TANZANIA METEOROLOGICAL AGENCY

MONTHLY WEATHER BULLETIN

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HIGHLIGHT

- **Over bimodal rainfall areas (northern coastal belt including the Isles of Unguja and Pemba, northern areas and the Lake Victoria basin) the rainfall activities from the prevailing synoptic systems highlighted the timely onset of long rains (*masika*).**

SYNOPTIC SUMMARY

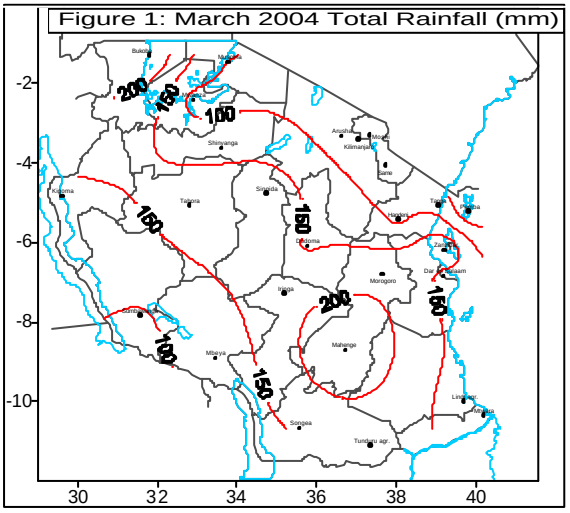
During the month of March, the Arabian ridge and the Azores anticyclone were weak. The St. Helena anticyclone was strong whereas the Mascarene anticyclone was weak. The zonal component of the Inter Tropical Convergence Zone (I.T.C.Z) was active over the southern parts of the country.

WEATHER SUMMARY

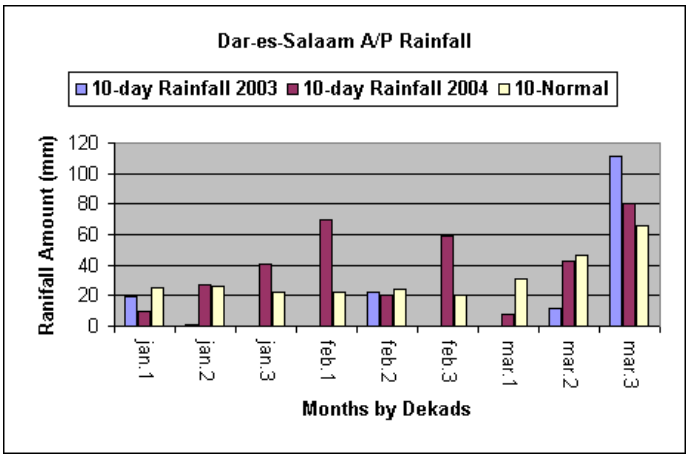
RAINFALL

Rainfall was observed over most parts of the country during March. Over bimodal rainfall areas (northern coastal belt including the Isles of Unguja and Pemba, northern areas and the Lake Victoria basin) the rainfall activities from the prevailing synoptic systems highlighted the timely onset of long rains (*masika*).

Figure 1: March 2004 Total Rainfall (mm)



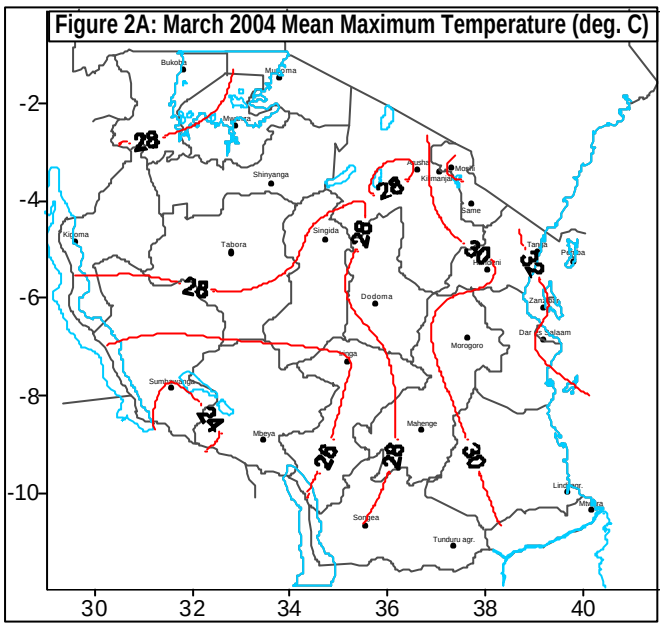
As shown in Figure 1, large rainfall amounts (above 200mm) were observed over some parts of southern Morogoro region and Kagera. Rukwa region that has a unimodal rainfall pattern was among areas that recorded lowest rainfall amounts (below 100mm) during the period.
The general rainfall performance of rains over



