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THE REPUBLIC OF UGANDA

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THE SEASONAL RAINFALL OUTLOOK FOR SEPTEMBER TO DECEMBER 2025 OVER UGANDA

1.0 INTRODUCTION

Uganda generally experiences two major rainfall seasons; March-April-May (MAM) and September-October-November-December (SOND), as the first and second rainy seasons, respectively. However, regions in the Northern sector and parts of Eastern region usually experience substantial rainfall amount during June-July-August (JJA) period.

2.0 GENERAL FORECAST

Overall, the SOND 2025 rainfall forecast indicates that several parts of the country are expected to receive **near-average** rainfall. However, some parts in the cattle corridor of southwestern region are expected to experience **near-average,** tending to **below-average** rainfall conditions during the forecast period. The SOND 2025 seasonal outlook and the climatological spatial distribution maps are shown in the figure below.

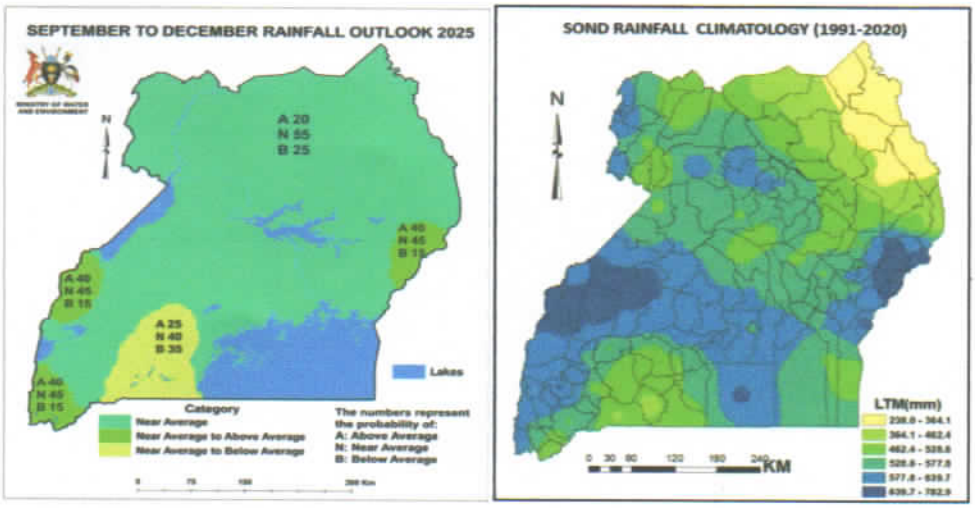

Figure: Seasonal rainfall outlook for SOND 2025 (left) and SOND Rainfall Climatology, based on the base period: 1991-2020 (right)

3.0 SOND 2025 CLIMATE DRIVERS

The major climate drivers that are expected to influence the SOND 2025 rainfall outlook over Uganda include:

i) The sea surface temperature anomaly over central Pacific Ocean which is currently in a neutral state, with low chances of developing into La Niña condition;

ii) The current negative phase of the Indian Ocean Dipole (IOD) index, which is expected to return to neutral state as the season progresses;

iii) The positioning of the rainfall belt over the country due to the apparent movement of the overhead sun;

iv) The intra-seasonal variation of the wind system that oscillates around the tropics referred to as Madden Julian Oscillations (MJO). This is expected to affect the spatial distribution of rainfall at different times of the season over most parts of the country;

v) The influence of the Congo Air mass, topographical features, and large inland water bodies.

Based on the above considerations, the Ministry of Water and Environment, through the Department of Meteorological Services has generated a detailed seasonal rainfall outlook as provided below.

4.0 DETAILED FORECAST

4.1 WESTERN UGANDA

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

The current dry conditions over this region are expected to continue till mid-September when the onset of seasonal rainfall will get established, with the peak expected around late October to early November. The cessation is expected by mid to late December. This region is expected to experience **near-average, tending to above-average** rainfall.

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

The current dry conditions being experienced over this region are expected to continue till mid-September when the onset of seasonal rainfall will get established. The peak of the seasonal rains is expected around late October to early November and the cessation around mid-December. Overall, **near-average** rainfall is expected over this sub region.

