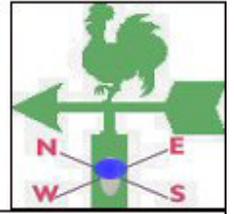




# TANZANIA METEOROLOGICAL AGENCY



## MONTHLY WEATHER BULLETIN

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### HIGHLIGHTS

- The country experienced cool to cold temperatures where cold temperatures were experienced over areas in the southwestern and northeastern highlands of the country.
- As night temperatures get low, caution should be taken against use of charcoal stoves for heating homes to avoid asphyxiation

### SYNOPTIC SUMMARY

Due to a substantial intensification of the East African ridge extending from the south and a deep cold front system that occurred towards the end of June, a strong southerly to south easterly wind flow was observed over most parts of the country. Generally a dry south-easterly wind flow was dominant over most areas of the country. However, occasionally this flow was associated with a supply of moisture from the Indian Ocean to the northern coast and north eastern highlands thus generating light rains over those areas particularly the extreme northern coast including the islands of Unguja and Pemba. The passage of cold front systems to the south of South Africa and intensification of southern hemisphere high pressure systems resulted into injection of cold air towards the country resulting in chilly weather conditions.

### WEATHER SUMMARY

#### RAINFALL

During June most areas of the country remained seasonally dry, except for a few areas over north eastern highlands and northern coast which recorded significant monthly rainfall amounts exceeding 100 mm as shown in Figures 1A and 1B. Pemba was leading by 233.2 mm of rainfall followed by Tanga 167.6 mm and Lyamungo 127.5 mm which were

above normal. Areas over unimodal rainfall regime were generally dry as shown in Figures 1A and 1B.

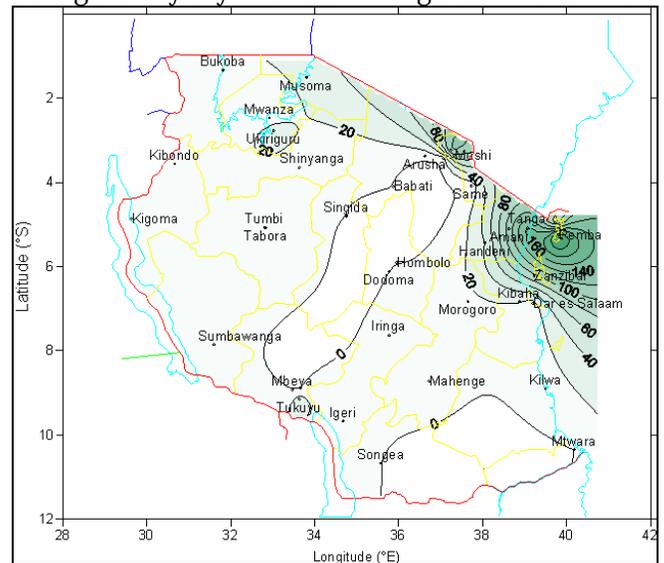


Figure 1A: June 2009 Rainfall Distribution (mm)

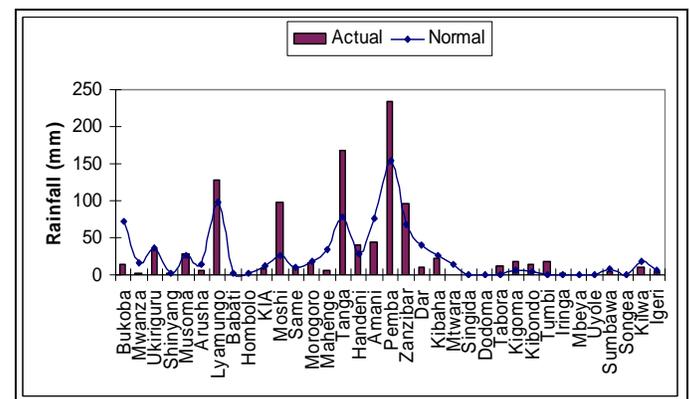
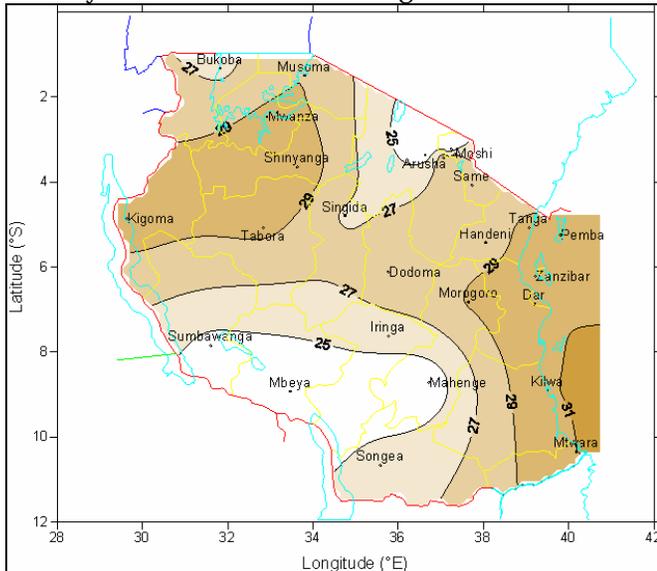


