TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHTS

- **Adequate soil moisture experienced over unimodal areas during the month was favorable for field activities carried out ranging from planting to weeding.**
- **Soil moisture deficit experienced over much of the bimodal areas particularly northeastern highlands and northern coast led to poor performance of *vuli* seasonal crops in the region.**

SYNOPTIC SITUATION

During the month of January 2014, the northern hemisphere high pressure systems continued to intensify while the southern hemisphere high pressure systems remained relaxed. Significant weakening of East African ridge was observed which resulted into zonal arm of the Inter Tropical Convergence Zone (ITCZ) to reach its extreme position in the southern hemisphere. Slightly cool Sea Surface Temperatures (SSTs) were observed over the Somali coast during the month and neutral to slight warm SSTs were observed over Tanzanian coast. A series of depressions which formed over eastern part off-Mtwara coast in the western Indian Ocean caused zonal arm of the ITCZ to gain less moisture feeding from north-easterly and easterly winds over the area. However, slight cooling in the Atlantic Ocean near Angola and Namibian coasts contributed to maintenance of the Meridional arm of the ICTZ over the west, south-western and southern areas of the country.

WEATHER SUMMARY

RAINFALL

As a result of the observed synoptic conditions, most of the uni-modal areas of the country experienced seasonal rains with periods of heavy rainfall and strong winds at times. The bimodal areas experienced mainly seasonal dry conditions as observed in most of the region. The highest amount of rainfall during the month was recorded at Songea (385.1 mm), followed by Mahenge (288.8mm), Kibondo (284.5 mm), Tukuyu (268.6 mm), Mbeya (246.4 mm), Igeri (234.0 mm), Singida (210.6 mm), Mbozi (205.2 mm), Iringa (199.1 mm), Dodoma (161.6 mm), Uyole (152.2 mm), Hombolo (148.4 mm), Mpanda (137.5 mm), Shinyanga (133.2 mm), Mwanza (125.5 mm), Songwe (119.8 mm), Babati (116.8 mm), Bukoba (115.5 mm), Tabora (112.6 mm), Ilonga (106.1 mm) and Sumbawanga (104.6mm). The remaining areas received rainfall totals below 100 mm during the month, as shown in Figure 1a.

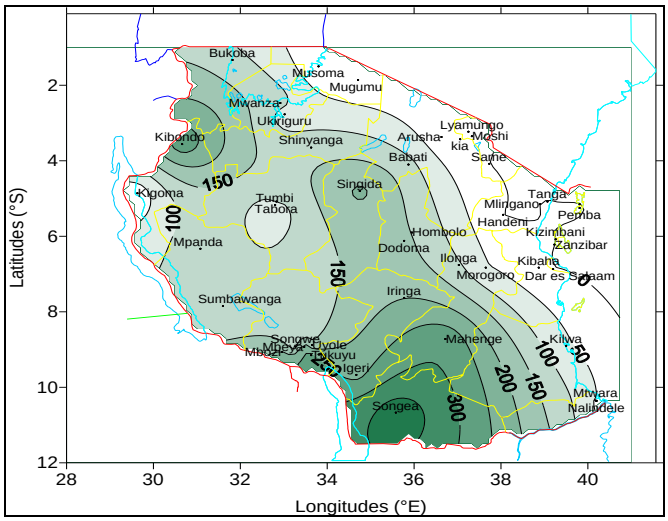

Fig. 1a: **January, 2014 total rainfall distribution in millimeters**

Figure 1b also shows percentage of long-term average rainfall during the month obtained from Satellite Rainfall Estimates (RFE) merged with gauge data from Tanzania rainfall stations network. As depicted from the diagram, most areas of the north- eastern highlands, northern coast and parts of Lake Victoria basin experienced below normal rainfall of long-term average. The unimodal areas mostly Ruvuma, south-western highlands, Singida and Rukwa regions experienced normal to above normal rainfall.

