

### In This Bulletin

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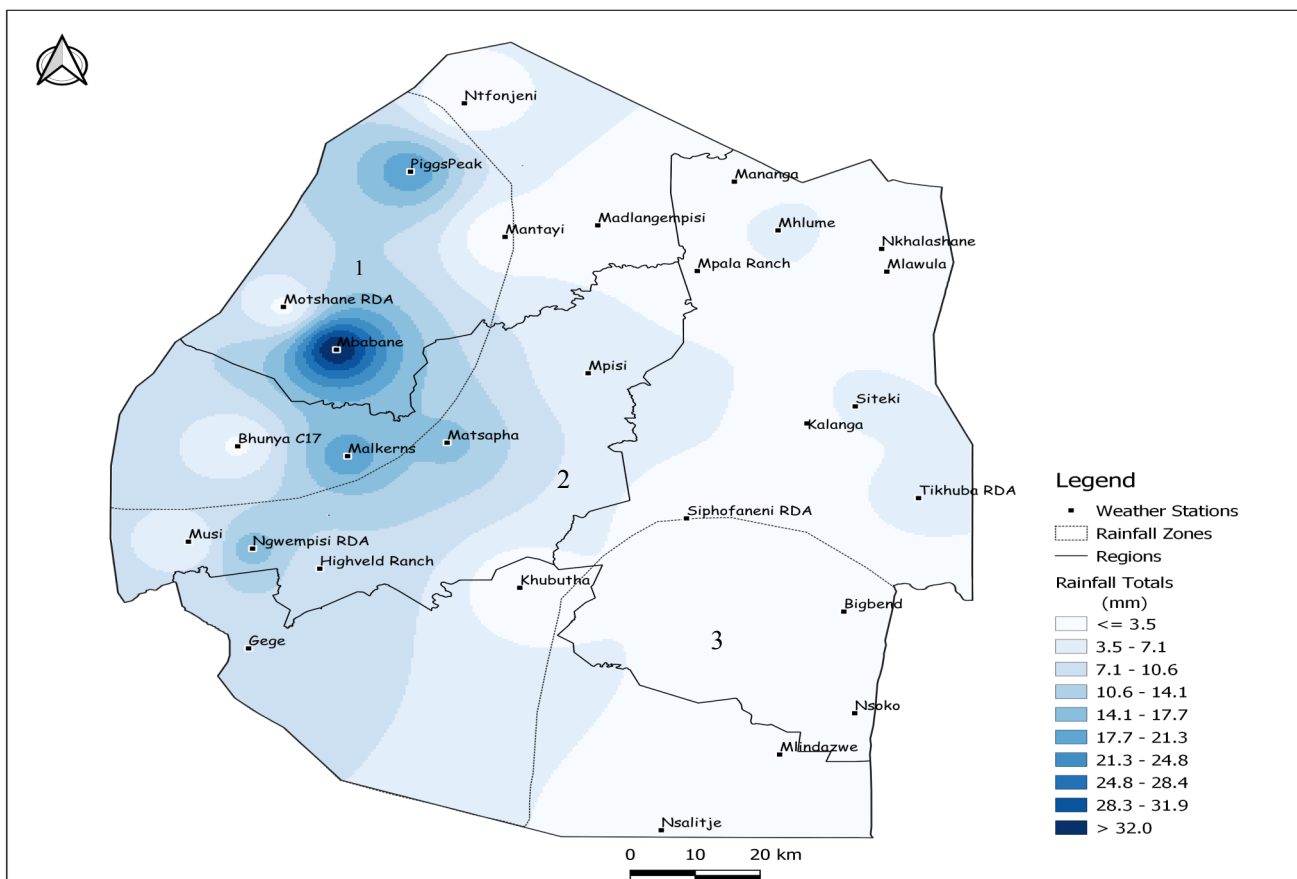
Approved by:

