TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHTS

- In January the rains increased over most parts of unimodal sector (western and southwestern highlands) except southern coast (Lindi and Mtwara regions) that has continuously experienced little rainfall since December 2008.
- Above normal rains were experienced at Bukoba and Shinyanga (Lake Victoria basin), Tabora (western), Sumbawanga, Mbeya (southwestern highlands), Songea (southern) and Singida (central).

SYNOPTIC SUMMARY

During January 2009, the southern hemisphere systems, St Helena and Mascarene high pressure cells relaxed while the northern systems were generally were intense. However, Siberian high pressure relaxed significantly towards the end of January 2009 resulting into slight northward oscillation of the zonal component of Inter-Tropical Convergence Zone (ITCZ). Warmer Sea Surface Temperatures (SST) over the south West Indian Ocean continued to support formation of tropical disturbances and cyclones. During the period of January 2009 two tropical cyclones '*Dongo*' and '*Fanele*' occurred leading into northwesterly wind flow enhancing rainfall activities over the Lake zone, western and southwestern parts of the country.

WEATHER SUMMARY

RAINFALL

During January the rains increased over most parts of unimodal sector (western and southwestern highlands) except southern coast (Lindi and Mtwara regions) that has continuously experienced little rainfall since December 2008 as indicated in Fig. 1A. The Lake Victoria basin (Kagera, Shinyanga, and Mwanza regions) recorded off-season rains as *Vuli* (OND) rains ended by the end of December 2008. Records from sample stations indicate that the highest rainfall was reported at Bukoba 312.1 mm followed by Sumbawanga 311.5 mm, Mbeya 280.0 mm, Tabora 265.8 mm, Uyole 220.8 mm, and Tukuyu 211.8 mm.

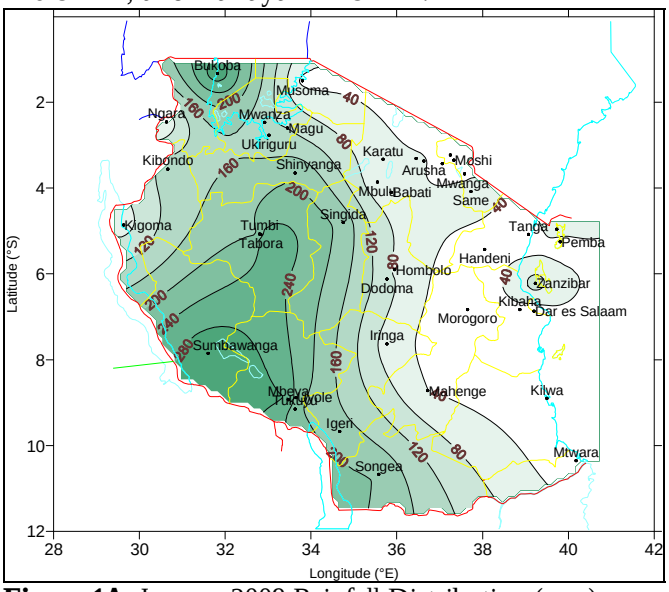

Figure 1A: January 2009 Rainfall Distribution (mm)

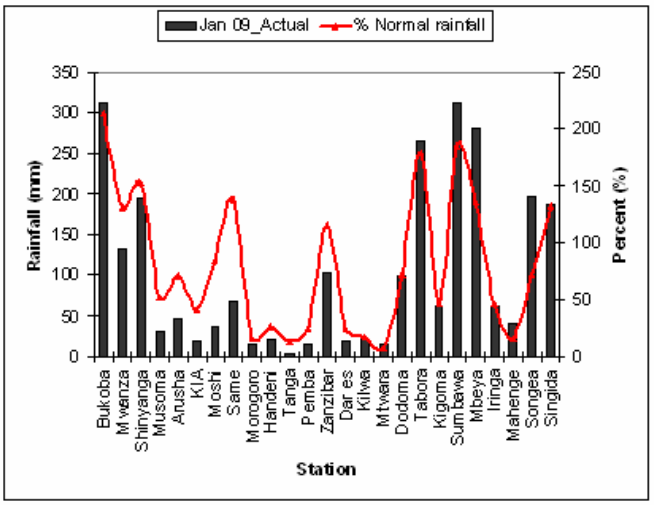

Figure 1B: Rainfall Performance during January 2009

During January Fig 1B, indicates that rainfall performance was below normal (<75% normal) over most stations. Above normal (>125% normal) rains were experienced at Bukoba and Shinyanga (Lake Victoria basin), Tabora (western), Sumbawanga, Mbeya (southwestern highlands), Songea (southern) and Singida (central).