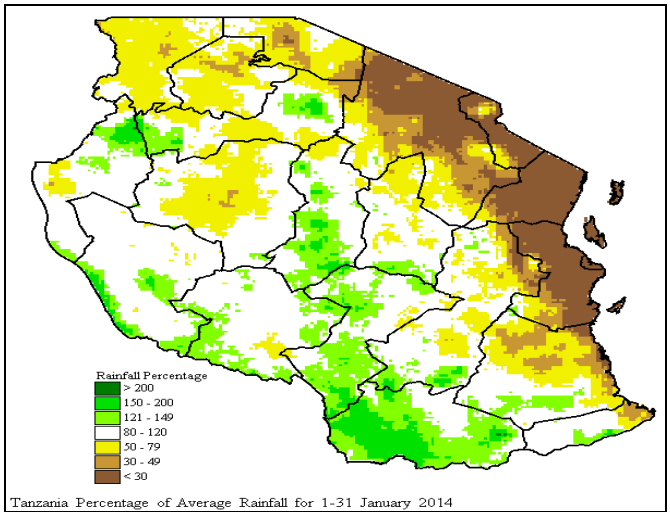

Fig. 1b: **January, 2014 percentage of long term average rainfall (mm) from Satellite Rainfall Estimates (GeoWRSI).**

MEAN AIR TEMPERATURE

Mean maximum temperature during the month of January, 2014 ranged between 20 ºC and 34ºC as indicated in Figure 2a. The highest absolute maximum temperature was 34.5°C observed at Dar-es-Salaam International Airport during the third dekad of the month, whereas the lowest absolute maximum temperature was 19.4°C observed over Igeri in the southwestern highlands during the second dekad.

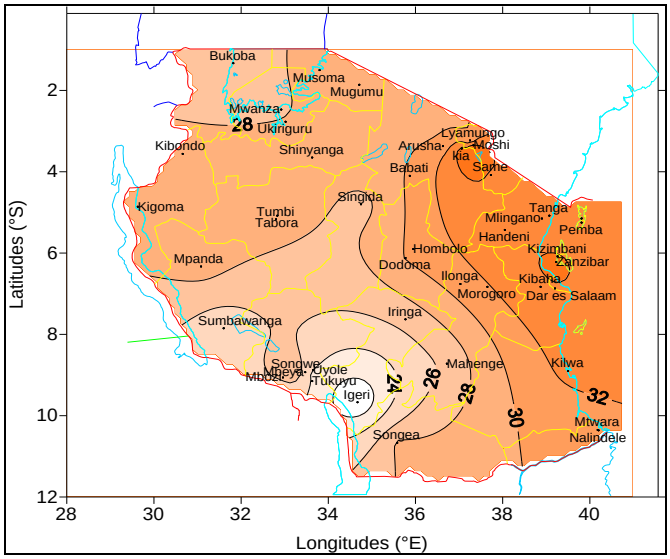

Fig. 2a: **January, 2014 mean maximum temperature (°C)**

The mean minimum air temperatures ranged between 12ºC and 26ºC as shown in Figure 2b. The highest absolute minimum temperature was 25.9°C recorded at Dar-es-Salaam International Airport during the first dekad, while the lowest absolute minimum temperature was 12.2°C recorded at Igeri in the south western highlands during the second dekad of the month.

