TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHTS

- During March rainfall performance was generally above normal.
- Over some areas of bimodal sector mainly the northern coast and northeastern highlands (Pwani, Tanga, Arusha, and Kilimanjaro regions), early planted maize crops at early vegetative stages while over the unimodal patterns, cereals were between tasselling and ripeness with moderate to good state.

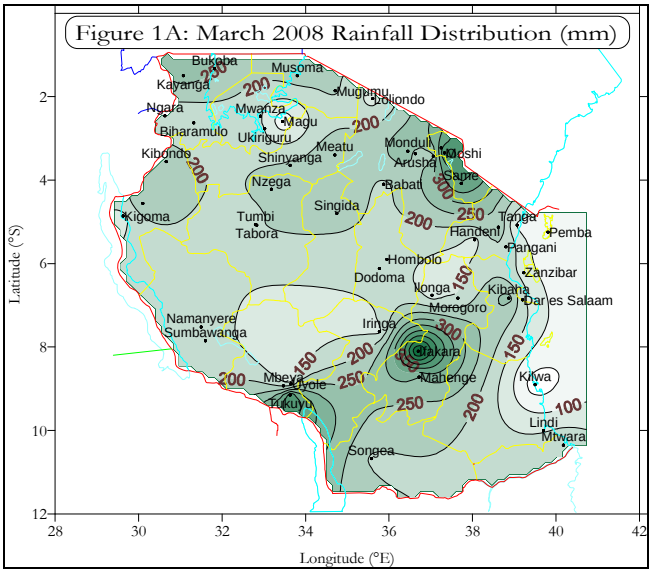
SYNOPTIC SUMMARY

During March, 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 wind flow over the northern coast. Generally the northern hemisphere systems, Azores and Siberian high pressure cells together with the Arabian ridge continued to relax thus allowing the Inter-Tropical Convergence Zone (ITCZ) to migrate northwards over Tanzania. A weak trough over the Lake Victoria basin continued to enhance rainfall over the region. The development of the tropical cyclone *Lola* over east Madagascar resulted to alignment of the mid-level wind flow regime which enhanced rainfall over the northeastern sector of the country.

WEATHER SUMMARY

RAINFALL

During March, rainfall activities spread over much of the country where most of the stations reported monthly rainfall which exceeded 150 mm as shown in Figure 1A. Significant rainfall (at least 250 mm) was observed over some areas in the southern, southwestern highlands, and northeastern highlands where the highest amount reported was 617.5 mm at Ifakara, followed by



Moshi 474.4 mm, Tukuyu 453.1 mm, Same 399.0 mm, Lyamungo 374.7 mm, Monduli 304.5 mm, Mahenge 292.6 mm, Kayanga 274.1 mm, and Kibaha 272.2 mm.

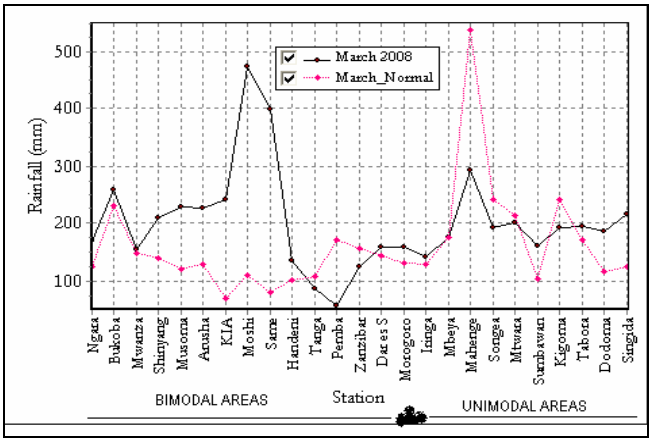
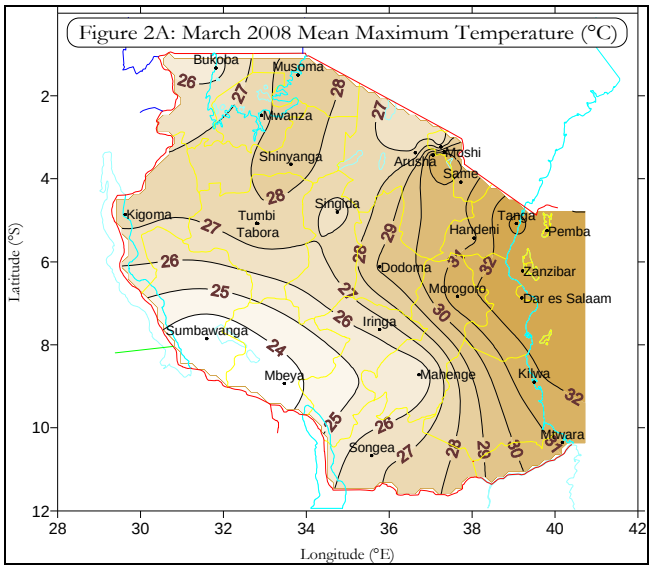


