TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHTS

- Over the unimodal rainfall areas the declining soil moisture was conducive for crop maturity and harvesting as observed over lager parts of the regime.
- Soil moisture decline stressed crops over Lake Victoria basin (Magu and Kwimba districts in Mwanaza region).

SYNOPTIC SUMMARY

During the month of April, the southern hemisphere systems; St Helena, Mascarene high pressure cells and the East African ridge intensified while the Arabian ridge over the northwest Indian ocean relaxed resulting to southeasterly to easterly flow toward the coastal areas. Generally, the northern hemisphere systems (Azores and Siberian anticyclones) continued to relax thus allowing the Inter-Tropical Convergence Zone (ITCZ) to migrate northwards lying over our country. A weak trough over the Lake Victoria basin continued to support rainfall over the region. The convergent moist air masses from the Indian Ocean enhanced rainfall over the northeastern and northern coast areas of the country.

WEATHER SUMMARY

RAINFALL

During April, rainfall activities continued over much of the country where most of the stations reported monthly rainfall amounts exceeding 100 mm as shown in Figure 1A. Rainfall exceeding 250 mm was observed over northern coast (Pwani, Dar es Salaam, Tanga, and Morogoro regions, and Islands of Zanzibar and Pemba), and Arusha, Kilimanjaro, Mbeya, and Kagera regions. The highest amounts (exceeding 250 mm) were reported at Tukuyu 612.8 mm, Mahenge 441.3 mm, Zanzibar 384.0 mm, Pemba 380.5 mm, Kibaha 339.1 mm, Dar es Salaam 315.8 mm, Morogoro 299.5 mm, Arusha 288.5 mm, and Handeni 255.0 mm. Rainfall decline over central areas indicate normal cessation of the rains.

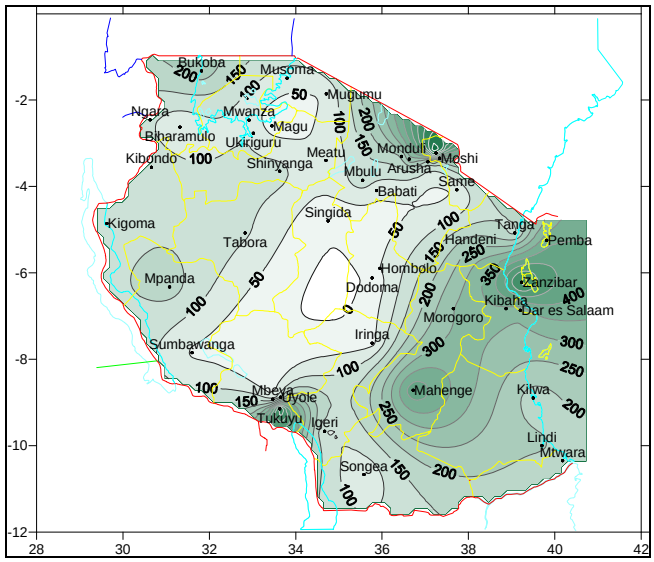

Figure 1A: April 2008 Rainfall Distribution (mm)

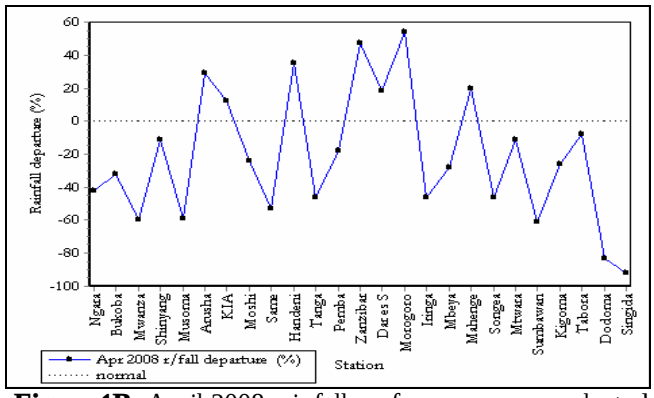

Figure 1B: April 2008 rainfall performance over selected stations in the country presented as percentage departures of actual rainfall from normal values

When actual rainfall for April 2008 was compared with long-term mean rainfall for the same period at each station, the overall rainfall performance was generally below normal as indicated in Figure 1B. Above normal rainfall amounts (by 25% or more) were recorded over Morogoro, Zanzibar Island, Handeni and Arusha. On the other hand, the recorded rainfall amounts over Mwanza and Musoma (Lake Victoria basin), Same (northeastern highlands), Sumbawanga (western), and Dodoma and Singida (central) areas were between 50-90% less than long term average (normal) rainfall.

