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UGANDA NATIONAL METEOROLOGICAL AUTHORITY

Ref: SCF/SOND/2021

2nd September, 2021

SEPTEMBER TO DECEMBER, 2021 SEASONAL RAINFALL OUTLOOK OVER UGANDA

1.0 General Forecast

September, October, November and December (SOND) period constitutes the second major rainfall season over most parts of Uganda.

In general, most parts of the country are expected to experience **near normal (average) to below normal (suppressed) rainfall** during SOND 2021 season.

There is high expectation for poor rainfall distribution over most parts of the country during this season. However, from September to mid-October the rainfall performance is expected to be enhanced.

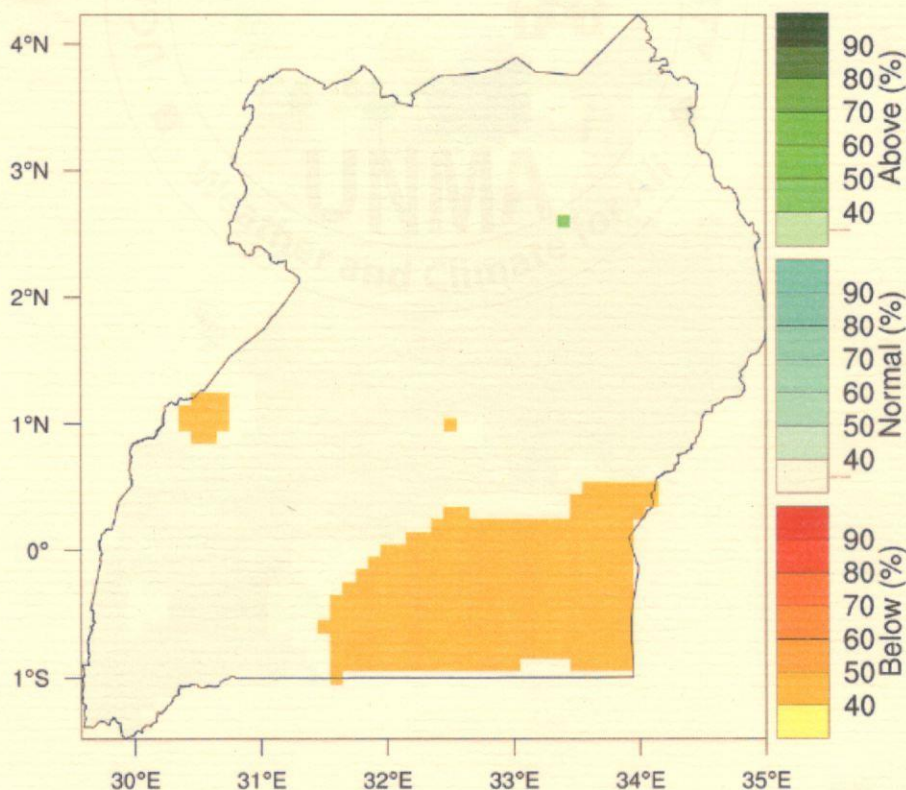


Figure1: Spatial distribution of seasonal rainfall outlook for SOND 2021

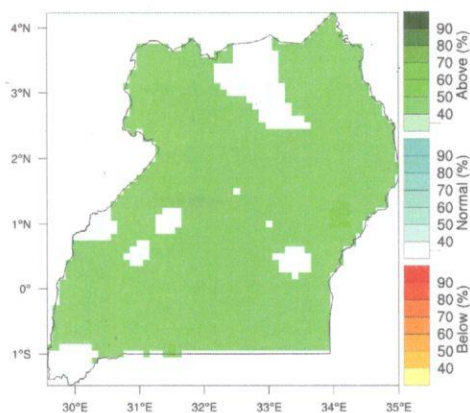
2.0 Detailed Forecast

The major physical conditions that are 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 September to December 2021 include:

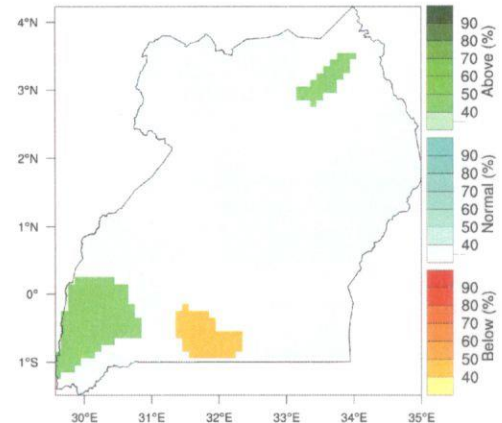
- *Current negative state of Indian Ocean Dipole (IOD);*
- *Current neutral El Nino Southern Oscillation phase in the central and eastern tropical Pacific Ocean;*
- *Influence of regional circulation patterns, topographical features and large inland water bodies.*

Based on the above considerations as well as details of the climatology, scientific tools for climate analysis, and the physical features of the different regions of the country, Uganda National Meteorological Authority (UNMA), has come up with the disaggregated monthly spatial distribution of SOND seasonal rainfall forecast.