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

The current dry conditions over this region are expected to continue till mid-September when the onset of seasonal rainfall will get established. The peak rainfall will be experienced by around late October to early November. The cessation is expected by early to mid-December. Overall, this sub region is expected to experience **near-average** rainfall.

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

The current rains that are being experienced over most parts of this region signal the onset of the seasonal rainfall. Peak rains are expected around early October, with cessation of the seasonal rains expected by late November to early December. Overall, **near average** rainfall conditions are expected over this sub region.

4.2 CENTRAL REGION AND LAKE VICTORIA BASIN

4.2.2 Western Central Region (Nakasongola, Luwero, Kyankwanzi, Kakumiro, Kasanda, Nakaseke, Kiboga, Mubende, Sembabule, Lyantonde, and Rakai districts).

Northern districts of this region are currently experiencing occasional isolated rains, signifying the onset of the seasonal rainfall, whereas the remaining districts are experiencing dry conditions with onset expected around mid-September. The peak of the

rainfall season is around October. The cessation of rainfall is expected by late November to early December.

Overall, **near-average, with a tendency to below-average** rainfall conditions are expected over this region.

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

Some parts of this region are currently experiencing isolated light rains. The onset of rainfall is expected around mid-September. The peak is expected by mid to late October, with rainfall cessation expected around early to mid-December.

Overall, **near-average** rainfall is expected over the region.

4.2.4 Eastern Central Region (Jinja, Mukono, Buikwe, Kayunga, and Buvuma ditricts).

Some areas of this region are currently experiencing isolated rains. The rainfall onset is expected around mid-September. The peak rainfall is likely to be experienced around early to mid-October, with cessation around early December. Overall, **near-average** rainfall is expected over the region.

4.3 EASTERN UGANDA

4.3.1 Eastern Lake Victoria districts (Bugiri, Busia, Mayuge, Namayingo and Tororo).

Most parts of this region are currently experiencing isolated rains, signaling the onset around mid-September. The peak is expected around early to mid-October, with cessation around early December. Overall, **near-average** rainfall is expected over this region.

4.3.2 Southeastern Region (Kamuli, Iganga, Bugweri, Luuka, Namutumba, Buyende, Kaliro, and Butaleja districts).

Most parts of this region are currently experiencing isolated rains, which signal the onset on seasonal rains. The peak rainfall is expected around early to mid-October, with cessation around early December.

Overall, **near-average** rainfall is expected over the region.

4.3.3 Eastern Parts of Kyoga Region (Pallisa, Butebo, Budaka, Kibuku, Bukedea, Kumi, Kalaki, Kaberamaido, Serere and Soroti districts).

The current rains over this region are expected to continue, reaching peak around late September to early October. The cessation is expected to occur around mid to late November.

Overall, **near average** rainfall is expected over this region.

4.3.4 Mount Elgon Region (Districts of Mbale, Manafwa, Namisindwa, Bududa, Sironko, Bulambuli, Kapchorwa, Kween, Bukwo).

The current rains over this region are expected to continue, reaching the peak around late September to early October. The cessation is expected around mid to late November.

Overall, there are high chances of **near-average, with a tendency to above average** rainfall.

4.4 NORTHERN REGION

4.4.1 Northeastern Region (Districts of Katakwi, Amuria, Kapelebyong, Napak, Moroto, Nabilatuk, Nakapiripirit, Amudat, Abim, Kotido, Kaabong, and Karenga).

The current rains being experienced over this region are expected to continue, reaching peak around late September to early October. The cessation is expected around mid to late November.

Overall, **near average** rainfall is expected to prevail over this region.

4.4.2 Northwestern Region (Districts of Arua, Maracha, Koboko, Terego, Yumbe, Obongi, Moyo, Adjumani, Madi Okollo, Zombo, Nebbi, and Pakwach).

The current rains being experienced over this region are expected to continue. The peak rainfall is expected around late September to early October, with the rainfall cessation expected by mid to late November.

