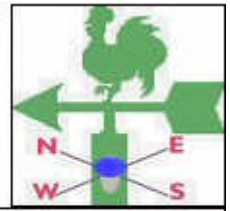




# TANZANIA METEOROLOGICAL AGENCY



## MONTHLY WEATHER BULLETIN

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### HIGHLIGHTS

- Improved wet conditions in much of the country favoured both growing crops and pastures while prompting farmers over bimodal areas to start land preparation for long rains (Masika) season.

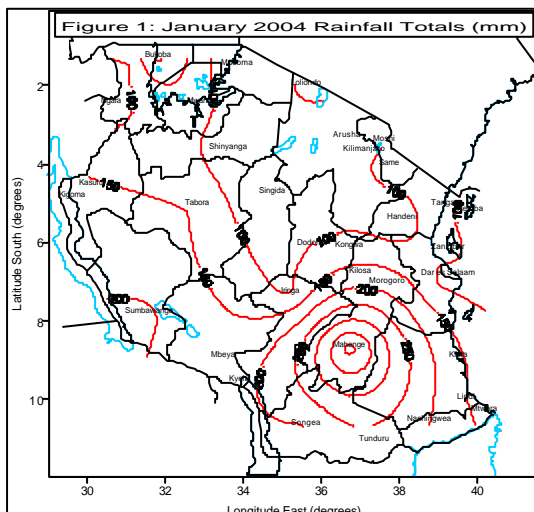
### SYNOPTIC SUMMARY

During the month of January, the Arabian ridge was strong and maintained low level diffluent flow pattern over northeastern highlands and parts of northern coast. The St. Helena and the Azores anticyclone were strong while the Mascarene anticyclone was weak. The meridional component of Inter Tropical Convergence Zone (I.T.C.Z) was active over southwestern highlands and southern parts of the country. Severe tropical cyclones Elita and Frank, which developed in Southwestern Indian Ocean, enhanced influx of moist westerlies into the country.

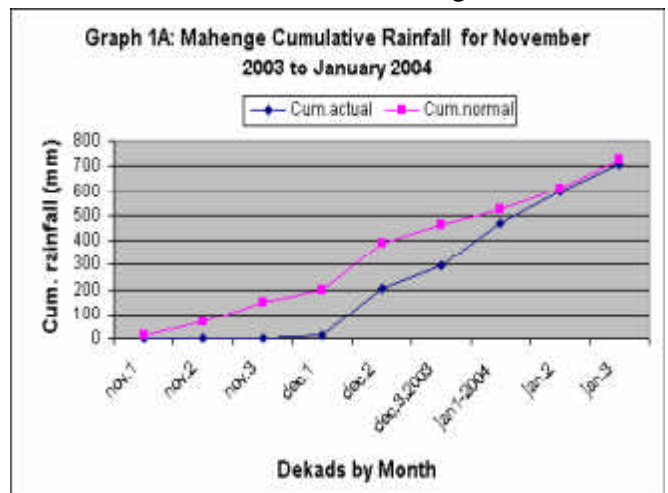
### WEATHER SUMMARY

### RAINFALL

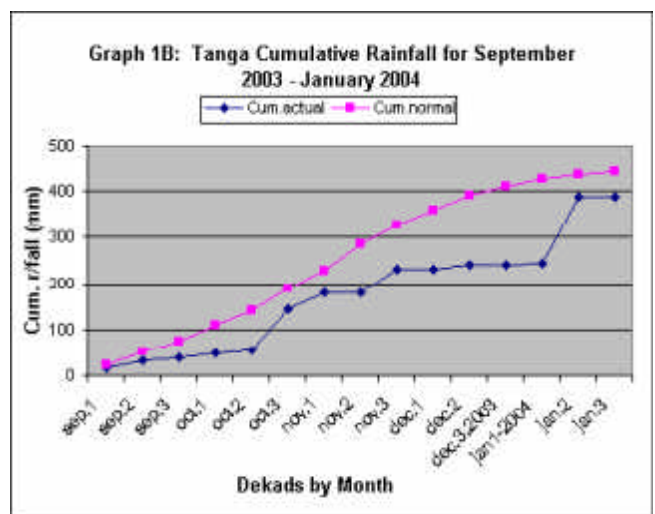
Development of tropical storms due to enhanced sea surface temperatures in South West Indian



Ocean improved rainfall amounts in southern areas and southwestern highlands of the country in the third week of the month. During the month of



