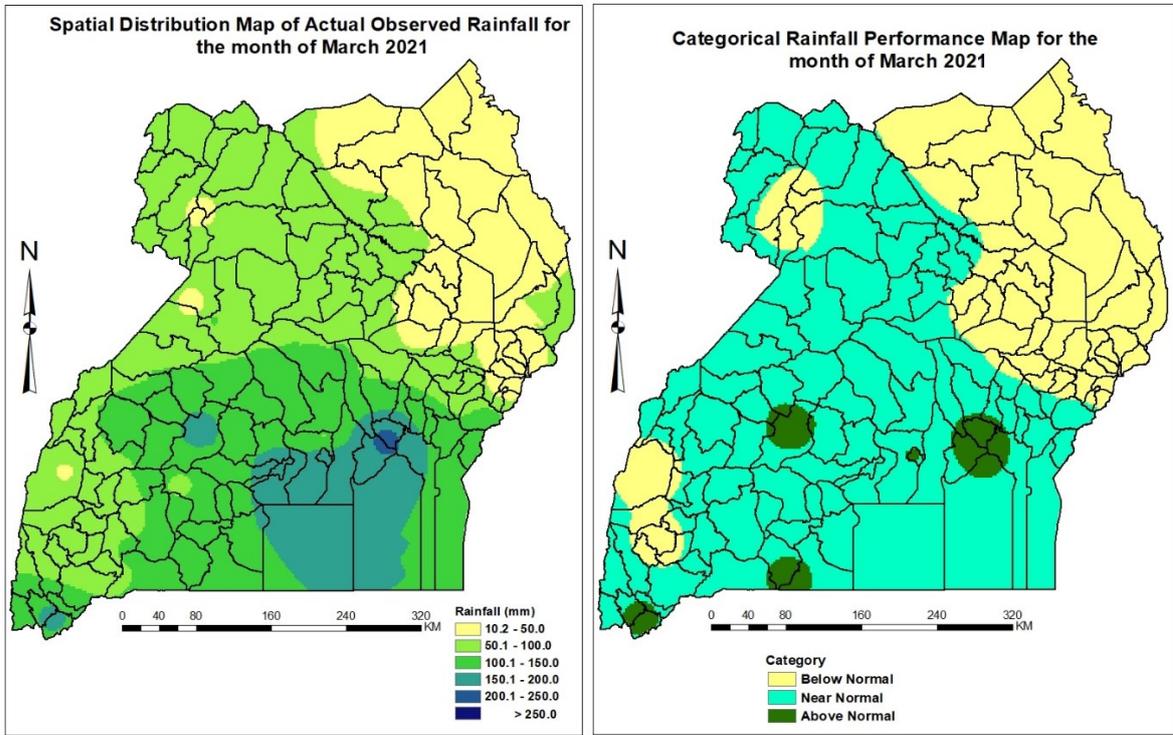


Figure 2: Maps showing Actual Observed and Categorical Rainfall performance for the months of March, 2021

