TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHTS

- The rains caused flooding over some parts of central (Dodoma region) and northern coast (Dar es Salaam regions) where human displacements, damage to communication infrastructures, crops and property were reported.
- Pastures were highly boosted and water availability over much of the country was adequate.

SYNOPTIC SITUATION

During the month of December 2011, southern hemisphere high pressure cells, St Helena and Mascarene anticyclones were relatively weak. The Siberian high and the associated Arabian ridge were intense during the month. This resulted to southward pushing of the rain-making mechanism, the Inter-Tropical Convergence Zone (ITCZ). Cool Sea Surface Temperature (SSTs) conditions have been established over the Equatorial central-eastern Pacific, while warm SSTs were observed over eastern Indian Ocean (areas around Indonesia) and the central equatorial Indian Ocean during the month of December 2011. Northeasterly to northwesterly low level wind flows prevailed over eastern parts of the country during much of period. Westerly winds were also observed towards the second half of the month this resulted to convergence over the eastern part of the country which led to enhanced activities over the southwestern highlands, west, central, some parts of northeastern highlands and northern coast.

RAINFALL SUMMARY

During the month of December 2011, extreme wet conditions were experienced over most parts of the country except for parts of northeastern highlands that obtained the lowest amounts for the period. The highest monthly total rainfall was recorded at Igeri 379.4 mm, followed by Dar es Salaam 377.2 mm, Mbeya 357.6 mm, Iringa 310.7 mm, Mbozi 306.9mm, Uyole 296.7mm, Babati 291.9 mm, Dodoma 289.2 mm, Mlingano 287.9 mm, Hombolo 265.9 mm, Kibaha 245.7 mm, Sumbawanga 239.4 mm, Tukuyu 230.3 mm, Ilonga 225.3 mm, Mwanza 219.1 mm, Tabora 216.6 mm, Pemba 204.2 mm, Singida 204.0 mm and Kibondo 200.1 mm as shown in Fig. 1A. Most stations from our sample stations recorded normal to above normal rainfall with only a few such as Mahenge, Mtwara and Songea that obtained below normal rainfall for the period as depicted by Fig. 1B.

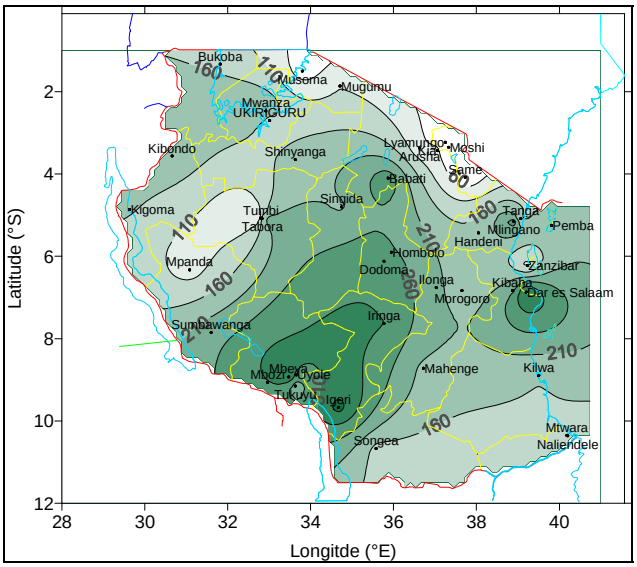

Figure 1A: December 2011 Rainfall distribution in (mm).

On the other hand, these rains caused flooding over some parts of central (Dodoma region) and northern coast (Dar es Salaam regions) where human displacements, damage to communication infrastructures, crops and property were reported.

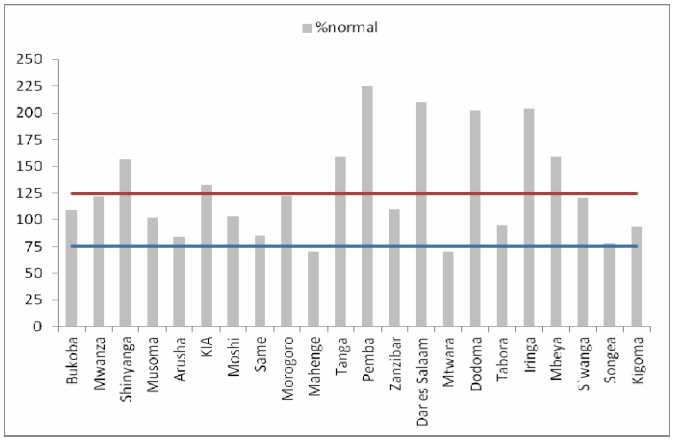

Figure 1B: October – December (OND) 2011 rainfall performance as percentage of long term mean. Below normal (0-75%), Normal (75 – 125%), Above normal (125% and above).

