TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHTS

- Rains continued during May over few areas of the unimodal and bimodal rainfall patterns.
- Soil moisture stress during the period resulted into very poor crop performance over some localized areas of Same, Simanjiro, Loliondo, and Monduli districts and lowlands of Rombo district.
- Maximum temperatures in May decreased slightly by about 2 °C, while minimum temperature decreased by about 1 °C

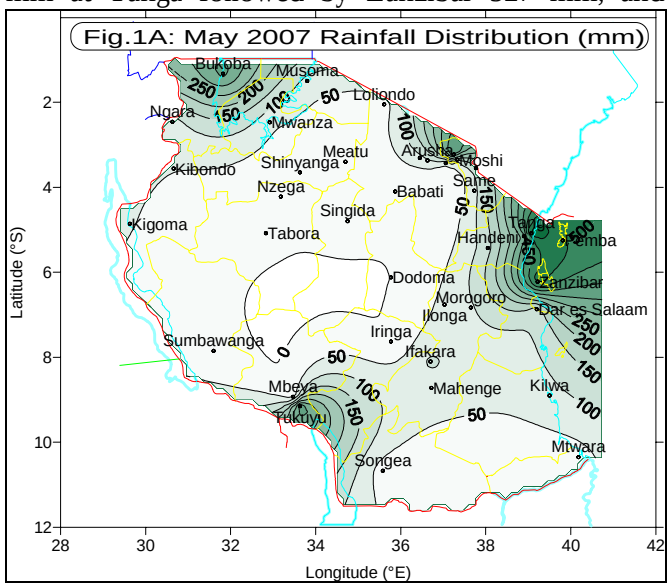
SYNOPTIC SUMMARY

During May, the St. Helena and the Mascarene anticyclones were significantly strong enough thus extending the East African ridge towards East Africa. The relaxation of the Azores and Siberian anticyclones together with Arabian ridge created room for the zonal arm of the Inter-Tropical Convergence Zone (ITCZ) to shift further north. However, at various intervals the subtropical anticyclones in the southern hemisphere were weakened thus allowing extra tropical depressions to dominate. At 500 hPa, a weak anticyclone over coastal areas was responsible for the enhancement of vertical uplift within the areas. Southeasterly advection of moisture to a weak lake trough triggered mechanism responsible for activities over the lake zone. At the very beginning of the month, two air masses from maritime sub-tropical and maritime tropical were converging along the northern coast. Sea surface temperatures over West Indian Ocean, along Tanzanian coast were relatively warm throughout the month. This coupled with significant moisture caused activities over some parts of the country.

WEATHER SUMMARY

RAINFALL

The rains continued during May over few areas of the unimodal and bimodal rainfall patterns where some of the recording stations in bimodal areas reported monthly rainfall amounts that exceeded 500 mm (Fig. 1A). The highest rainfall recorded was 584 mm at Tanga followed by Zanzibar 527 mm, and



Pemba 502 mm. Rainfall over much of the unimodal pattern areas was below 50 mm except for a few stations in the southern coast and southern Morogoro and southwestern highlands where rainfall amounts exceeded 50 mm, with the highest amount of 388 mm reported at Tukuyu.