Fig. 1B: Rainfall performance for March 2008 over selected stations in the bimodal and unimodal rainfall patterns.

Overall rainfall performance was generally above normal as indicated in Figure 1B when cumulative rainfall for the 3 dekads of March was compared with cumulative long-term mean dekadal rainfall for the same period at each station. However Pemba Island reported far below normal rainfall as shown in Figure 1B.

MEAN AIR TEMPERATURE

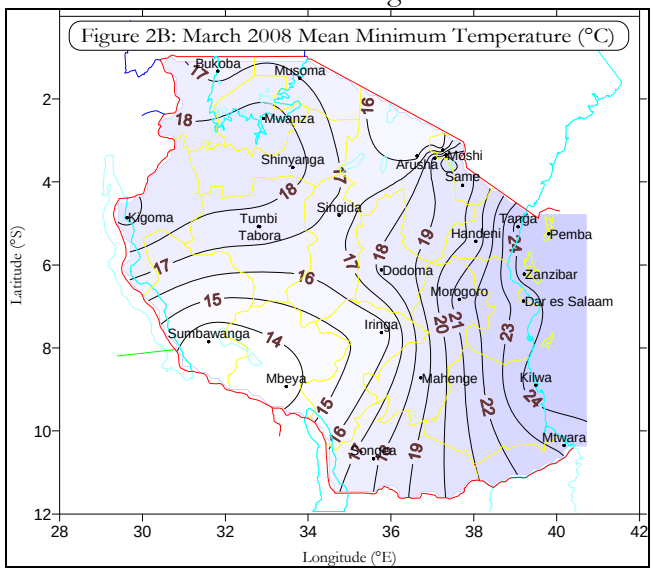
Temperatures were high during the month as indicated by the spatial mean maximum and minimum values in Figs. 2A and 2B respectively.



Temperatures were generally high during the first two dekads of the month but slightly decreased during the third dekad due to increased cloud cover and wet conditions. The mean maximum temperature ranged between just above 33 ºC and below 24 ºC as indicated in Figure 2A.

