



UGANDA NATIONAL METEOROLOGICAL AUTHORITY

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JUNE TO AUGUST 2024 SEASONAL RAINFALL OUTLOOK OVER UGANDA

1.0 INTRODUCTION

The June, July, and August (JJA) forecast period is generally a dry season over the southern sector of the country, especially parts of the southwestern, central, Lake Victoria basin, and parts of the eastern region. It marks the end of the first rainfall season and a harvesting period for seasonal crops for most parts of the country. However, for Northern Uganda, JJA rainfall is a continuation of the MAM rainfall season.

2.0 GENERAL FORECAST

Overall, the JJA 2024 rainfall forecast indicates that northwestern and northeastern parts of the country are expected to receive **above-normal (above average)** rainfall. Parts of central and southwestern Uganda are likely to experience **dry conditions** during the forecast period. The rest of the country is expected to receive **near-normal (near average) to above-normal (more than average)** rainfall. The spatial distribution of the expected seasonal rainfall is shown in Figure 1.

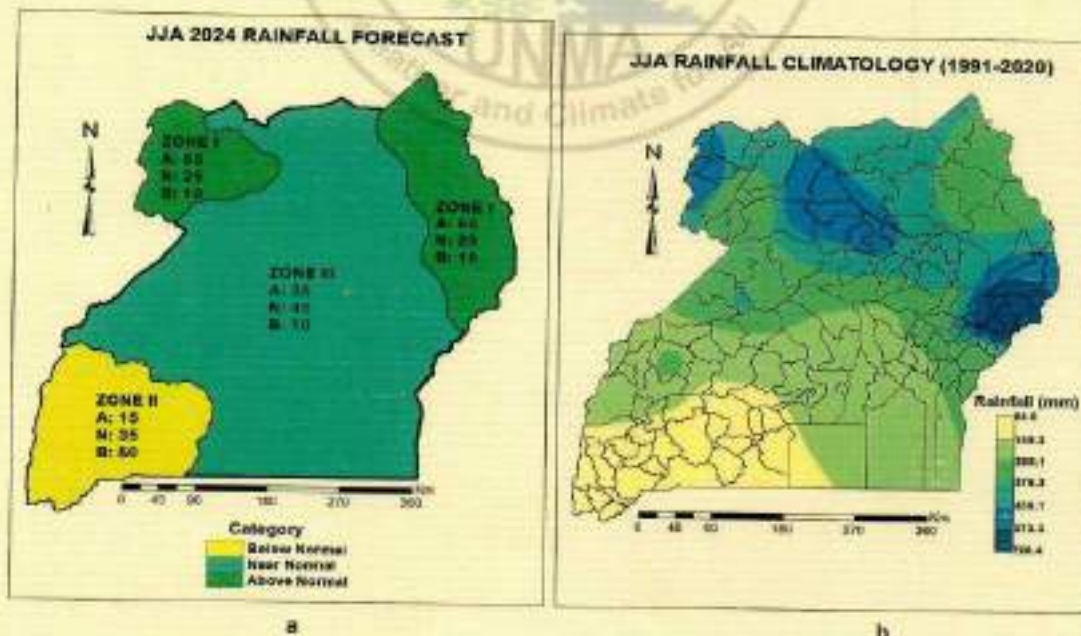


Figure 1: (a) Seasonal climate outlook for June to August (JJA), 2024 (b) JJA rainfall climatology (1991-2020)

3.0 THE JJA 2024 CLIMATE DRIVERS

The major climate factors that are likely to influence the rainfall outlook for JJA 2024 over Uganda include: -

- i) The current neutral state of the Sea Surface Temperatures (SSTs) over the equatorial central Pacific Ocean;
- ii) 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;
- iii) The Indian Ocean Dipole (IOD) is currently in the neutral phase;
- iv) The orientation of the Inter-Tropical Convergence Zone (ITCZ);
- v) The influence of the Congo Air mass circulation, topographical features, and large inland water bodies.