MEAN AIR TEMPERATURE

Mean maximum temperatures ranged between 20.9ºC and 32.4ºC as indicated in Figure 2A. The highest absolute maximum temperature of 33.3 °C was reported at Morogoro and KIA both during the first dekad of the month. The lowest mean maximum temperature was about 20.9°C over Igeri in the southwestern highlands.

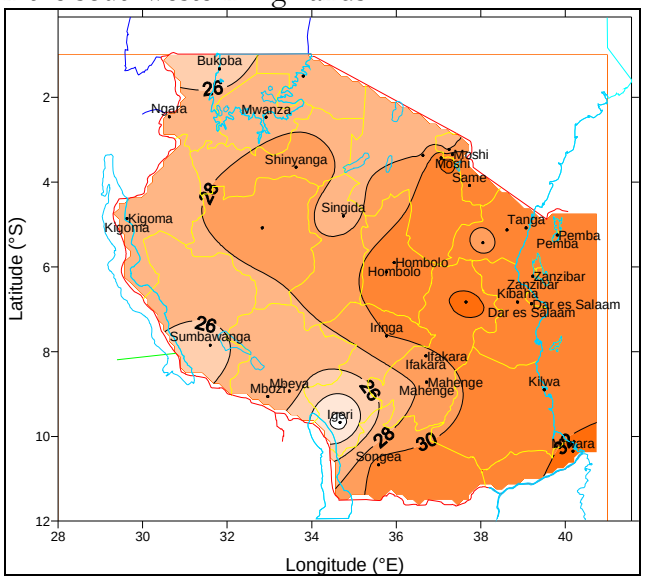

Figure 2A: December 2011 Mean maximum temperature (°C)

MINIMUM TEMPERATURE

During the month under review the country experienced cool temperatures, where the lowest recorded temperatures were experienced over southwestern highlands of the country, notably Igeri, as indicated in Figure 2B. Mean minimum air temperatures ranged from 11.1 ºC to 24.0 ºC, while the absolute mean minimum temperature value was 10.4 °C at Igeri in the first dekad of the month.

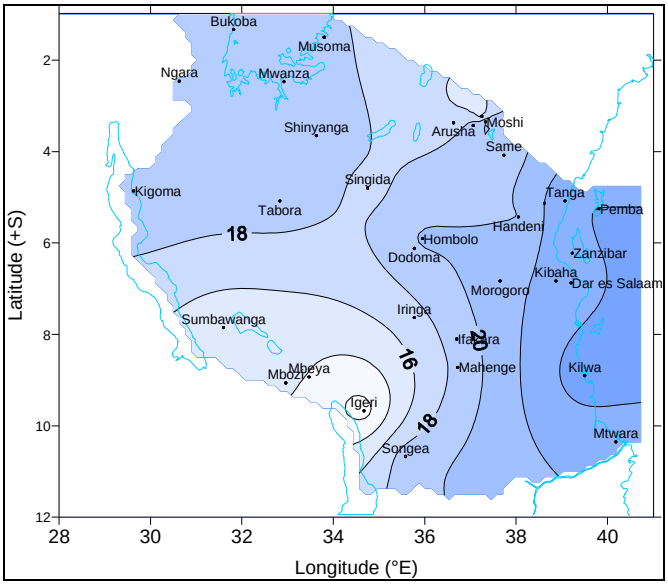

Figure 2B: December 2011 Mean minimum temperature (°C)

MEAN SUNSHINE HOURS

Sunshine durations across the country during December 2011 ranged from about 3 hrs per day over Bukoba which was the lowest while Kilwa reported 12 hrs per day as shown in Figure 3.

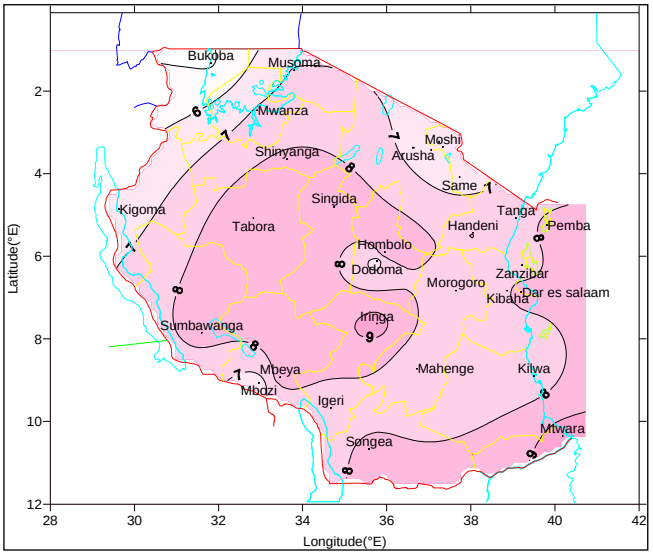

Figure 3: December 2011 Mean Sunshine hours (hrs/day)

MEAN WIND SPEED

Mean wind speeds across the country ranged between 1 to 12 km/hr during the month of December 2011 as indicated in Figure 4. More windy conditions were recorded over parts of central, northeastern and southwestern highlands, and southern coast. The lowest wind speed was experienced over northern coast of country.