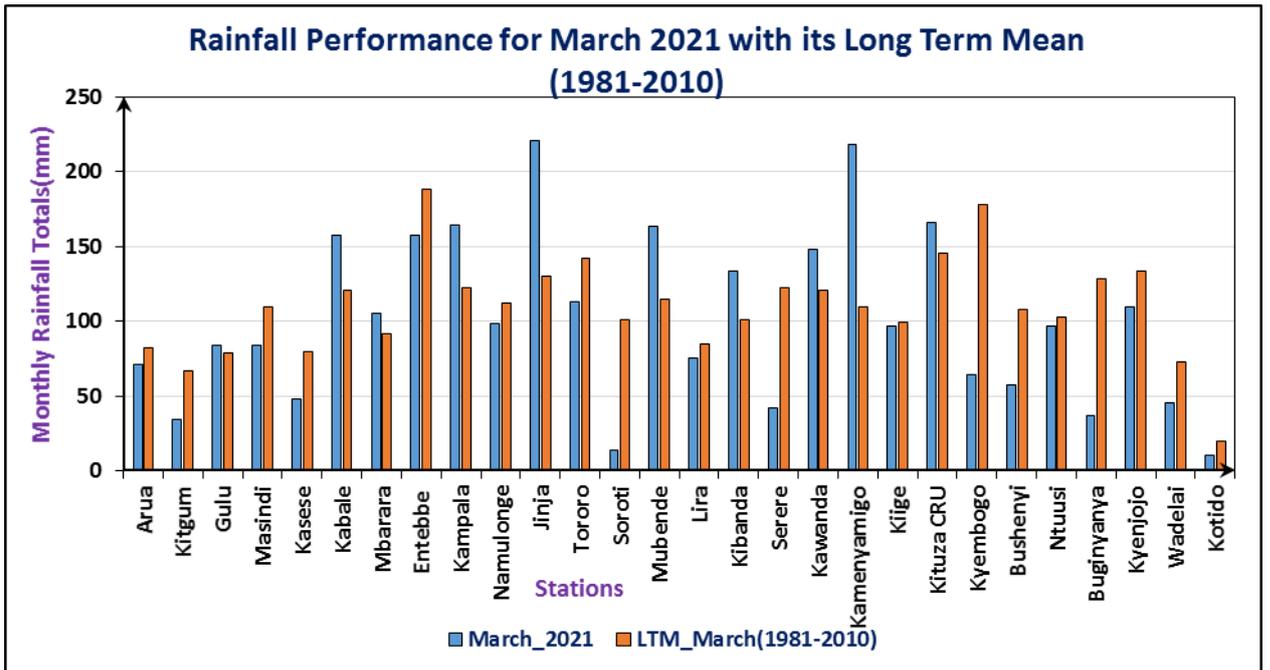


Figure 3: Shows Actual Observed rainfall against the Long Term Mean (1981-2010) for the month of March, 2021.