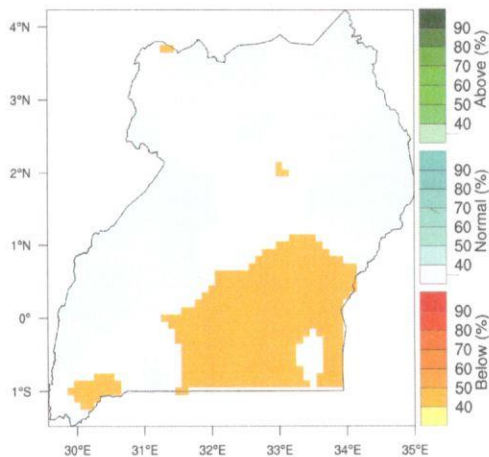
The maps below in figures 2a to 2d show the expected monthly rainfall forecasts with September expected to be wetter than October, November and December respectively.



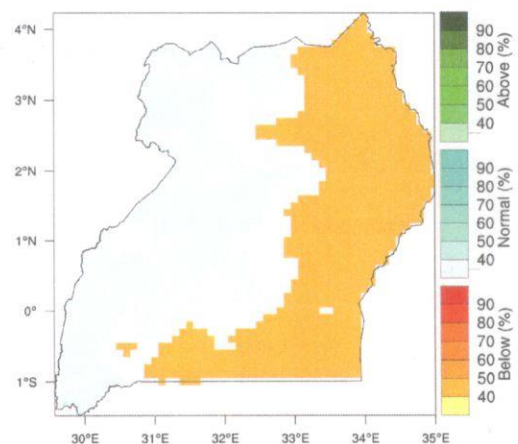
2a. Rainfall Forecast for September 2021



2b. Rainfall Forecast for October 2021



2c. Rainfall Forecast for November 2021



2d. Rainfall Forecast for December 2021

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The breakdown of the detailed regional forecast is given as follows:

2.1 Lake Victoria basin and central region

2.1.1 Western parts of Central (*Nakasongola, Luwero, Kyankwanzi, Nakaseke, Kiboga, Mubende, Kasanda, Sembabule, Lwengo, Lyantonde, Kyotera and Rakai*) districts.

Currently this region is experiencing dry conditions with occasional outbreaks of showers and thunderstorms signifying the onset of the seasonal rainfall. Wetter conditions are expected to prevail during the month of September. The peak of rains is expected around late September to mid-October and a relaxation of the seasonal rainfall expected around late October. The cessation of rains is expected around mid to late November 2021. Overall, **near normal (average) to below normal** rainfall conditions are expected to prevail over this region during the forecast period.

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

These districts are currently experiencing occasional outbreaks of showers and thunderstorms signifying the onset of the seasonal rainfall. Wetter conditions are expected to occur in September with the peak rains in late September. Thereafter, a slight relaxation of rainfall activity is expected during the month of October. Cessation of the rains is expected around late November. Overall, **near normal (average) to below normal (Suppressed)** rainfall conditions are expected to prevail over this region.

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

This area has been experiencing isolated outbreak of showers and thunderstorms since August signifying the onset of the seasonal rainfall. Wetter conditions are expected to prevail during the month of September, with a slight relaxation during October. Cessation of the seasonal rains is expected by around mid to late November. Overall, **near normal (average) with a slight tendency to below normal (Suppressed)** rainfall is expected to prevail over this region.

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

This region is currently experiencing occasional showers and thunderstorms indicating the onset of the seasonal rainfall. The peak rainfall is expected around late September to early-October and the cessation around mid to late November. Overall, **near normal (average) with slight tendency to below normal (Suppressed) rainfall** is expected to prevail over this region.



2.2 Western region

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

The region has been experiencing isolated outbreaks of showers and thunderstorms since August, signifying the onset of rains. Wetter conditions are expected to occur in September, with some relaxation of rainfall activity in October. Cessation of the seasonal rains is expected around late November. Overall, **near normal (average)** rainfall is expected over this region.

