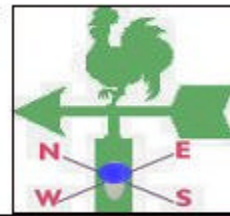




# TANZANIA METEOROLOGICAL AGENCY



## MONTHLY WEATHER BULLETIN

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### HIGHLIGHTS

- Below normal short rains (*vuli*) over the northeastern sector of the country

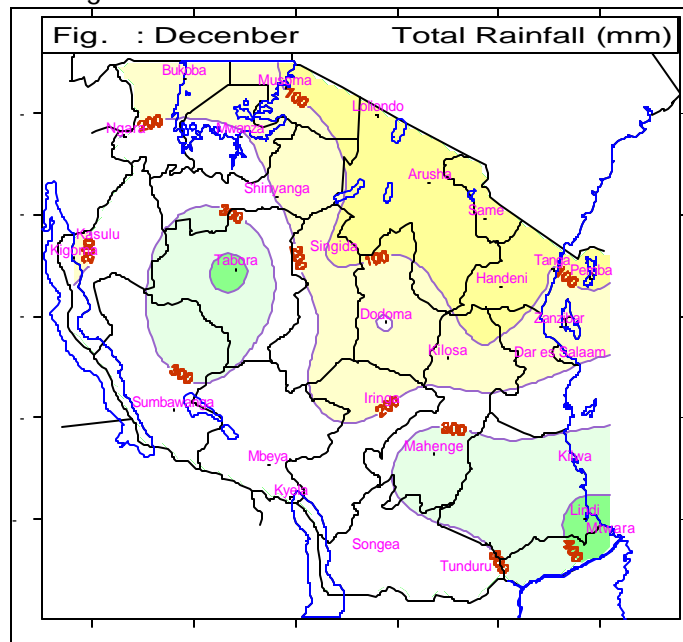
### SYNOPTIC SUMMARY

During the month of December, the Azores anticyclone and the Arabian ridge were strong. The Mascarene anticyclone and the Azores anticyclone were weak. The meridional component of the Inter Tropical Convergence Zone (I.T.C.Z) was active over the Lake Victoria basin and western areas. Tropical cyclones Bento and moderate tropical storm Chambo developed in southwestern Indian Ocean.

### WEATHER SUMMARY

### RAINFALL

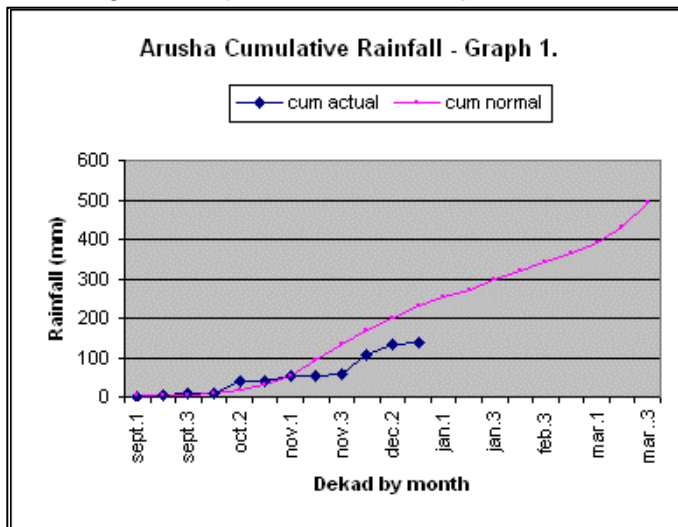
During December rainfall was recorded over



most parts of the country. Higher amounts

exceeding 300mm were recorded in areas of Mahenge and Tabora districts. But on the other hand, lower amounts were experienced over the northeastern sector. Amounts below 100mm were recorded over Manyara, Arusha, Mara regions while localized areas including Kilimanjaro region as shown in Figure 1 depict areas that observed total December rainfall with amounts less than 50mm.

