TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHTS

- Bimodal rainfall areas remained seasonably dry while over unimodal regions rainfall 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 were negatively affected by low soil moisture stress

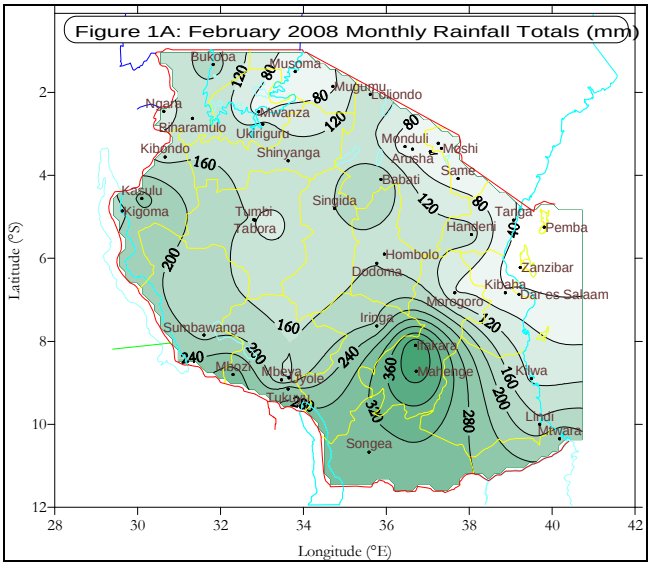
SYNOPTIC SUMMARY

During February, the Arabian ridge was intense over the northwest Indian Ocean resulting in dominantly northeasterly winds over northern coast. The development of the tropical depression *Ivan* over central Indian Ocean had enhanced thundery showers over both unimodal and bimodal areas. The southern hemisphere systems (St. Helena and Mascarene highs and East African ridge) were relaxed. The northern hemisphere systems (Azores and Siberian anticyclones together with Arabian ridge) were relatively intense, allowing the Inter-Tropical Convergence Zone (ITCZ) to maintain its position further south. The Lake Victoria weak trough which also covered over western areas was a dominant feature, thus enhancing thundery showers along the meridional arm of the ITCZ. However the presence of the moderate *La Niña* conditions influenced suppression of rainfall over some parts of the bimodal areas.

WEATHER SUMMARY

RAINFALL

During February, seasonal (*Msimu*) rains continued over much of the unimodal rainfall areas where most of the stations reported monthly rainfall which exceeded 160 mm as shown in Figure 1. Significant rainfall was observed over much of the southern, western, and southwestern highlands regions where the highest amount reported was



445.2 mm at Ifakara, followed by Mahenge 425.4 mm, Mbozi 306.3 mm, Songea 291.8 mm, Tukuyu 268.4, Kasulu 257.4, Mtwara 234.7 mm, and Iringa 204.4 mm.

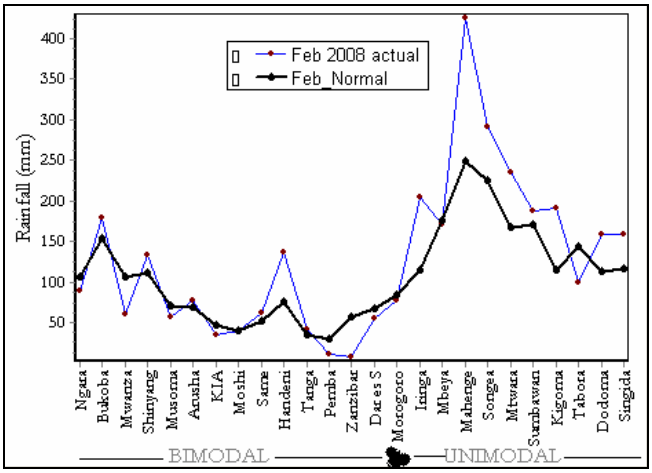
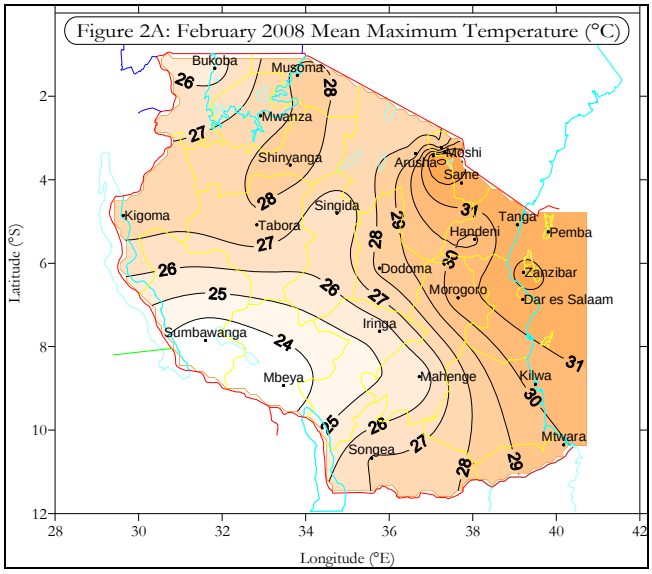


Fig. 1B: Rainfall performance for February 2008 over selected stations in the bimodal and unimodal rainfall patterns.

