TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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SEPTEMBER - HIGHLIGHTS

- Dry conditions prevailed throughout the country except for a few rainfall activities in northwestern and northern coastal belt.
- There is increased likelihood of near normal rainfall over much of the country during this *Vuli* season

SYNOPTIC SUMMARY

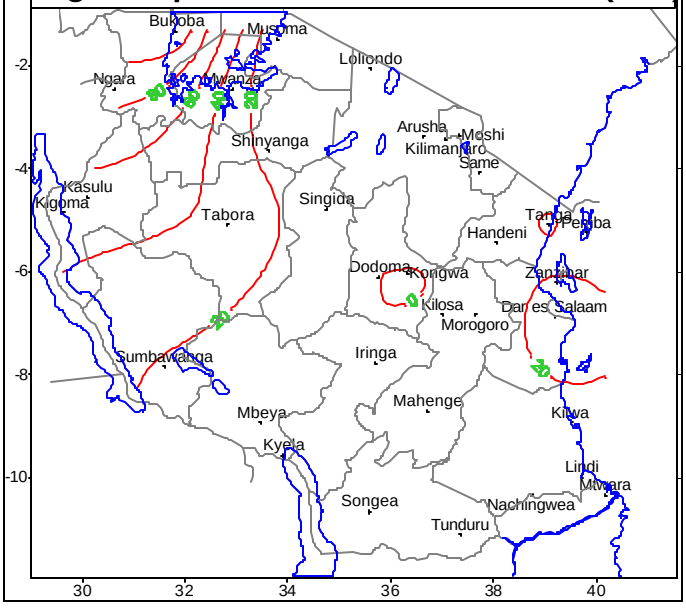
During the month of September, the East African ridge was strong and maintained low-level diffluent flow over most parts of the country. The St. Helena anticyclone and the Azores anticyclone were strong. The meridional component of the Inter Tropical Convergence Zone (I.T.C.Z) was active over the Lake Victoria basin.

WEATHER SUMMARY

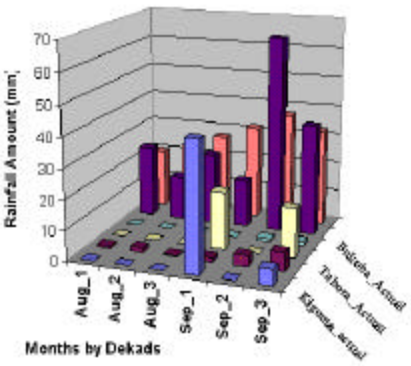
RAINFALL

During September rainfall activities were observed over northwestern areas (parts of Kagera and Kigoma regions) and over a few parts over a few parts in northern coastal belt. As shown in Figure 1, an occasion of wet conditions over northwestern areas signifies a normal onset of *vuli* rains during the period. Persistent rains were observed at Bukoba met station, compared to others that had rainfall. The rest of the country (central, southern and southwestern areas) remained dry a normal feature during this time of the year.

Fig.1: September 2004 Total Rainfall (mm)



Rainfall Over Western Regions: Graph 1.