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

4.0 DETAILED FORECAST

4.1 WESTERN UGANDA

4.1.1 South Western Highlands (Kabale, Kisoro, Rukungiri, Kanungu, Rukiga, Rubanda, Bushenyi, Rubirizi, Mitooma, Buhweju, Sheema, Rwampara districts)

This region has been experiencing dry conditions which are expected to continue up to around mid-August. Thereafter, isolated showers are likely to set in until the end of the season. Overall, **dry conditions (suppressed rainfall)** are likely to prevail during the forecast period.

4.1.2 South Western Lowlands (Ntungamo, Isingiro, Mbarara, Ibanda, Kiruhura and Kazo districts)

The current dry conditions being experienced in this region are expected to continue up to around early-August when isolated light rains are expected to set in and continue up to the end of the season. Overall, **dry conditions (suppressed rainfall)** are expected to prevail over most parts of the region.

4.1.3 Rwenzori sub region (Kasese, Bundibugyo, Ntoroko, Kabarole and Bunyangabu districts)

The region has been experiencing a blend of wet (mountainous areas) and dry (low-lying areas) conditions which is expected to continue until mid-June. Thereafter, dry conditions are likely to persist up to late-July when isolated light rains are expected to set in until the end of the season. Overall, **near normal to below normal rainfall** is expected to prevail over most parts of the region.

4.1.4 Central parts of Western (Masindi, Bulisa, Hoima, Kikuube, Kakumiro Kyenjojo, Kyegegwa, Kamwenge, Kitagwenda, Kagadi and Kibaale districts)

This region is experiencing dry conditions punctuated by isolated showers an indication of the cessation of the first season. Dry conditions are expected to persist up to late-July when light rainfall is likely to set in up to the end of the forecast period. Overall, **near normal (near average)** with slight tendency to **below normal (Suppressed)** rainfall is expected over most parts of the region.

4.2 CENTRAL REGION, LAKE VICTORIA REGION AND EASTERN UGANDA

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

Several parts of this region have been experiencing isolated showers coupled with dry spells and are expected to persist until early June. Thereafter, dry conditions are expected to prevail until early July when occasional rainfall is likely to set in up to the end of the season. Overall, there are high chances of **near normal (near average) rainfall** conditions over most parts of the region.

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

Currently, this region has been experiencing dry conditions characterized by isolated showers which are expected to continue up to mid-June when dry conditions are expected to set in up to mid-July. This is likely to be followed by occasional rains until the end of the season. Overall, **near-normal (near average) to below-normal rainfall** is expected to prevail over this region.

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

This region has been experiencing dry conditions with isolated rainfall which is expected to continue until mid-June when dry conditions are likely to set in late July. Thereafter occasional rains are expected to set in up to the end of the forecast period. Overall, this region is expected to receive **near normal (near average)** rain with a high tendency to **below normal (below average)** rainfall.

4.2.4 Eastern Lake Victoria Basin (Jinja, Bugiri, Busia, Mayuge, Namayingo and Tororo districts)

The region has been experiencing a blend of wet and dry conditions which are expected to continue up to mid-June. Thereafter, the dry conditions are likely to set in up to late July when moderate rains are expected to prevail until the end of the season. Overall, **near normal** rainfall is expected during this season over the region.

4.3 EASTERN REGION

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

This region is currently experiencing a reduction in rainfall activity indicating cessation of the first season. Dry conditions are expected to continue up to late July when the occasional rainfall will be experienced up to the end of the forecast period. Overall, there are high chances of **near-normal (near average)** rainfall conditions over this region.

4.3.2 Eastern_parts of Kyoga (Pallisa, Butebo, Budaka, Kibuku, Bukedea, Kumi, Kalaki, Kaberamaido, Serere and Soroti districts)

Currently, the region is experiencing relaxation in rainfall conditions and this is likely to continue until late June when wet spells are expected to resume. Overall, there are high chances of **near-normal (near average)** rainfall.

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

At present, the region is experiencing relaxation in rainfall conditions which is likely to give way to dry conditions up to late June. Thereafter, rains are expected to resume until the end of the forecast period. Overall, there are high chances of **above-normal** rainfall.

