TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

ISSN No: 0856-0919, Volume 7, Issue 11 November 2005

NOVEMBER – HIGHLIGHTS

- *Over areas with a unimodal rainfall regime, most farmers completed land preparations*
- *Land encroachments and poor pasture conditions over areas of cental and northeastern highlands*

SYNOPTIC SUMMARY

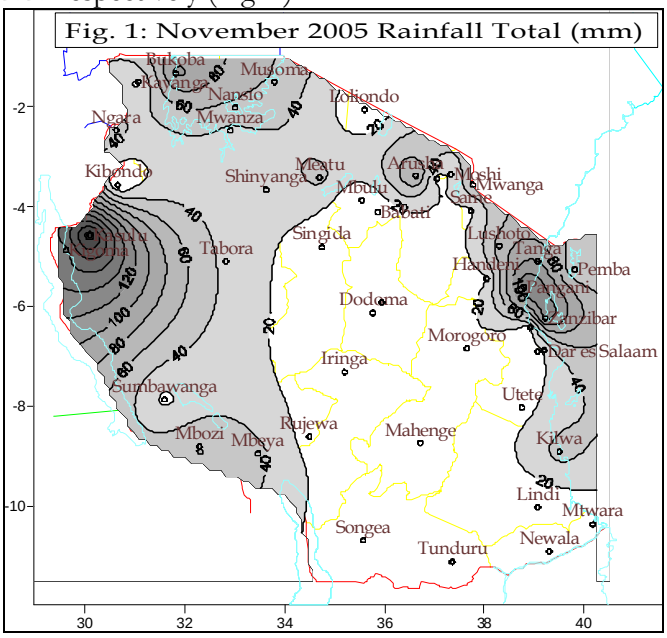
The Azores anticyclone was relatively weak while the Arabian anticyclone was intense. St. Helena anticyclone was generally strong while the Mascarene anticyclone continued to relax slowly southeastward. The Inter-Tropical Convergence Zone (ITCZ) remained active over the East African regions (Kenya and Uganda) although over Tanzania it was defused over the land but active to the east over the western Indian Ocean. The Northeasterly wind flows from the northern Indian Ocean was evident, but more continental with less moisture contents. The convergence of northwesterly to westerly wind flow from the Congo basin and northeasterly wind flows from the northern Indian Ocean over western part of the country and Lake Victoria Basin (LVB), was apparent and contributed to rainfall activities over those areas. The weak convergence of weak easterly wind flows from western Indian Ocean and north-easterlies from the northern Indian Ocean over eastern parts of Tanzania contributed into rainfall activities over the areas during the early days and towards the end of the month. The prevailing cold Sea Surface Temperatures (SSTs) over the western Indian Ocean contributed into a decreased rainfall over many parts of the northern coast.

WEATHER SUMMARY

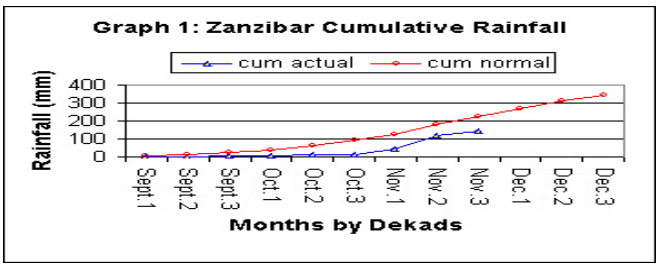
RAINFALL

Rainfall activities spread out over a large part of the country during the month except over the area extending from northeastern highlands through central parts and southern regions of the country where the observed rainfall was generally below 20 mm. Most areas recorded above 20 mm of rainfall with Kasulu and Kigoma stations over the western areas reporting the highest rainfall of 236 mm and 154 mm respectively (Fig. 1).