Overall, **near average** rainfall is to prevail over this region.

4.4.3 **Central Northern Region** (Districts of Gulu, Omoro, Lamwo, Nwoya, Amuru, Oyam, and Kiryandongo).

The current rainfall being experienced over this region is expected to continue, reaching the peak by late September to early October. The cessation is expected around mid to late November.

Overall, this region is expected to receive **near average** rainfall.

4.4.4 **Eastern Areas of Northern Region** (Districts of Dokolo, Amolatar, Alebtong, Lira, Kole, Otuke, Pader, Kitgum, Apac, and Agago)

The current rainfall being experienced over this region is expected to continue, reaching the peak around late September to early October. The cessation is expected by mid to late November. Overall, **near average** rainfall is to prevail over this region.

4.0 IMPLICATIONS OF THE FORECAST

There is a high likelihood of receiving near-average rainfall over most parts of the country. However, some parts of the southwestern and eastern regions are expected to experience near- average, tending to above-average rainfall. This is likely to have impact on various socio-economic sectors, especially agriculture and food security, health and water resources, among others.

It should be noted that:

- Rainfall in areas expected to receive near- average to below-average amounts may not adequately support the usual socio-economic activities;
- Localized occurrences of flash floods may also occur in areas expected to receive near-average to below-average rainfall as a result of isolated heavy downpours.
- Poor rainfall distribution may occur in some areas expected to receive near-average to above- average rainfall.

5.0 ADVISORIES FOR THE DIFFERENT SECTORS

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

5.1 FOR AREAS EXPECTED TO RECEIVE NEAR AVERAGE TO ABOVE AVERAGE RAINFALL

5.1.1 AGRICULTURE AND FOOD SECURITY

5.1.1.1 Crops

Positive Impacts	Negative Impacts:
• A boost in crop production, leading to optimum crop yields; • Water availability for crop germination and growth; • Increased production of high-water requiring crops like rice, yams and sugarcane.	• Increased incidences of some crop pests and diseases; • Destruction of crops in areas prone to flooding, waterlogging, hail storms and landslides; • Increased soil erosion in highland districts as a result of flash floods and landslides; • A high likelihood of waterlogging/ flooding and leaching of soil nutrients; • A likelihood of post-harvest losses, which may lead to poor quality agricultural produce.

Advisories for Crop Farmers

- In areas prone to water logging, plant crops like rice, yam, sugarcane;
- Early stocking and delivery of farm inputs before the onset of seasonal rains;
- Timely planting;
- Apply fertilizers in split for proper crop nutrient utilization, especially nitrogenous fertilizers;
- Plant improved high-yielding varieties e.g. Longe series, NABE series and quick maturing varieties;
- Apply good agronomical practices (GAPs), e.g. timely weeding, spacing of crops, thinning, and timely harvesting;
- Soil and water conservation practices, such as contour bands, grass bands, trenches, and water harvesting techniques;
- Crop monitoring and surveillance for pests and diseases and reporting of epidemic outbreaks to the responsible officers are encouraged;
- Timely control of pests and diseases, such as bacterial and fungal diseases;
- Effective utilization of weather and climate information in decision making and planning is encouraged.

5.1.1.2 Fisheries	
Positive Impacts • Increased natural food in the lakes such as earthworms and snails; • Increased water flow into the ponds; • Increased production of fish in lakes and rivers.	**Negative Impacts** • Likelihood of increased siltation of fish ponds; • High cost associated with fish ponds management; • Destruction of life cycles of fish as a result of pond flooding; • Intoxication of fish ponds (eutrophication); • Poor quality of fish products.
Advisories for Fisheries • Protect wetlands for breeding of seasonal migratory fish, like African catfish and lungfish, among others; • Improve drainage of ponds; • Raise pond banks; • Clear waterways around the fish farms to avoid silting; • Stock fish in ponds due to availability of water; • Prepare drying racks/raised platforms for fish drying.	
5.1.1.3 Livestock	
Positive Impacts • Reduced conflict and violence over natural resources; • Adequate pasture which leads to high quality animal products, such as milk and meat; • Adequate water for animals.	**Negative Impacts** • Increased occurrence of disease incidences and vectors, such as coccidiosis in poultry, tsetse flies among the cattle keeping communities, Foot and Mouth Disease (FMD) and ticks; • High cost of inputs, such as drugs due to increased disease incidences and vectors; • Increased cost of maintaining the housing structures for livestock; • Death of animals in flooded areas; • Poisoning due to the inflow of contaminated water into water sources/ reservoirs; • Damage to pastures which are less resistant to floods; • Preservation challenges of animal feeds; • Low quality of milk.
Advisories for Livestock Farmers • Monitor and ensure surveillance of vectors and disease epidemics; • Disease and vector control are encouraged; • Move animals to less flooded areas; • Restock farms with animals;	