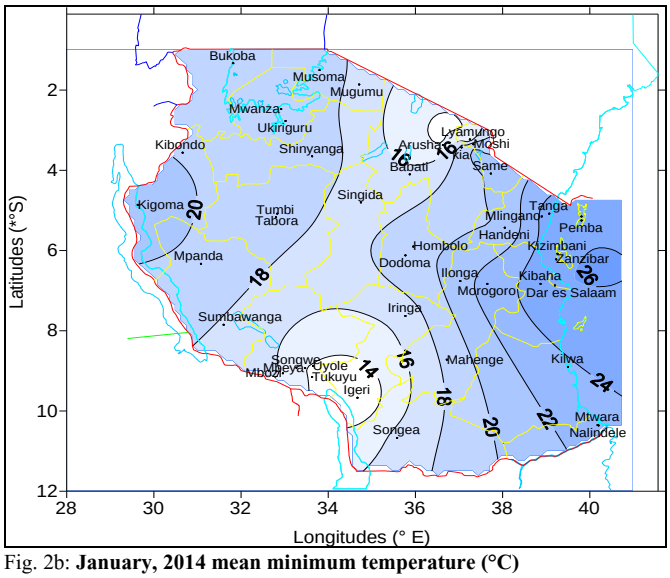

Fig. 2b: **January, 2014 mean minimum temperature (°C)**

MEAN SUNSHINE HOURS

Sunshine durations across the country during the month of January, 2014 ranged from about 3 hours per day as the shortest duration observed at Igeri to about 10 hours per day as recorded over Moshi in the north-eastern highlands of the country (see Figure 3).

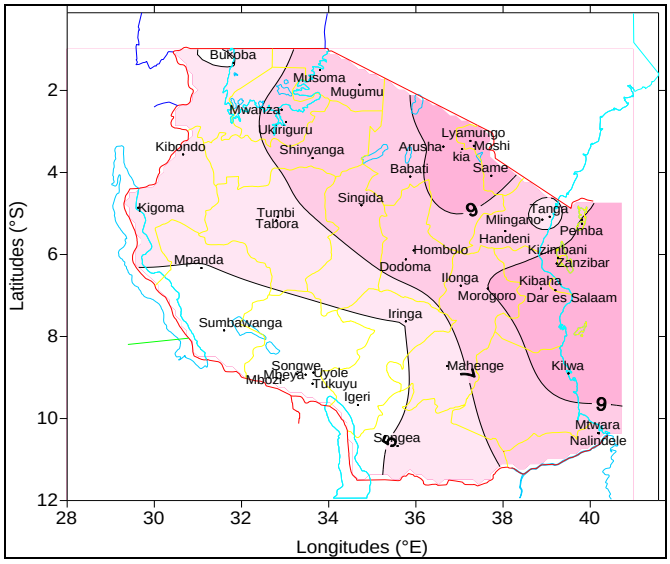

Fig. 3: **January, 2014 mean sunshine hours (hrs/day)**

MEAN WIND SPEED

Mean wind speed during the month of November 2014, ranged from 1 to 17 km/hr across the country. The highest wind speed was 18.2 km/hr recorded over Same in the third dekad, while the lowest wind speed was nearly 1 km/hr recorded over Kibaha during the second dekad of the month, as depicted by Figure 4.