## 1.0 Rainfall

### 1.1 Spatial Distribution

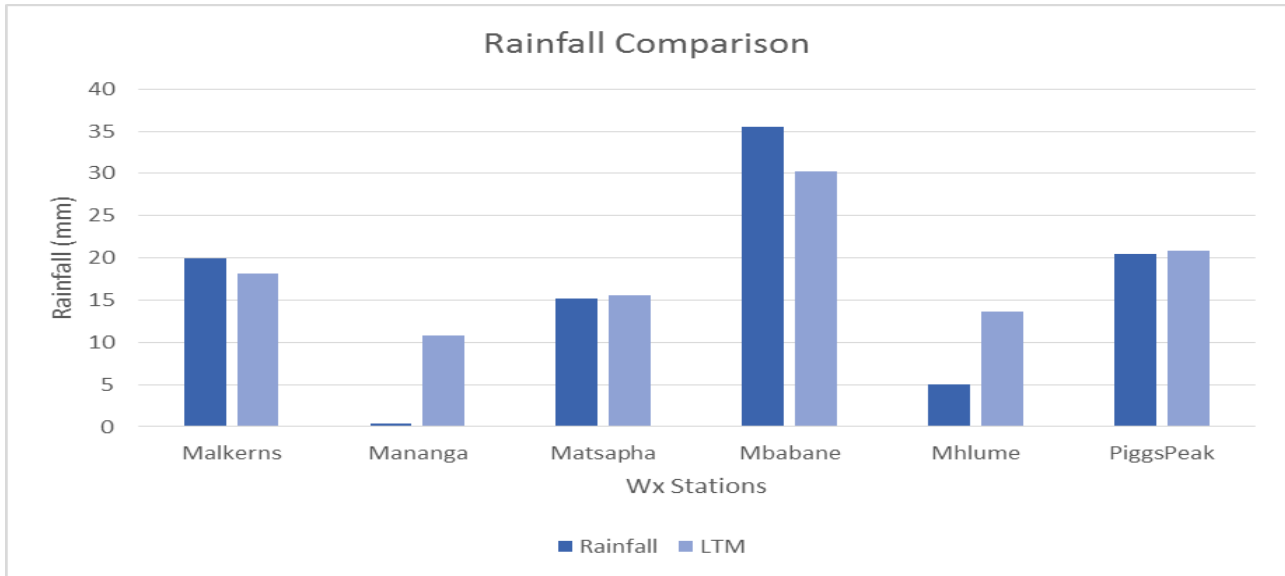
The month of May saw a slight increase of rainfall when compared to the two previous months, even so, the country's average was far less than the country's long term average as many weather stations were recording less than 3.5 mm. Significant rainfall was observed in the traditional wet areas ( rainfall zone 1) along the escarpment followed by the Lubombo plateau. Most areas located along the Lowveld and rainfall zone 3 recorded the least amounts of rainfall. Mbabane recorded the highest amounts of 35.5 mm followed by Piggs Peak 20.55 mm, Malkerns 15.2 mm, Ngwempisi 16 mm and Gege 10.1 mm respectively. Furthermore, all the stations that received significant amounts were normal to above normal when compared to their long term average as shown in fig 1.

**May 2021 Rainfall Distribution**



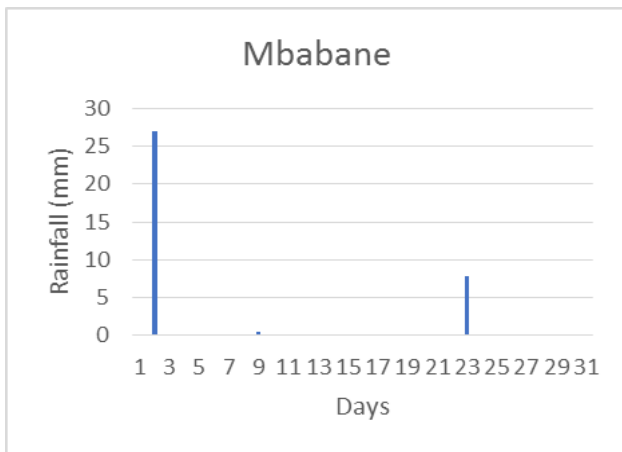
**Fig 1.**

## 1.2 Rainfall Totals Comparison

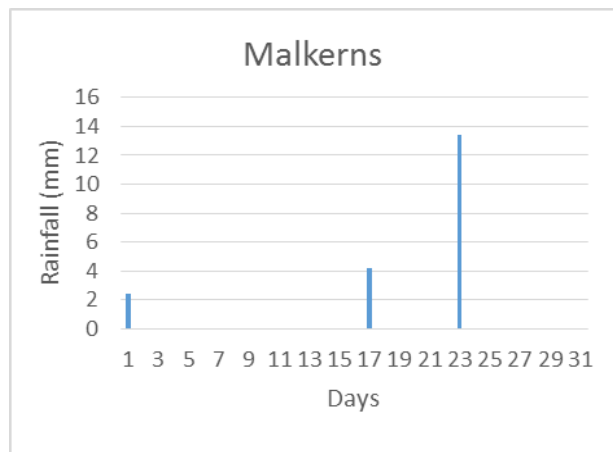


**Fig 2.** The monthly rainfall collection for stations in May countrywide, in comparison with their Long Term Averages.

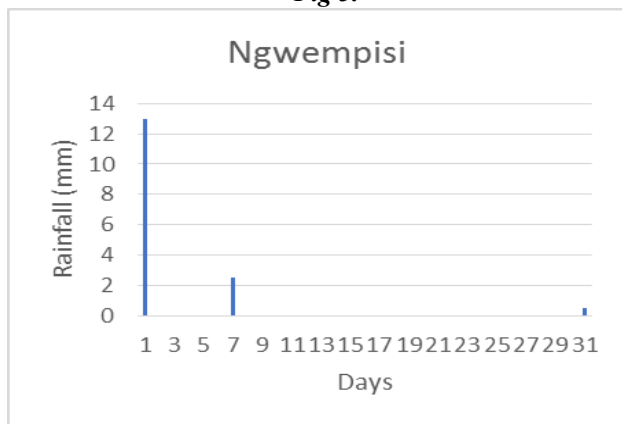
## 1.3 Temporal Distribution of Rainfall