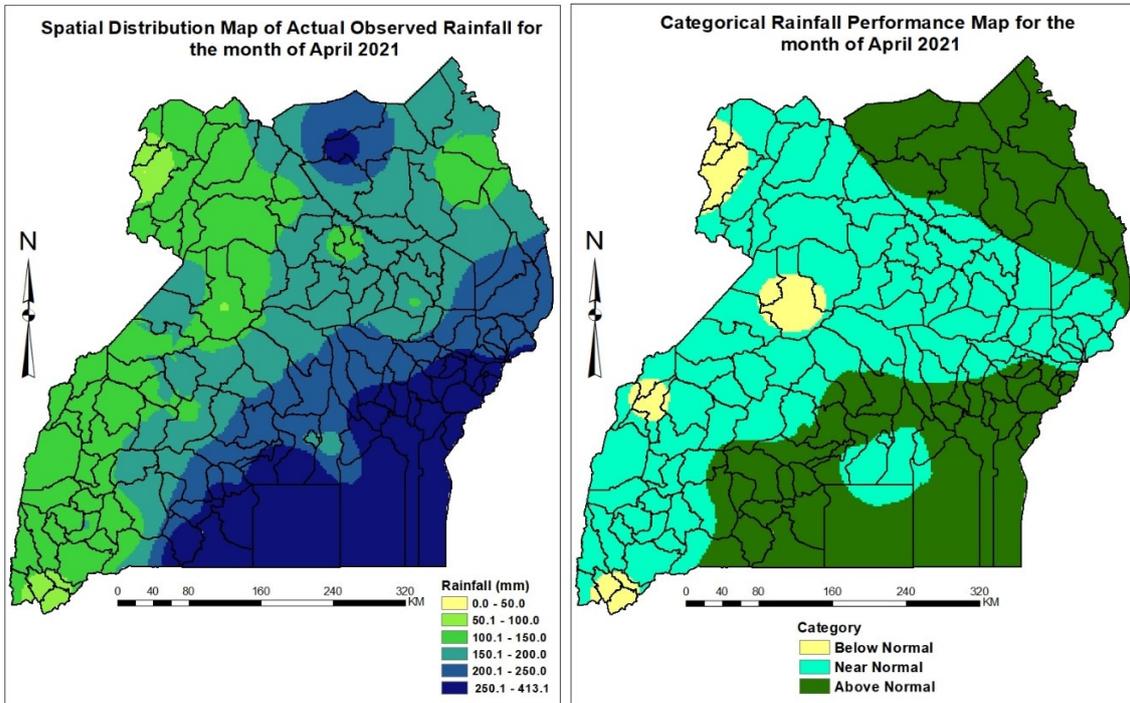


Figure 4: Maps showing Actual Observed and Categorical Rainfall performance for the months of April, 2021.

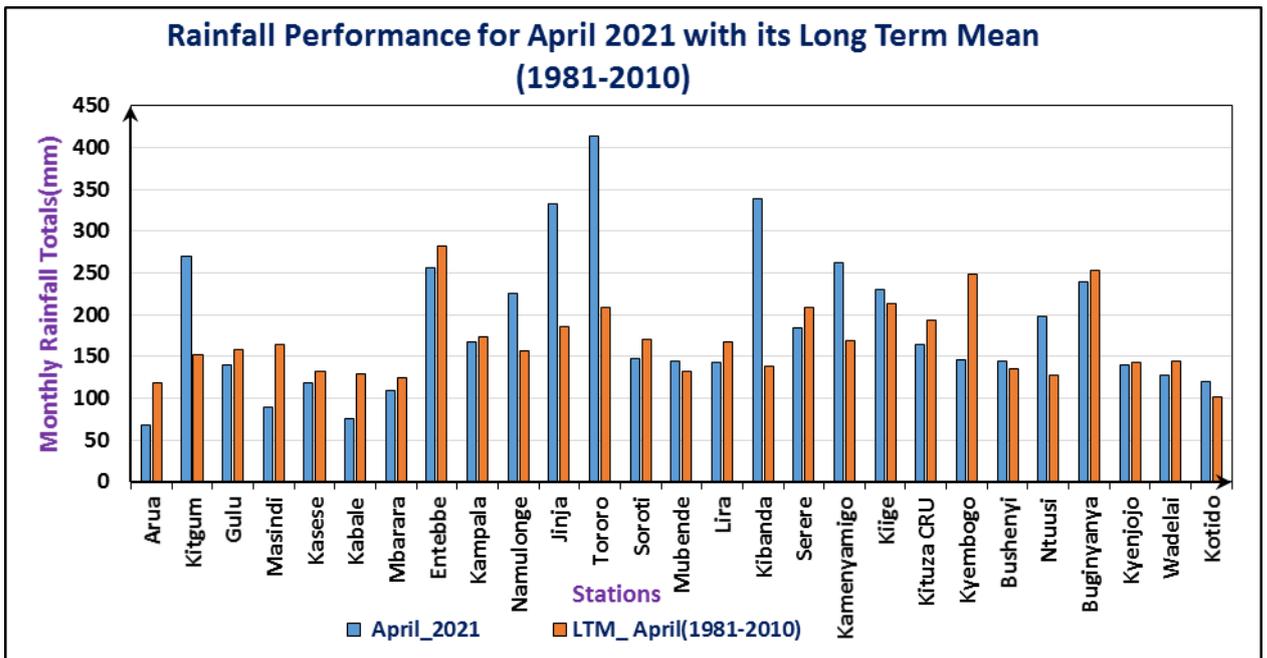


Figure 5: Shows Actual Observed rainfall against the Long Term Mean (1981-2010) for the month of April, 2021.