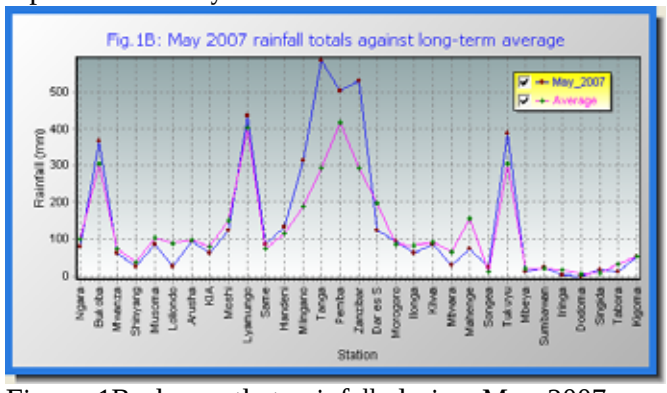
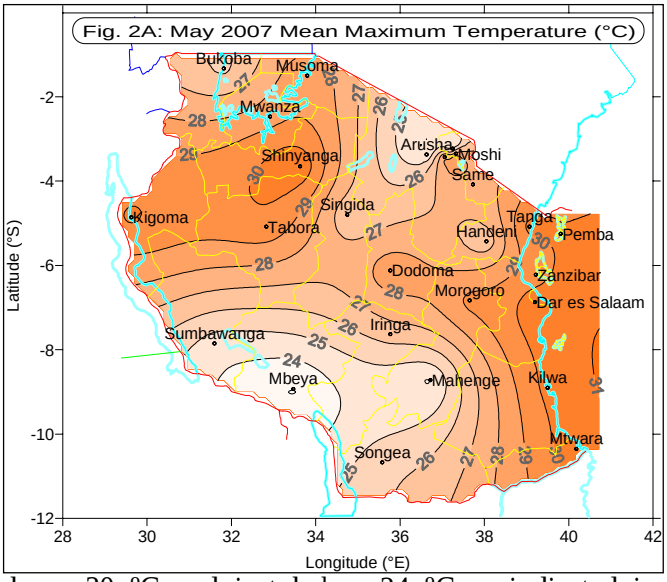


Figure 1B shows that rainfall during May 2007 was generally above normal in those bimodal areas which

normally receive rainfall above 100 mm, and normal to below normal over the rest of the areas, except Tukuyu in the southwestern highlands which is normally wet during the period.

MEAN AIR TEMPERATURE

Temperatures dropped slightly during the month of May. The spatial mean maximum and minimum values are shown in Figs. 2A and 2B respectively. The mean maximum temperature ranged between just

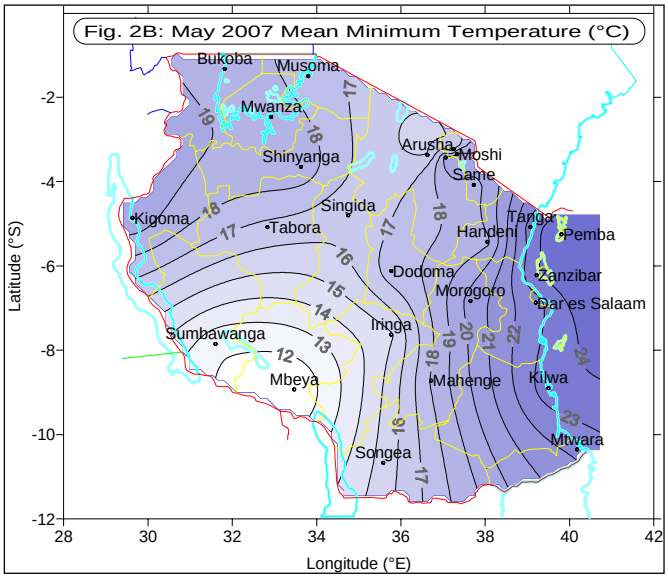


above 30 ºC and just below 24 ºC as indicated in Figure 2A.

The highest mean maximum temperature recorded during the month was about 31.0°C at Shinyanga in the Lake Victoria basin, and Dar es Salaam and Mtwara in the coastal belt, while the lowest was about 24 °C at Mbeya in southwestern highlands. The highest values were observed during the first dekad of the month. Dar es Salaam and Pemba reported the highest 10-day maximum temperature of 31.5 °C during the first dekad of the month.

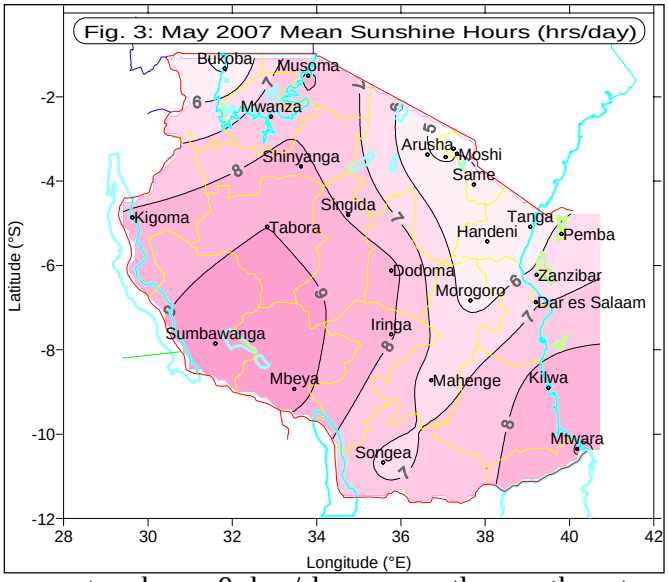
The mean minimum air temperatures ranged from just below 12 ºC to slightly above 24 ºC as shown in Fig. 2B. The lowest value of the mean minimum temperature recorded was about 11 °C at Mbeya, while the highest value was about 25 °C in the island of Pemba. Mbeya reported a 10-day minimum temperature of 10.2°C during the first dekad.