4.4 NORTHERN REGION

4.4.1 West Nile (Zombo, Nebbi, Pakwach, Madi-Okollo, Arua, Koboko, Terego, Maracha, Moyo, Yumbe, Obongi, and Adjumani districts)

The current rains are expected to continue until late June when a dry spell will set in until mid-July. Thereafter, occasional rains are expected to be established up to the end of the forecast period. Overall, there are high chances for **near normal to above-normal** rainfall over most parts of this region.

4.4.2 Eastern Parts of Northern (Lira, Apac, Alebtong, Amolatar, Kitgum, Lamwo, Agago, Otuke, Pader, Kole and Dokolo districts)

The current rains over this region are expected to continue up to mid-June followed by a relaxation until mid-July. Thereafter, steady rains are expected to be established up to the end of the forecast period. Overall, there are high chances for **near normal to above-normal** rainfall over most parts of this region.



4.4.3 Central Parts Northern: (Gulu, Omoro, Kwania, Nwoya, Amuru, Oyam and Kiryandongo districts)

There is a high likelihood that the current rains being experienced will continue up to late June when a relaxation is likely to set in until mid-July. Thereafter, steady rains are expected to be established up to the end of the forecast period. Overall, there are high chances of **near normal to above normal (enhanced)** rainfall over most parts of this region.

5.0 THE IMPLICATIONS OF THE CURRENT FORECAST

There is high chance that rainfall is likely to perform from near normal to above normal over northern and Eastern parts of the country, while the southern parts of the country are likely to experience near normal to below normal. This is likely to have impacts on socio-economic activities especially agricultural production and food security.

It should be noted that areas expected to receive near-normal rainfall do 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 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.

6.0 ADVISORIES TO DIFFERENT SECTORS

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

6.1 Agriculture and Food Security Sector

6.1.1 *Expected impacts for Near Normal to Below Normal rainfall areas for Agriculture and food security sector*

- ❖ Shortage of pasture and water for livestock production;
- ❖ Water stress for crops such as bananas, coffee, tea, and fruit trees;
- ❖ strong winds associated with strong waves on lakes and rivers causing accidents;
- ❖ Fish tend to migrate to deeper waters affecting their production system;
- ❖ Fish nets are washed away by strong winds leading to a termed ghost fishing, especially along the lake shores;
- ❖ Honey production is expected to be of high quality.

6.1.2 Expected impacts for Near Normal to Above Normal rainfall areas for Agriculture and food security sector

- ❖ Increased likelihood of animal and crop diseases as well as pests/vectors e.g. Rift Valley fever, and Foot and Mouth Disease (FMD);
- ❖ Post-harvest losses (crops, fish, and animals) are expected to be high;
- ❖ Water logging likely to affect tuber crops;
- ❖ Poor tuber formation in crops e.g. sweet potatoes, and yams;
- ❖ Increased availability of water for production (crops, fish, and animals);
- ❖ Soil erosion from surface runoff and leaching of minerals;
- ❖ Wastage/ washing off of agricultural chemicals (herbicides, pesticides, and fertilizers) likely to be high;
- ❖ Silting of dams, valley tanks, fish ponds, and other water harvesting structures due to erosion effect;
- ❖ Increased flash flooding in most areas with poor drainage systems;
- ❖ Low production of honey;
- ❖ High production of milk due to abundant pastures and water;
- ❖ Increased production of high water-intensive crops e.g. rice, yams.