MEAN AIR TEMPERATURE

Temperatures decreased slightly during the month due to increased cloud cover and wet conditions.

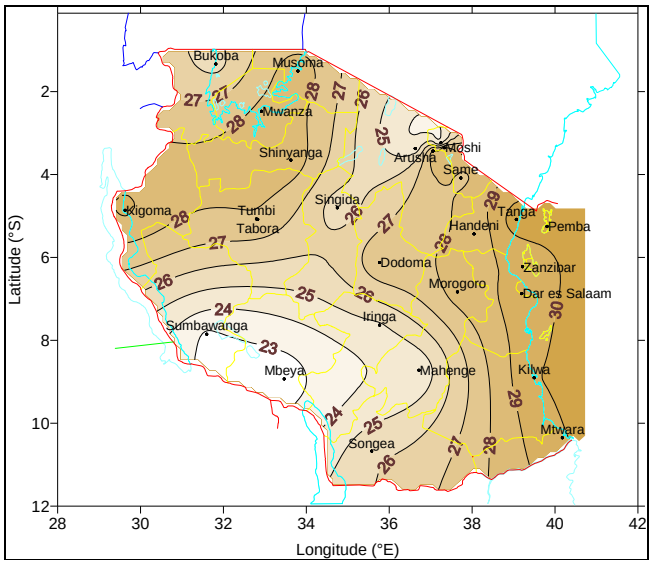

Figure 2A: April 2008 Mean Maximum Temperature (°C)

The mean maximum temperature ranged between just above 30 ºC and below 23 ºC as indicated in Figure 2A. The highest mean maximum temperature recorded during the month was about 30.6 °C at Tanga with recording an absolute highest maximum of about 30.8 °C during the second dekad of the month. The lowest mean maximum temperature was about 22.4 °C over Mbeya in the southwestern highlands. The mean minimum air temperature ranged from just below 12 ºC to slightly above 24 ºC.

The lowest value of the mean minimum temperature was about 11.7 °C as observed at Mbeya, while the highest value was about 24.5 °C recorded at Pemba as shown in Fig. 2B. Mbeya town reported the lowest 10 day minimum temperature of about 10.5 °C during the third dekad of April.

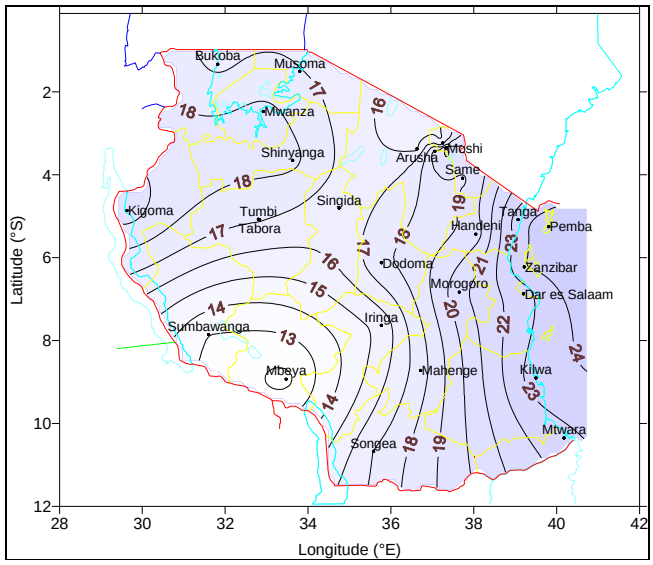

Figure 2B: April 2008 Mean Minimum Temperature (°C)

MEAN SUNSHINE HOURS

Sunshine hours across the country during April indicate that the duration of mean bright sunshine