January there were widespread rainfall activities in the country. However in areas covering the central, northeastern highlands, eastern Lake Victoria Basin (LVB), northern coast, rainfall amounts were below



100 mm, except for Tanga meteorological station where (a rare event of) exceptional heavy rainfall of

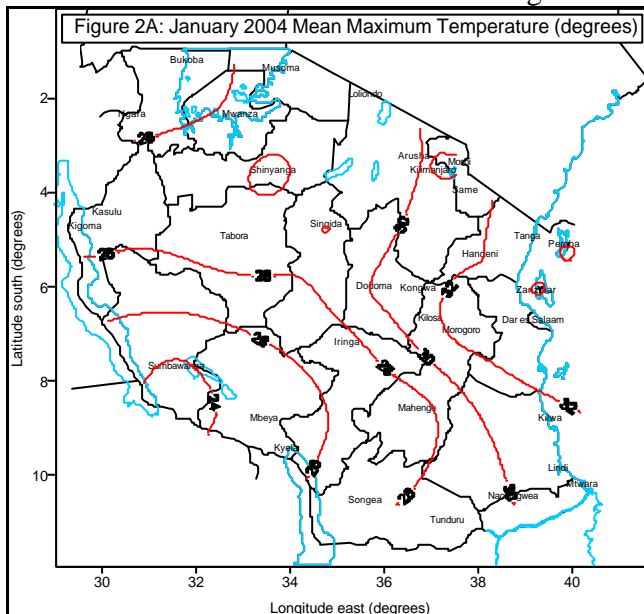
136.6 mm was recorded on 16<sup>th</sup> January, although no loss was reported. Elsewhere in the southern and western sectors of the country rainfall was above 150 mm, with the highest falls of slightly above 400 mm observed in Mahenge district.

The cumulative rainfall in northeastern highlands (Arusha, Manyara, and Kilimanjaro regions), and northern coast (Tanga, Coast, and Dar es Salaam), and the Islands of Zanzibar and Pemba continued being below normal rains for the period of September to January (Graphs 1B).

Generally in much of the country there was an increase in wet conditions.

**MEAN AIR TEMPERATURE**

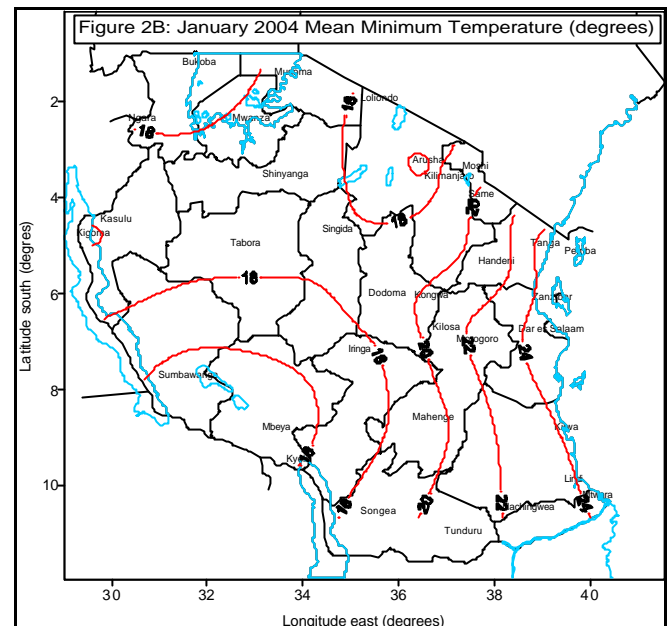
During January the mean maximum temperature ranged slightly below 24 °C to just above 34 °C, with areas over the northern Morogoro, northern coastal belt, and Islands of Zanzibar and Pemba recording temperatures between 32 °C to slightly above 34 °C as indicated in Figure 2A.



The highest mean maximum values of slightly above 34 °C were recorded in the Islands of Zanzibar and Pemba. Some areas in Mbeya and Sumbawanga recorded the lowest mean maximum values of about 24 °C in January compared with about 26.0 °C reported in December.