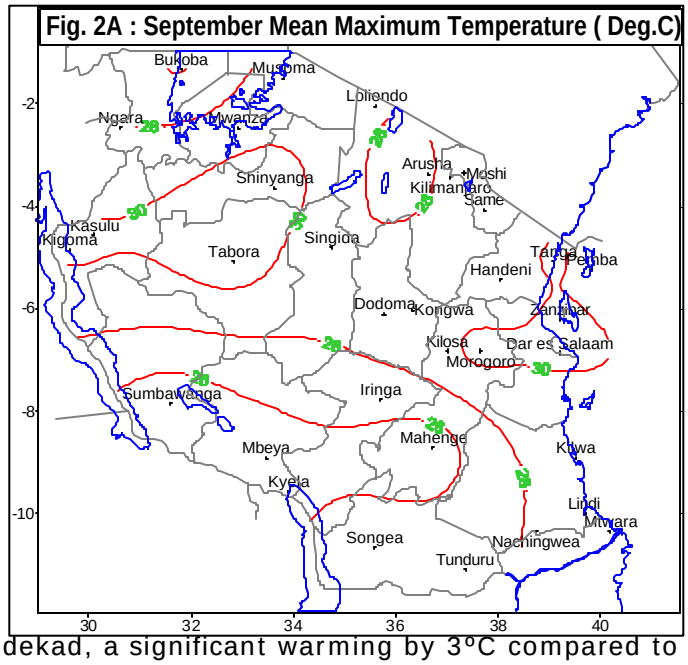


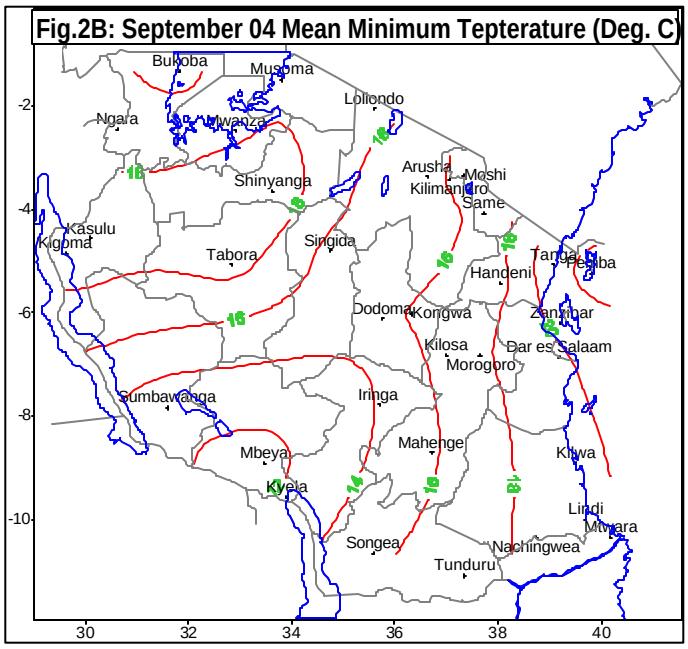
MEAN AIR TEMPERATURE

Temperatures for the month of September depicting air mean maximum and minimum observations during the period appear in Figures 2A and 2B respectively. Observed mean maximum temperature ranged between 31.6ºC and 24.6ºC. The pattern overall depicts the situation recorded during August. The first extreme maximum temperature of 32.2ºC was recorded inland during the second dekad at Shinyanga Met station followed by another over the coastal belt where during the third dekad the extreme maximum temperature reached 31.6ºC.

On the other hand, mean minimum air temperatures ranged from 11.3 to 22.5ºC and the extreme minimum temperature of 10.3ºC was

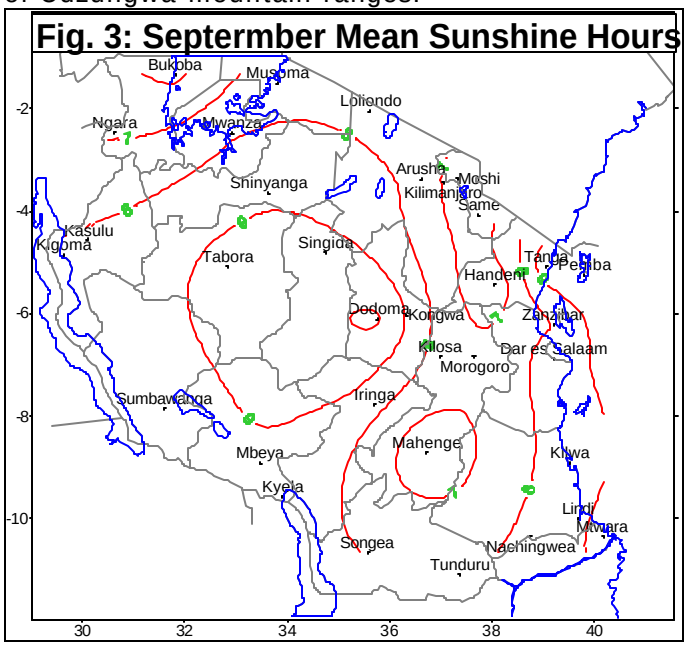
observed at Mbeya Met Station during the third dekad, a significant warming by 3°C compared to the situation during August.