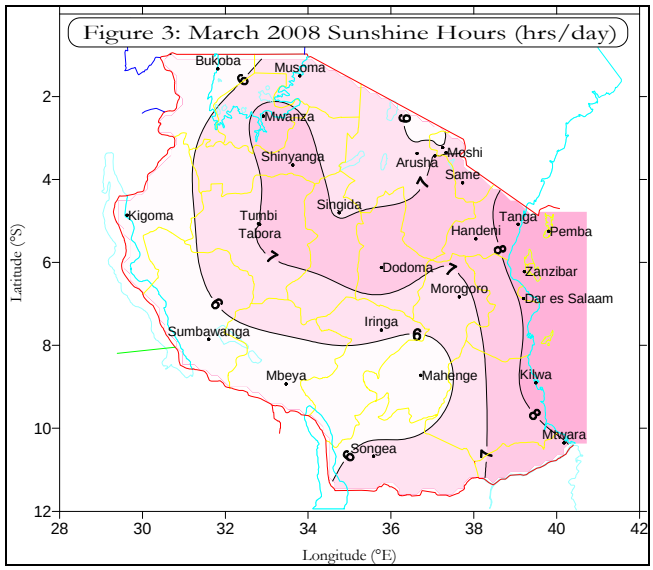
The highest mean maximum temperature recorded during the month was about 33.0 °C at Tanga and Dar es Salaam with both towns recording an absolute highest maximum of about 34.0 °C during the second dekad of the month. The lowest mean maximum temperature was about 24 °C over Mbeya and Sumbawanga in the southwestern highlands. The mean minimum air temperature ranged from just below 14 ºC to slightly above 24 ºC.

The lowest value of the mean minimum temperature was about 13.0 °C as observed at Sumbawanga station, while the highest value was about 25.0 °C recorded at Kilwa in the southern coast and over Island of Pemba as shown in Fig. 2B.



MEAN SUNSHINE HOURS

Sunshine hours across the country during March indicate that the duration of mean bright sunshine hours ranged from about 6 hrs/day to above 8 hrs/day as shown in Figure 3.

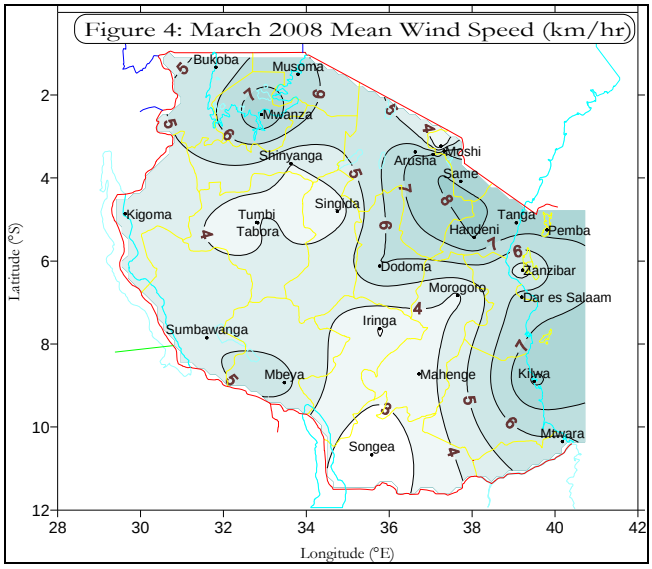


Longer bright sunshine hours (> 8 hr/day) occurred over coastal belt including Islands Zanzibar and Pemba. Cloudy conditions over southern,

southwestern highlands, western, northeastern highlands and western parts of Lake Victoria basin shortened bright sunshine durations to a 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 8 km/hr as indicated in Figure 4. Some parts of northeastern highlands and Kilwa in the southern coast experienced windy conditions that exceeded 8 km/hr. Wind strength in March decreased slightly as compared to February. Calm conditions and low wind speeds of about 4 km/hr were recorded over most parts of Ruvuma, Iringa, and Morogoro region, together with some parts of Shinyanga, Tabora and Singida regions.



Decreased wind and wet conditions have decreased prospects for occurrences of dust devils, wind erosion, and higher evaporation rates.

SATELLITE INFORMATION

Mean vegetation condition during the third dekad of March 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 regardless a few pockets of poor condition vegetation mainly over the lowlands of northeastern highlands in Arusha and Kilimanjaro regions where vegetation have not yet recovered besides improved soil moisture reported in those areas. Vegetation condition is likely to improve across the country as a result of increased soil moisture levels.