6.1.3 Advisories for Near Normal to Below Normal rainfall areas for Agriculture and food security sector

Crops

- ❖ Irrigation of farmlands with appropriate technology to sustain crop growth;
- ❖ Farmers are encouraged to mulch their gardens to conserve soil moisture availability;
- ❖ Plant short-maturing crops such as cowpeas, leafy vegetables and drought-tolerant crop varieties such as Sorghum and Millet;
- ❖ Backyard/homestead gardening of vegetables such as nakati, dodo, and eggplants, is encouraged;
- ❖ Store/stock enough food for household use, especially cereals from the harvest;
- ❖ Diversify the economic enterprises to strengthen and ensure fallback position;
- ❖ Land preparation is encouraged for the next rainfall season;
- ❖ Control of pests & diseases e.g. termites since they search water everywhere leading to the destruction of tree plants and other tree made structures;
- ❖ Stock farm inputs for the coming season like seeds and garden tools;
- ❖ Use proper post-harvest handling practices to avoid yield losses e.g. use of super bags, metallic silos, maize cribs, Cocoons, tarpaulins, and drying racks;
- ❖ Carry out good agronomic practices e.g. tendering for perennial crops;
- ❖ Continue to plant/establish long-seasoned crops accordingly e.g. fruit trees/agroforestry trees.

JAF

Livestock

- ❖ Pasture preservation (hay, silage for livestock) is encouraged;
- ❖ Sparingly use the available water for livestock, irrigation, and domestic purposes;
- ❖ Reduce on the stocking rate of livestock;
- ❖ Construct and rehabilitate reserve tanks for water harvesting;
- ❖ Vaccinate livestock.

Fisheries

- ❖ Avoid overloading of boats due to expected strong waves;
- ❖ Fishermen are encouraged to wear life jackets at all times to minimize accidents;
- ❖ Use sea-worthy boats;
- ❖ Lower the stocking rate for fish ponds and cages;
- ❖ Construction of reserve tanks/ ponds;
- ❖ Use early warning weather updates

Apiculture

- ❖ Improve hygienic practices along the honey value chain;
- ❖ Put up more bee hives especially the modern ones e.g. Kenya's top bar hives;
- ❖ Provide water sources to the apiary;
- ❖ Maintain the apiary sites e.g. fencing.

6.1.4 Advisories for Near Normal to Above Normal areas for Agriculture and food security sector

Crops

- ❖ Soil and water conservation practices e.g., grass bunds, mulching, and digging of trenches to enhance soil moisture retention and reduce soil erosion;
- ❖ Control of crop diseases especially fungal and bacterial ones which are widespread during the rainy season e.g. potato diseases;
- ❖ Encourage proper agronomic practices such as timely weeding and harvesting;
- ❖ Encourage proper storage of produce;
- ❖ Plant high-yielding crop varieties (**NB**: Consult ZARDI's and Area extension office);
- ❖ Soil testing practice is encouraged.
- ❖ Plan and construct water harvesting structures;

Livestock

- ❖ Establishment of water harvesting structures at household and community levels;
- ❖ Vaccination and spraying of livestock against diseases and vectors;
- ❖ Rehabilitate/ reconstruct damaged farm structures in a timely fashion;
- ❖ Plant and conserve pastures for livestock production (Napier, leguminous pastures/ silage, hay);
- ❖ Improve storage facilities for milk like coolers;
- ❖ Increase the stocking rates of livestock;
- ❖ Encourage value addition for animal products.

Fisheries

- ❖ Construction of drying racks for Mukene, and smoking kilns for bigger fishes;
- ❖ Encourage proper hygiene and sanitation at landing sites e.g. cleaning of boats;
- ❖ Carry ice on board for fish preservation;
- ❖ Avoid overloading of fishing crafts;
- ❖ Put on life jackets;
- ❖ Boats should be sea-worthy;
- ❖ Use proper storage facilities e.g. well-aerated stores;
- ❖ Construct boulders around fish ponds;
- ❖ Maintain waterways in fish ponds.

Apiculture

- ❖ Plant flowering plants near apiary;
- ❖ Protect hives from harsh weather hazards e.g. windbreaks;
- ❖ Caution should be taken when using pesticides near apiaries.

6.2 Water, Energy, and Hydro-Power Generation Sector

6.2.1 Expected impacts for Near Normal to Below Normal areas for the Water and Energy sector

- ❖ Reduction in water table;
- ❖ Reduced availability of surface and groundwater;
- ❖ Declining levels/drying of streams and other water resources such as boreholes, wells, etc.