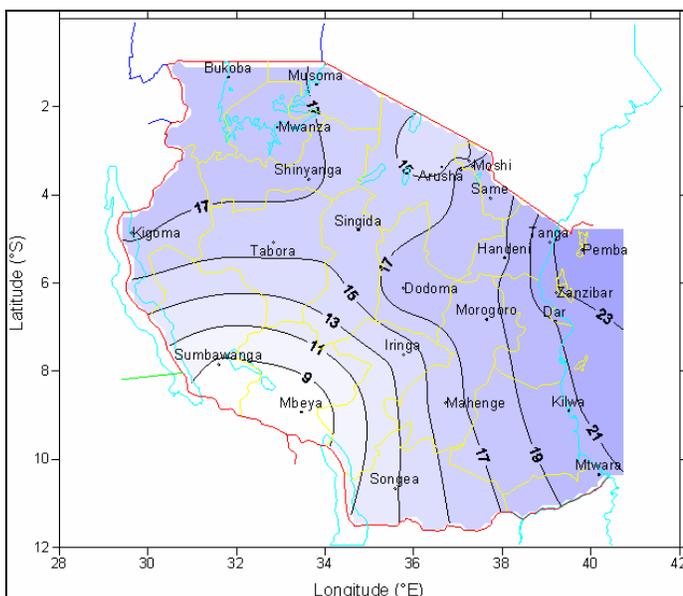
Figure 1B: Rainfall Performance during June 2009

**MEAN AIR TEMPERATURE**

During the month under review the country experienced cool to cold temperatures where cold temperatures were experienced over areas in the southwestern and northeastern highlands of the country as indicated in Figure 2A and 2B.



**Figure 2A:** June 2009 Mean Maximum Temperature (°C)



**Figure 2B:** June 2009 Mean Minimum Temperature (°C)

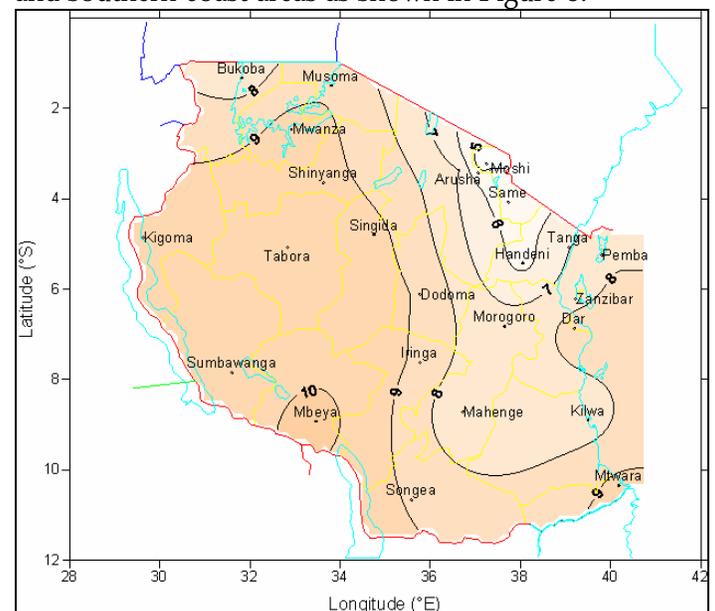
Mean maximum temperatures ranged between 25 °C and 31°C as indicated in Figure 2A. The highest absolute maximum temperature of 30.9 °C was reported at Dar es Salaam during the first dekad of the month. The lowest mean maximum temperature

was about 23.1 °C over Lyamungo in the north eastern highlands.