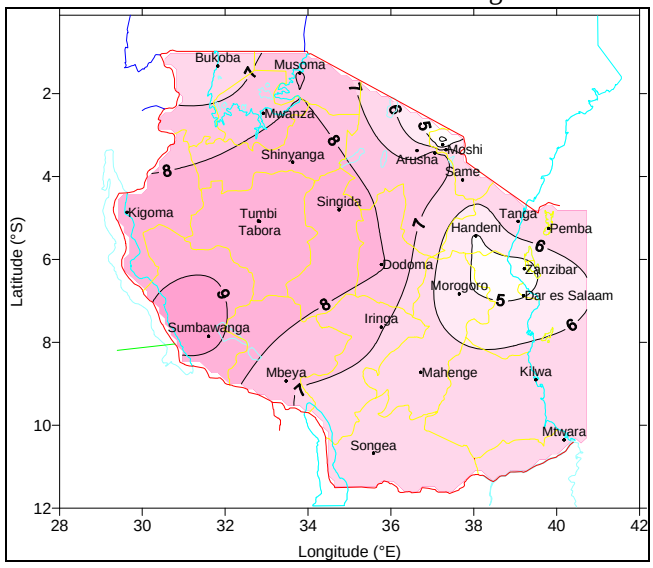

Figure 3: April 2008 Mean Sunshine Hours (hrs/day)

ranged from about 5 hrs/day to above 9 hrs/day as shown in Figure 3. Long bright sunshine hours (> 9 hrs/day) occurred over western, while short durations (< 6 hrs/day) were experienced over some parts in northern coastal belt and northeastern highlands. Cloudy conditions over northeastern highlands and northern coastal belt shortened bright sunshine durations to less than 6 hrs/day in those regions.

MEAN WIND SPEED

During the period mean wind speed across the country ranged between about 3 to 10 km/hr as indicated in Figure 4. Some parts of northeastern highlands and central regions experienced windy conditions that exceeded 8 km/hr. Wind speed in April slightly increased when compared to March.

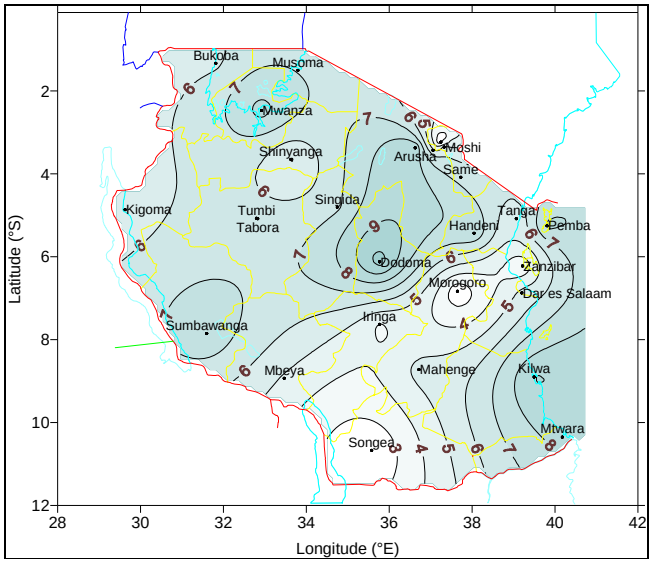

Figure 4: April 2008 Mean wind speed (mm)

Calm conditions and low wind speeds of about 4 km/hr were recorded over most parts of Ruvuma, Iringa, and Morogoro region. However, increased windy and dry conditions over central areas have increased prospects for occurrences of dust devils, wind erosion, and higher evaporation rates.

SATELLITE INFORMATION

Mean vegetation condition during the first dekad of April is indicated in Figure 5 in a NOAA satellite imagery, depicting the Normalized Difference Vegetation Index (NDVI). The vegetation condition across the country is generally good as a result of satisfactory soil moisture levels reported in those areas. Vegetation condition is likely to remain good in May.