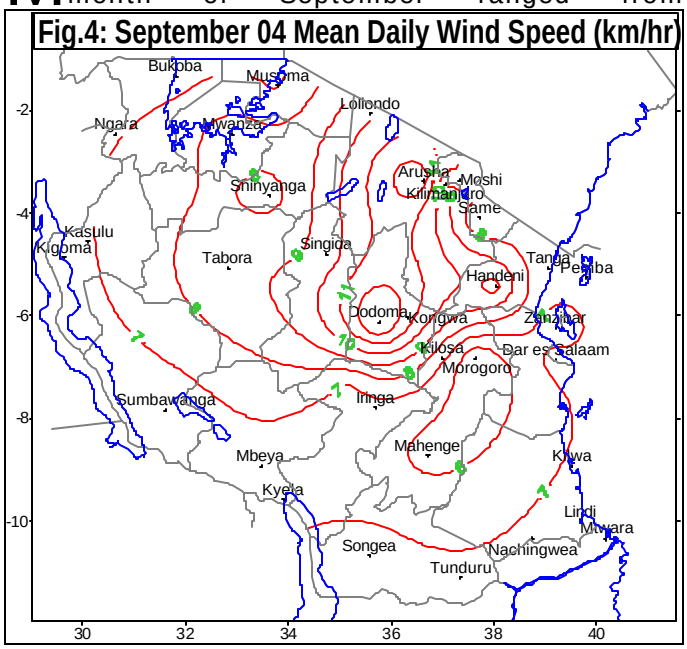
SUNSHINE HOURS

Figure 3: indicates the spread of mean sunshine hours during September observed across the country. Durations of mean bright sunshine ranged from 6 to about 10 hours/day. Highest durations mainly up to 9 hours/day dominated parts of mid-western and southern highlands and 10 hours/day was recorded over Dodoma district. Compared to the situation during August coverage of maximum hours up to 10 was reduced during September mainly as a result of increased influx of cloud cover activity from the Congo air mass on the western side. Lowest durations around half daylight hours covered western parts of Lake Victoria Basin, parts of northeastern areas, northern coast belt and parts of Udzungwa mountain ranges.



MEAN DAILY WINDSPEED

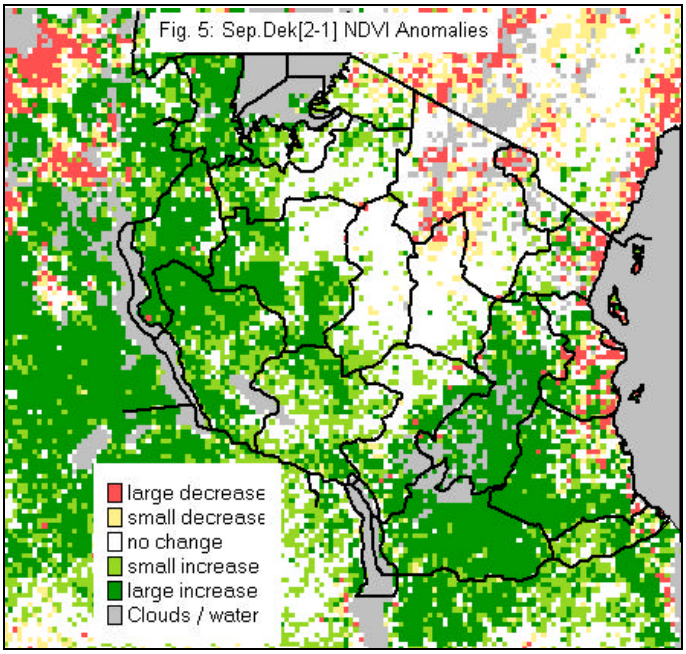
Mean wind run across the country during the month of September ranged from 6.5km/hr to a maximum of just above 13km/hr as shown in Figure 4. The core of maximum wind speed was oriented along the north – south axis and occurred over central and parts of



northeastern areas. Lower wind speeds, around 7km/hr, dominated over southern, southwestern, western and northwestern areas.