- Proper disposal of dead animals to minimize contamination and disease spread;
- Water harvesting is encouraged;
- Provide animals with safe water;
- Provide animals with adequate quality feeds;
- Plant and preserve pastures;
- Proper storage of animal feeds under dry conditions;
- Construct quality/stable animal structures with waterproof roofs and non-slippery ground.

5.1.1.4 Beekeeping

Positive Impacts	Negative Impacts
• Abundance of flowering plants required by bees; • Adequate water.	• Destruction of flowers and bee hives may result in low honey production; • Occurrence of thunder and lightning may lead to migration of bees; • Increased consumption of honey by bees themselves.

Advisories for Beekeepers

- Plant more flowering crops in the vicinity of apiaries to reduce swarming;
- Proper maintenance of the apiary farm, i.e. slashing the bushes;
- Provide shades to beehives to shield them from harsh weather.

5.1.2 WATER, ENERGY, AND HYDRO-POWER GENERATION

Positive Impacts	Negative Impacts
• Increased availability of water for use (power generation, domestic use, industries, etc.); • Increased groundwater recharge.	• Groundwater contamination from surface runoff, leading to disease transmission such as cholera, diarrhoea and dysentery; • Increased surface and groundwater levels, leading to riverine and flash floods in flood-prone regions; • Increased sediment loading into the water bodies and water storage facilities, such as valley dams/tanks, reservoirs, ponds and other water passages.

Advisories for Water, Energy, and Hydro-Power Generation

- Take advantage of the available water to increase hydro-power production;
- Encourage water harvesting;
- Construction of valley dams, tanks, and dikes should be done early enough before peak rain periods;
- People should vacate flood-prone areas and river banks;
- Demarcation of buffer zones;
- Strengthen river and reservoir banks by use of sandbags and gabions to stabilize them;

- Intensify monitoring of the water resources (Quality and Quantity);
- Soil and water conservation measures to reduce erosion and surface runoff;
- Desilting and opening up of trenches by urban authorities;
- Stock of water treatment kits;
- Proper waste management to avoid clogging of channels and rivers through inflow into water channels;
- Awareness- creation of proper sanitation;
- Encourage planting of trees and grass to reduce erosion;

5.1.3 HEALTH

Positive Impacts	Negative Impacts
• Bumper harvest of food crops, hence, reduced levels of malnutrition • Improved hygiene in water-stressed areas due to rains.	• Increased vector-borne diseases, e.g. malaria; • Waterborne diseases, such as diarrheal diseases; • Respiratory tract infections, including asthmatic attacks; • Disruption of timely medical supplies to health facilities; • Destruction of health infrastructure; • Disruption of emergency medical services e.g. referrals; • Shortage of food due to floods, leading to famine; • Psycho-social challenges; • Increased accidents and disability.

Advisories for Health

- Promote the use of mosquito nets and safe water consumption.
- Public health teams should sensitize communities on disease prevention.
- Provide psychosocial support for affected individuals.
- Stock essential medicines in health facilities.
- Install lightning arrestors and other safety systems.
- Ensure timely reception and dissemination of weather updates through various communication platforms for the health sector.