Fig. 1: November 2005 Rainfall Total (mm)



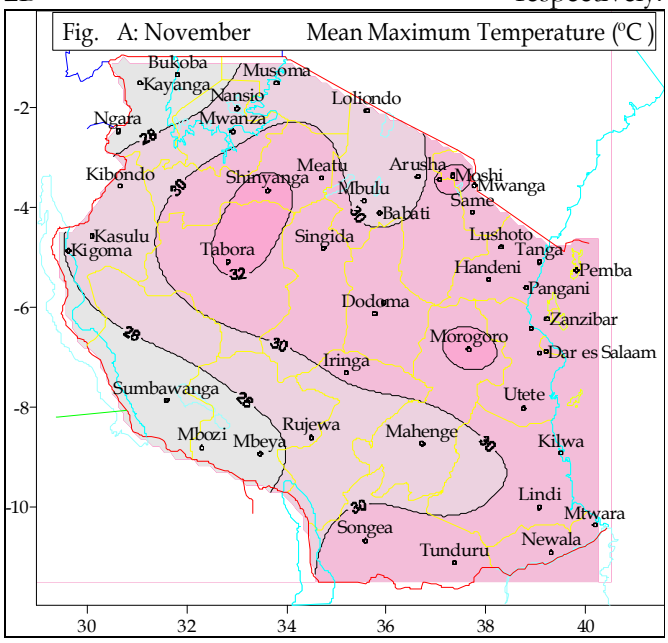
The northern coast also benefited during the month with Pangani (143.7 mm) and Zanzibar (133.1 mm) whereas over LVB, Bukoba in Kagera region recorded 105.9 mm of rainfall. These records are an increase of rainfall amounts and coverage as compared to the previous month. However, over the northern coast, rainfall performance has been below normal for most



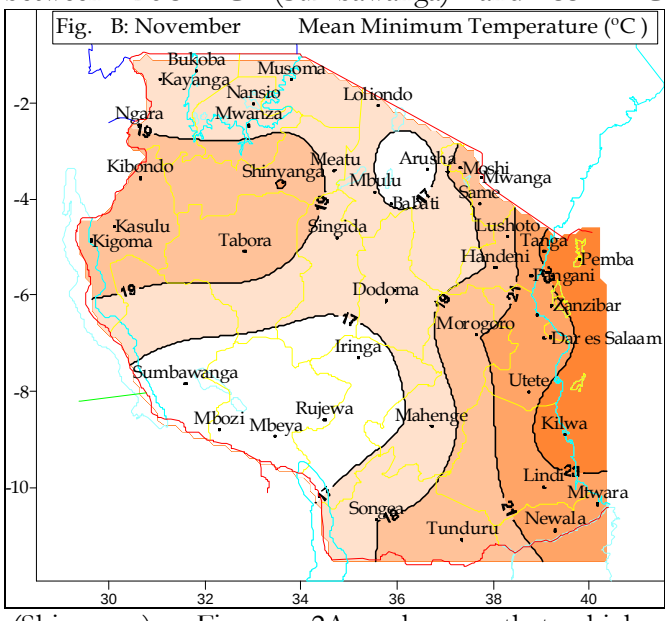
areas. For example, at Zanzibar Airport rainfall has been below normal since September to date (Graph 1).

MEAN AIR TEMPERATURE

Temperature conditions during the month of November were expressed as mean air maximum and minimum temperatures as shown in Figs. 2A and 2B respectively.



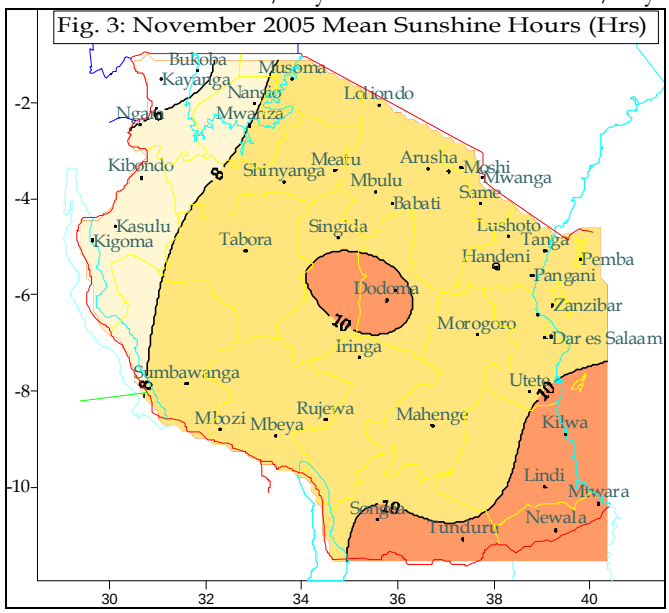
Observed mean maximum temperature ranged between 26.3 °C (Sumbawanga) and 33.1 °C



