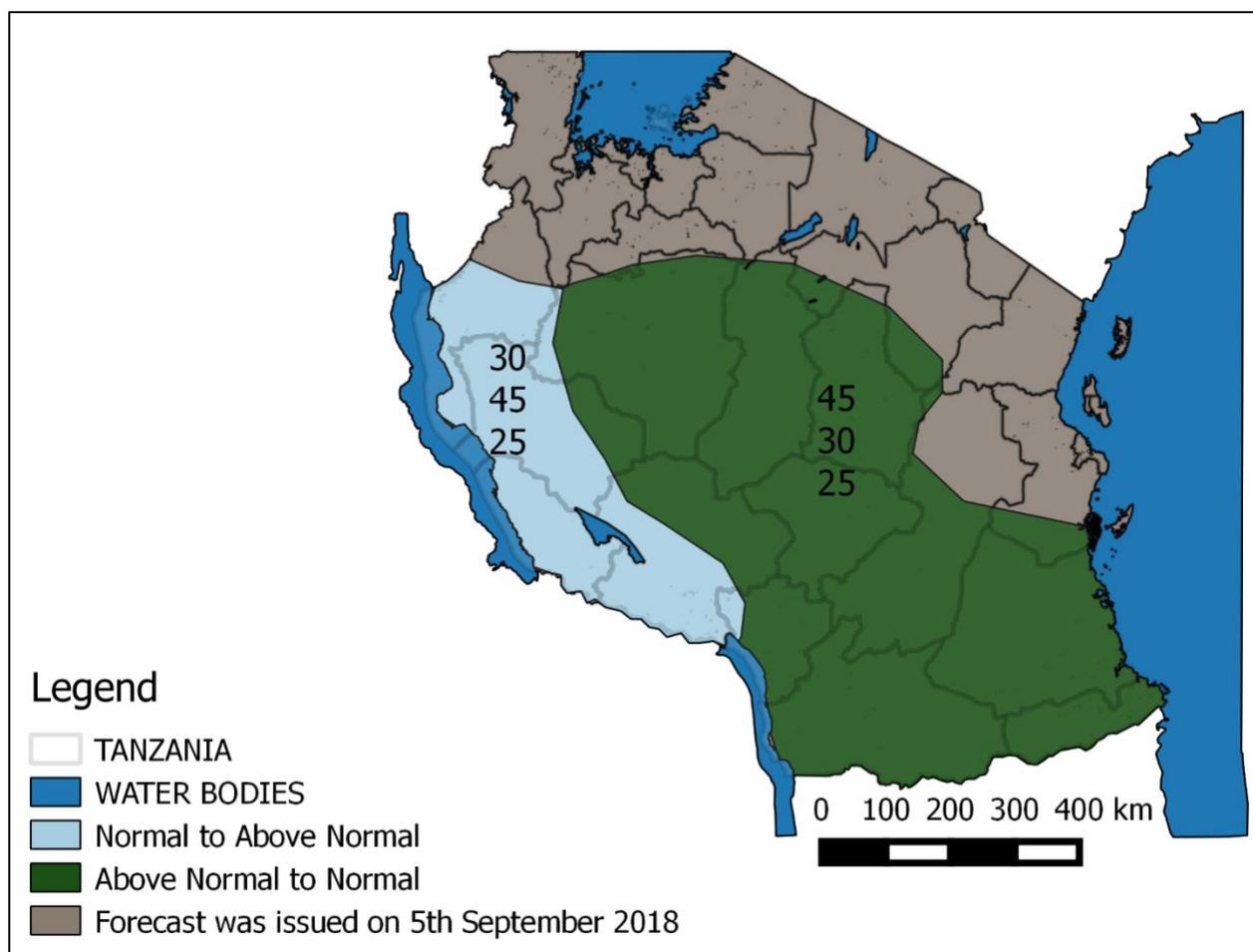


THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS, TRANSPORT AND COMMUNICATIONS
TANZANIA METEOROLOGICAL AGENCY



CLIMATE OUTLOOK FOR *MSIMU* RAINS
(NOVEMBER, 2018 - APRIL, 2019)



Rainfall Outlook for Msimu Rains (November, 2018 to April, 2019).