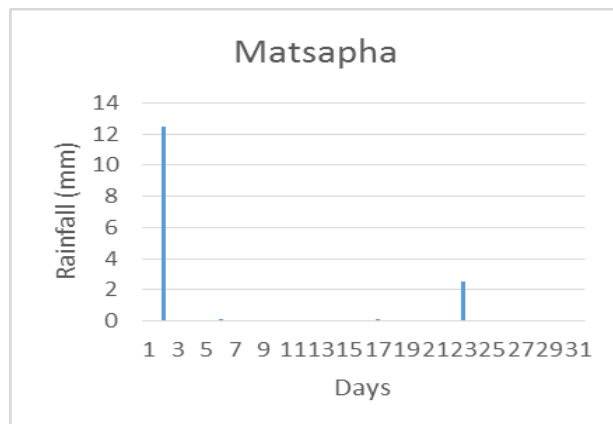
**Fig 3.**



**Fig 4.**



**Fig 5.**



**Fig 6.**

Depicted above, are daily time series graphs for four stations in May. There were only three(3) significant rainfall days and Mbabane recorded the highest single day total (see fig 3 to 6).

### 1.4 Years Comparisons

The month of May 2021 saw a significant increase of rainfall received when compared to the previous two years (2019 and 2020). However, rainfall has been on a decline since 2020 for most weather stations and thus can be attributed to the changing climate. The decline of rainfall is shown by the negative trend line for the two selected stations (Mbabane and Matsapha) in fig 7 and fig 8.

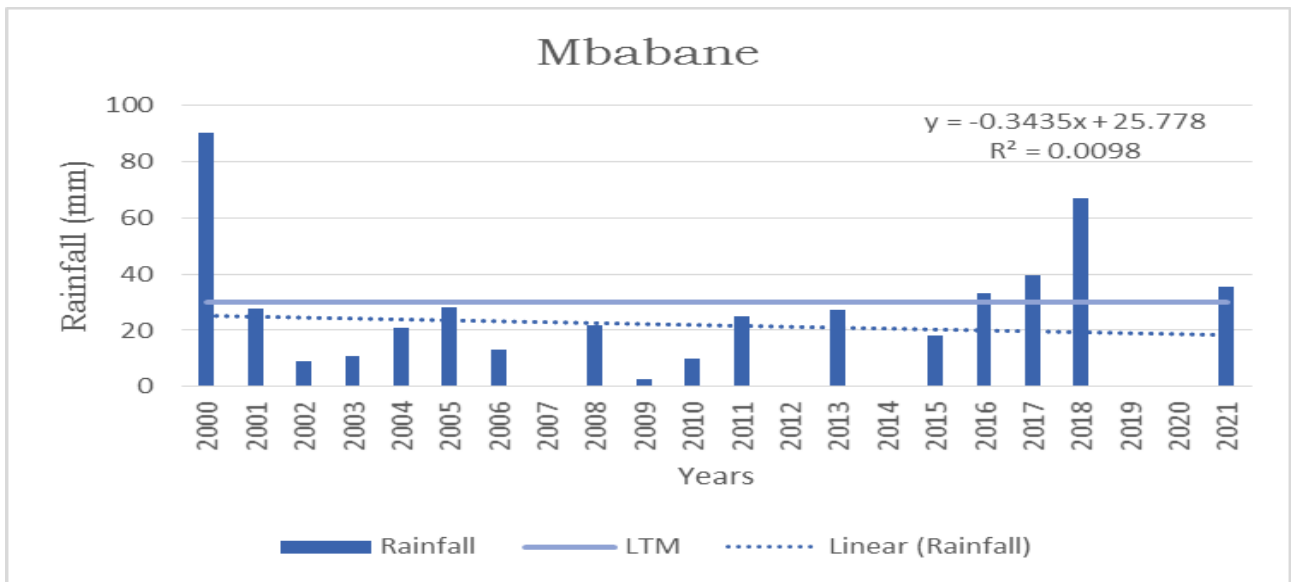


Fig 7.

