TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHTS

- Rains caused flooding over some parts of Igunga district in Tabora region and Kishapu and Meatu districts in Shinyanga region and Magu in Mwanza region.
- Improved soil moisture conditions during the month have favoured crop growth and development in the country.
- Pasture and water availability for livestock is very good.

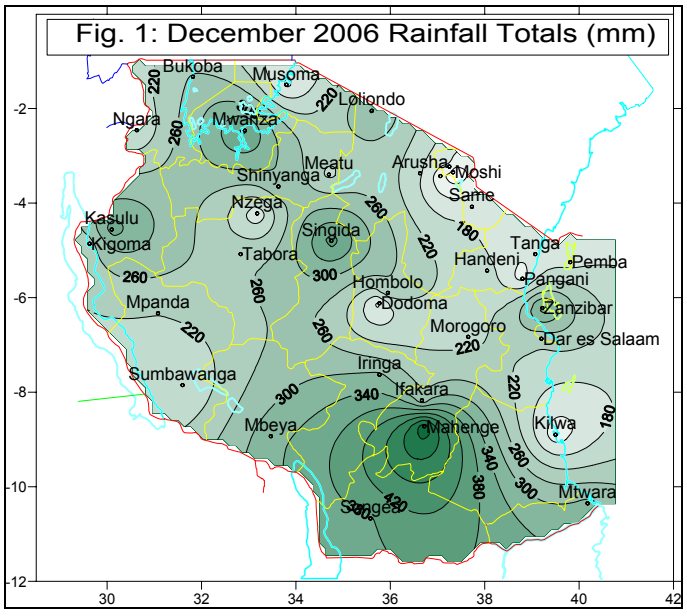
SYNOPTIC SUMMARY

The Azores and Siberian anticyclones, and the Arabian ridge continued to intensify due to the weakness of the southern hemisphere systems pushing the Inter-Tropical Convergence Zone (I T C Z) further south. The situation was contributed by a series of tropical cyclones which commenced at the end of November. The southern hemisphere anticyclones, St. Helena and Mascarene, and the East African ridge continued to relax due to deep frontal system which continued to erode the anti-cyclonic systems. The meridional component of the ITCZ over the western part of the country and western parts of the Lake Victoria was generally deep and active, while the convergence of the northerly to northwesterly wind flow across the lake and the northeasterly to northerly monsoon from the Indian Ocean contributed to a very active zone over the areas and thus during the month, floods over some areas of western and Lake Victoria basin were observed. The presence of ITCZ in the vicinity and the occurrence of tropical cyclones, *Anita, Bondo and Clovis* over the Indian Ocean have resulted into a very active weather in December.

WEATHER SUMMARY

RAINFALL

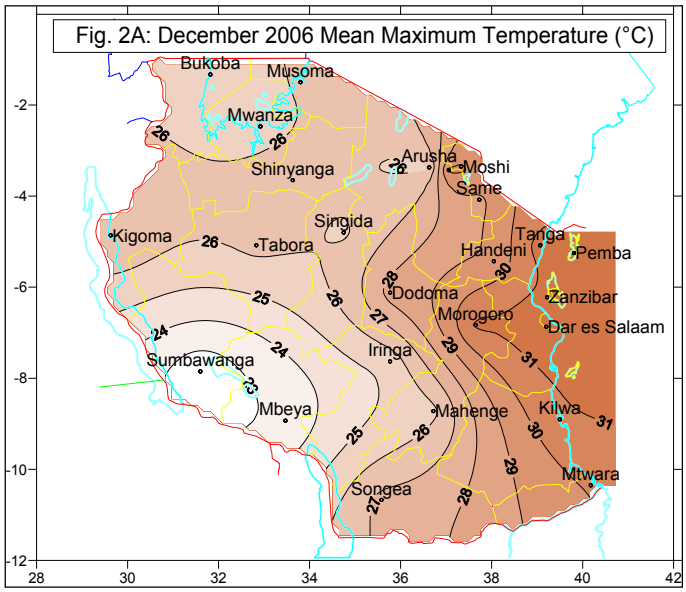
During December, rainfall activities increased and spread over much of the country with more than 50% of the stations used reported monthly rainfall amounts that exceeded 200 mm (Fig. 1). The highest rainfall was 568.1 mm at Mahenge and more than 350 mm reported at Singida 398.2 mm (central), Mwanza 391.8 mm (Lake Victoria basin), Songea 376.4 mm (southern), Zanzibar 362.6 mm (Island of Zanzibar) and Kasulu 358.9 mm (western).