Highlights for Msimu rains (November, 2018 - April, 2019)

This statement gives evolution of climate systems and outlook for Msimu rains, over the unimodal areas (western, central, southwestern highlands, southern region, southern coast and southern parts of Morogoro region) for the months of November, 2018 - April, 2019. Furthermore, this statement provides an update of Vuli rains over the Lake Victoria Basin, Northern coast and North-eastern highlands. Advisories and early warnings have been provided to various weather sensitive sectors such as Agriculture and Food Security, Livestock and Wildlife, Natural Resources and Tourism, Transport and Communication, Energy and Water, Local Authorities, Health sector and Disaster Management. The Outlook for *Msimu* rains indicates that: -

a) Outlook for *Msimu* rains over Unimodal areas:

- (i) Rains are likely to be above normal to normal over most parts of Dodoma, Singida, Tabora, Mbeya, Njombe, Iringa, Ruvuma, southern sector of Morogoro, Lindi and Mtwara regions, On the other hand areas of Kigoma, Katavi, Rukwa and Songwe are expected to feature mainly normal to above normal rains.
- (ii) Much rainfall activities are likely during the first half of the NDJFMA 2018/19 season, the second half is expected to have reduced activities.
- (iii) The rains over the unimodal areas are expected to commence in the first and second week of November, 2018 over Kigoma and Katavi regions and between the third and fourth week of November, 2018 over the remaining areas. The rains are expected to cease during the fourth week of April, 2019 over much of the unimodal areas.

b) Expected Impacts

- (i) Short periods of heavy rains could result into water accumulation that may lead into floods.
- (ii) There is a likelihood of outbreak of water borne diseases especially in areas with poor sewage systems over urban areas and in areas with shortage of safe water.
- (iii) Soil moisture is expected to be sufficient for crop production over most areas. However, periods of dry spells, particularly in December, 2018 and February, 2019 may lead to soil moisture deficit in central regions.

I. RAINFALL OUTLOOK FOR *MSIMU* RAINS

Based on the current and expected climate systems (as indicated in part II of this outlook), there is an elevated chance of above normal to normal rains over most parts of unimodal areas of the country, few areas over the extreme western side are expected to feature mainly normal to above normal rains. However, much rainfall activities are expected during the first half of NDJFMA 2018/19 season due to the low-level westerly wind anomalies which are likely to enhance moisture influx from Congo Basin. The remaining period of the season is expected to have reduced rainfall activities due to the progressive warming over the Central Indian Ocean.

Msimu rains are specific for the western, central, southwestern highlands, southern regions, southern coast and southern parts of Morogoro region. These regions experience unimodal rainfall pattern, which starts in November and ends between April and May of the following year. Details of the rainfall season are as follows:

i *Western areas: (Tabora, Rukwa, Katavi and Kigoma regions):*

During the NDJFMA 2018/19 season above normal to normal rains are expected over Tabora region, where as normal to above normal rains are expected over Kigoma, Katavi and Rukwa regions. Rains are expected to commence between the first and second week of November, 2018 over Kigoma and Katavi regions there after spreading to Rukwa and Tabora regions between the third and fourth week of November, 2018.

The rains are expected to end in the fourth week of April, 2019.

ii *Central (Singida and Dodoma regions):*

Rains over these regions are expected to start between the third and fourth week of November, 2018. These regions are expected to receive above normal to normal rains during the NDJFMA 2018/19 season. The rains are expected to cease between the first and second week of April, 2019.

iii Southwestern highlands and Southern Region: (Songwe, Mbeya, Iringa, Njombe and Ruvuma regions; and southern sector of Morogoro region):

Rains are expected to start between the third and fourth week of November, 2018 and are expected to be above normal to normal over most areas, however Songwe region is expected to feature normal to above normal rains during the NDJFMA 2018/19 season.

