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UGANDA NATIONAL METEOROLOGICAL AUTHORITY

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MARCH TO MAY 2023 SEASONAL RAINFALL OUTLOOK OVER UGANDA

1.0 INTRODUCTION

Uganda generally, experiences two major rainfall seasons that include the March-April-May (MAM) that constitutes the first season and September-October-November-December (SOND) as the second season. However, regions in the northern sector of the country experiences the third rainfall season during June-July-August (JJA) period.

2.0 GENERAL FORECAST

Overall, during MAM 2023 the country is expected to experience **near normal (near average) to below normal (suppressed)** rainfall over several parts of the country. However, some areas of South Western, Central and Lake Victoria basin are expected to receive **near normal (near average) to above normal (enhanced)** rainfall.

The onset of seasonal rains is expected around early to mid-March in several parts of the southern sector of the country (South Western, Central and Lake Victoria basin) whereas for the Northern parts of the country it is expected from around late-March to early-April. This onset is likely to be characterized by thunderstorms associated with strong winds, lightning and hailstorms over several parts of the country.

The spatial distribution of the expected seasonal rainfall is indicated in figure 1.

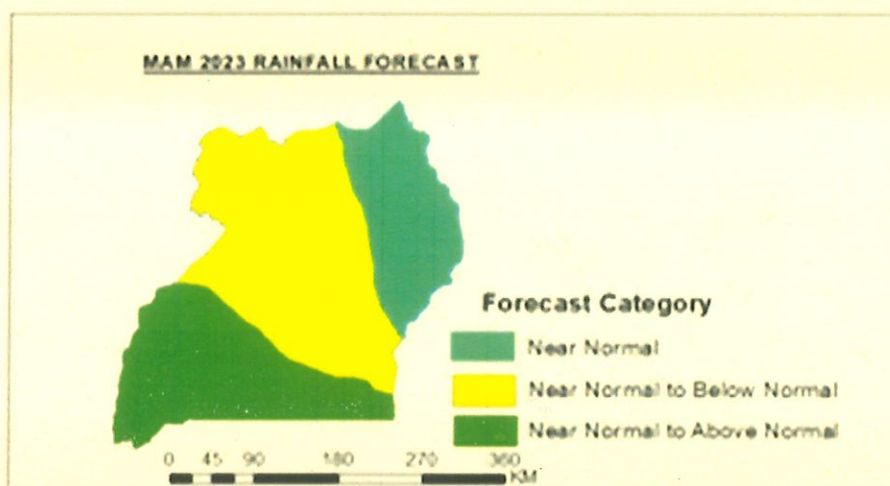


Figure 1: Seasonal climate outlook for March to May (MAM), 2023

3.0 DETAILED FORECAST

The major physical conditions that are likely to influence the rainfall outlook for MAM 2023 over Uganda include: -

- i. The Sea Surface Temperatures (SSTs) anomalies over the equatorial central Pacific Ocean are likely to return to neutral over the coming months with El Niño development becoming the most likely outcome during summer 2023.
- ii. The Indian Ocean Dipole (IOD) will likely remain neutral.
- iii. The intra-seasonal variation of Madden Julian Oscillations (MJO) is likely to affect the spatial distribution of rainfall at different time scales of the season over most parts of the country;
- iv. The influence of regional circulation patterns, topographical features and large inland water bodies;

Based on the above considerations, Uganda National Meteorological Authority (UNMA) has come up with the detailed seasonal rainfall outlook as given below: -

3.1 WESTERN UGANDA

3.1.1. South Western: (*Kisoro, Kabale, Rubanda, Rukiga, Rwampara, Kazo, Rukungiri, Kanungu, Ntungamo, Mbarara, Kiruhura, Isingiro, Ibanda, Kitagwenda, Bushenyi, Buhweju, Mitooma, Sheema, Rubirizi and Kasese*) districts.

This region has been experiencing isolated showers in late February which is expected to continue up to around mid-March when the steady rains are expected to set in. The peak of the seasonal rains is expected around mid to late-April and cessation around late May to early June. Overall, this region is expected to receive **near normal** (closer to average rainfall) with a **high tendency to above normal** (enhanced rainfall).

3.1.2 Central Western: (*Bundibugyo, Ntoroko, Kabarole, Kyenjojo, Kyegegwa, Kamwenge, Kibaale, Kikuube, Bunyangabu, Kakumiro, Kagadi, Hoima, Buliisa, Masindi*) districts

This region has been characterized by dry conditions since the start of the year 2023. The onset of seasonal rains over this region is expected around mid-March with the peak period expected to occur around late April. Cessation of seasonal rains is expected around late May to early June. Overall, there is a likelihood for the region to experience **near normal** (near average) rainfall with slight tendency to **below normal** (suppressed) rainfall.