MEAN AIR TEMPERATURE

Warm temperatures were experienced over much of the country during the month indicating persistence of the warm season. The mean maximum temperature ranged between just above 33 ºC and below 25 ºC as indicated in Figure 2A. The highest mean maximum temperature recorded during the month was about 34.5 °C at KIA with an absolute highest maximum of about 34.8 °C during the second dekad of the month. The lowest mean maximum temperature was about 21.0 °C over Igeri (southern Iringa) in the southwestern highlands. The mean minimum air temperature ranged from just below 14 ºC to slightly above 26 ºC.

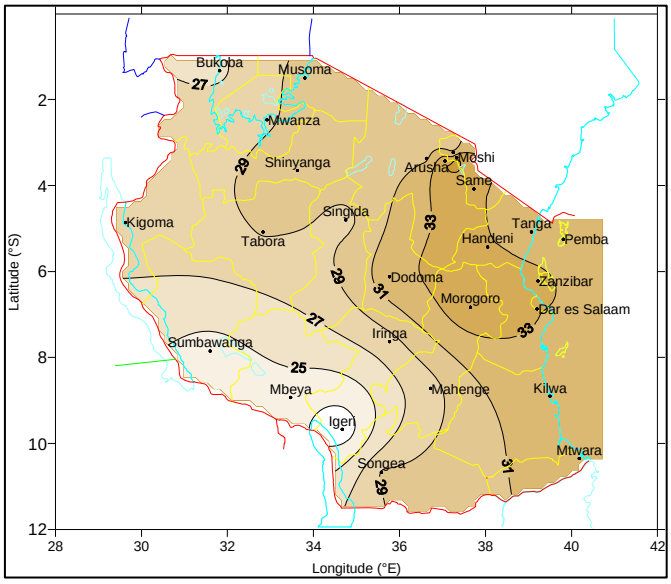

Figure 2A: January 2009 Mean Maximum Temperature (°C)

The lowest value of the mean minimum temperature of about 11.6 °C was recorded at Igeri, while the highest values of about 25°C were observed over the coastal belt as shown (Kilwa, Dar es Salaam and Mtwara stations) as shown in Fig. 2B.

An absolute minimum temperature of about 10.8 °C was also recorded at Igeri during the third dekad of the month.

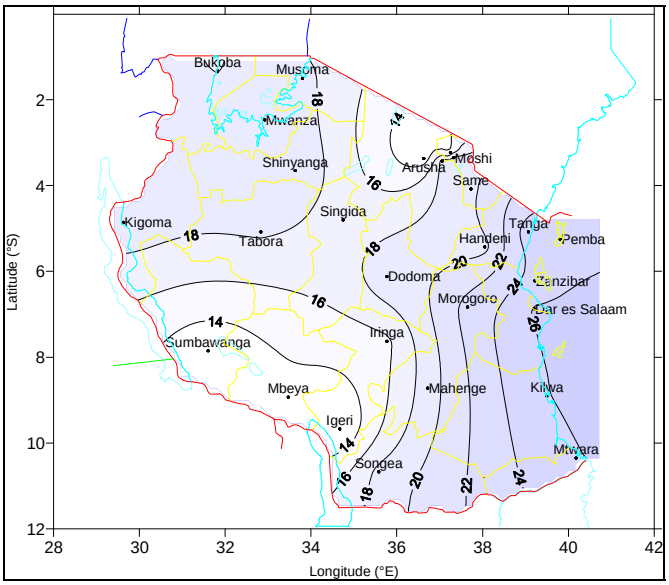

Figure 2B: January 2009 Mean Minimum Temperature (°C)

MEAN SUNSHINE HOURS

Sunshine duration across the country during January indicates that the mean bright sunshine hours ranged from about 5 hrs/day over southwestern highlands to more than 10 hrs/day over eastern sector and central areas of the country as shown in Fig 3.