Mean minimum air temperatures ranged from 9 °C to 23 °C as shown in Figure 2B. The lowest value of the mean minimum temperature was about 7 °C at Mbeya in the south western highlands while the highest value of about 24.1°C was at Pemba over the coastal belt. During the second dekad of the month Mbeya recorded the lowest absolute temperature of about 6 °C.

**MEAN SUNSHINE HOURS**

Sunshine duration across the country during June indicates that the mean bright sunshine hours ranged from about 5 hrs/day over few areas in the northeastern highlands to more than 9 hrs/day over central, western, southwestern highlands, southern, and southern coast areas as shown in Figure 3.



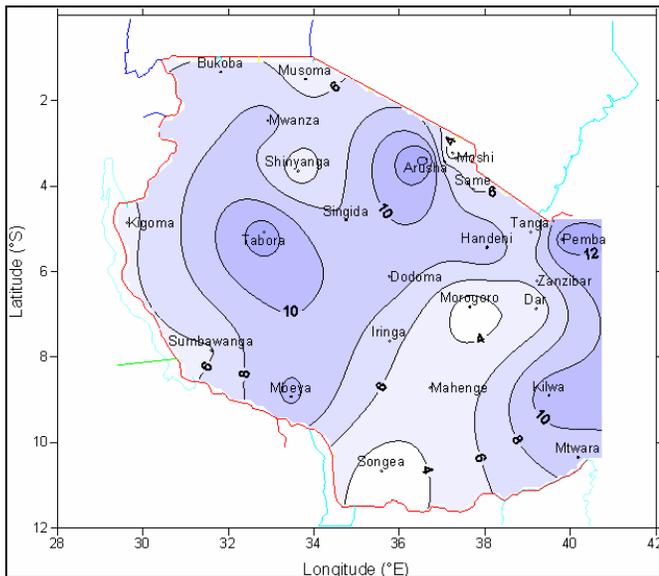
**Figure 3:** June 2009 Mean Sunshine Hours (hrs/day)

More hours of sunshine are anticipated over much of the country in July as seasonal dry season prevails.

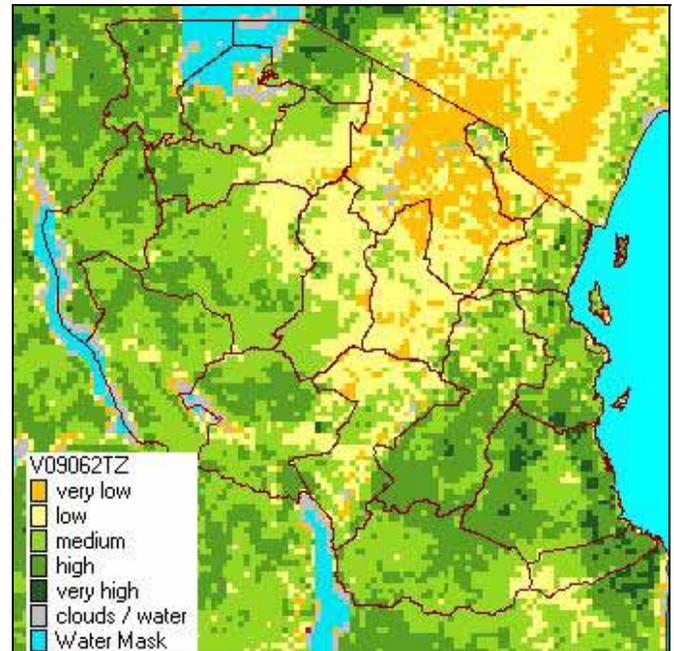
**MEAN WIND SPEED**

Mean wind speeds across the country ranged between 4 to 14 km/hr during the month of May as indicated in Figure 4. Some parts of north

eastern highlands experienced windy conditions that exceeded 14 km/hr. Low wind speed of below 4 km/hr were recorded over Moshi, Shinyanga, Songea, and Morogoro as shown in Figure 4. Windy conditions experienced over north eastern highlands, western (Tabora), and coastal regions increased occurrence of higher evaporation rates and water deficit.