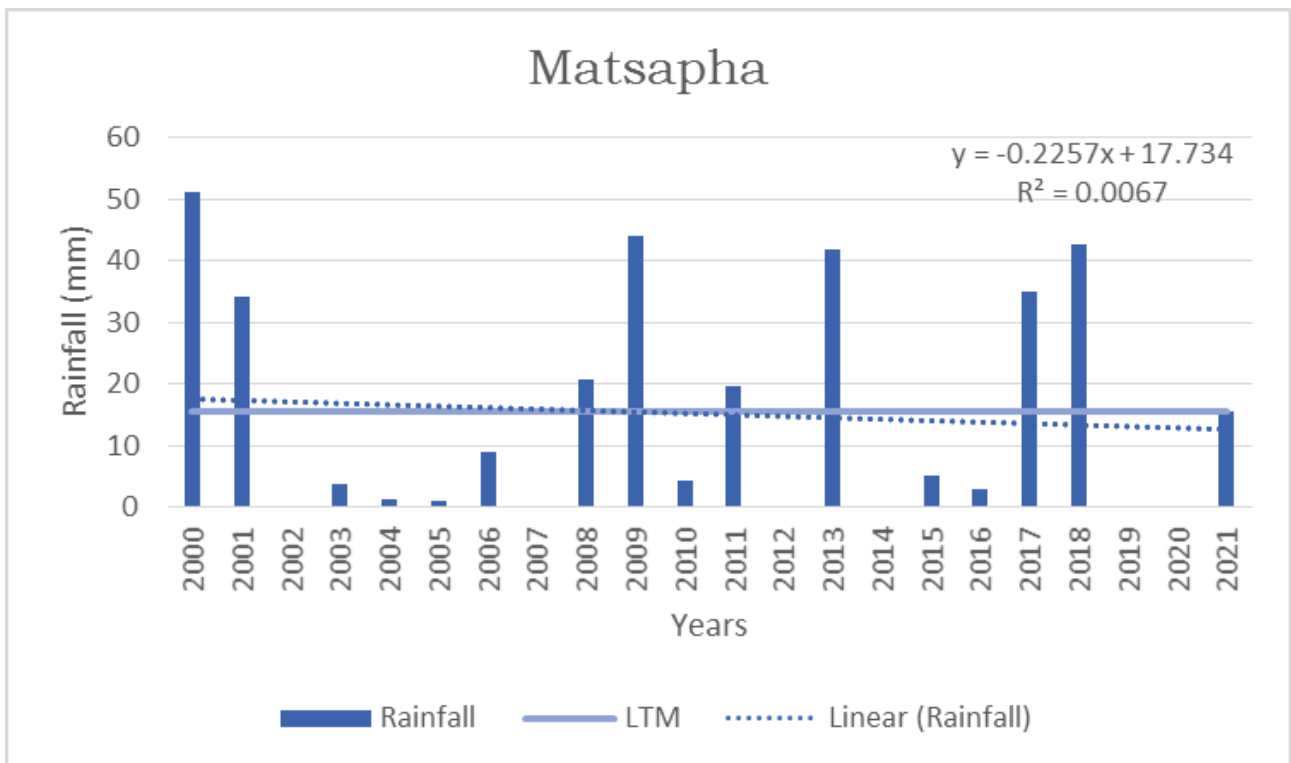
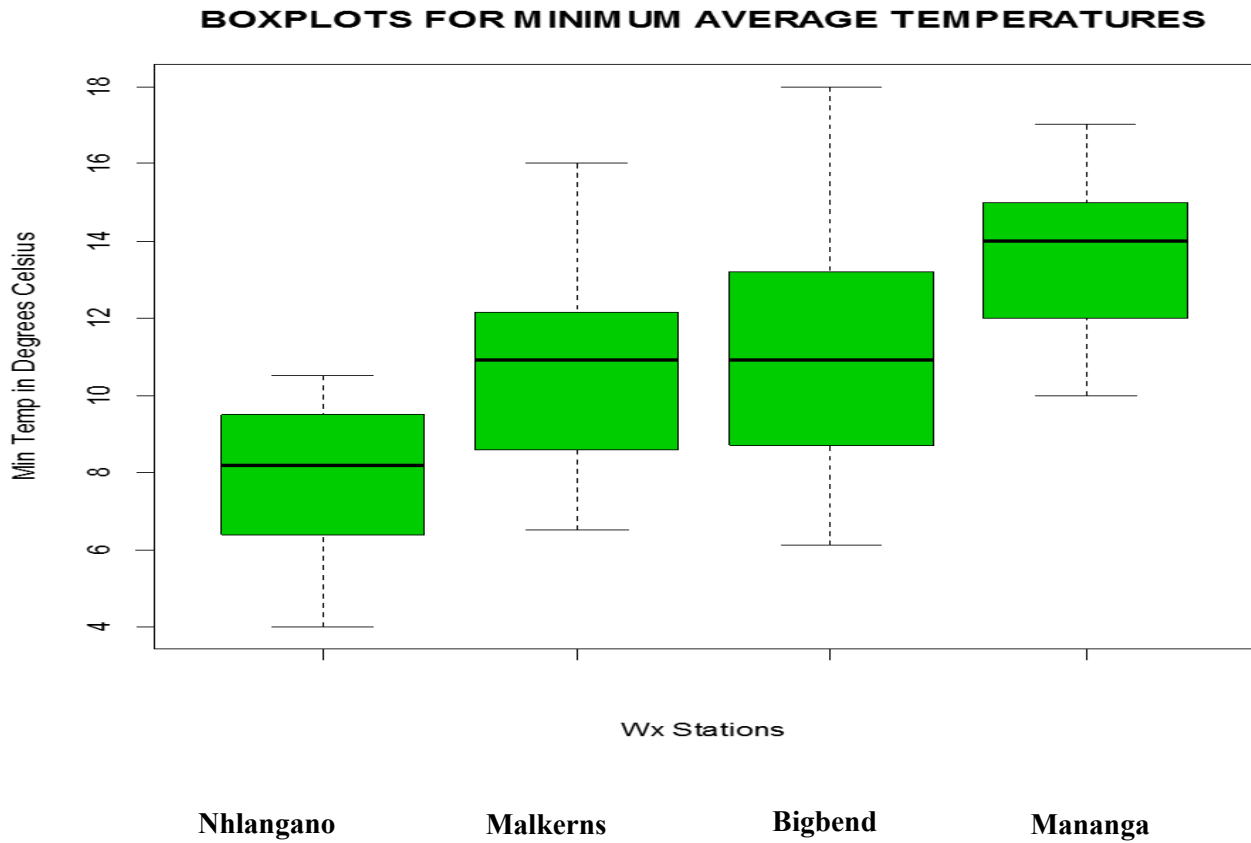