6.2.2 Expected impacts for Near Normal to Above Normal areas for the Water and Energy sector

- ❖ Enhanced water for irrigation during dry spells;
- ❖ Flash floods expected in areas receiving above-normal rains;
- ❖ Sustainable water supply for hydropower production;
- ❖ Availability of water for domestic use;
- ❖ There will be a recharge of ground aquifers and surface water bodies;
- ❖ Bursting of river banks may occur and increased sediment loading/silting expected;
- ❖ Destruction of infrastructures i.e., roads and bridges;
- ❖ Improved utilization of water transport due to the increase of water levels;

6.2.3 Advisories for Near Normal to below Normal areas for the Water and Energy sector

- ❖ Communities are advised to desilt water reservoirs (valley dams, tanks, ponds shallow wells);
- ❖ Communities are encouraged to use water sparingly.



6.2.4 Advisories for Near Normal to above normal rainfall areas for the Water and Energy sector

- ❖ Communities are encouraged to carry out rain water harvesting.
- ❖ Installation of lightning conductors.
- ❖ Water Treatment or boiling before consumption/ drinking is necessary.
- ❖ Apply sandbags to act as a barrier from bursting water reservoirs.
- ❖ Authorities in charge of power production should utilize the available water to increase power output.
- ❖ Avoid standing under trees when it's raining.

6.3 Health Sector

6.3.1 Expected impacts for Near Normal to Below Normal areas for the Health sector

- ❖ Increased upper respiratory diseases;
- ❖ Increased skin allergies are also likely to occur.

6.3.2 Expected impacts for Near Normal to Above Normal areas for the Health sector

- ❖ Waterborne diseases such as typhoid and cholera upsurge expected;
- ❖ Increased prevalence of malaria;
- ❖ Water contamination from surface runoff.

6.3.3 Advisories for Near Normal to Below Normal areas for the Health sector

- ❖ Health education through community awareness and sensitization avoid respiratory diseases
- ❖ Communities are encouraged to practice proper hygiene including washing of hands to avoid eye diseases.

6.3.4 Advisories for Near Normal to Above Normal areas for the Health sector

- ❖ Communities are advised to improve domestic hygiene to reduce contamination of water. E.g. proper use of latrines;
- ❖ Water and sanitation to be observed to avoid contamination;
- ❖ Health education through community awareness and sensitization about those diseases
- ❖ Control water pollution. E.g. not to release wastewater into rivers, streams, and other water sources.
- ❖ Enhanced disease surveillance of malaria, typhoid, and cholera.
- ❖ Buffer stocks for anti-malarial
- ❖ Communities are encouraged to practice proper disposal of waste including human fecal matter.
- ❖ Treat water/boil before consumption.

6.4 Disaster Risk Management Sector

Advisories:

- ❖ Districts are advised to review and update their disaster contingency plan;
- ❖ Cash transfer is highly recommended to affected families;
- ❖ Multi-agency approach in response to disasters works best at national and sub-national levels;
- ❖ Host family program which assists affected communities in the different regions of Uganda.
- ❖ Install and construct water harvesting facilities;
- ❖ 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;

7.0 CONCLUSION

This early warning information on JJA 2024 season requires timely and appropriate action to take advantage of the information. It should be used for planning and decision making in all the climate sensitive economic activities to improve the 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 weather alerts, updates, and advisories to the users regularly. This seasonal forecast should be used together with other forecasts such as daily, decadal (10-days), and monthly updates regularly provided by UNMA.



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EXPLANATORY NOTES TO TERMINOLOGY

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 areas.

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.

General: Appropriate updates and advisories to the users will be regularly issued by Uganda National Meteorological Authority through continuous monitor of the evolution of relevant weather controlling systems particularly the state of the SSTs.

NB: The current status of seasonal forecasting allows for Prediction of spatial and temporal averages over larger areas and may not fully account for all physical and dynamical factors that influence short-term climate variability. Users of this outlook are, therefore urged to make good use of daily, ten day and monthly updates issued by the Uganda National Meteorological Authority.

Categorical analysis is obtained from a comparison between the actual observation and the Long-Term Mean (LTM) which determines the range of rainfall experienced to be above normal (enhanced), near normal(average) or below normal (suppressed) conditions.