The rains are expected to end between the fourth week of April and first week of May 2019.

iv Southern Coast: (Mtwara and Lindi regions):

During NDJFMA 2018/19 season, above normal to normal rains are expected over Mtwara and Lindi regions. The rains are expected to start between the third and fourth week of November, 2018.

Cessation is expected to be between the fourth week of April and first week of May, 2019.

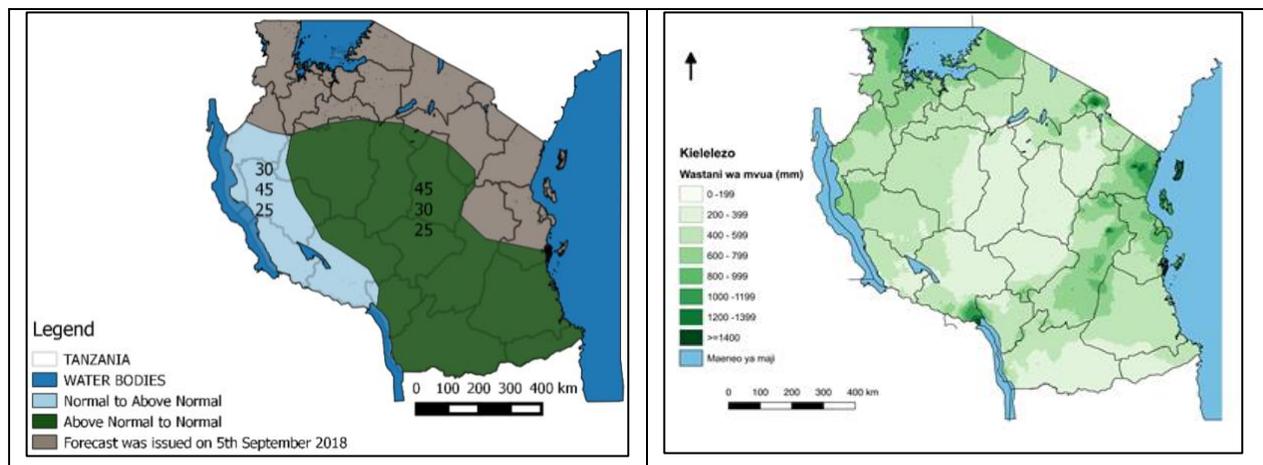


Figure 1: Left: Rainfall Outlook for Msimu rains (November, 2018-April, 2019) and Right: 30-year from November to April climatological rainfall averages (1981-2010).

It should be noted that events of heavy and short duration rainfall might occur even over areas with normal rainfall conditions.

II. CLIMATE SYSTEMS OUTLOOK

Currently, warm Sea Surface Temperatures (SSTs) are observed over the western Indian Ocean and central equatorial Pacific Ocean, the warmth over the central equatorial Pacific Ocean is likely to persist throughout the season. On the other hand, the Indian Ocean is expected to be warmer; however, more warming is predicted to be in central areas, migrating towards East as the season progresses. Slightly warm Sea Surface Temperatures are expected over Somali coast, while cool SSTs are likely over the coast of Angola During the months of November, 2018 to April, 2019.

Likelihood of deep low-pressure systems including tropical cyclones over southwestern Indian Ocean is expected to trigger westerly wind pattern across the country. The westerly wind pattern is expected to enhance moisture influx from Congo basin, favoring enhanced rains over most parts of unimodal areas.

III. LIKELY IMPACTS AND ADVISORY

Agriculture, Fishing Industry, Livestock and Wildlife Production

During the 'Msimu' (November to April) 2018/19 rainfall season, soil moisture and availability of food for fish are expected to improve over most areas.

However, excess soil moisture may ruin crops (maize, beans and burley) that do not require much water. On the other hand, the expected above normal rains might cause animal diseases and loss of fish due to destruction of fish farming infrastructure.

Sufficient pasture and water for livestock and wildlife are expected.

Livestock keepers are advised to practice good animal husbandry and harvest rainwater and pasture for immediate and future use. Users are advised to seek more information including advice from the extension officers.