Fig 8.

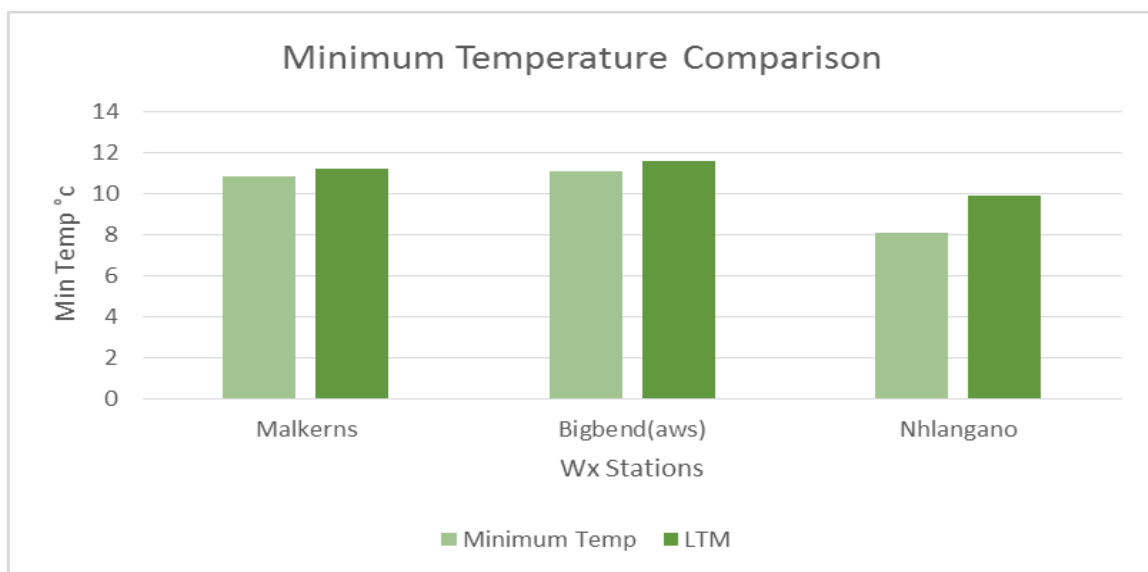
## 2.0 Temperature

### 2.1 Minimum Temperatures

The boxplots in fig 9 depicts the lowest minimum temperature, median temperatures, the highest maximum temperature values recorded for the selected weather stations across the country.