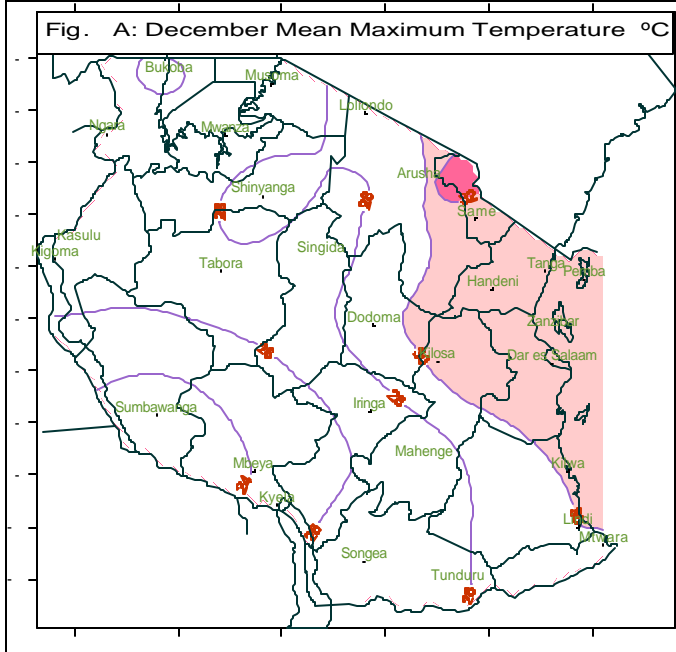
Looking at Graph 1, Arusha Airport cumulative



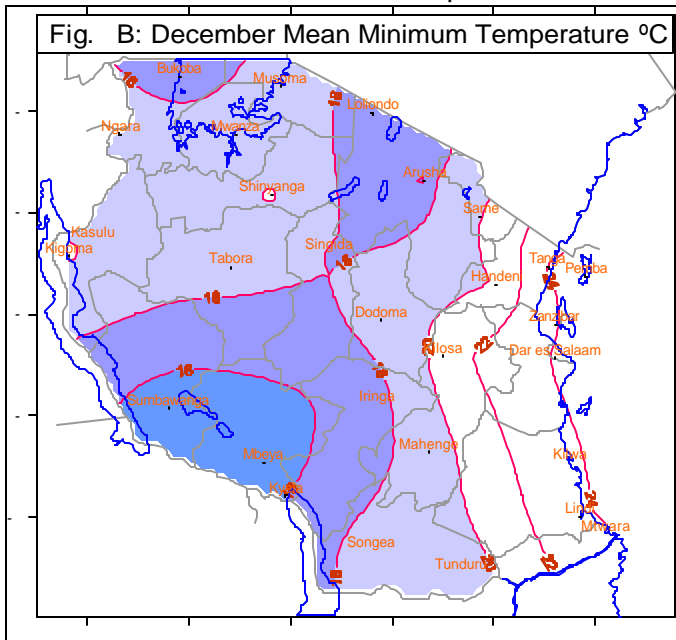
rainfall curve depicts existence of a prolonged dry spell during November and the first half of December emphasizing the generally poor rainfall performance and distribution over the northeastern sector of the country. In summary, the 2004 short rains (*vuli*) performance has been at below normal level over the northeastern sector. Remaining areas (central, western, southwestern and southern) received adequate rainfall amounts for the period.

**MEAN AIR TEMPERATURE**

Mean maximum temperature across the country during November is shown in Figure 2A. Hot conditions ranged from 24 to 32°C.



Hotter conditions were observed over inland areas of Shinyanga and parts of northern coastal belt as indicated by the figure 2A. Elevation lowered temperatures as

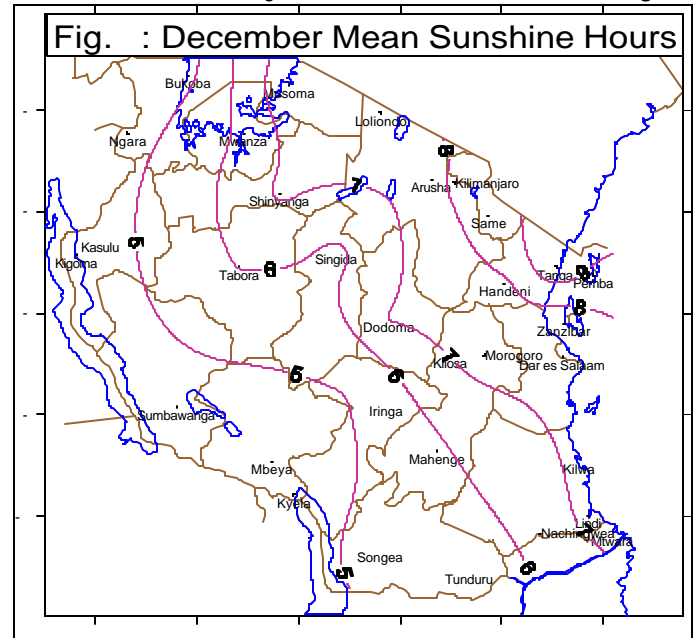


observed over southwestern areas. On the other hand, mean minimum temperature profile for November appears as Figure 2B. Mean minimum temperature range

was between 16°C to 25°C. Relatively higher minimum temperatures by 1°C were observed during December compared to the situation during November over the northern coastal belt and the Isles of Zanzibar and Pemba.