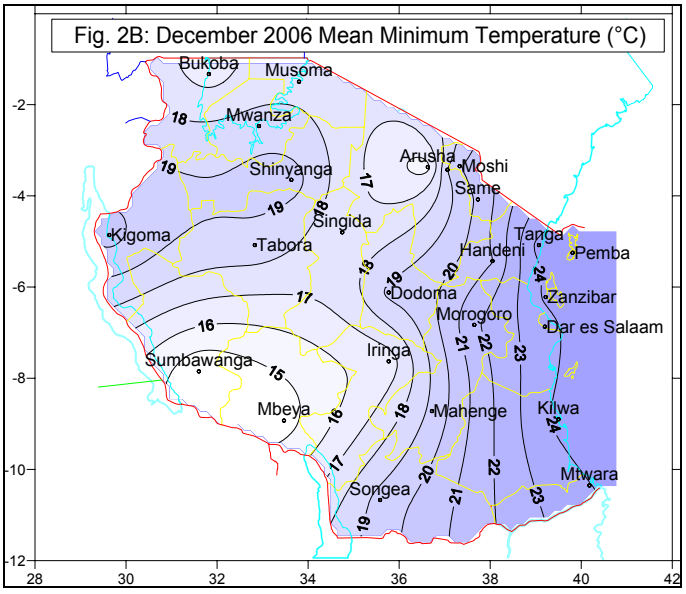
The monthly minimum rainfall amount was recorded at Moshi (70.6 mm) in the northeastern highlands. The high intensity rainfall recorded during the period caused flooding over some areas in the country. The floods in Igunga (Tabora region), Magu (Mwanza region) and Kishapu district in Shinyanga region resulted into significant infrastructure and crop destruction. The victims were cut off from the rest of the country after floods destroyed bridges on roads connecting their communities. Rainfall activities reported from areas with the unimodal rainfall regime (southern sector) indicate a good start of seasonal rains in the region.

MEAN AIR TEMPERATURE

Temperature conditions for the month of December were expressed as mean maximum and minimum values as shown in Figs. 2A and 2B respectively. Observed mean maximum temperature ranged between just above 31.0 ºC and just below 23.0 ºC as indicated in Figure 2A. The highest mean maximum temperature was recorded at Dar es Salaam 31.6 °C, while the minimum was 22.3 °C at Sumbawanga. Higher temperatures were recorded



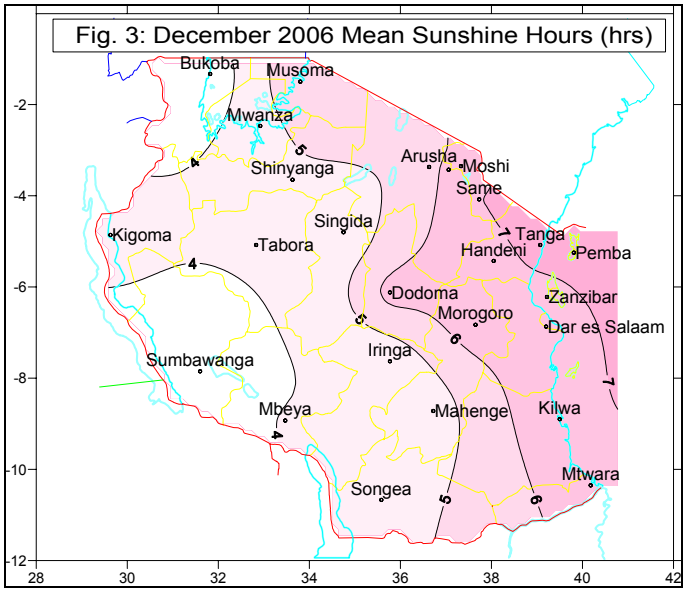
over eastern sector of the country including parts of Dodoma, Morogoro and Kilimanjaro regions, entire coastal belt and Islands of Zanzibar and Pemba.