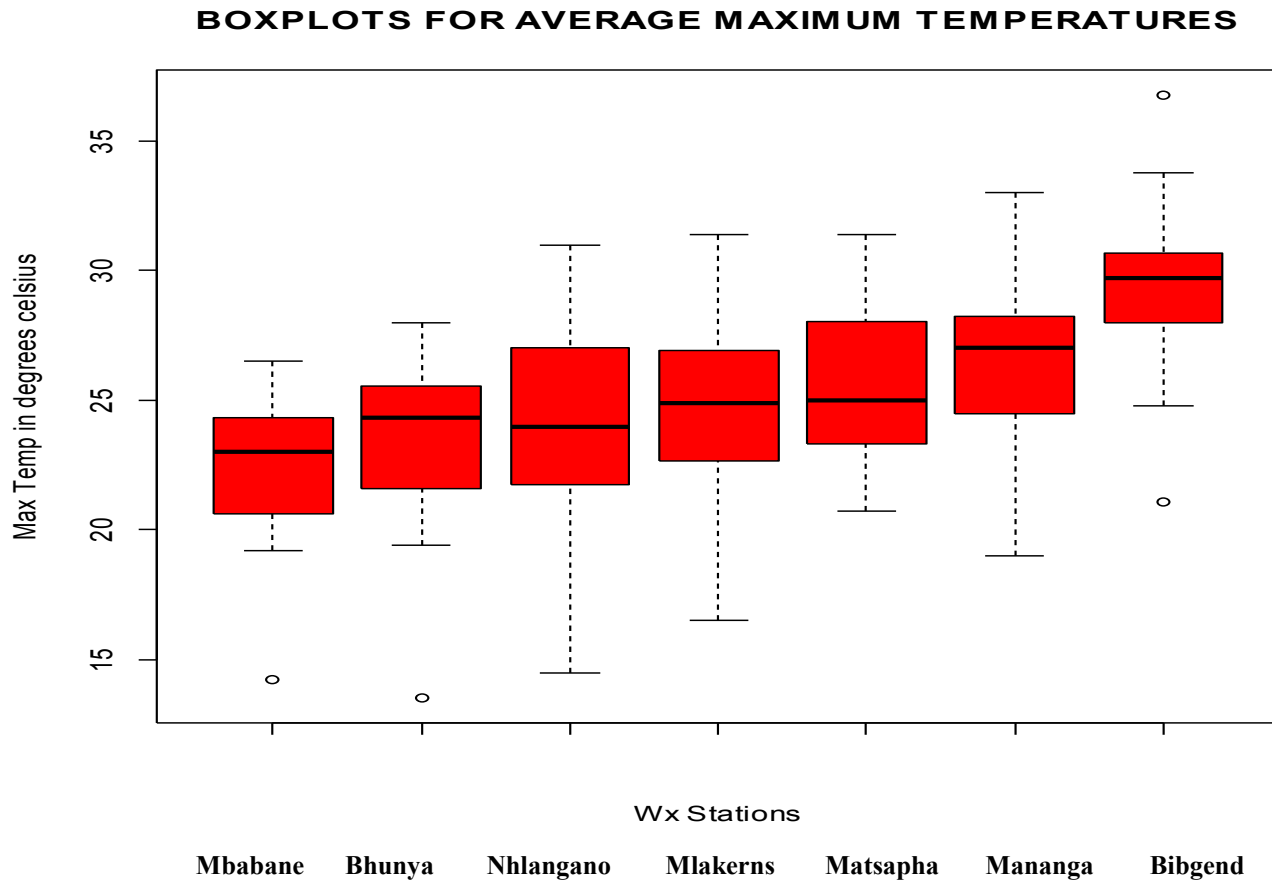
*Fig 9.*



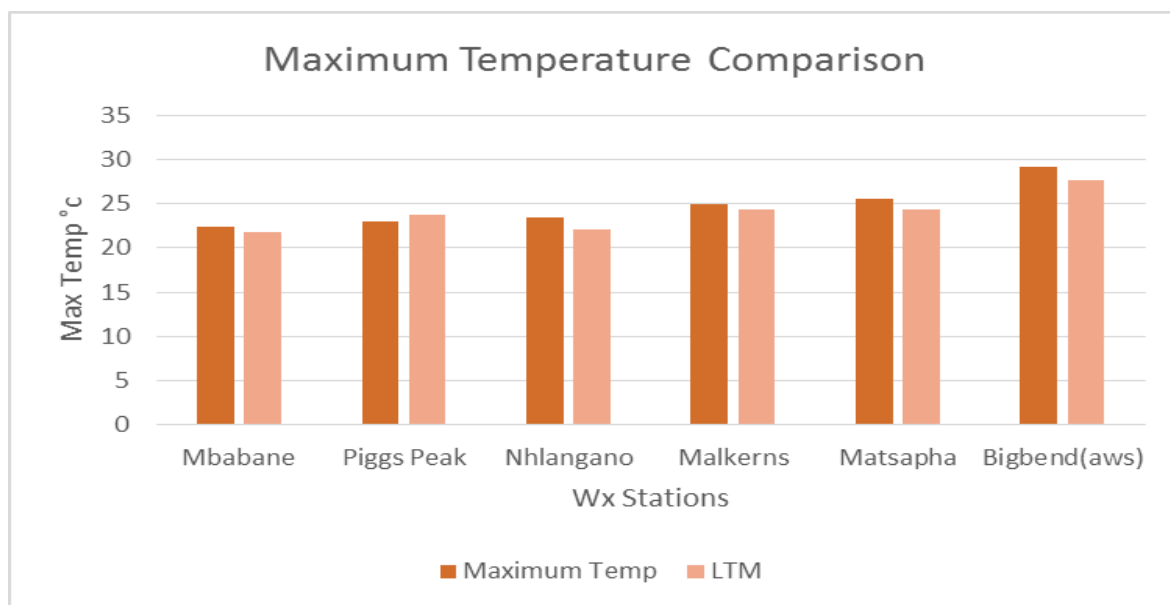
**Fig 10.** The monthly minimum average temperature stations in May countrywide, in comparison with their Long Term Averages. Stations were normal to below normal.