Energy, Minerals and Water

Water levels in dams and reservoirs for example Mtera are likely to increase due to above normal and normal rains. However, the energy sector is advised to improve infrastructures necessary for electric supply so as to minimize impacts which might

occur. Energy mix is also highly encouraged to merge any energy gap from hydropower generation.

Those engaged in small-scale mining activities, safety precaution should be observed as excessive water in the soil may trigger landslides and cave-ins. Experts in Mining Sector are advised to conduct regular checking and stabilization of mining pits.

Availability of enough water for irrigation, domestic use and power generation is expected. However, efficient use of it is recommended.

Residents along the river banks together with the relevant sectors are advised to take necessary precautions as rivers might overflow.

Local Authorities

Anticipation of short periods of heavy rains and water accumulation due to surface runoff and floods that may be associated with the forecasted *Msimu* rains may cause destruction of infrastructures, loss of lives and property. Responsible Authorities are advised to open up drainage systems in urban areas to lessen the impacts of Floods.

Health sector

The expected above normal and normal rains are likely to trigger disease outbreaks such as malaria, and other vector borne and water borne diseases. Therefore, relevant Authorities concerned with public health and individuals are advised to take necessary health measures such as, water purification, prevention and destruction of mosquito breeding zones. Also, community should be encouraged to improve and make good use of latrines, mosquito nets and other measures so as to minimize the expected negative impacts on health.

Disaster Management

Over the areas where above normal to normal rains are expected, information through District or Regional area secretaries and Disaster committees should be given to the people especially those residing over low laying areas. Disaster management authorities are advised to prepare contingency plan as well as budget necessary to cater any negative impacts which might occur. Transport and construction agencies together

with other stakeholders are advised to take necessary measures such as good practice of improving infrastructure and ensure preparedness, and mitigation plan to reduce any negative impacts that may result from the expected above normal rainfall.

Over the areas where normal to above normal rains are expected, community and other stakeholders are advised to continue with social-economical activities, however those living over high risk areas should be prepared to concur any expected negative impact.

Media

The media is advised to obtain, make regular follow-up and disseminate weather and climate information and warnings including the updates as provided by appropriate Warning Authority i.e. the Tanzania Meteorological Agency - TMA. Moreover, Media is encouraged to seek and obtain inputs from relevant sectors when preparing and communicating cross cutting issues related to weather and climate. Media is also encouraged to use sector informants to inform the public of the expected weather-related impacts in their respective sectors. On the other hand, media is advised to prepare and distribute professional articles in order to inform the community necessity of using the weather forecasts.

Tanzania Meteorological Agency (TMA) advises all users of weather information including farmers, livestock keepers, wildlife conservation authorities, hydrological and health sectors to continue seeking and utilizing experts' advice in their relevant sectors.

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 Tanzania Meteorological Agency.

IV. UPDATE OF VULI, 2018 RAINS

The ongoing Vuli rains over areas which receive two rain seasons in a year started in the month of September, particularly over few areas in the Lake Victoria Basin and the Northern coast. Distribution of these rains is still poor over many areas. On the other hand, in North-eastern highlands, rains are yet to start. Poor rainfall distribution and delayed onset are due to persistence of warmer than normal temperatures off the

Somali coast which caused decrease in moisture over the country, especially over the Northern coast and North-eastern highlands.

Rains in the Lake Victoria Basin are expected to progress well during the remainder of the season. For the Northern coast, the distribution of rains is expected to improve during the fourth week of October and progress well during the month of November, 2018. As for North-eastern highlands, the rains are expected to start towards the end of October and improve during November, 2018. However, it should be noted that there is high chance of less rainfall during the month of December, 2018 over most areas of Northern coast and North-eastern highlands. In this regard, farmers are advised to make follow up of the 10 days forecast and receive advise from Agricultural Extension Officers.

The Agency will continue to monitor developments of the weather systems and issue updates seems to be necessary.

Issued by the Tanzania Meteorological Agency:

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Director General

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