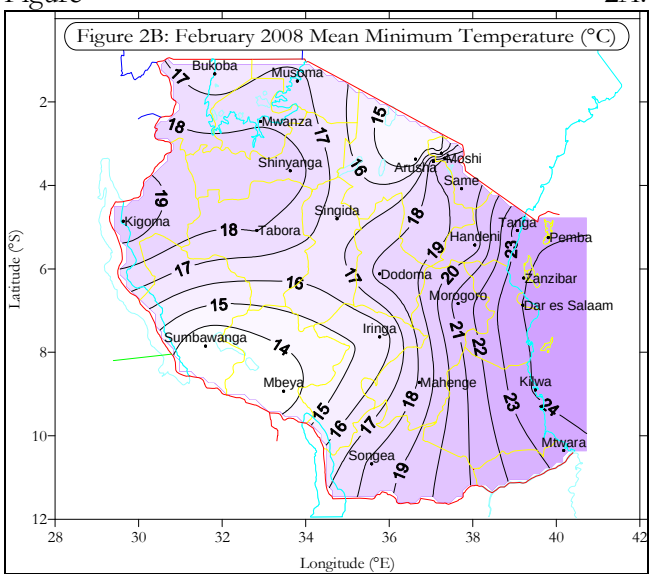
Bimodal rainfall areas remained seasonably dry while over unimodal regions rainfall was generally above normal as indicated in Figure 1B.

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.



The mean maximum temperature ranged between just above 32 ºC and below 24 ºC as indicated in Figure 2A.

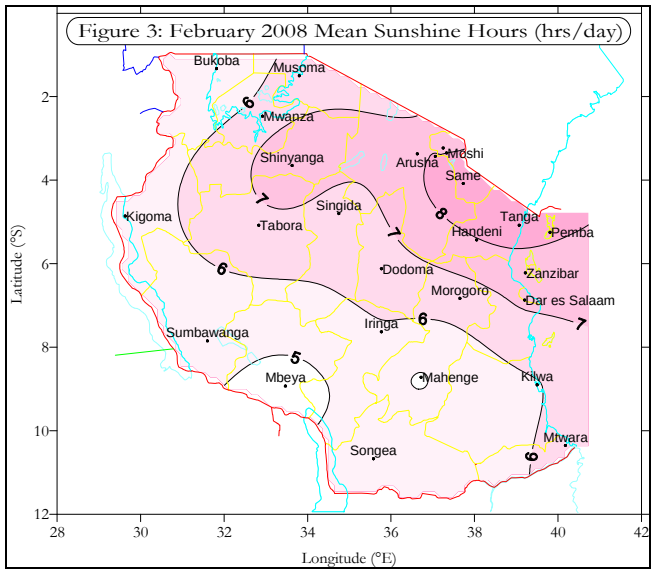


The highest mean maximum temperature recorded during the month was about 33.0 °C at Moshi and Kilimanjaro International Airport (KIA) with Moshi recording an absolute highest maximum of 33.8 °C during the third dekad of the month. The lowest mean maximum temperature was about 24 °C over Mbeya and Sumbawanga 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 Mbeya and Sumbawanga stations, while the highest value was about 24.0 °C recorded at Kilwa in the southern coast and over Islands of Pemba and Zanzibar as shown in Fig. 2B.

MEAN SUNSHINE HOURS

Sunshine hours across the country during February indicate that the duration of mean bright sunshine hours ranged from about 5 hrs/day to above 8 hrs/day as shown in Figure 3.

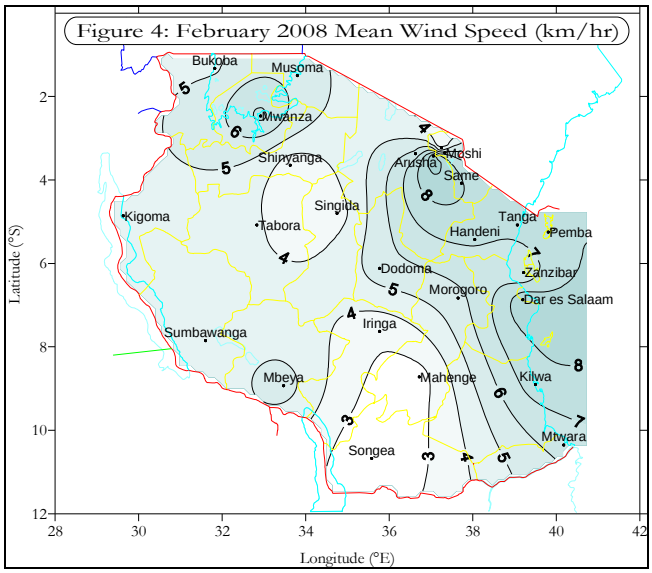


Longer bright sunshine hours (> 8 hr/day) occurred over some parts in northeastern highlands and northern coast including Pemba Island. Cloudy conditions over southern, southwestern highlands western and western parts of Lake Victoria basin shortened bright sunshine durations to a less than 6 hrs/day in those regions.