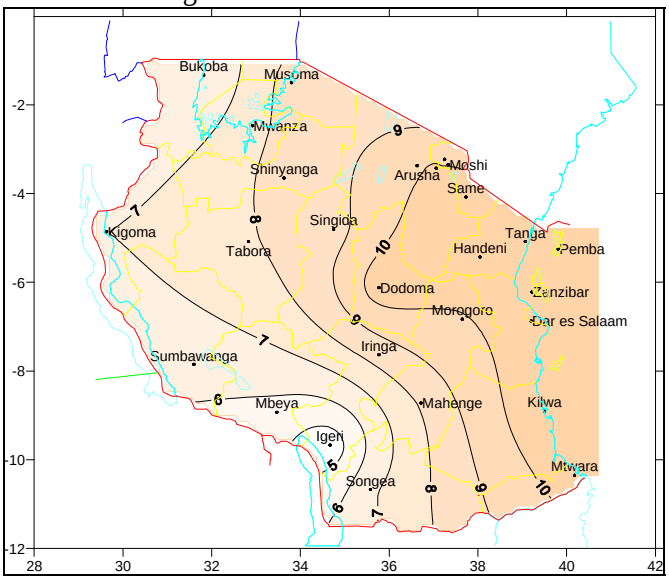

Fig 3: January 2009 Mean Sunshine Hours (hrs/day)

Long bright sunshine hours (> 10 hrs/day) occurred over parts of central regions, northeastern highlands,

and coastal belt including islands of Zanzibar and Pemba. Cloudy conditions shortened bright sunshine durations (< 5 hrs/day) over southwestern highlands as depicted in Figure 3.

MEAN WIND SPEED

During the period mean wind speeds across the country ranged between about 2 to 16 km/hr as indicated in Fig 4. Some parts of northeastern highlands experienced windy conditions that exceeded 16 km/hr. Slight wind conditions and low wind speeds of below 4 km/hr were recorded over Mara, Singida, and Shinyanga (east) regions as shown in Fig 4. Dryness and Windy conditions experienced over northeastern highlands increased occurrences of higher evaporation rates.

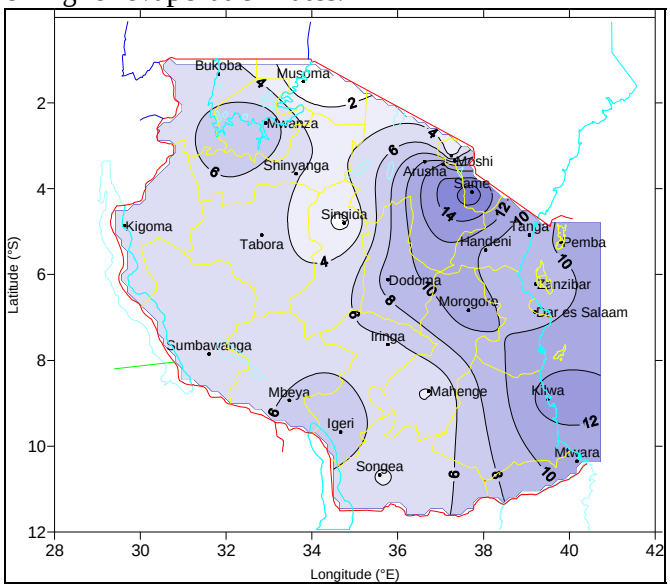

Fig 4: January 2009 Mean wind speed (km/hr)

SATELLITE INFORMATION

Mean vegetation condition during the month of January is indicated in Figure 5 in a NOAA satellite imagery, depicting the Normalized Difference Vegetation Index (NDVI). Some areas over northeastern highlands (Arusha, Kilimanjaro, and Manyara regions) were indicating poor vegetation condition depicted by low to very low vegetation indices. However, vegetation greenness over much of the country has increased due to soil moisture improvement as a result of the ongoing seasonal rains. Thus, pasture supply for livestock and wildlife in the country is likely to improve.