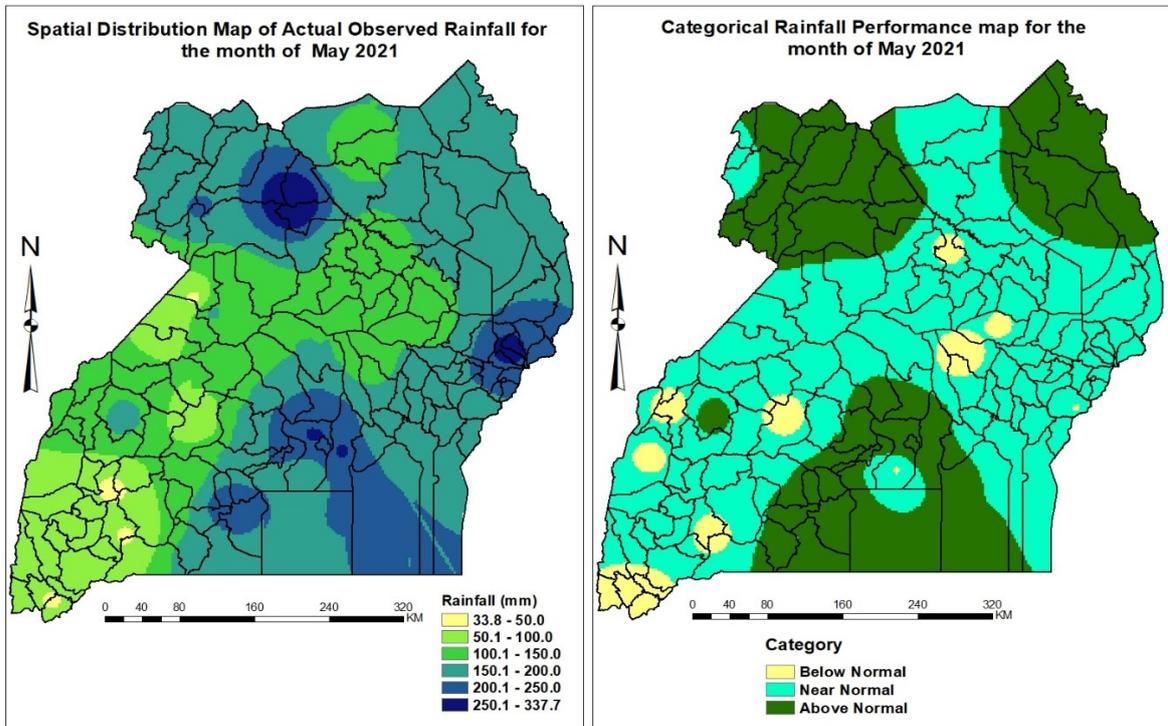


Figure 6: Maps showing Actual Observed and Categorical Rainfall performance for the months of May, 2021