2.2.2 Central Western (*Bundibugyo, Ntoroko, Kabarole, Kyenjojo, Kyegegwa, Kamwenge, Kitagwenda Masindi, Buliisa, Hoima, Kikuube, Kakumiro, Bunyangabu and Kibaale*) districts

This region has been experiencing occasional rains during the month of August. Steady rains are expected to set in around early September reaching peak levels around early October. Thereafter, a relaxation of rainfall activity is likely to be experienced around late October. The Cessation of the seasonal rains is predicted to occur around late-November. Overall, **near normal (average)** rainfall conditions are likely to prevail over this region.

2.3 Eastern region

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

The current rainfall being experienced in this region is expected to continue reaching peak levels late September to early October. Thereafter, a slight relaxation is expected to prevail, and cessation of the seasonal rains is likely to be experienced around late November. Overall, **near normal (average) to below normal** rainfall conditions are expected to prevail over this region.

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

Most parts of this region have been experiencing some rainfall activity punctuated with some dry conditions. The rains are expected to continue until late September to early October when they attain peak levels. Thereafter, the rains are expected to slightly relax until mid-November. Cessation of the seasonal rains is likely to get established by late November. Overall, **near normal (average)** rainfall conditions are expected to prevail over this region.

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

This region has been experiencing occasional rainfall which is expected to continue until the end of September. Thereafter, relaxation in rainfall activity is expected to prevail during the month of October. Cessation of the seasonal

rains is likely to get established by early November. Overall, **near normal (average) to below normal** rainfall conditions are expected to prevail over this region.

2.4 Northern region

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

The current rainfall conditions being experienced in the region is expected to continue until end of September with a relaxation likely to set in during the month of October. Cessation of the seasonal rains is expected early to mid-November. Overall, **near normal (average) to below normal** rainfall conditions are expected to prevail over this region.

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

This region has been experiencing normal rainfall which is expected to continue until end of September, with relaxation likely to set in during the month of October. Cessation of the seasonal rainfall is expected around early to mid-November. Overall, **near normal (average)** rainfall conditions are expected to prevail over this region.

2.4.3 Central Northern Parts (*Gulu, Omoro, Apac, Kwanja, Nwoya, Amuru, Oyam and Kiryandongo*) districts

The rainfall currently being experienced over the region is expected to continue until end of September with a slight relaxation during the month of October. Cessation of the seasonal rains is expected around early to mid-November. Overall, **near normal (average) to below normal** rainfall conditions are expected to prevail over this region.

3.0 Implications of current rainfall forecast

The near normal (near Average) to below normal (below Average) rainfall predicted for September to December (SOND) 2021 rainfall season over most parts of the country is expected to be characterised by dry spells.

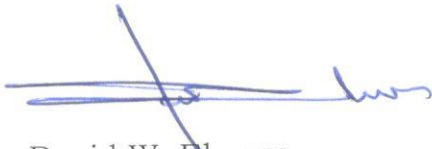
This implies that there are high chances for socio-economic activities to continue normally in areas where near normal (average/adequate) rainfall is expected while in areas of rainfall deficiency (those areas with below normal/suppressed rainfall) the activities are likely to be stressed. The level of stress is expected to increase with increasing rainfall deficiency.



4.0. Conclusion

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 Indian Ocean Dipole, and issue appropriate updates and warnings to the users regularly.

Users of this rainfall outlook are, therefore, urged to make good use of daily, ten day and monthly updates that are issued regularly by UNMA through some FM radios, UBC and UNMA website www.unma.go.ug



David W. Elweru

For: EXECUTIVE DIRECTOR

APPENDIX

POTENTIAL ADVISORIES TO DIFFERENT SECTORS

1. Disaster Risk Reduction

It should be noted that local and month-to-month variations might occur as the season progresses. For example, episodic flash floods might be experienced in some areas leading to loss of lives and destruction of property. Other disasters may arise from possible landslides mostly in mountainous areas of western, south-western and eastern Uganda as well as strong and gusty winds and lightning among others. Therefore, appropriate measures should be taken to avoid loss of life and destruction of infrastructure and property such as:-

- The Disaster Risk Management institutions are advised to update their contingency plans for better coordination in case of any weather and climate disaster that might occur during this season.
- Communities at high risk areas need to be informed in good time including to prepare for planned relocations, for example resettling people from low lying areas to high lying areas
- The onset of rainfall is expected to be associated with lightning and hail storms in which can be disastrous, therefore, communities are advised to install lightening conductors/arrestors on their structures and also put on rubber shoes and avoid contacts with metallic objects while it's raining.
- Decision makers should be informed early enough to be able to allocate resources and provide prompt support for the areas that are expected to receive suppressed rainfall;
- In addition, there is need for an effective multi-sectoral coordination at national level by the DRR institutions and timely activation of task forces should be emphasized.
- The importance of understanding uncertainties in the forecast for all categories and preparing for multiple scenarios should be underlined.