Comparing with temperature conditions in April the maximum temperatures in May decreased slightly by about 2 °C, while minimum temperature decreased by about 1 °C. This decrease in temperature conditions as reported across the country indicates the onset of the cool season.



MEAN SUNSHINE HOURS

Spatial distribution of mean sunshine hours across the country during May indicates that the duration of mean bright sunshine hours ranged from below 5 in the northeastern highlands and Lake Victoria basin



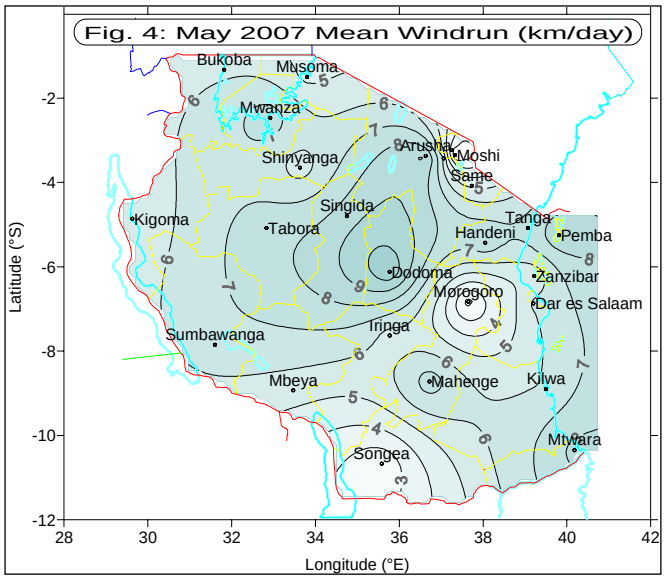
areas to above 9 hrs/day over the southwestern highlands as shown in Fig. 3.

The northern coast, northeastern highlands and west of Lake Victoria basin experienced sunshine durations of less than 6 hours/day. The southern coast, western, southwestern highlands, and central areas observed

longer durations that exceed 8 hours/day mainly due to decreased cloudy conditions experienced in the areas during the month.

MEAN DAILY WIND SPEED

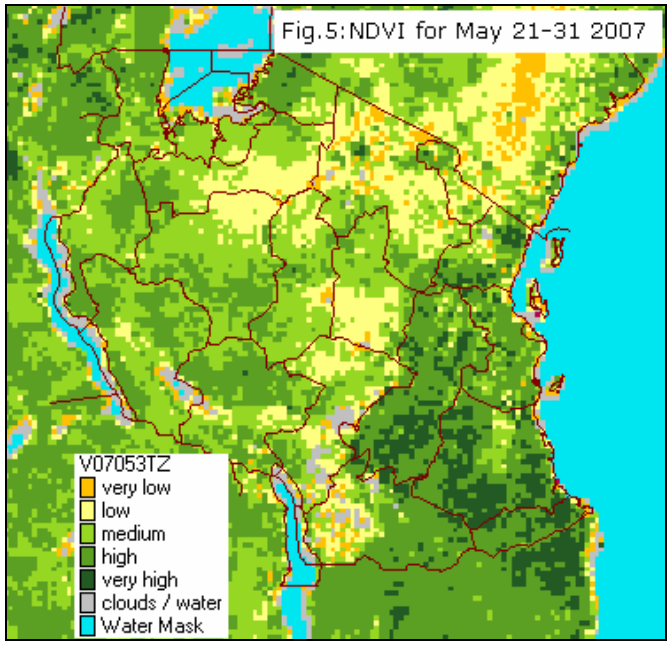
During the period mean wind speed across the country ranged between about 1.0 and 11 km/hr as indicated in Fig. 4. The central areas and parts of northeastern highlands experienced windy conditions with wind speeds exceeding 8 km/hr. Slight winds of less than 4 km/hr had the cores of minimum speeds located over Songea, Morogoro and Moshi.