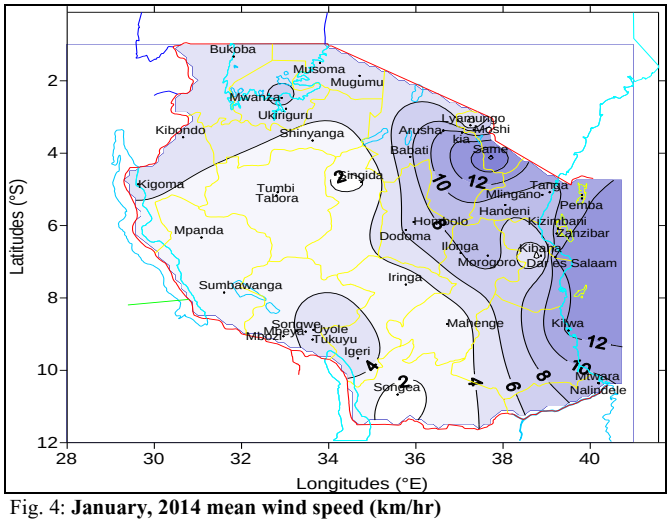

Fig. 4: **January, 2014 mean wind speed (km/hr)**

AGROMETEOROLOGICAL SUMMARY

During the month of January 2014, the rainfall experienced over the most of the unimodal areas led to significant improvement of soil moisture. The acquired soil moisture was favorable for field activities ranging from planting to weeding. Crops in these areas were mainly at emergence and establishment stages, with planting and weeding activities carried out in several areas, except for Kigoma region where maize crop was at tasseling stage. Crops over the unimodal areas were generally in good state. Heavy rainfall associated with hailstorm was reported in Kibondo district that damaged maize and banana crops. Over the bimodal areas, maize and beans crops have reached full ripeness stage except for late planted crops observed over parts of northeastern highlands and northern coast. However, the cessation of *vuli* rains during the period led to severe soil moisture stress in most parts of the bimodal areas, except for some pocket areas like Shinyanga region. The reported soil moisture stress hampered most crops to permanent wilting as for late planted maize and bean crops observed in Tanga, Kilimanjaro, Coast, Mara and Shinyanga regions, leading to tremendously low *vuli* harvests. A case of floods was reported in Morogoro and Dodoma regions causing destruction of property including stored crops and infrastructure as occurred in Kilosa, Mvomero and Gairo in Morogoro region. Pastures and water availability for livestock and wildlife have improved over much of the country particularly in unimodal areas.

HYDROMETEOROLOGICAL SUMMARY

Water levels in dams and river-flows have decreased over most parts of bimodal areas due to poor *vuli* rains, while significant improvements was reported mainly over unimodal areas of the country.

ENVIRONMENTAL SUMMARY

During the month of December warmer condition prevailed over much of the country.

EXPECTED SYNOPTIC SITUATION DURING FEBRUARY, 2014

In February 2014, the southern hemisphere high pressure systems are expected to remain relaxed while the northern hemisphere high pressure systems are expected to continue intensifying. With this configuration, the Arabian ridge is expected to intensify significantly especially in the first half of the month, while the zonal arm of the ITCZ is expected to maintain its position in the extreme southern parts of the country. However, the meridional arm of ITCZ is likely to move slightly east wards and contribute to slight enhancement of rainfall over western, south-western, southern and central sector of the country. Slight neutral SSTs currently observed over the south western Indian Ocean closer to Tanzania, are expected to persist along the coast and likely to continue towards the mid of February.

EXPECTED WEATHER DURING FEBRUARY, 2014

Lake Victoria Lake Victoria basin (Kagera, Geita, Mwanza, Mara, Simiyu and Shinyanga regions together with northern Kigoma regions)**:** Below normal rains are expected (mainly dry conditions). Northern coast (Dar es Salaam, Morogoro and Tanga regions, the isles of Unguja and Pemba)**:** Normal rains are expected (mainly dry conditions with periods of offseason rain showers over few areas). North-eastern highlands (Kilimanjaro, Arusha and Manyara regions): Normal rains are expected (mainly dry conditions with periods of off-seasonal rain showers over few areas). Western regions (Kigoma, Rukwa and Tabora regions): Mainly normal rains are expected. Central areas (Dodoma and Singida regions): Normal rains are expected. South-western highlands (Southern Rukwa, Katavi, Njombe, Iringa and Mbeya region): Normal to above Normal rains are expected. Southern Coast (Mtwara and Lindi regions): Normal rains are expected. Southern region (Ruvuma region): Normal to above normal rains are expected.

AGROMETEOROLOGICAL OUTLOOK DURING FEBRUARY, 2014

During the month of February 2014, the expected normal to above normal seasonal rains over the unimodal areas are expected to provide favorable soil moisture for farm activities ranging from planting, weeding and fertilizer application. Timely weeding is therefore recommended to salvage soil moisture available for crops. Prevailing seasonal dry conditions over much of bimodal areas are favorable for land preparation for *Masika* farming season. Farmers are advised to seek professional advice from their agriculture extension officers.