5.1.4 DISASTER RISK MANAGEMENT

Positive Impacts	Negative Impacts
Replenishment of water sources: rivers, lakes, and underground water tables will be restored, ensuring water availability.	• Heavy rains are expected to lead to flash floods in low-lying areas and landslides in mountainous regions, destroying homes and infrastructure, especially in Elgon, Kigezi, and Rwenzori regions; • Destruction of homes, roads, and social infrastructure; • Increased risk of waterborne diseases; • Loss of lives and displacement of communities; • Road accidents due to poor visibility and slippery roads; • Marine accidents due to hazardous weather • Increased water levels in major lakes and rivers, leading to possible overflow.

Advisories for Disaster Risk Management

National Level:

- The Ministry of Health should intensify disease surveillance and stock medicine.
- Ministries of Works, Education, and Energy should ensure road maintenance, school contingency plans, and power line safety.
- Disaster management institutions should prepare emergency response teams.
- Marine police should enhance water rescue mechanisms.

Community Level:

- Communities should clean drainage channels and plant flood-tolerant crops like rice and yams;
- Schools and families should establish alternative routes for learners;
- Residents in flood-prone areas should relocate to safer locations;
- Local authorities should promote awareness campaigns on early warning signs.

5.1.5 EDUCATION SECTOR

Positive Impacts:	Negative Impacts:
• Increased water availability for school use through roof water harvesting	• Increased absenteeism due to flooded roads and bridges that may make it difficult for learners and teachers to reach schools; • Heavy rains may damage classrooms and school facilities, disrupting learning.

5.2 AREAS EXPECTED TO RECEIVE NEAR AVERAGE TENDING TO BELOW AVERAGE RAINFALL

5.2.1 AGRICULTURE AND FOOD SECURITY

Impacts

- Increased incidences of livestock and crop pests/vectors and diseases is expected;
- Shortage of pasture and water for livestock production;
- Water stress for some crops such as banana, coffee, tea and fruit trees;
- Fish migration to deeper waters may affect fish production.

Advisories

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 fall-back 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.

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 honey value chain;
- Put up more bee hives especially the modern ones;
- Provide water sources to the apiary;
- Maintain the apiary sites, e.g. fencing.

5.2.2 WATER, ENERGY, AND HYDRO-POWER GENERATION

Impacts

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

Advisories for Water, Energy, and Hydro-Power Generation

- Water source protection and management should be strengthened for water security;
- Water should be used sparingly and where possible, water recycling can be adopted;
- Protect and conserve water infrastructure in areas with established dams and valley tanks;
- Soil and water conservation should be encouraged;
- Other energy sources including solar, biogas and wind energy should be utilized.

5.2.3 HEALTH

Impacts

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

Advisories for Health

- Frequent health inspection in all communities is encouraged;
- Health education through community awareness and sensitization to avoid diseases, such as respiratory diseases;
- Communities are encouraged to practice proper hygiene including washing of hands to avoid eye diseases.

5.2.4 DISASTER RISK MANAGEMENT

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.

6.0 CONCLUSION

This rainfall outlook is an early warning information for SOND 2025 season that 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 sectors to improve the welfare and livelihoods for all our communities in their localities.

The Department of Meteorological Services under Ministry of Water and Environment 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 6-hourly, daily, dekadal (10-days), and monthly updates, regularly provided by the Ministry.

Hon. Beatrice Atim Anywar
MINISTER OF STATE FOR ENVIRONMENT

APPENDIX

Explanation of Key Terms

Categorical Analysis

Categorical analysis involves comparing actual rainfall observations with the Long-Term Mean (LTM) to classify rainfall conditions into three categories: Above Normal (enhanced), Near Normal (average), or Below Normal (suppressed).

Above Normal

Rainfall is classified as above normal when the total amount exceeds 125% of the Long-Term Mean (LTM). In most cases, this leads to positive impacts on socio-economic activities, particularly when the increase is above the average.

Near Normal

This refers to rainfall totals ranging between 75% and 125% of the LTM. Under these conditions, normal socio-economic activities are expected to proceed without significant disruptions.

Below Normal

Rainfall falls into this category when it is less than 75% of the LTM. In such cases, socio-economic activities may experience increasing levels of stress, with the severity depending on the degree of rainfall deficiency.