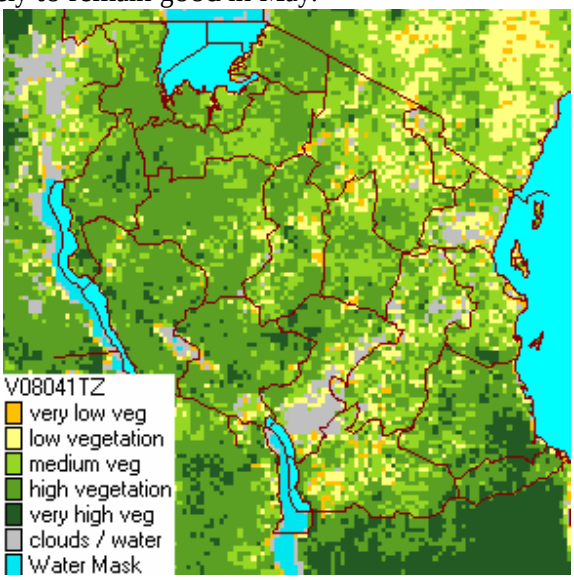

Figure 5: NOAA Satellite NDVI indicating the vegetation condition for the period of April 1-10, 2008

AGROMETEOROLOGICAL SUMMARY

Soil moisture condition during the month was conducive for the growth and development of field crops particularly over bimodal rainfall areas. Observed crops were mainly at late vegetative stage during the third dekad of the month with good state, except for a few pockets of Lake Victoria basin (Magu and Kwimba districts) in Mwanza region that experienced soil moisture stress for quite long resulting in poor crop performance. Over the unimodal rainfall areas the declining soil moisture was conducive for crop maturity and harvesting as observed over a larger part of the regime. In these areas crops mostly maize, sorghum and paddy with stages ranging between wax ripeness and harvesting were rated to be in moderate to good state. Over bimodal rainfall areas these crops were between late

vegetative stage as a result of late planting caused by late onset of long rains (*Masika*) experienced in several parts of northern coast (Pwani, Dar es Salaam, and Tanga regions, the Isles of Zanzibar and Pemba), northeastern highlands and Lake Victoria basin. For example, over Monduli district (Arusha region), Loliondo district (Manyara region) and Magu district (Mwanza region) the crops were at various stages ranging between late vegetative and tasselling, in good state except for Magu where the crops condition was simply moderate. The second phase planted beans crop was observed to be at between vegetative and flowering stage mainly over several parts in southwestern highlands, western, Lake Victoria basin and northeastern highlands with its state ranging between fair and good. The observed low crop status was a result of adverse effect of excessive soil moisture experienced over parts of Morogoro region.

Market supply for cassava over several areas of the country continued fairly well, while pasture conditions and water availability for livestock and wildlife were generally good across the country.

HYDROMETEOROLOGICAL SUMMARY

Water levels in lakes and dams, and water flows in rivers were increasing as a result of the seasonal and long rains received over unimodal and bimodal rainfall areas respectively.

ENVIRONMENTAL SUMMARY

Temperatures were moderate over most parts of the country due to increased cloud cover and wet conditions.

EXPECTED SYNOPTIC SITUATION DURING MAY 2008

During the month of May, the southern hemisphere systems; St. Helena and the Mascarene anticyclones are expected to continue intensifying, where as the Azores and Siberian anticyclones in the northern hemisphere are expected to continue relaxing thus allowing both the zonal and meridional arms of the ITCZ to gradually retreat northwards. The East African ridge will continue to be active over the southern parts of the country allowing a southeasterly to easterly wind flow towards the northern coast. Relatively normal influx of moisture from the Indian Ocean is expected for the northern coast and northeastern highlands with likelihood of normal rainfall activities.

EXPECTED WEATHER SITUATION DURING MAY 2008

The northern coast and hinterlands (Dar es Salaam and Tanga regions and Islands of Zanzibar and Pemba) and northeastern highlands (Arusha, Kilimanjaro and Manyara regions) are expected to feature partly cloudy conditions with showers and thunderstorms over some areas. Lake Victoria basin (Kagera, Mwanza, Shinyanga, and Mara regions) is expected to feature partly cloudy conditions with thundery showers over few areas. Western areas are expected to feature partly cloudy conditions and sunny periods except over northern Kigoma where isolated showers and thunderstorms are expected. 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 conditions with isolated showers over high grounds. Southern coast (Lindi and Mtwara regions) is expected to feature partly cloudy conditions**.**

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