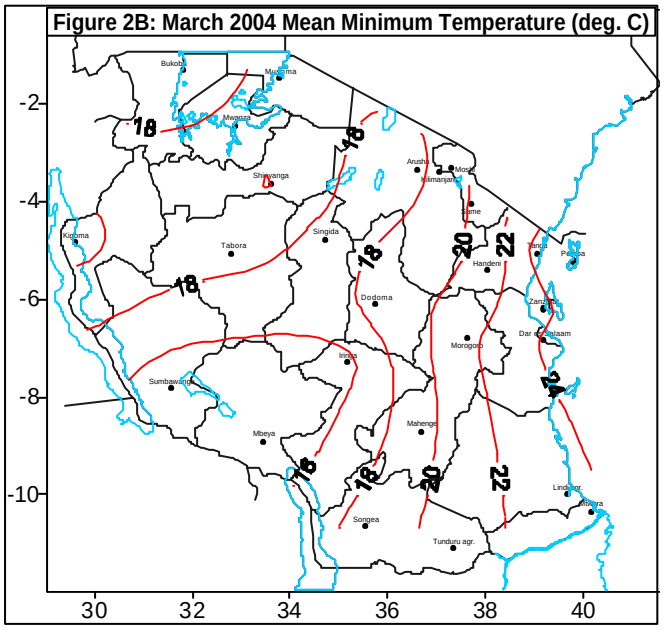
bimodal areas during January, February till March can be depicted by the Dar-es-Salaam A/P rainfall graph shown above. As pointed out in our previous publication – off season rains persisted during January and February due to a series of Tropical cyclones that occurred over the Indian Ocean. The graph shows that rains were more active during 2004 than 2003, and a normal trend was followed for 2004 long rains (masika) started to pick-up during the second dekad of March.

MEAN AIR TEMPERATURE

Mean air temperatures during March ranged between minimum values of around 16°C and maximum values of about 32°C.



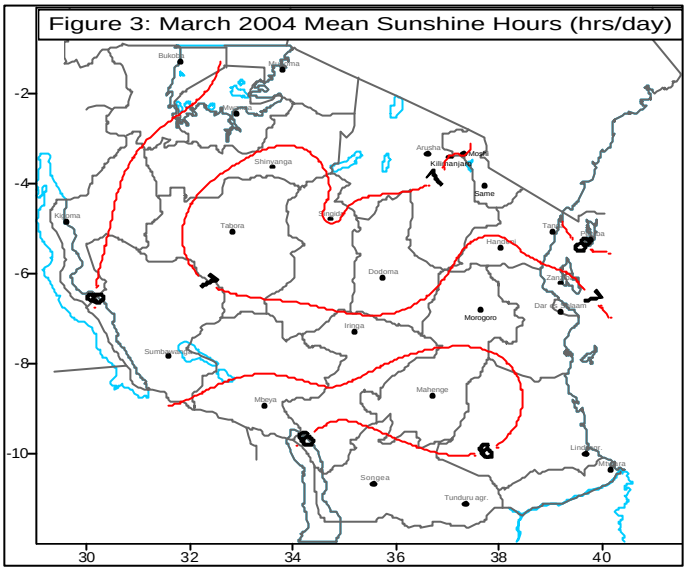
Mean maximum air temperatures ranged from 24°C to 32°C as shown in Figure 2A. The geographical spread shows that lower mean maximum temperatures (around 24°C) concentrated over southwestern highlands. On the other hand, higher mean maximum air temperatures occurred mostly over the eastern sector of the country with maximum values (around 32°C) recorded over the northern coastal belt.