(Shinyanga). Figure 2A, shows that higher temperatures of above 32 °C were experienced over Tabora, Shinyanga and Moshi towns. On the other hand, Fig. 2B shows that the mean minimum air temperatures ranged from just below 15 °C to slightly above 23 °C, whereas the extreme minimum temperature of 14.4 °C was observed over southwestern highlands at Mbeya during the second dekad of the month, a normal feature of upward trend of warming for this time of year. For example, a significant rise of about 5.1 °C during the month has been observed over the southwestern highlands as compared to the situation during October.

SUNSHINE HOURS

Figure 3, indicates the spread of mean sunshine hours during November as observed across the country. Durations of mean bright sunshine ranged from about 6 hrs/day to about 10 hrs/day.

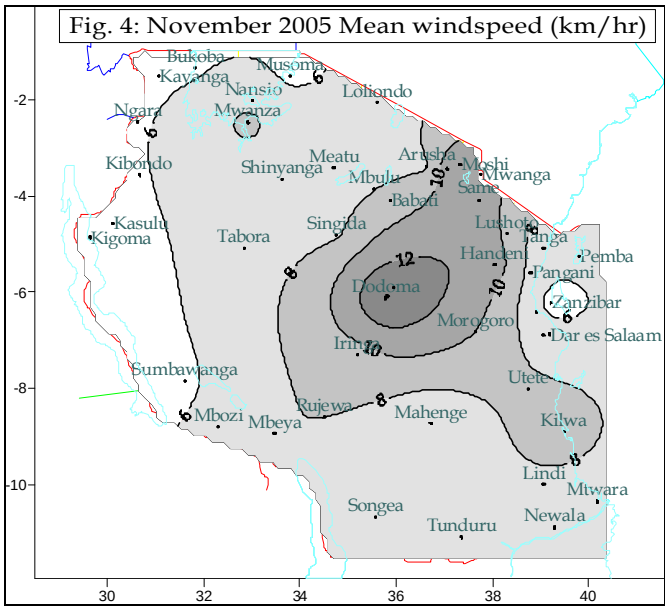


The longest durations of above 10 hrs/day dominated over central, southern and southern coastal areas. The lowest durations of below half daylight hours were observed largely over the western part of the country and Kagera region mainly due to increased cloudy activities during the month.

MEAN DAILY WIND SPEED

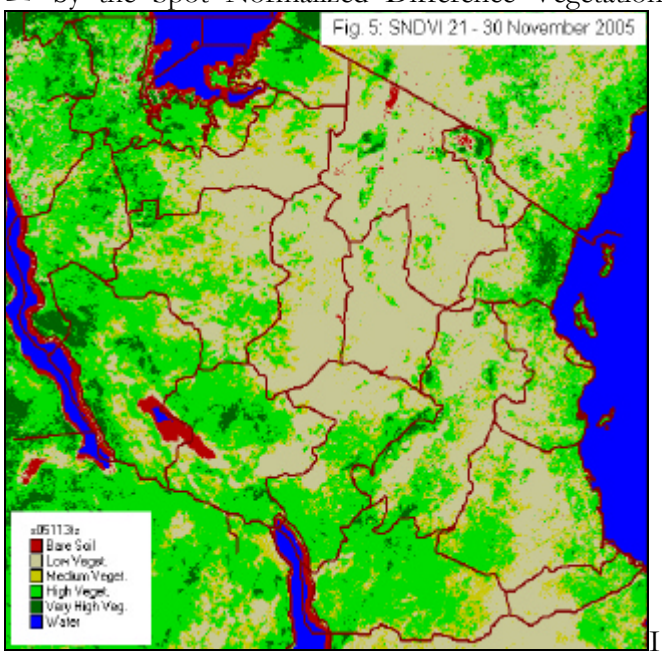
Mean wind run across the country during the period ranged from just below 6 km/hr to just above 12 km/hr as shown in Figure 4. The core axis of higher wind speeds (greater than 10 km/hr) is oriented from central to the northeastern highlands with core maximum of about 14 km/hr located over