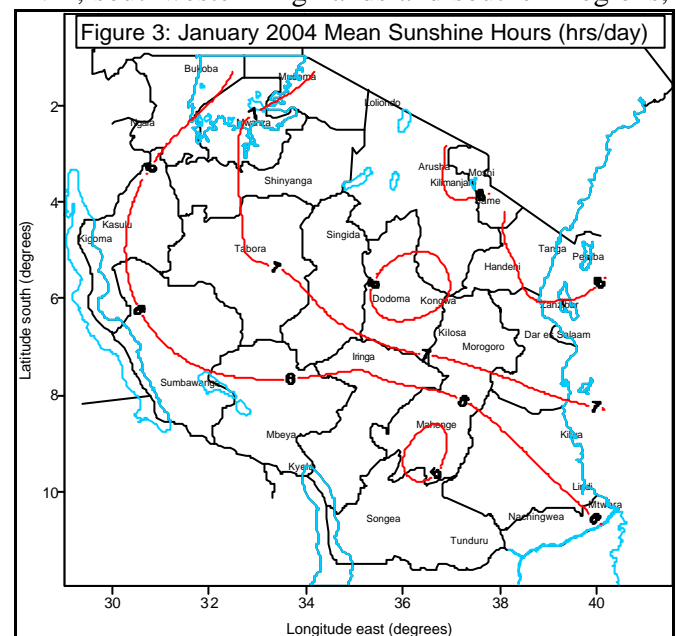
Figure 2B, on the other hand shows the mean minimum temperatures, where the range was from slightly below 16°C to just above 24 °C, with the lowest values recorded over the southwestern

highlands including Mbeya and Sumbawanga areas, northeastern highlands (Arusha), while the highest mean minima were recorded along the coast and Islands of Zanzibar and Pemba



**SUNSHINE HOURS**

During the month the mean sunshine hours across the country ranged from about 5 to just above 8 hours/day as shown in Figure 3. Shorter durations (less than 6 hrs/day) of bright sunshine were experienced in areas near Lake Tanganyika, west of LVB, southwestern highlands and southern regions,

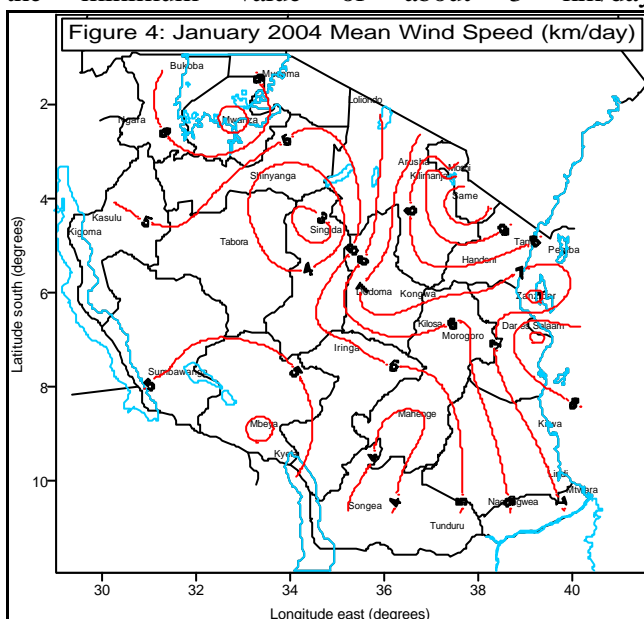


while Mahenge recording the lowest values of

slightly below 5 hrs/day. Elsewhere, bright sunshine was between 7 hrs/day to slightly above 8 hrs/day, with the highest mean value recorded in Dodoma, Kilimanjaro and Tanga regions, and the islands of Zanzibar and Pemba.

**MEAN DAILY WINDSPEED**

Mean wind speeds across the country ranged from about 3 to just above 10 km/hr as shown in Figure 4. Northeastern highlands (Same) recorded the highest wind speeds of up to slightly above 10 km/hr, while Singida in the central areas recorded the minimum value of about 3 km/day.



Generally, the country experienced lower winds in January compared to December.

**SATELLITE INFORMATION**

Satellite information on vegetation greenness during the month is indicated by Normalized Difference Vegetation Index (NDVI) for the second and third dekad of January as shown in Figure 5A and 5B. Figure 5B shows higher indices, indicating that from the middle towards the end of the month the greening had increased in much of the country, due to improved rainfall activities. However, other areas of Shinyanga, Manyara, Arusha, Singida, Dodoma, Iringa, and eastern Mbeya depict low values of the vegetation greening level, as the

greening recovery of the vegetation had been slow in these areas due to prolonged effects of severe soil moisture deficits that resulted from prolonged dry weather.