Mean minimum temperatures during the period appear in Figure 2B. Lower values (around 16°C) covered the south-western highland areas. On the other hand, higher values were registered over the coastal areas. Correspondingly higher values (around 24°C) were reported over the coastal belt. Another relatively warmer zone appears over midlands in the regions of Kigoma, Tabora, Shinyanga and parts of southern Lake Victoria Basin where minimum temperatures were above 18°C

MEAN SUNSHINE HOURS

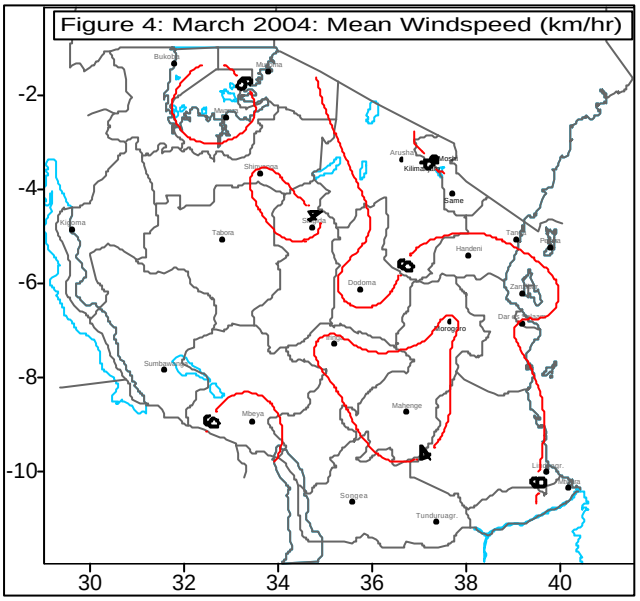
Exposure to direct sunshine at the ground observed during the period is depicted in Figure 3. Durations of about half daylight hours were mostly experienced across the country with a few localised areas recording slightly above 7 hours over parts of central and eastern areas.



Shorter durations of bright sunshine of less than 6 hrs/day were experienced over the highlands of southwestern and northwestern regions.

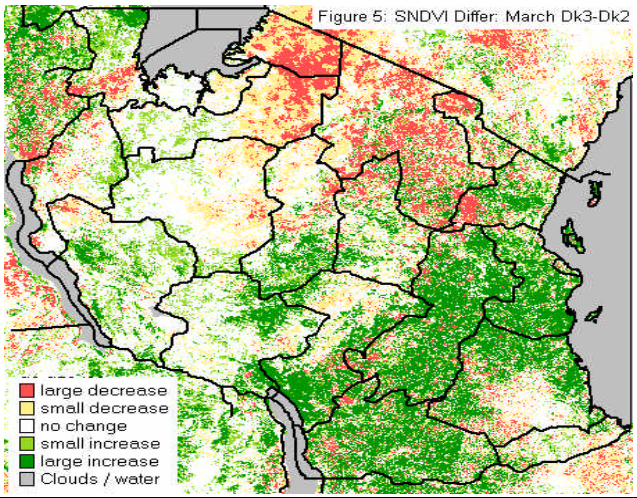
MEAN WINDSPEED

Mean wind speeds across the country ranged from minimum values of about 4km/hr to just above 8km/hr as shown in Figure 4 on the next page. Maximum speeds were reported over parts of northeastern areas. Speeds of below 4km/hr dominated over most parts in central, western and mid-eastern regions. The overall situation of relatively low wind speeds at the surface continued to be experienced as was in February.



SATELLITE INFORMATION

Satellite information during the month appears as in Figure 5 Normalized Difference Vegetation Index (NDVI) anomaly from Spot satellite images depicting the difference between the situation of dekad 3 (average of March 21 – 31) and dekad 2 (March 11 – 20). Large decreases (a tendency of drying up of vegetation) during the period were experienced over the eastern parts of Lake Victoria Basin, Manyara, Arusha and Kilimanjaro regions. On the other hand, notable increases in the greening of vegetation concentrated mostly over parts of southern and eastern areas. Remaining areas that appear in white colour, did not have much change in the vegetation greening which on average had an index of above 50%.