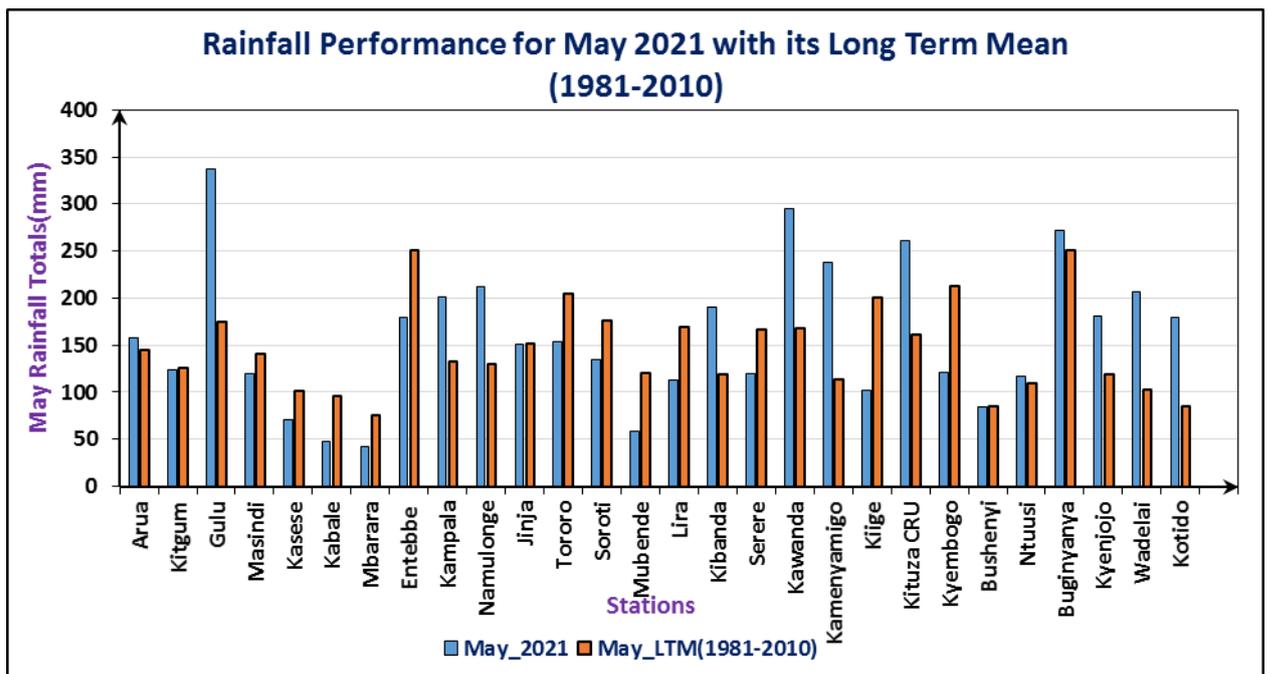


Figure 7: Shows Actual Observed rainfall against the Long Term Mean (1981-2010) for the month of May, 2021.