2. Agriculture

a) Crops

The predicted rainfall season is expected to be short and therefore, farmers are advised to do the following:

- Practice mulching especially of perennial crops like bananas, coffee to conserve the available moisture in the soil;
- Timely planting of improved quick maturing and drought tolerant crops Sorghum, millet and Sim sim should highly be encouraged;
- Use the available water sparingly since there is a likelihood of water stress to both crops, pasture and domestic use;



- Where possible, communities are encouraged to use Low-cost irrigation systems like small-scale drip irrigation e.g. use of plastic bottles filled with water
- Farmers are encouraged to carry out proper post-harvesting and storage practices so as to limit the post-harvest losses during transportation from gardens to stores and also reserve food for household use.

b) Livestock

- Construct and de-silt water and soil conservation structures like dams, ponds, and water tanks in preparation for water harvesting;
- Avoid bush burning to preserve pasture and forage and cutting trees and destruction of water catchment areas;
- Livestock farmers are encouraged to make hay and use pasture sparingly;
- Practice rotational grazing to avoid overgrazing;
- The pastoral households should maintain manageable herds and carry out Pests and Disease control measures for their livestock e.g. tick borne disease;
- Continue with routine vaccination and animal treatment against the common diseases and worms.

c) Fisheries

- Clear bush around fish ponds;
- Construct / de-silt existing fishponds;
- Secure ponds to prevent predators from pond area.

d) Forestry

- Avoid bush burning, cutting trees irresponsibly and destruction of water catchment areas;
- Prepare tree nursery beds for the next season planting;
- Irrigate and maintain young trees.

3. Health and Public Safety

- Ministries of health and local government are encouraged increase disease surveillance due to expected upsurges of epidemics related to dry conditions;
- Regular surveillance of diseases, stock of relevant drugs and supplies is encouraged as a contingency measure against any expected disease outbreaks;
- Clearing bushes, opening of drainages, purchase of mosquito nets, fumigating in and around homesteads is encouraged as a precautionary control measure against Malaria;
- Public education and sensitization should be carried out by respective institutions;
- Malaria upsurges are expected to increase
- Contingency planning like stocking of drugs in health units are encouraged.

4. Water and Energy sector

- Water management committees should ensure effective utilization of available water resources;
- Water harvesting for home consumption, and ground water harvesting into gardens, dams and valley tanks for livestock and sustaining crop production is encouraged since we expected water scarcity;
- Efficient power utilisation and adoption of alternative power sources such as solar, wind, geothermal, gas etc are encouraged ;
- Setting up and protection of vegetated/forested buffer zones around water sources to guard against water pollution should be encouraged;
- Communities should ensure proper catchment management and avoid encroachment on wetlands;
- Desilting of valley dams and fishponds.is encouraged to ensure the maximum collection of the rain water;

5. Works and Infrastructure Sector

- Urban authorities need to desilt and open water channels to avoid water logging on streets;
- Strong/violent winds may be experienced that can cause structural damages (blow off rooftops and collapse of poorly constructed buildings);

Explanatory Notes to Terminologies

Above Normal: This is when the total rainfall is above 125% of the Long-Term Mean (Thirty-year average rainfall). Impact on socio-economic activities is mostly boosted especially in the modest degrees of above average.

Near Normal: This is when the total rainfall is in the range of 75% to 125% of the Long-Term Mean (Thirty-year average rainfall). This range of rainfall is expected to adequately support the normal socio-economic activities for the various areas.

Below Normal: This is when the total rainfall is below 75% of the Long-Term Mean (Thirty-year average rainfall). 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 80% accurate. It is supported by useful objective forecast guidance inputs drawn from a wide range of sources including the World Meteorological Organisation's thirteen Global Producing Centres' (WMO GPCs). These inputs were combined into a regional consensus forecast using deterministic and probabilistic modelling alongside expert analysis and interpretation to obtain the regional rainfall forecast for this rainy season of September to December (SOND) 2021.