central areas (Dodoma). The high wind speeds led to high evaporation rates, increased presence of dust devils and enhanced wind erosion on bare grounds. On the other hand, lower wind speeds of less than 6 km/hr dominated over southern, western, parts of northern coast and the LVB.



SATELLITE INFORMATION

Figure 5 depicts vegetation greenness as indicated by the Spot Normalized Difference Vegetation



Index (SNDVI) from METEOSAT satellite sensor for the 10-days of November. During the month the northern coast and western sector of the country indicated increase in vegetation greening, while a large part of the country including central and northeastern highlands were dominated by low vegetation cover. Such low vegetation depicts the negative effects caused by poor rainfall performance over the northeastern highlands and a late onset of seasonal rains over many parts in the unimodal rainfall regime. This justifies the persistence of land encroachments and poor pasture conditions which have been reported in the affected areas mainly over the northeastern highlands and central region.

AGROMETEOROLOGY

Soil moisture deficits were observed over most parts of the country. Over bimodal areas (LVB, northern coast and northeastern highlands) the prolonged dry spells were the cause of partial wilting of crops, mainly maize and beans as reported over districts of Pangani and Lushoto in Tanga region, Tarime in Mara region and Mwanga in Kilimanjaro region. Crop stages over these areas ranged between tasseling and wax ripeness for maize over Pangani, Mwanga and Tarime, except Lushoto in Tanga region that reported maize at vegetative stage. Beans crop was generally between vegetative and full ripeness while cassava was at various stages and in moderate state. Over the unimodal rainfall regime (central, western, southern and southwestern highlands) most farmers completed land preparations and therefore they are advised to plant immediately when it rains.

HYDROMETEOROLOGY

Low water levels in rivers and lakes were experienced during the period. Water for industrial and domestic purposes should be used sparingly.

ENVIRONMENTAL

The high temperatures and moist conditions setting in are making it a conducive environment for diseases like malaria.

EXPECTED SYNOPTIC SITUATION DURING DECEMBER

The Arabian and Azores anticyclones are expected to remain strong over the northern hemisphere while over the southern hemisphere the Mascarene anticyclone is expected to weaken southeastward and St. Helena anticyclone to remain intense. The position of ITCZ is expected to shift further south over Tanzania while to the west the meridional arm of ITCZ is expected to become more active and oscillate westward over Congo to western Tanzania. Westerly wind flows from the Congo basin are expected to strengthen. The North East monsoons (NE) flows from the north-west Indian Ocean are expected to strengthen and converging with westerlies from Congo basin and easterlies from western Indian Ocean over Tanzania. Hence, more rainfall activities are expected to increase over the western and southwestern Tanzania. The easterly wind flow over western Indian Ocean is expected to prevail.

EXPECTED WEATHER SITUATION DURING DECEMBER

The Lake Victoria basin, western parts, southwestern highlands and southern region (Ruvuma) are expected to feature partly cloudy to cloudy conditions with showers and thunderstorms over few to most areas and sunny periods. The northeastern highlands, northern coast and the hinterlands, central parts, southern coast, Zanzibar and Pemba Islands are expected to experience partly cloudy conditions with showers over few areas and sunny periods.

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