3.2 CENTRAL REGION, LAKE VICTORIA REGION AND EASTERN UGANDA

3.2.1 Western areas of Central region: (*Nakasongola, Luwero, Kyankwanzi, Kakumiro, Kasanda, Nakaseke, Kiboga, Mubende, Sembabule, Lyantonde, Kyotera and Rakai*) districts.

Several parts of this region have been experiencing dry conditions since the start of year 2023. The onset of seasonal rainfall characterized by thunderstorms is expected around early to mid-March. The peak rains are expected around mid to late April with cessation around early June. Overall, there is a high chance of **near normal** (closer to average) rainfall with a **slight tendency to below normal** (suppressed) rainfall over this region.

3.2.2 Central and Western Lake Victoria region: (*Kalangala, Kampala, Wakiso, Masaka, Lwengo, Mpigi, Butambala, Kalungu, Bukomansimbi, Gomba, and Mityana*) districts

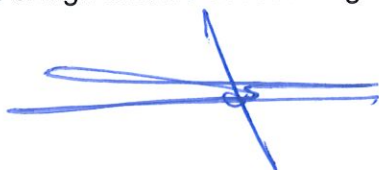
Currently, some areas in this region have been receiving occasional isolated showers and thunderstorms since late February. The onset of steady rains is expected around early to mid-March. The peak rains are expected to occur around mid to late-April with the cessation around early to mid-June. Overall, there is a high chance for this region to receive **near normal** (closer to average) rainfall with a **slight tendency to above normal** (enhanced) rainfall during this season.

3.2.3 Eastern areas of Central region: (*Mukono, Buikwe, Kayunga, Buvuma*) districts

This region has been experiencing dry conditions since January 2023 and of late there are occasional and isolated thunderstorms. The steady rains are expected to get established around mid-March. Thereafter, the peak of the seasonal rains is likely to occur around mid to late April with the cessation expected around mid-June. Overall, this region is expected to receive **near normal** (closer to average) rainfall to **above normal** (enhanced) rainfall.

3.2.4 Eastern Lake Victoria and South Eastern: (*Jinja, Mayuge, Kamuli, Iganga, Bugiri, Namayingo, Luuka, Namutumba, Buyende, Kaliro, Busia and Tororo*) districts.

This region has been experiencing dry conditions since January 2023 and the onset of seasonal rainfall is expected around early to mid-March. The peak is likely to occur around mid-April while cessation is expected to occur around early to mid-June. Overall, this region has a high chance of receiving **near normal** rainfall.



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

Currently dry conditions are still prevailing in this region. The onset of the seasonal rains is expected around mid to late March. The peak rains are expected to occur around mid to late-April with cessation expected around early to mid-June. Overall, there is a high chance for this region to receive **near normal** (closer to average).

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

The region is currently experiencing dry conditions. The onset of seasonal rains is expected around late March to early April which are expected to give way to steady rains reaching the peak levels around early to mid-May. Thereafter, a moderate relaxation is expected around mid to late June. Overall, there is a high chance for this region to receive **near normal** (closer to average) rainfall during the forecast period.

3.3 NORTHERN REGION

3.3.1 North Western: (Arua, Maracha, Koboko, Terego, Yumbe, Obongi, Moyo, Adjumani, Madi Okollo, Zombo, Nebbi and Pakwach,) districts.

This region has been experiencing dry conditions since January 2023. The onset of the seasonal rains is expected around mid to late March. The peak of the seasonal rain is expected to occur around late April to early May, thereafter a moderate relaxation of rains is expected around mid-June. Overall, this region is likely to receive **near normal** (closer to average) rainfall.

3.3.2 Central Northern Parts: (Gulu, Omoro, Lamwo, Nwoya, Amuru, Oyam and Kiryandongo) districts

The region has been experiencing dry conditions since January 2023. The onset of the seasonal rains is likely to get established by around late March to early April with the peak of the rains expected around early to mid-May. Thereafter, moderate relaxation of the rains is likely to occur around mid-June. Overall, this region is expected to receive **near normal** (closer to average) with a **slight tendency to below-normal** (suppressed) rainfall during the forecast period.

3.3.3 South-eastern areas of Northern region: (Dokolo, Amolatar, Alebtong, Lira, Kole, Otuke, Pader, Kitgum, and Agago) districts

Currently the dry conditions being experienced over this region are expected to continue up to around late March to early April when the onset is expected to get established. The peak of the rains is expected to occur around early to mid-May. Thereafter, moderate relaxation of rains is expected around mid-June. Overall, **near normal** (closer to average) rainfall is expected over this region.



4.0 THE IMPLICATIONS OF THE CURRENT FORECAST

There are high chances the rainfall forecast is likely to perform from near normal to below normal and this is likely to affect economic activities especially agricultural production and food security.