## 2.2 Maximum Temperatures

The boxplots in fig 11 depicts the lowest maximum temperatures, median temperatures, the highest maximum temperatures values and the outliers recorded for the selected weather stations across the country.



*Fig 11.*



**Fig 12.** The monthly maximum average temperature stations in May countrywide, in comparison with their Long Term Averages. All stations were normal above below normal with the exception of Piggs Peak.

## 2.3 Years Comparisons

Maximum temperatures have been on a constant rise since the year 2000. This is depicted by the positive trend line shown for the selected weather stations in fig 13 and 14. Furthermore, the analysis also indicate that the year 2015 was the hottest year and this was attributed by extreme ENSO event that heat most parts of the world and since that year maximum temperature have been normal to above the long term average.

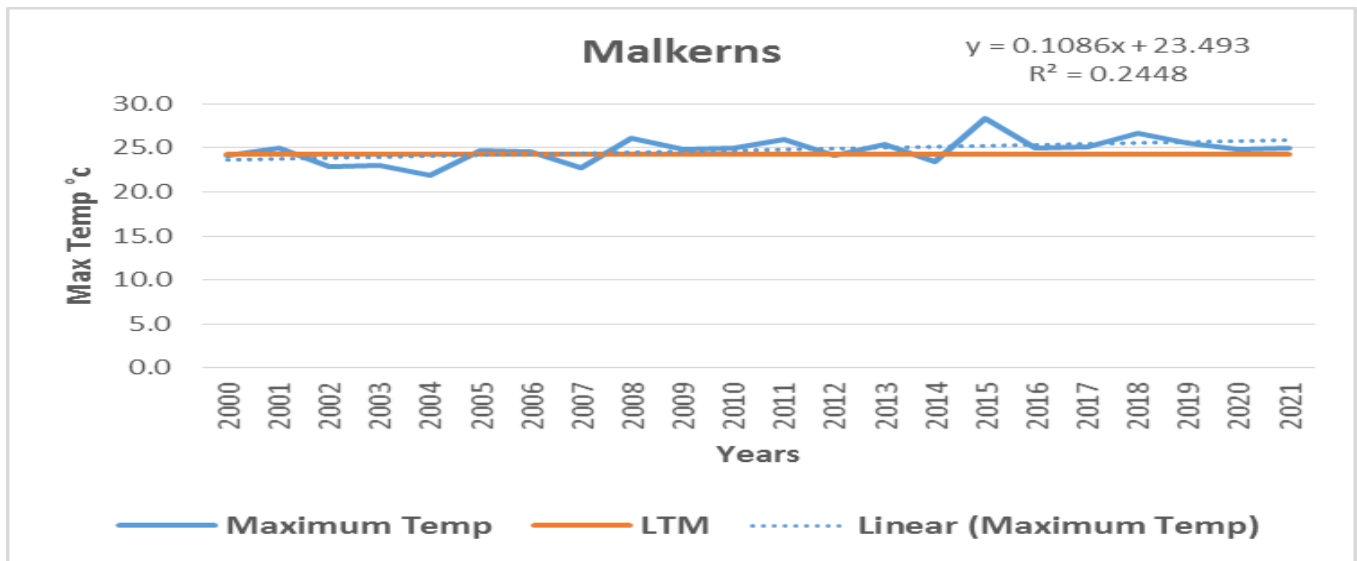


Fig.13

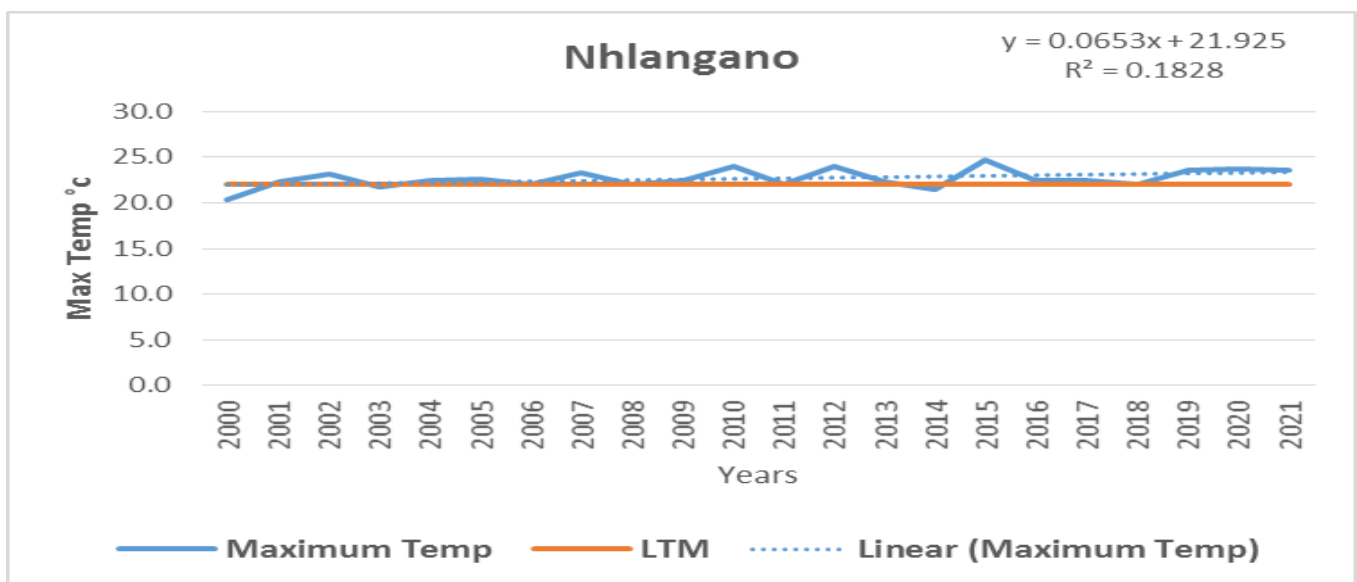
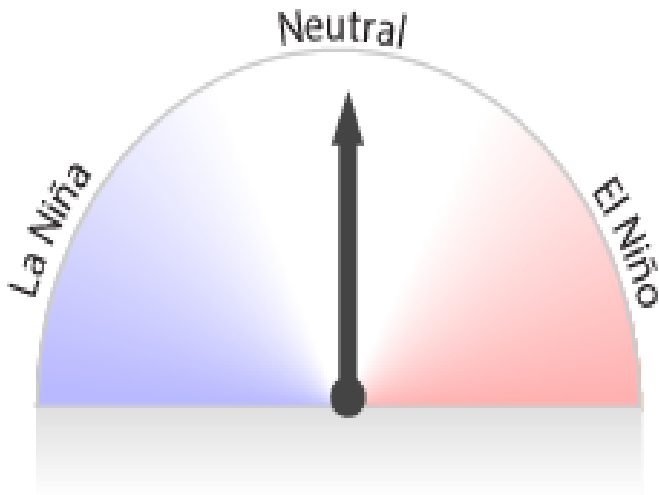
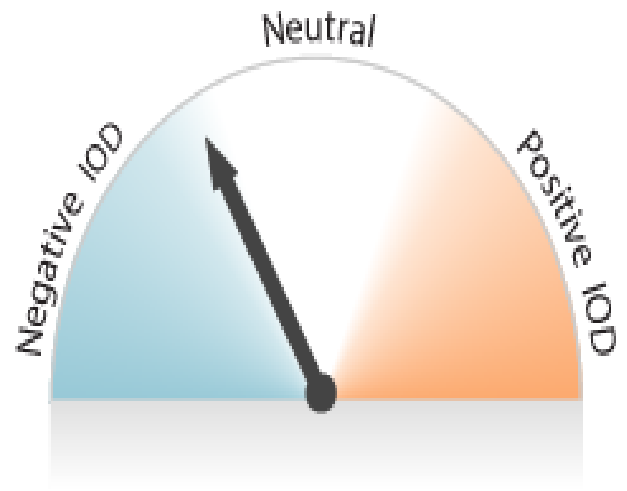


Fig.14

### 3.0 ENSO and IOD Status



*Fig 15.*



*Fig 16.*

The El Niño–Southern Oscillation (ENSO) remains neutral with all oceanic and atmospheric indicators within the neutral range. Most climate model outlooks indicate this neutral ENSO state is likely to continue for the southern hemisphere winter and early spring, with tropical Pacific sea surface temperatures slowly cooling over the coming six months.

The Indian Ocean Dipole (IOD) index has been below the negative IOD threshold for the past five weeks, with no models forecasting a rise in the index any time soon. Large parts of the eastern Indian Ocean are now warmer than average, with cooler than average waters near the Horn of Africa—a pattern typical of a negative IOD.

A negative IOD event is declared when there have been at least eight weeks below the IOD index threshold of  $-0.4^{\circ}\text{C}$ . Negative IOD conditions decreases the chances of above average winter–spring rainfall for parts of southern eastern African region.

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**Additional ENSO information obtained from:**  
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\*National Oceanic and Atmospheric Administration (NOAA).  
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