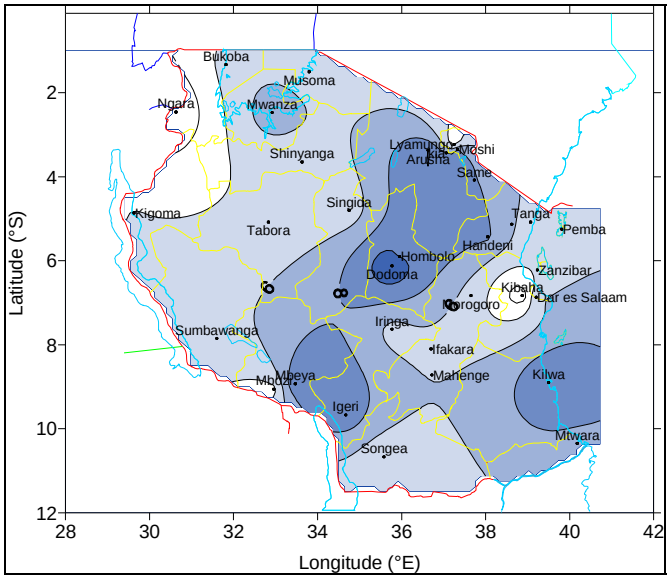

Figure 4: December 2011 Mean Wind speed (km/hr)

AGROMETEOROLOGICAL SUMMARY

Soil moisture supply during the month was adequate over both bimodal and unimodal sectors where most crops were at early to advanced vegetative phases. Most crops like maize over bimodal areas (Lake Victoria basin, northeastern highlands, and northern coast) were reported at early vegetative to wax ripeness and in good condition, while beans were at early vegetative to maturity with some hampered by excessive soil moisture supply, as reported in Mbeya region. Paddy crop was reported at transplanting except over northern coast which was still in land preparation. Sorghum was at emergence stage while cassava flourishing well at all stages including harvesting and in good state as well. Over unimodal sector (central, south, southern coast, and southwestern highlands) crops such as maize, beans, sorghum, and paddy were at early vegetative stage cassava with cassava reported at all stages and in good state by the end of the period. However, the replenished soil moisture supply over parts of northeastern highlands (low grounds) like parts of Same and Moshi districts, also northern coast particularly Handeni and Korogwe districts in Tanga region where the delayed soil moisture supply did not fairly revive the adversely affected crops over those areas.

Pastures and water availability for livestock and wildlife were quickly revived mainly over the greater part of the country that experienced higher rainfall levels during the month.

HYDROMETEOROLOGICAL SUMMARY

Water levels in lakes, dams and discharges in river flows including their respective catchments were boosted.

ENVIRONMENTAL SUMMARY

Temperatures over most areas in the country were fairly warm except along the coastal belt and a few inland areas where they were getting hotter. Low relative humidity dominated over most areas but was getting higher along the coastal belt.

EXPECTED SYNOPTIC SITUATION DURING JANUARY 2011

During January 2012, the Azores and the Siberian anticyclones, and the Arabian ridge are expected to remain intense. The Mascarene anticyclone is expected to relax while St. Helena anticyclone is expected to become strong thus pushing the meridional component of the ITCZ towards the western part of the country. On the other hand, the zonal arm of the rain making mechanism (ITCZ) is expected to oscillate over the southern sector of the country, thus influencing rainfall activities over unimodal areas. The above configuration is expected to result to the penetration of westerly winds over the western towards the central parts of the country. The northeasterly to northwesterly winds are expected to dominate over eastern part of the country resulting to convergence of the low level winds over southern half sector of the country.

Below average Sea Surface Temperatures (SSTs) are expected over central eastern equatorial Pacific Ocean. Warm SSTs conditions are expected to prevail over the great part of the Indian Ocean, including southwestern Indian Ocean.

EXPECTED WEATHER DURING JANUARY 2011

Lake Victoria Basin (Kagera, Mwanza, Mara and Shinyanga regions): These areas are expected to feature normal rains. Western regions (Kigoma, Rukwa and Tabora regions): These areas are expected to experience normal to above normal rains. Northern coast (Dar es Salaam, Morogoro and Tanga regions, the isles of Unguja and Pemba): The areas are expected to experience normal to above rains. Central areas (Dodoma and Singida regions): The areas are expected to feature normal to above rains. Northeastern highlands (Kilimanjaro, Arusha and Manyara regions): These areas are expected to feature normal rains. Southwestern highlands (Southern Rukwa, Iringa and Mbeya region): There is a high chance of normal rains. Southern Coast (Mtwara and Lindi regions): These areas are expected to feature normal rains. Southern region (Ruvuma region): Is expected to feature normal to above normal rains.

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