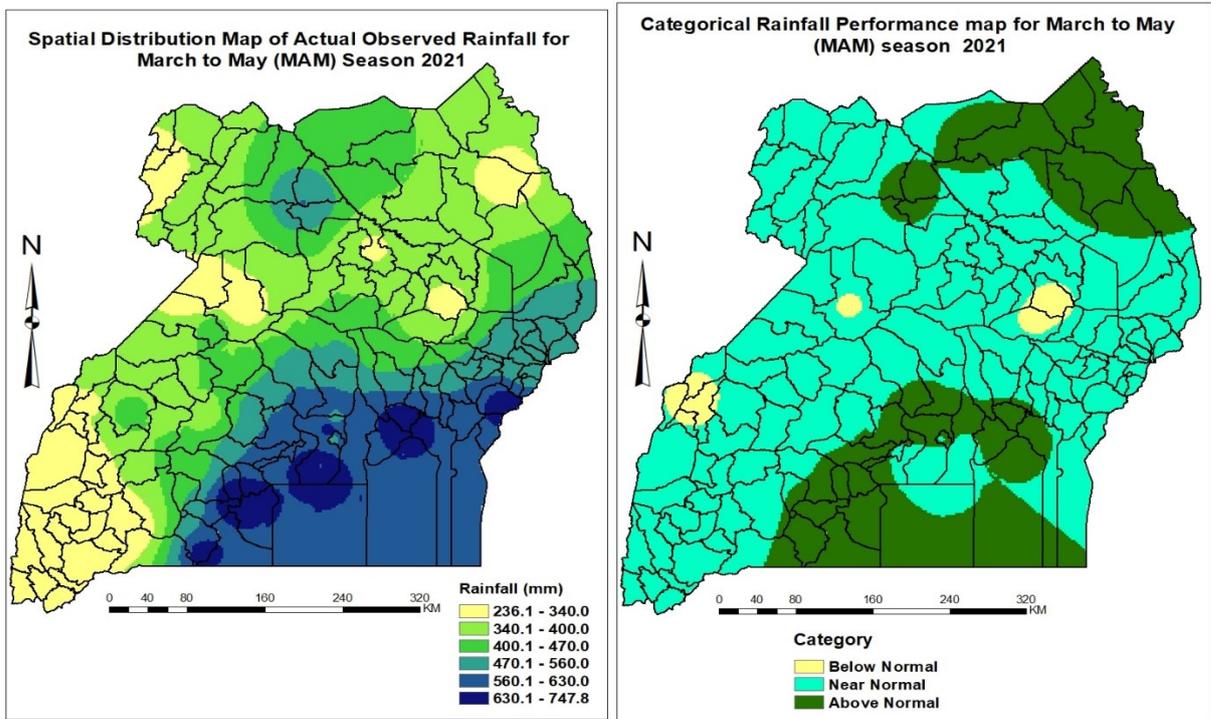


Figure 8: Maps showing Actual Observed and Categorical Rainfall performance for the Rainfall season of March to May (MAM), 2021.

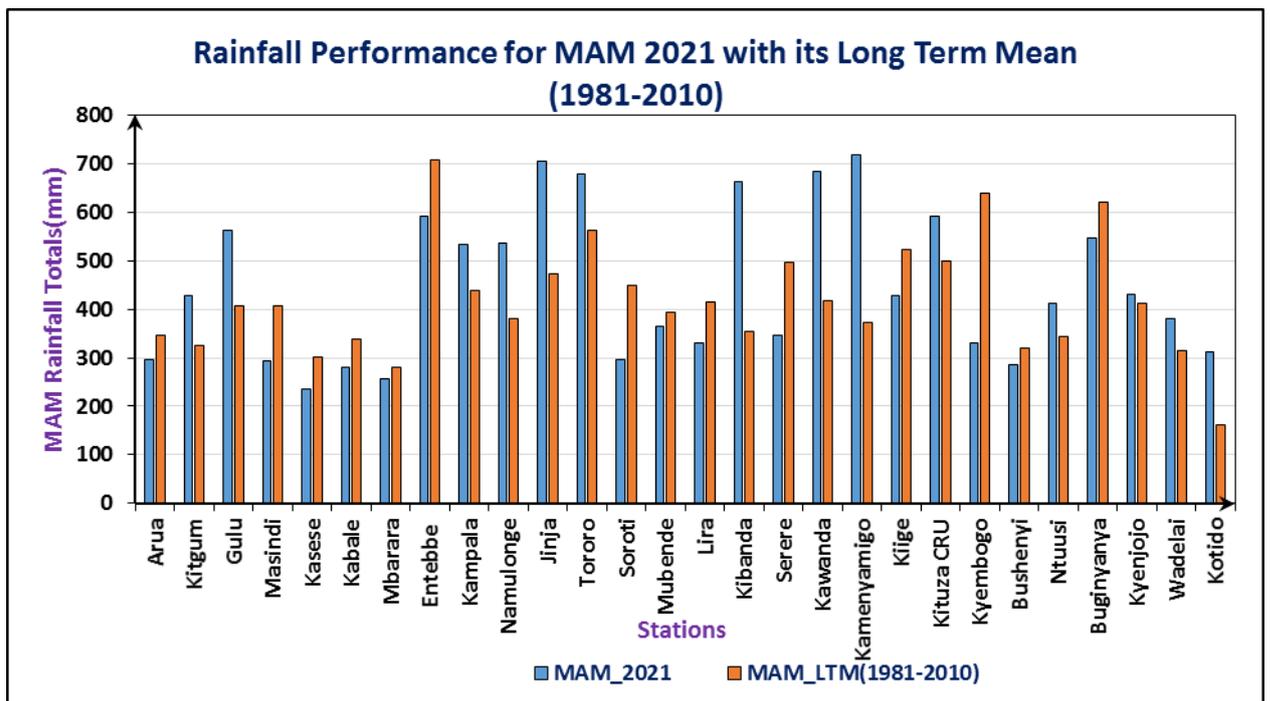


Figure 9: Shows Actual Observed rainfall against the Long Term Mean (1981-2010) for the season of March to May (MAM), 2021.