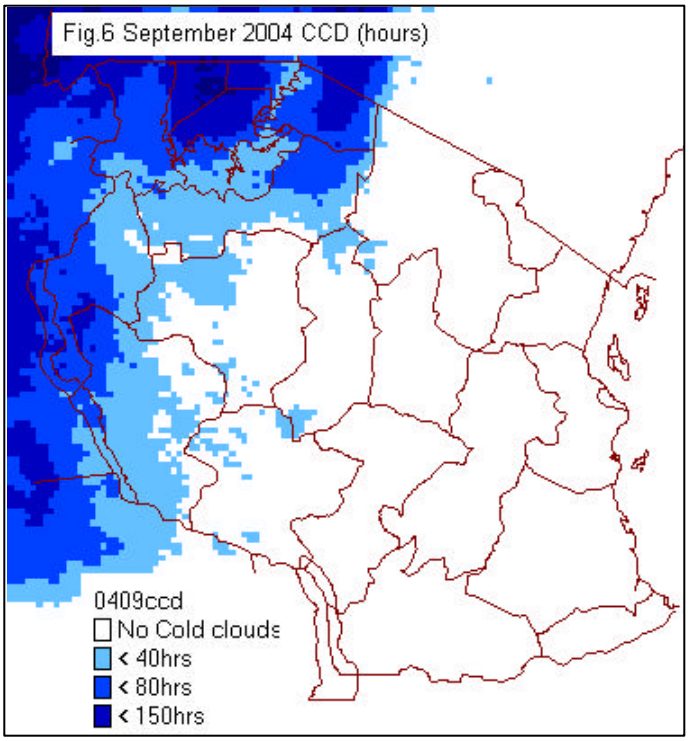
SATELLITE INFORMATION

Figure 5 depicts anomalies of the Normalized Difference Vegetation Index (NDVI) from METEOSAT satellite sensor



indicating the change that occurred between the first dekad of September to that of the second dekad of September.

Notable decreases in the greening index appear to cover parts of the coastal belt and northern areas indicated by the spread of yellow and red colouring. White colouring mostly over central and northeastern areas demarcates areas that recorded no change in the index from dekad one to two. The remaining areas of the country were dominated by increases in the greening index signifying the general trend during September where the vegetation canopy started to sprout in anticipation of the setting in of the rainfall season.



Looking at the Cold Cloud Duration (CCD) figure 6, most of the country was clear of cold cloud cover except for the Lake Victoria Basin and parts of western areas that registered durations in the range of more than 40 hours but less than 150 hours. The spread was an influx of cloud activities from the Congo air mass.

AGROMETEOROLOGY

The dry period continued into September over most parts of the country except for a few parts over western Lake Victoria Basin that registered some soil moisture replenishment. In figure 7, districts with food supply deficits to cover

November 2004 through January 2005 as assessed by the Food Supply Information Team August 2004 mission are painted yellow. To the north of the red dash line are districts in the bi-modal rainfall areas

and to the south – districts in the uni-modal rainfall areas. To-date *vuli* crops (maize and bens) in the early vegetative stage have been reported to be in good state in Kagera region. Over remaining areas of the country farmers are busy anticipating the start of the new growing season.

HYDROMETEOROLOGY

Decline in the water levels in rivers and water reservoirs has been recorded as the dry period continues. Nevertheless, electricity generation has been boosted by the use of natural gas reducing dependence on hydropower. Water for industrial and domestic purposes should be used sparingly.

ENVIRONMENTAL

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

WEATHER OUTLOOK FOR SEPTEMBER - DECEMBER

Forecast model outputs indicate that there is a likelihood of development of warmer than normal sea surface temperatures (SSTs), resulting into a weak *El-Nino* over the equatorial central Pacific Ocean during the next several months. Such events may not affect the climate of the country at the beginning of the season, but could have significant impacts towards the end of the forecast period.