**Figure 4:** June 2009 Mean wind speed (km/hr)



**Figure 5:** Vegetation condition during June 11-20, 2009.

**AGROMETEOROLOGICAL SUMMARY**

During the month of June soil moisture levels continued declining over much of the country due to the prevailing dry season. Over the bimodal rainfall regime further decrease of soil moisture has favoured drying up of field crops that were between full ripeness and harvesting maturity. Soil moisture replenishment that was observed over a few localized areas in northern coast and northeastern highlands was not useful to maize crops at between wax ripeness and harvesting maturity which had already been affected by soil moisture stress. Crop yields are anticipated to be poor as a result of false start and poor rainfall distribution experienced over much of northeastern highlands (Arusha, Kilimanjaro, and Manyara regions) and northern coastal areas (Tanga, Morogoro, and Coast regions) during *Masika* 2009 cropping season.

Over unimodal rainfall regime (southwestern highlands, western, southern, southern coast, and central) many farmers have finished harvesting of maize, beans and paddy. Crop yields in this regime are variable, where some areas of Central (Dodoma region and northern Iringa), and southern coast (Lindi and Mtwara regions) have had below average harvests.

Market supply for cassava over several areas of the country slightly declined, while pastures and water

**SATELLITE INFORMATION**

Figure 5 depicts the status of vegetation greening and coverage during the second dekad of June 2009 as Normalized Difference Vegetation Index (NDVI) from METEOSAT satellite sensor. In dekad 2 June 2009, the satellite depicted NDVI between very low to low indices over most parts of the northeastern highlands (Arusha, Manyara, and Kilimanjaro regions), eastern Shinyanga region, western (northern part of Tabora region), and central (Dodoma and Singida regions), and northern Iringa region. However, the vegetation has performed better (high to very high indices) mainly over the western, southern regions and coastal belt. The observed low NDVI indices over the livestock potential areas (northeastern highlands, Lake Victoria basin, central and Tabora region) is a preliminary indicator that pasture supply is likely to be low as the dry season continues.

availability for livestock and wildlife was at a satisfactory level mainly over unimodal areas. However, over most parts of northeastern highlands and parts of northern coast (Handeni district) pastures and water conditions continued deteriorating as the dry season continues.

### HYDROMETEOROLOGICAL SUMMARY

Water levels in lakes and dams, and discharges in rivers in their respective catchments were declining over most areas and are expected to persist as the dry season continues. Water for industrial and domestic purposes should be used sparingly.

### ENVIRONMENTAL SUMMARY

During June the country experienced generally cool to cold temperatures, giving comfortable conditions for the coastal belt which is normally warmer but chilly elsewhere. As night temperatures get low, caution should be taken against use of charcoal stoves for heating homes to avoid asphyxiation. Dry windy conditions that prevailed over northeastern highlands, coast, central and western areas increased prospects for diseases such as coughs, colds, pneumonia, and asthma.

### EXPECTED SYNOPTIC SITUATION DURING JULY 2009

During the month of July, the southern hemisphere systems (the St. Helena and the Mascarene anticyclones) are expected to continue intensifying significantly contributing to strengthening of East African ridge while the Azores and Siberian anticyclones in the northern hemisphere are expected to continue to relax thus keeping both the meridional and zonal components

of the ITCZ further north. The SSTs over East-tropical Atlantic ocean and western coast of South Africa are expected to be neutral to slightly warmer conditions. The East African ridge is expected to become stronger due to cooling over southern Madagascar and therefore allowing southerly to southeasterly wind to inject cold air over a greater part of the country resulting into chilly weather conditions.

### EXPECTED WEATHER SITUATION DURING JULY 2009

Most parts of country are expected to continue experiencing a normal dry and cool/cold season (*kipupwe*) except some parts of northern coast, northeastern highlands and lake Victoria basin whereas light rain and showers are expected. However, cold weather is expected to feature over southwestern, central and northeastern highlands of the country. The northern coast and hinterlands (Dar es Salaam, Tanga, northern Morogoro regions and islands of Unguja and Pemba) are expected to feature mainly partly cloudy conditions with isolated cases of light rain over few areas. Dry and cool/cold conditions are likely over the northeastern highlands (Arusha, Kilimanjaro and Manyara regions). Lake Victoria basin (Kagera, Mwanza and Mara regions) is expected to feature partly cloudy conditions with isolated showers and thunderstorms. Western areas are expected to feature mainly partly cloudy conditions and long sunny periods. Central areas (Dodoma and Singida regions), southwestern highlands (Iringa, Rukwa and Mbeya regions), southern areas (Ruvuma region and Mahenge) are expected to feature partly cloudy and cool/cold weather conditions with drizzle mostly over high grounds. Southern coast (Lindi and Mtwara) is expected to feature partly cloudy conditions and long sunny periods.

Prepared by

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