It should be noted that areas expected to receive near normal rainfall does not mean that they will receive little rainfall. The implication of this is that these areas will receive rainfall within the average range of their long term mean and rainfall is expected to adequately support the normal socio-economic activities;

It is also worth noting that localized episodic flash flood events may occur in areas that are expected to receive near normal rainfall as a result of isolated heavy downpours. Similarly, in localized areas expected to receive above-normal rainfall, poor rainfall distribution may as well occur.

5.0 ADVISORIES TO DIFFERENT SECTORS

The following are potential advisories developed for action for each sector: -

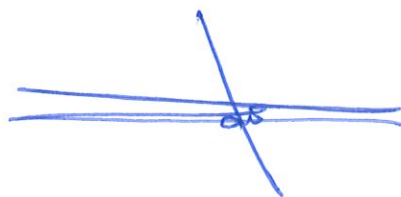
5.1 Agriculture and Food Security Sector

The general advisories include: -

- Farmers are advised to finalize land preparation and planting early in order to optimize all the available water;
- Use of appropriate soil management practices and technology to control soil erosion and nutrient loss is encouraged in areas expected to receive above normal rainfall and in highland areas.
- Proper seed and crop selection based on rainfall characteristics of this season with the aid of the agricultural extension staff at various levels is encouraged.
- Farmers are encouraged to practice water harvesting for micro-irrigation (where necessary), especially during dry spells.
- Communities and farmers are advised to monitor the occurrence of crop pests and diseases as well as parasites and report immediately to extension workers.
- Restocking livestock farms, fish ponds and apiaries is encouraged;
- Plantation of trees is highly encouraged through agroforestry wherever possible;
- Harvesting and storage of animal feeds are encouraged.

5.2 Disaster Management Sector

On the basis of this forecast the following potential disasters are expected; Flash floods, water logging, hailstorms, landslides, lightening strikes and strong winds



Advisories

- Avoid crossing flooded road sections
- Desilt drainage systems especially in urban areas
- Dig / Open drainage channels around households and gardens
- Districts are advised to update their contingency plan.
- Install and construct water harvesting facilities
- Review disaster contingency plans
- Community awareness campaigns should be encouraged
- Communities in high-risk areas need to be informed in good time including preparations for any planned relocations through authorized institutions.
- Decision-makers should be informed early enough to be able to allocate resources and provide prompt support;

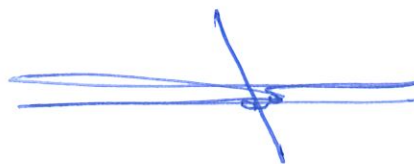
5.3 Water, Energy and Hydro-Power generation

- Water harvesting is encouraged to offset dry spells shocks that might occur in the coming season
- Communities should avoid consumption of contaminated water and rehabilitation of drainage facilities should be undertaken to avoid flooding in urban centres.
- Plans for optimization of power generation and distribution should be enhanced due to the expected increased discharge of seasonal rainwater into the water bodies;
- Areas expected to receive average to above-average rainfall should undertake integrated flood management, preparedness and mitigation strategies in flood-prone areas.
- Setting up and protection of vegetated/forested buffer zones around water sources to guard against water pollution should be encouraged;

5.4. Infrastructure, Works and Transport Sector

The following measures should be taken: -

- Strong/violent winds may be experienced that can cause structural damages to buildings (blow off rooftops and collapse of poorly constructed buildings);
- Urban authorities need to clear and reduce blockages of the drainage systems to avoid waterlogging on streets;
- De-silting drainages and other water channels to curtail flooding is encouraged.
- There is high potential of flash floods disrupting road transportation and construction



5.5. Health

The Potential impacts expected during MAM 2023 seasonal climate forecast include:

- Weather associated diseases such as asthmatic cases, rift valley fever in the cattle keeping areas;
- Waterborne diseases such as bilharzia;
- Increased cases of malaria are expected in most parts of the country;
- Diarrheal diseases (cholera, dysentery);

The general public is therefore advised to do the following: -

- Monitor and reposition stocks of drugs;
- Routine distribution of long-lasting insecticide treated mosquito nets;
- Enhance disease surveillance in flood-prone areas for prevention and treatment;
- Enhance good sanitation and health practices;
- Integrate health hygiene to communities;
- Encourage routine water treatment at all levels.

6. CONCLUSION

The predicted rains require action in sufficient time and in an appropriate manner so as to take advantage of the information. This forecast should be used for planning in all rain-fed economic activities so as to improve economic welfare and livelihoods for all our communities in their localities.

Uganda National Meteorological Authority will continue to monitor the evolution of relevant weather systems and issue appropriate rainfall alerts, updates and advisories to the users regularly. This seasonal forecast should be used together with other forecasts such as daily, decadal, and monthly updates.



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AG. EXECUTIVE DIRECTOR