MEAN WIND SPEED

During the period mean wind speed across the country ranged between about 3 to 9 km/hr as indicated in Figure 4.

Some parts of northeastern highlands and coastal belt experienced windy conditions that exceeded 8 km/hr. The core of maximum wind speed of about 10 km/hr was recorded at KIA. Calm conditions and low wind speeds of about 4 km/hr were recorded over most parts of Ruvuma, Iringa, and south of Morogoro region, together with some parts of Shinyanga, Tabora and Singida regions.



Increased windy and dry conditions over northeastern highlands and northern coast have increased prospects for occurrences of dust devils, wind erosion, and higher evaporation rates.

SATELLITE INFORMATION

Mean vegetation condition during the third dekad of February 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 due to persistent soil moisture decline during the period. The observed improvement of vegetation is likely to increase pasture productivity for livestock in those areas.

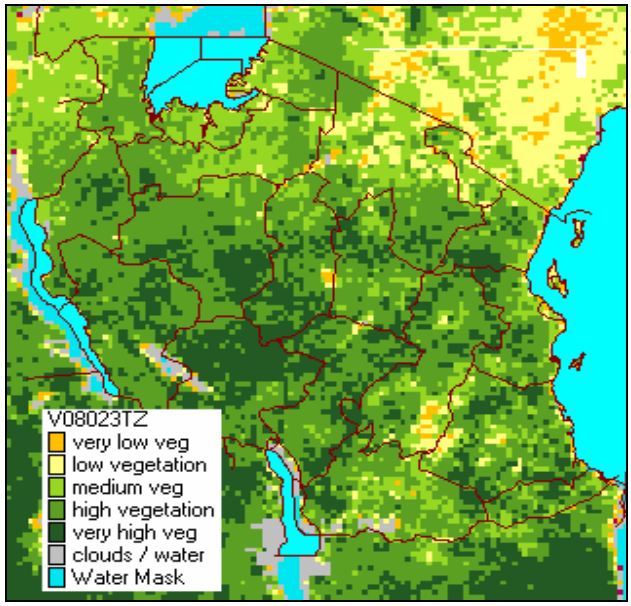


***Figure 5**: NOAA Satellite NDVI indicating the vegetation condition for the period of February 21-29, 2008.*

AGROMETEOROLOGICAL SUMMARY

During the month soil moisture improvement was observed over most areas of the unimodal rainfall pattern with maize crop status being generally good at between vegetative to tasselling. However during the third dekad most areas across the country observed declining soil moisture supply. The situation though facilitated weeding of crops at various stages ranging from early vegetative to pre-tasselling mainly for maize, sorghum and paddy as observed over several parts of the unimodal sector including southern coast (Mtwara and Lindi regions) and central (Dodoma and Singida regions).

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 were negatively affected by low soil moisture stress, a situation that requires farmers to replant before onset of the long rains "*Masika*" season. Other field activities like land preparation in some areas of this

sector continued, while some few pockets of Loliondo in Ngorongoro district and Orkesmet in Simanjiro district maize crop was between ninth leaf and earing stages in moderate state. Remaining areas of the country such as parts of Lake Victoria basin (Kagera region) and western areas (Tabora and Kigoma regions) crops particularly maize was at ripeness stage and in good state, while second planting of beans continued which usually lasts until 15th March in Kigoma north and Kagera region.

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 but poor over the lowlands of the northeastern highlands as a result of prolonged dry season.

HYDROMETEOROLOGICAL SUMMARY

Water levels in lakes and dams, and water flows in rivers are expected to increase as a result of the ongoing seasonal rains over unimodal areas. However, water for domestic and industrial purposes should be used sparingly particularly over the bimodal rainfall sector.

ENVIRONMENTAL SUMMARY

Temperatures were high over most parts of northeastern highlands and northern coast with high humidity.

EXPECTED SYNOPTIC SITUATION DURING MARCH 2008

The northern hemisphere systems (Arabian ridge, Siberian and Azores anticyclones) are expected to relax, while the southern hemisphere systems (St. Helena, and Mascarene anticyclones and the East African ridge) are expected to intensify allowing the ITCZ to retreat northwards. During March, development of tropical depression is expected to continue influencing rainfall activities over some parts of the country.

EXPECTED WEATHER SITUATION DURING MARCH 2008

Over northern coast and hinterlands (Dar es Salaam, Tanga and Morogoro 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 few areas. Lake Victoria basin (Kagera, Mwanza, Shinyanga and Mara regions), western areas (northern Kigoma), southern areas (Ruvuma region together with Mahenge) and southwestern highlands (Iringa, Rukwa and Mbeya regions) are expected to feature partly cloudy conditions with thundery showers over some areas. Western areas (Tabora region and southern Kigoma) and central areas (Dodoma and Singida regions) are expected to feature cloudy conditions with thundery showers over some areas. Southern coast (Lindi and Mtwara regions) is expected to feature partly cloudy to cloudy conditions with thundery showers over some areas.

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