Mean minimum air temperatures ranged from just below 15.0 ºC to slightly above 24.0 ºC as shown in Fig. 2B. Comparing with temperature conditions in November, during December maximum temperatures decreased slightly over the southwestern highlands due to increased rainfall activities. Generally, warm conditions have continued over much of the country, which is a normal feature in this month.

MEAN SUNSHINE HOURS

Spatial distribution of mean sunshine hours across the country during December indicates that the durations of mean bright sunshine hours ranged between about 4 and 7 hrs/day as shown in Fig. 3. The shortest durations of bright sunshine were experienced over western Lake Victoria basin and Rukwa region where Bukoba recorded the shortest duration of about 2 hours/day during third dekad of the month.

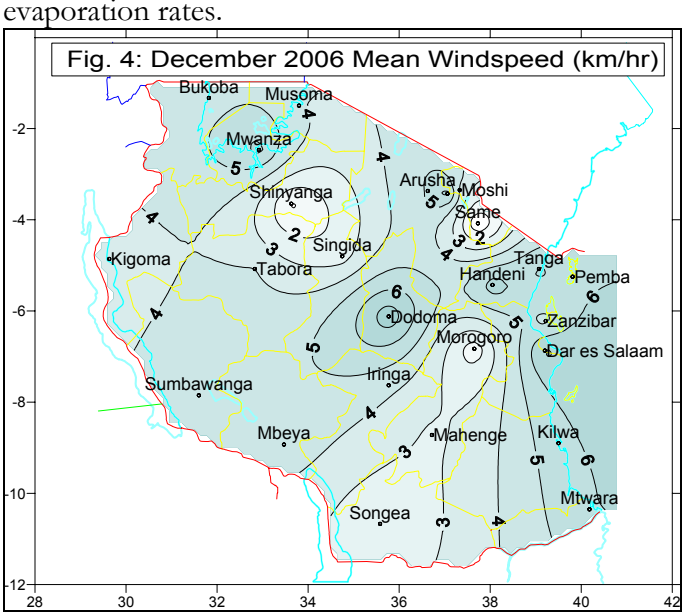


Much of the country has observed shorter durations (less than 5 hours/day) mainly due to increased cloudy activities experienced in the areas during the month.

MEAN DAILY WIND SPEED

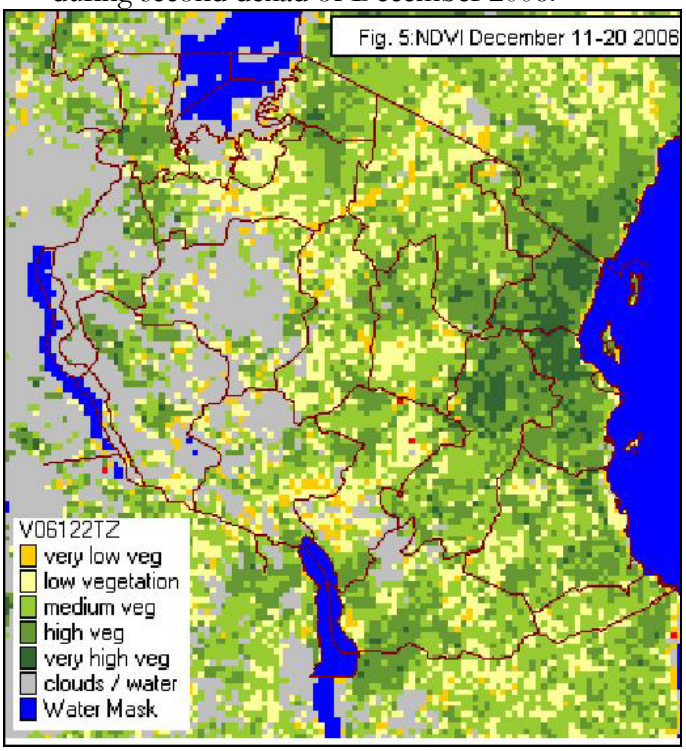
During December mean wind speed across the country ranged between about 2 and 6 km/hr as indicated in Figure 4. The cores of minimum speed of about 2.0 km/hr were located over Morogoro, Shinyanga, and Same. The decreased wind speed over much of the country reduced prospects for

occurrences of dust devils, wind erosion and higher evaporation rates.