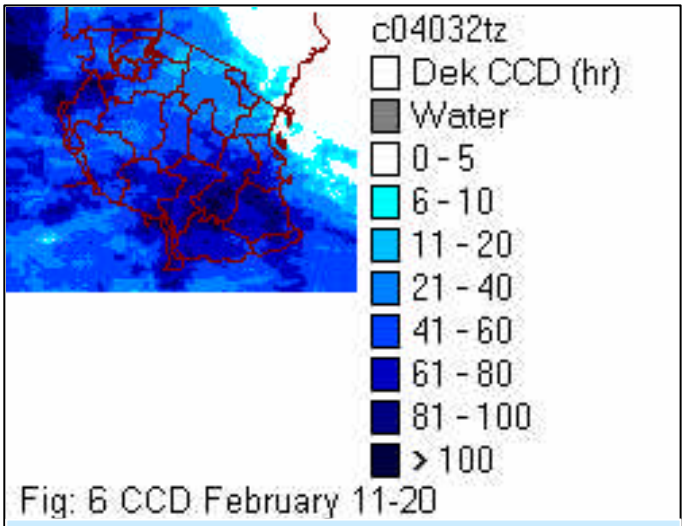


Fig: 6 CCD February 11-20

Cold Cloud Durations (CCD), were as in Figure 6 that depicts the average situation for period 11-20th March. Longer durations above 80hours during the 10-day periods of the month persisted over most of the country. Such areas indicate positions where active cloud development concentrated.

AGROMETEOROLOGY

Decline in soil moisture replenishment benefited mature crops (maize, beans and sorghum) over western regions (Kigoma and western Tabora) where open air-drying of maize and harvesting continued.

Over central (regions of Dodoma, Singida) southwestern areas (regions of Iringa, southern Morogoro, Mbeya, Ruvuma and Rukwa) most of the crops in the fields, generally in good condition were between the late vegetative stage to maturity. Over localized areas episodes of soil moisture deficit hit late sown crops in the flowering stage when demand for ample supply of soil moisture was high.

Paddy, mainly in the vegetative stage across the country after being transplanted featured well especially in areas where high soil moisture levels were maintained either by irrigation or occasional occurrences of rainfall activities.

Cassava was at various stages over the coastal areas and some was being harvested.

State of pastures across the country is featuring well.

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 rains.

SEASONAL WEATHER FORECAST

During the first week of March 2004, TMA issued a press release on the weather outlook for March to May rainfall season. The statement read as follows:

From 25 to 27 February 2004, the thirteenth Climate Outlook Forum was convened in Nairobi, Kenya by the Drought Monitoring Centre, Nairobi (DMNC) to formulate consensus guidance for the March to May rainfall season in the eastern Africa sub- region. Users from disaster management, agriculture, health, livestock, wildlife, and media, among other sectors were active participants in the forum.

PREVAILING SYNOPTIC SYSTEMS

Among the principal factors taken into account were the observed and predicted Sea Surface Temperatures (SSTs) in tropical Pacific Ocean, and over the tropical Atlantic and Indian Oceans.

Forecast model outputs from advanced centres indicate that near normal (neutral) conditions are likely to persist in the equatorial Pacific during the forecast period. The current sea surface temperature (SST) anomalies over northern eastern Atlantic and southern tropical Indian oceans are warmer than average while much of southern eastern Atlantic Ocean is dominated by cooler than average SSTs.

RAINFALL OUTLOOK FOR MARCH TO MAY 2004 SEASON

March to May constitutes an important rainfall season over much of the country. The influence of the current tropical cyclone 'GAFILO' over the adjacent Indian Ocean is likely to bring earlier than normal onset over some parts of the country.

Details of the likely distribution is as follows:

(i) BIMODAL AREAS – MASIKA

1. **Lake Victoria basin: (Kagera, Mwanza, Shinyanga, Mara regions and Northern parts of Kigoma)**

Long rains (Masika) started during the first week of March. The rains are expected to be normal and will last until end of May.