**SUNSHINE HOURS**

Figure 3 indicates the spread of mean bright sunshine hours during December observed across the country. Durations of mean bright



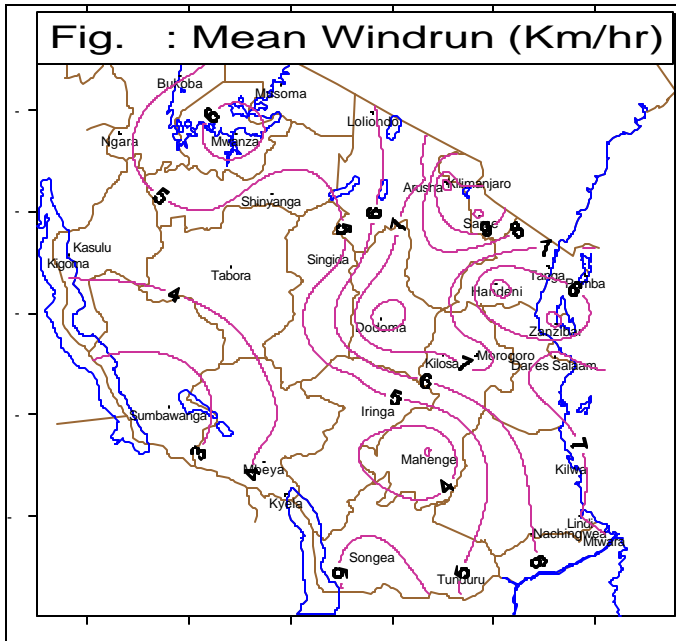
sunshine ranged from around 5 hours to about 9 hours per day, a reduction by 4 hours over central areas which had recorded the longest hours during November.

The longer bright sunshine hours mainly greater than 9 hours per day, were observed over the extreme northeastern corner. Almost half of the western sector of the country recorded the lowest durations, below half daylight, mainly because of the cloud activity persistence as an influx of moist air from the Congo air mass.

**MEAN DAILY WINDSPEED**

Mean wind run across the country during the month of December ranged from 3 km/hr to 9km/hr as shown by Figure 4. Maximum surface windrun during December were

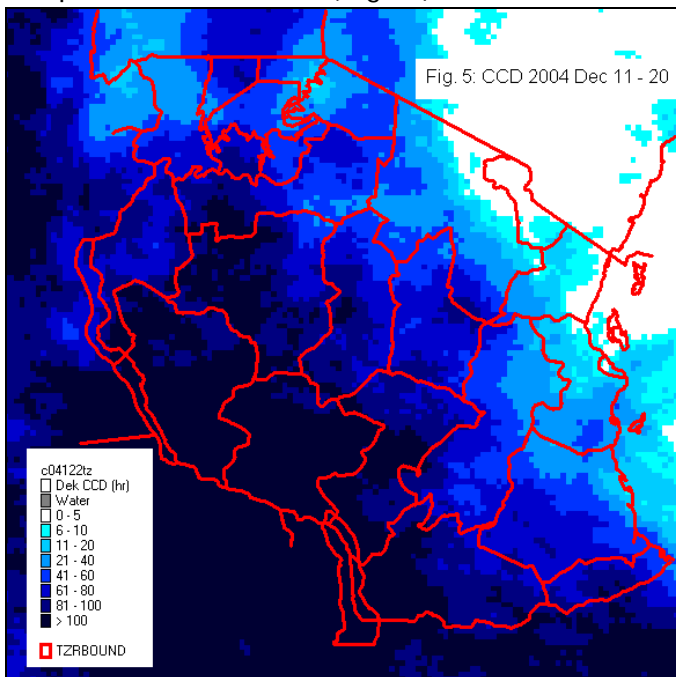
observed over parts of northeastern and central areas at a speed of around 9km/hr, a drop by 3km/hr compared to November.



Calmer conditions prevailed across the country especially over Rukwa region during December compared to November situation.