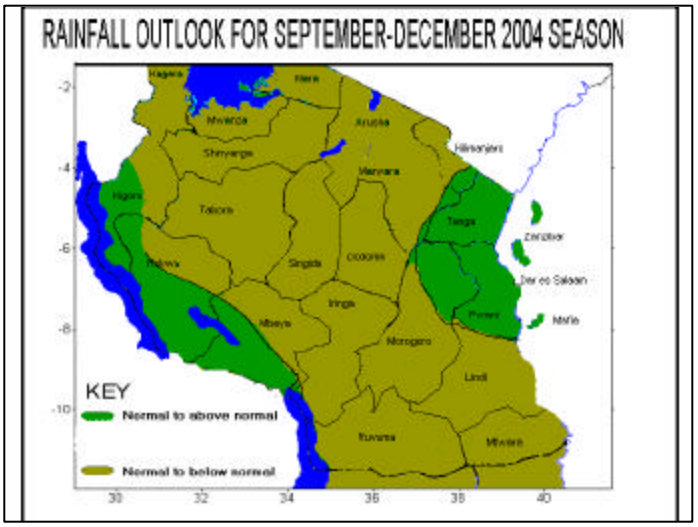
For September – December rainfall season, there is increased likelihood of near normal rainfall over much of the country. However, some areas in the Lake Victoria basin, northeastern highlands, central and southern Tanzania are likely to get below-normal rainfall, while some parts of western, northern coast and isles of Zanzibar and Pemba are likely to get above normal rainfall. It should be noted that heavy and short duration episodic events are common even in below normal rainfall conditions.
It may be recalled that some of the areas such as the eastern parts of Tanzania have experienced rainfall deficit since mid May.

It should also be noted that the September to December rainfall season (vuli) is more significant for the northern sector of the county.

Short Rains (*Vuli*)

The short rains (*Vuli*) season in the northern (bimodal rainfall) sector of Tanzania is due to commence between mid September and mid October 2004. The details are as follows:

Lake Victoria basin: Rains are expected to start during the second week of September in Kagera region and northern part of Kigoma, gradually spreading to other areas (Mwanza and Mara regions) during the fourth week of towards the end of September 2004. These rains are expected to be mainly normal and below normal over some areas.



Northern coastal areas and hinterland: (Dar es Salaam, Tanga, Coast and north Morogoro) and isles of Zanzibar and Pemba. The rains will commence around first week of October and are expected to be mainly normal to with a few areas getting above normal.

Northeastern highlands: (Kilimanjaro, Arusha and Manyara regions) the onset is expected during the third to fourth week of October. The rains in these areas are likely to be mainly normal and below normal in some places.

Seasonal Rains

The western areas: (Tabora, Rukwa, Southern parts of Kigoma and Shinyanga). The rains are likely to set in during the first week of November. These rains are expected to be mainly normal

with some in western, parts of Kigoma and Rukwa regions getting above normal rains while few parts of Tabora and Shinyanga will get below normal rains.

Central, Southern and Southwestern areas: (Singida and Dodoma, Mbeya, Iringa, Ruvuma, Mtwara and Lindi regions). Onset of the seasonal rains over these areas is expected in the third and fourth week of November 2004, with a likelihood of being normal to below normal except for parts of south-western Mbeya region which are expected to receive above normal rainfall.

This Outlook is relevant only for seasonal time scales and over relatively large areas. Local and month-to-month variations may occur.

The Tanzania Meteorological Agency will continue to monitor the evolution of relevant weather systems and issue updates and relevant advisories and additional guidance regularly.

IMPACTS

Areas getting *Vuli* [Lake Victoria basin, northern Kigoma, Arusha, Manyara, Kilimanjaro, Tanga, Coast, Dar e salaam, Zanzibar/Pemba and Northeastern Morogoro region] are expected to receive sufficient moisture for agriculture and pasture.

To utilize the rains well, farmers should adhere to principles of good husbandry including early land preparation, use of appropriate seed, timely planting, implementation of proper plant population and spacing, control of weeds, pests and diseases, fertilizer application and irrigation. Farmers are strongly advised to plant immediately when the rains start.

However, in those areas that were badly hit by drought during the last season, farmers should plant quick maturing varieties.

In central regions (Dodoma, Singida, Tabora) and in southern and western regions (Mtwara, Lindi, Ruvuma, Iringa, Mbeya, Rukwa, Kigoma) where rains will start in November/December farmers should continue with land preparation and input supply activities during the intermediate period.

Farmers are advised to seek further guidance from Agricultural Officers.

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