2. **Northern Coastal areas and hinterland**: **(Dar es Salaam, Tanga, Coast and Morogoro North and isles of Zanzibar and Pemba**).

The long rains (Masika) are expected to start during the first to second week of March and will be normal lasting till May 2004.

3. **Northeastern highlands: (Kilimanjaro, Arusha and Manyara regions)**

The onset is expected during the second to third week of March and the rains will be normal to below normal. These rains are expected to last until end of May 2004.

(ii) UNIMODAL AREAS: SEASONAL RAINS

4. **Southern Coast and hinterland (Mtwara and Lindi regions)**

The seasonal rains that started last December are expected to last until mid-April and will be normal to above normal.

5. **The western areas:** (**Tabora, and Southern parts of Kigoma**).

The seasonal rains that started last December are expected to last until mid April and will be normal to above normal.

6. **Central areas:** (**Singida and Dodoma regions)**

The seasonal rains are expected to last till the mid April and shall be normal to below normal.

7. Southwestern areas (Rukwa, Iringa and Mbeya regions)

The seasonal rains are expected to be normal to above normal and will end around end of April 2004.

8. Southern regions (Ruvuma and Morogoro South)

The seasonal rains are expected to last until end of April and will be normal to above normal.

IMPACTS

It should be noted that development of tropical cyclones in the Indian Ocean might influence the rainfall patterns in the country

This Outlook is relevant only for seasonal time scales and 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.

The rains received in January and February more than made up for the deficit of the short rains over parts of Mwanza and Shinyanga regions thereby enabling the sowing of paddy, which is now being transplanted and has good prospects up to harvesting.

However, there were experiences of pockets of long dry spells in eastern Shinyanga (Kishapu, Meatu and Maswa), parts of central areas and northern Iringa, whereby crops were water stressed.

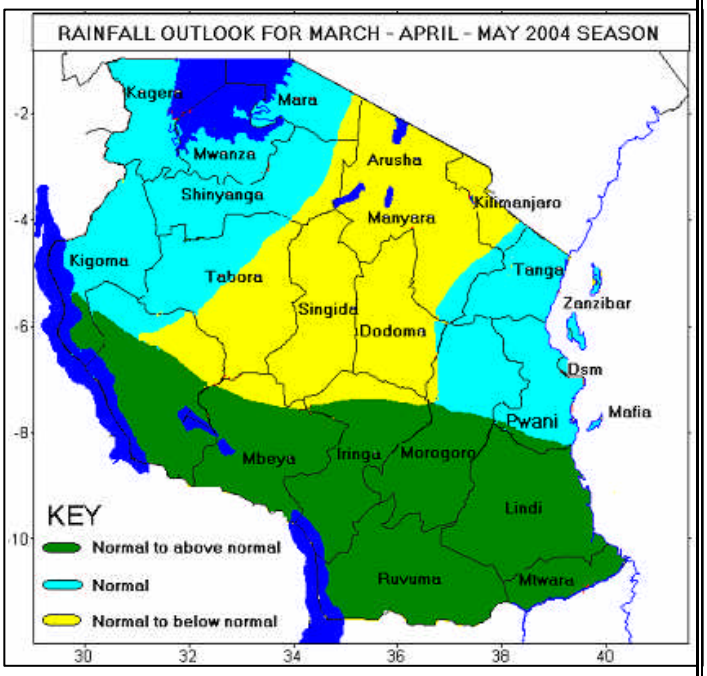
In southern Kagera and Northern Kigoma region, a second planting of beans should be completed by now. Inputs such as fertilizers and pesticides against common pests should be in place.

In coastal areas, northern Morogoro region and Zanzibar, land preparation should be completed and planting normal crop varieties should commence.

Land preparation should be completed and planting with drought tolerant varieties should commence in North Eastern Highlands.

In the rest of the country (Southern coast, Southern, South western, Central and western regions) normal agricultural activities should be done. A special watch on armyworms should be kept.

All in all, farmers are advised to seek further guidance from agricultural officers.



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