**SATELLITE INFORMATION**

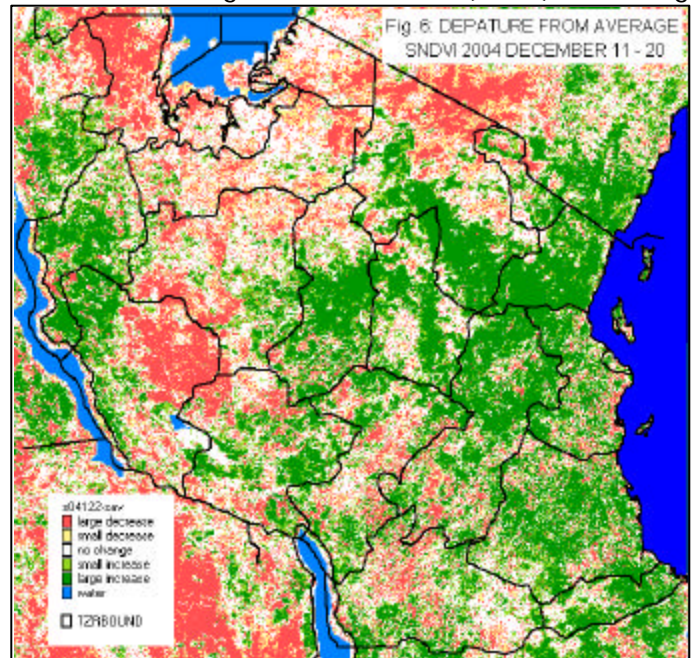
Satellite information is shown as duration of deep cloud activities (Fig. 5) and Normalized



Difference Vegetation Index (Fig. 6). Deep cold cloud increased during December

compared to the situation in November across the country. Influx of cold cloud activities fed into the country from Congo air mass to the west and just a few occasions of easterly waves on the eastern sector from the Indian Ocean. Looking at Figure 5, the METEOSAT picture depicts mean duration between 11 to 20<sup>th</sup> December. On average, durations ranged from just over 5 hours to only a maximum of 100 hours. In contrast clear skies without deep cloud activities dominated northeastern areas.

Figure 6 depicts the spot satellite Normalized Difference Vegetation Index (NDVI) showing



the spread of greening index during the second 10-day of December as compared to the five year normal during the same period. Increased greening occurred over a wider area over the eastern sector. Large decreases in the greening appear over northeastern sector, mid-western and the Lake Victoria Basin. Of concern during this time of the year are the patches of decreases in the index over northeastern areas where the index dropped by 30%. Further more, localized patches over Manyara, Arusha and Kilimanjaro areas appear with a much lower index of less than 0.1

## AGROMETEOROLOGY

Soil moisture supply ranged from adequate over most parts of the country, while excessive levels were observed over western areas (Tabora and Sumbawanga districts) mid-eastern areas (Mahenge district) and southern areas (Mtwara district). Water flooded soils were beneficial to paddy growing. Crops like maize, beans and sorghum were at different stages of development such as early vegetative for paddy to near wax ripeness for maize and all were reported in good state as observed over the Lake Victoria Basin, Northwestern, and the coast belt.

Final land preparations and planting was the major farm activity over central, southern and southwestern areas.

Of concern are localized areas over the northeastern areas where soil moisture deficit continued to be experienced during the period. December marks the normal ending of the short rain season for the area; as such yield prospects for *vuli* crops grown over the area (such as Arusha, Simanjiro, Monduli, Loliondo, Moshi rural and Karatu districts) will fall far short of expectations.

## HYDROMETEOROLOGY

During the period water levels in rivers and water reservoirs increased thus boosting hydropower generation. Nevertheless, water for industrial and domestic purposes should be used sparingly.

## ENVIRONMENT

The reduced windy condition across the country that prevailed during the month reduced prospects for diseases such as colds, coughs, pneumonia and asthma.

### EXPECTED SYNOPTIC SITUATION DURING JANUARY

The zonal component of the Inter Tropical Convergence Zone (I.T.C.Z) is expected to be active over the southern parts of the country. The Arabian ridge and the Azores anticyclone are expected to remain intense. The St. Helena anticyclone and the Mascarene anticyclone will weaken.

### EXPECTED RAINFALL SITUATION DURING JANUARY

The Lake Victoria basin and western areas will experience partly cloudy conditions with showers and thunderstorms over few areas and sunny periods. Northern coast and its hinterland, northeastern highlands and islands of Zanzibar and Pemba will have partly cloudy conditions with sunny periods. Southwestern highlands, central, southern coast and southern areas will experience cloudy conditions with showers and thunderstorms over most areas and sunny intervals.

Prepared by  
**TANZANIA METEOROLOGICAL AGENCY**  
 3<sup>rd</sup> & 4<sup>th</sup> Floors - Ubungu Plaza Ltd - Morogoro Road.  
 P.O. Box 3056  
 Tel. 255 - (0) 22 - 2460706-8 ; Fax: 255 - (0) 22 - 2460718 E-mail: (1) [met@meteo-tz.org](mailto:met@meteo-tz.org) (2) [agromet\\_tz@meteo.go.tz](mailto:agromet_tz@meteo.go.tz)  
 Dar-es-Salaam UNITED REPUBLIC OF TANZANIA