The increased wind speed accompanied with low rainfall over central areas and northeastern highlands increased prospects for occurrences of dust devils, wind erosion, and higher evaporation rates.

SATELLITE INFORMATION

Figure 5 shows the status of vegetation greening during the third dekad of May 2007 as depicted by the Normalized Difference Vegetation Index (NDVI) from METEOSAT satellite sensor. Some areas over the northeastern highlands, southern Lake Victoria basin, central and southwestern highlands have started observing low to very low greening indices due to little rainfall and poor distribution of 2007 long rains (*Masika)* and most crops being at maturity growth stages. Over much of the country the vegetation condition was good as the greening indices ranged from medium to very high. On the other hand good vegetation cover and greening is observed over the coastal regions as indicated by very high indices.



AGROMETEOROLOGY

During the month declined soil moisture levels continued to be recorded over much of unimodal rainfall areas and over some areas with bimodal rainfall pattern. However, some pockets in the northern coast of the bimodal regime received excessive soil moisture levels. The low soil moisture supplies over unimodal areas were conducive to field drying of mature crops in the areas.

Over the bimodal regime, the soil moisture stress during the period resulted into very poor crop performance over some localized areas of Same, Simanjiro, Loliondo, and Monduli districts and lowlands of Rombo district. Soil moisture improved over some parts of the northern coast, northeastern highlands and the Islands of Zanzibar and Pemba, though the improvement did not help most field crops that had already been severely affected by the moisture stress caused by false start of *Masika* coupled with poor distribution. However, the moisture was beneficial to many root crops mainly cassava and sweet potatoes at various growth stages in the northern coast. Maize crop over bimodal areas

generally ranged from tasselling to ripeness stage and in poor to moderate growth state. Over unimodal areas maize crop was at harvesting maturity with some farmers reported to have started harvesting.

Paddy crop was generally performing moderately across the country while cassava crop was reported at various growth stages in good state.

Pasture conditions and water availability for livestock and wildlife continued to be adequate across the country.

HYDROMETEOROLOGY

Water levels in rivers, lakes and dams are good over much of the country.

ENVIRONMENTAL

The country experienced generally cool temperatures and comfortable conditions.

EXPECTED SYNOPTIC SITUATION DURING JUNE 2007

The Siberian and Azores anticyclones together with Arabian ridge over the Northern Hemisphere are expected to remain relaxed causing the zonal arm of the ITCZ to maintain its position.

The St. Helena and Mascarene anticyclones with the East African ridge over the southern hemisphere are expected to intensify allowing intrusion of cold dry southerly flow into the country. This will result in reduction of moisture over most parts of the country. The Sea Surface Temperatures (SSTs) are also expected to cool over the West Indian Ocean, hence reducing rainfall activities over the northern coast, northeastern highlands and Lake Victoria basin. However, local effects over Lake Victoria and over the South West Indian Ocean are expected to bring some occasional rainfall activities over the areas.

EXPECTED WEATHER SITUATION DURING JUNE 2007

Northeastern highlands (Arusha, Kilimanjaro and Manyara regions), northern coast (Pwani, Dar-es-Salaam, Tanga and Morogoro regions together with Zanzibar and Pemba Islands) are expected to feature isolated rain showers and sunny periods. Lake Victoria basin (Kagera, Mwanza and Mara regions) is expected to feature isolated thundershowers over few areas and sunny periods. Southwestern highlands (Iringa, Mbeya and Rukwa regions), southern areas (Ruvuma and Southern Morogoro region) and southern coast (Mtwara and Lindi regions), Western areas (Kigoma and Tabora) and central areas (Dodoma and Singida regions) towards Shinyanga region are generally expected to experience dry conditions and sunny periods. Cool/cold weather conditions are expected over southwestern and northeastern highlands.

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