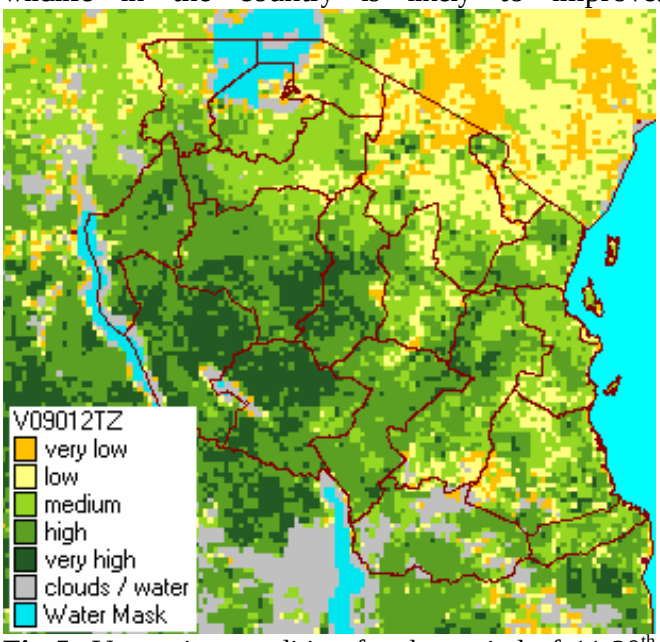

Fig 5: Vegetation condition for the period of 11-20th, January, 2009

AGROMETEOROLOGICAL SUMMARY

During the month of January soil moisture supply improved significantly over much of the unimodal areas except for parts of southern coast (Lindi and Mtwara regions) where insufficient soil moisture and high temperature conditions were observed to continue depriving crops mostly of badly needed soil moisture.

Maize at advanced vegetative stage and beans at between vegetative and pod filling stages were observed over parts of southwestern highlands specifically Mbeya, Rukwa and Iringa regions and the state of the crops was between poor to moderate. Over the remaining parts of the unimodal sector central (Dodoma, and Tabora (east), southern (Tunduru district in Ruvuma region) and southern coast (Lindi and Mtwara regions) crops were in very poor to moderate state although paddy crop was doing well over several areas generally at transplanting to vegetative stage. Crops were generally wilting in some of these areas as a result of severe soil moisture deficit during the period. Thus, farmers were advised to switch to short term and drought tolerant varieties like millet, peas and root crops including cassava and sweet potatoes.

Market supply for cassava over several areas of the country slightly declined, while pastures and water availability for livestock and wildlife was at a satisfactory level.

HYDROMETEOROLOGICAL SUMMARY

Seasonal rains over unimodal areas have slightly boosted water levels in lakes and dams, and rivers in their respective catchments. However due to poor performance of *Vuli* rainfall over much of bimodal areas, water for domestic and industrial purposes should be used sparingly.

ENVIRONMENTAL SUMMARY

During January warm temperatures continued as it was anticipated over most parts of the country. However, dry and windy conditions that prevailed over parts of the central and northeastern highlands areas increased prospects for diseases such as coughs, colds, pneumonia, and asthma.

EXPECTED SYNOPTIC SITUATION DURING FEBRUARY 2009

During the month of February 2009, the Southern Hemisphere Systems (St. Helena and the Mascarene anticyclones) are expected to remain generally relaxed although occasional intensification are expected toward the end of the month, whereas the Azores and Siberian anticyclones in the northern hemisphere will remain slightly intense.

Warmer Sea Surface Temperatures over the South West Indian Ocean is expected to persist, allowing development of tropical cyclones that could influence our weather patterns. Low level easterly wind anomalies are developing over parts of Indian Ocean and indicate a likelihood of enhanced moisture influx over the southern coast and southern sector converging over the southwestern parts of the country. The above configuration is likely to support near normal with pockets of above normal rainfall activities over most of these areas.

EXPECTED WEATHER SITUATION DURING FEBRUARY 2009

Southwestern highlands (Iringa, Rukwa and Mbeya regions), southern areas (Ruvuma region and Mahenge), southern coast (Lindi and Mtwara regions) and central areas (Dodoma and Singida regions) are expected to experience normal rainfall with pockets of above normal rainfall. Lake Victoria basin (Kagera, Mwanza, and Shinyanga regions) and western areas (Tabora and Kigoma regions) are expected to receive normal rains. Northern coast and hinterlands (Dar es Salaam, Tanga and Morogoro regions, Islands of Zanzibar and Pemba) and northeastern highlands (Arusha, Kilimanjaro and Manyara regions) are expected to remain mainly dry with few occasional out breaks of showers .

Prepared by
TANZANIA METEOROLOGICAL AGENCY
3rd, 4th & 10 th Floors - Ubungo Plaza – Morogoro Road.
P.O. Box 3056 Tel. 255 -(0) 22 – 2460706-8 ; Fax: 255 - (0) 22 – 2460718 E-mail: (1) met@meteo.go.tz (2) agromet1_tz@meteo.go.tz
Dar es Salaam UNITED REPUBLIC OF TANZANIA