SATELLITE INFORMATION

Figure 5 shows the status of vegetation greening during second dekad of December 2006.



The Normalized Difference Vegetation Index (NDVI) indicates that the vegetation greening across the country ranged from low to very high. Much of the high vegetation greening was over the northern coast, northeastern highlands, Lake Victoria basin, western and central regions. In spite of a few pocket areas that have depicted very low vegetation greening, the vegetation condition across the country is generally good. The vegetation cover is likely to improve further following improved soil moisture levels from the December rainfall reported nearly countrywide.

AGROMETEOROLOGY

Improved soil moisture conditions during the month have favoured planting activities, crop growth and development nearly throughout the country. Over the bimodal rainfall pattern areas stages of most crops particularly maize and beans were ranging between tasseling and blister stage (maize), while beans crop was between vegetative and pod filling. Paddy was being transplanted while cassava was at various growth stages and in good state. Over unimodal areas, crops and other field activities such as land preparation and planting benefited from improved soil moisture status in the region. However, a few areas across the country experienced excessive soil moisture, hence, delayed some field activities to be carried out normally. Other affected areas were Nzega and Igunga districts in Tabora region, Magu district in Mwanza region, Kishapu and Meatu districts in Shinyanga region where floods disrupted scheduled field work and spoilt growing crops (beans and maize).

Pasture conditions and water availability for livestock across the country is very good.

HYDROMETEOROLOGY

Rains have boosted water levels in rivers, lakes and dams over most areas in the country and eased off the acute load shedding experienced in the second half of 2006.

ENVIRONMENTAL

Temperatures are warm and comfortable with low wind speeds over much of the country, thus reducing prospects for diseases such as coughs, colds, pneumonia and asthma

EXPECTED SYNOPTIC SITUATION DURING JANUARY 2007

The northern hemisphere systems (Arabian and Azores anticyclones) are expected to continue intensifying and create a diffluent pattern over the extreme northern coast and northeastern highlands. The situation will reduce rainfall activities over those areas. Towards the mid of the month the southern hemisphere systems, the Mascarene and St. Helena anticyclones and East African ridge are expected to continue relaxing. The near equatorial trough over the northern coast and parts of northeastern highlands will retreat thus leading to prospects of a dry spell over most areas of the coast. Over the western areas the meridional arm of ITCZ is expected to continue oscillating to the east and influencing some thunder showers over some areas together with those of Lake Victoria basin. The wind patterns over the coast will be more of northeasterly to northerly.

EXPECTED WEATHER SITUATION DURING JANUARY 2007

Lake Victoria basin (Kagera, Mwanza, Shinyanga and Mara regions) and western (Kigoma and Tabora regions) are expected to feature partly cloudy conditions with thundershowers over few areas and sunny periods. Northern coastal areas (Coast region, Dar es Salaam, Tanga, Zanzibar and Pemba and some parts of Morogoro) and northeastern highlands (Arusha, Kilimanjaro, and Manyara regions) are expected to experience partly cloudy conditions with showers over few areas and sunny periods. Central areas (Dodoma and Singida regions) are expected to feature cloudy conditions with thundershowers and sunny periods. Southwestern highlands (Iringa, Mbeya and Rukwa regions), southern (Ruvuma region) and southern coast are expected to feature partly cloudy to cloudy conditions with thundershowers and sunny periods. Over the northeastern highlands and northern coast the dry spell is anticipated during the third and fourth week of January 2007.

Prepared by
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