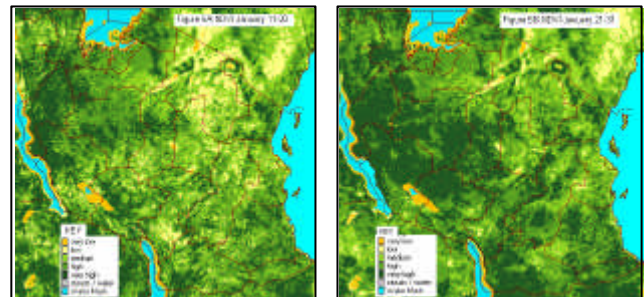


Fig. 5A: Spot NDVI January 11-20 Fig. 5B: Spot NDVI January 21-31

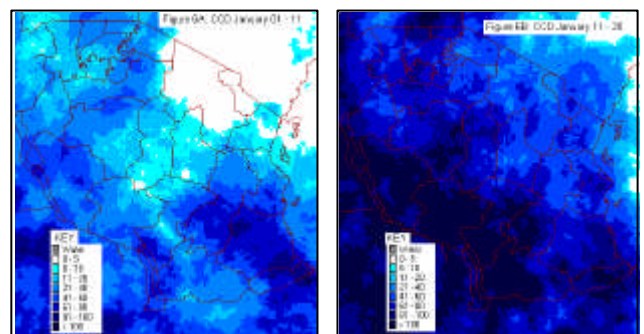


Fig. 6A: CCD January 01-10 Fig. 6B: CCD January 11-20

The 10-day Cold Cloud Durations (CCD) pictures for the first and second dekad of the month show much improvement in rainfall activities over the entire country. However very significant improvement was in the northeastern highlands and northern coast where the changes were from 0-5hrs during the first dekad to between 11 –60 hrs during the middle of the month. Many hours (greater than 100 hrs) of cold clouds were reported over areas in the western, southwestern, and southern sectors of the country as shown in Figures 6A and 6B. Severe tropical cyclones Elita and Frank which developed in Southwestern Indian Ocean enhanced influx of moist westerlies into the country thus increasing rainfall prospects in most parts of the country as depicted in Figure 6B, where CCDs increased towards the middle of the month.

**AGROMETEOROLOGY**

The rainfall recorded in the northeastern and eastern zone during the second and third dekad improved soil moisture conditions in these areas, which brought a relief to perennials and pastures,

while prompting farmers to start land preparation for *masika* season . In Kagera region, where harvesting of bean crop was coming to an end, farmers have started land preparation for *masika* season Over the unimodal regions (central and southern sectors) of the country maize was at pre-tasseling stage, and beans were between flowering and pod filling. The average performance so far could be rated as good. However, if heavy rains and shorter durations of bright sunshine continue in southern Morogoro, particularly Mahenge district, it is likely to affect pod filling in beans, and hence reduce anticipated yields. Armyworm infestations were reported in several districts including Kilosa, Kilombero, Ulanga and Mvomero (Morogoro Region), Kongwa, Kondoa and Dodoma Rural (Dodoma Region) as well as Kiteto (Manyara Region). Maize, sorghum and paddy have been affected. Stinking hoppers (*panzi kunuka*) have also been reported in Kondoa district (Dodoma Region) (*FEWS NET report, January 22,2004*). These pests if not controlled in time, might reduce yields.

Pastures production is likely to increase over most parts of the country as a result of soil moisture replenishment experienced during the month.

### HYDROMETEOROLOGY

Rainfall that fell during the month contributed significantly to water levels in rivers and other water reservoirs in most parts of the country.

Water levels in rivers and dams for water supply and electricity generation have improved greatly over the areas receiving seasonal rains as a result of increased runoff from the rains, especially in the Ruaha and Ruvuma river basins. Also Ruvu River benefited from such an increase.

### EXPECTED SYNOPTIC SYSTEMS FOR JANUARY

The Arabian ridge is expected to remain intense and maintain low level diffluent flow over northeastern highlands and northern coast. The St. Helena anticyclone and the Azores anticyclone are expected to strengthen while the Mascarene anticyclone will weaken. The zonal component of Inter Tropical Convergence Zone (I.T.C.Z.) is expected to be active over southwestern and southern parts of the country.

### WEATHER OUTLOOK FOR FEBRUARY

The Southwestern highlands, southern and southern coast will experience sunny periods and partly cloudy conditions with showers and thunderstorms over some areas. The rest of the country, namely, Lake Victoria basin, central, western areas, northeastern highlands, northern coast and its hinterland, and Islands of Zanzibar and Pemba will experience sunny periods and partly cloudy conditions with showers and thunderstorms over few areas.