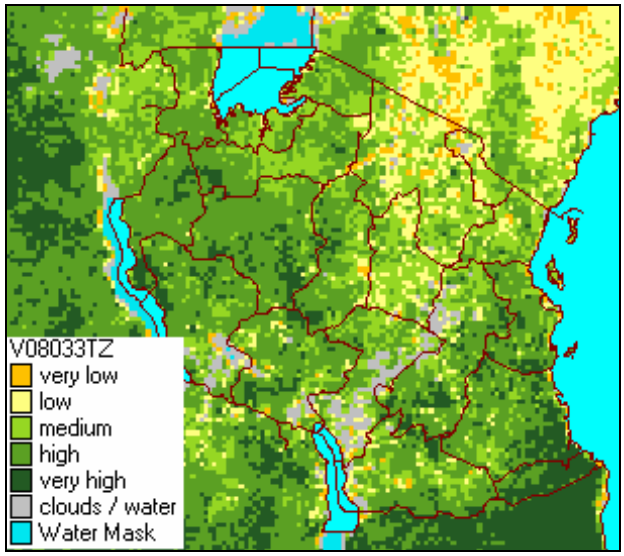


***Figure 5**: NOAA Satellite NDVI indicating the vegetation condition for the period of March 21-31, 2008.*

AGROMETEOROLOGICAL SUMMARY

The month experienced adequate soil moisture supply; this improvement was observed over most parts of bimodal rainfall pattern with normal field activities such as planting and weeding being carried out as reported from several parts of northern coast (Pwani and Tanga regions), northeastern highlands (Arusha, Manyara and Kilimanjaro regions), and parts of Lake Victoria basin particularly Kagera region. Over Monduli, Loliondo and Magu districts in Arusha, Manyara and Mwanza regions respectively, maize, sorghum and paddy crops were between emergence and tasselling growth stages in good state except over Magu where crop condition was moderate following insufficient soil moisture. Remaining areas particularly over the unimodal patterns, cereals were between tasselling and ripeness with moderate to good state. However, over some areas of Ifakara excessive soil moisture supply is likely to slowdown crop growth and development. The second planted beans crop was at early vegetative growth stage over

several parts in southwestern highlands, western and Lake Victoria basin.

Market supply for cassava over several areas of the country continued fairly well.

Pasture conditions and water availability for livestock and wildlife were generally good across the country and likely to improve over the lowlands of the northeastern highlands following the start of *Masika* rains.

HYDROMETEOROLOGICAL SUMMARY

Water levels in lakes and dams, and water flows in rivers ware increasing as a result of the ongoing seasonal and long rains 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 APRIL 2008

During April, the southern hemisphere Systems (St. Helena and Mascarene high pressure cells) are expected to continue intensifying, where as the Azores and Siberian high pressure cells in the northern hemisphere are expected to relax thus allowing both zonal and meridional components of the ITCZ to gradually retreat northwards.

The East African ridge will continue to be active over the southern parts of the country allowing southeasterly to easterly wind flow towards the northern Coast. Moisture influx from the Indian Ocean will favour the northern coast and northeastern highlands with likelihood of increased rainfall activities.

EXPECTED WEATHER SITUATION DURING APRIL 2008

Over northern coast (Dar es Salaam, Pwani and Tanga regions and Islands of Zanzibar and Pemba) and northeastern highlands (Arusha, Kilimanjaro and Manyara regions) are expected to feature partly cloudy to cloudy conditions with thundery showers over most areas. Lake Victoria basin (Kagera, Mwanza, Shinyanga, and Mara regions) is expected to feature partly cloudy conditions with thundery showers over some areas. Western areas (Western Tabora region and northern Kigoma), are expected to feature partly cloudy with isolated showers and thunderstorms. Central areas (Dodoma and Singida regions) are expected to feature partly cloudy to cloudy conditions with thundery showers over some areas. Southern areas (Ruvuma region), southern coast (Lindi and Mtwara regions together with Mahenge) are expected to feature partly cloudy conditions with isolated rainshowers. Southwestern highlands (Iringa, Rukwa and Mbeya regions) are expected to feature partly cloudy conditions with thundery showers over few areas.

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