



## HIGHLIGHTS

- Excessive rains led to flooding of Kasito River in Mzimba north ...
- Prolonged dry spells reduce chances of good harvest in 2015/16 season...
- Slight rainfall recovery expected in the south during 21 to 29 February 2016 ...

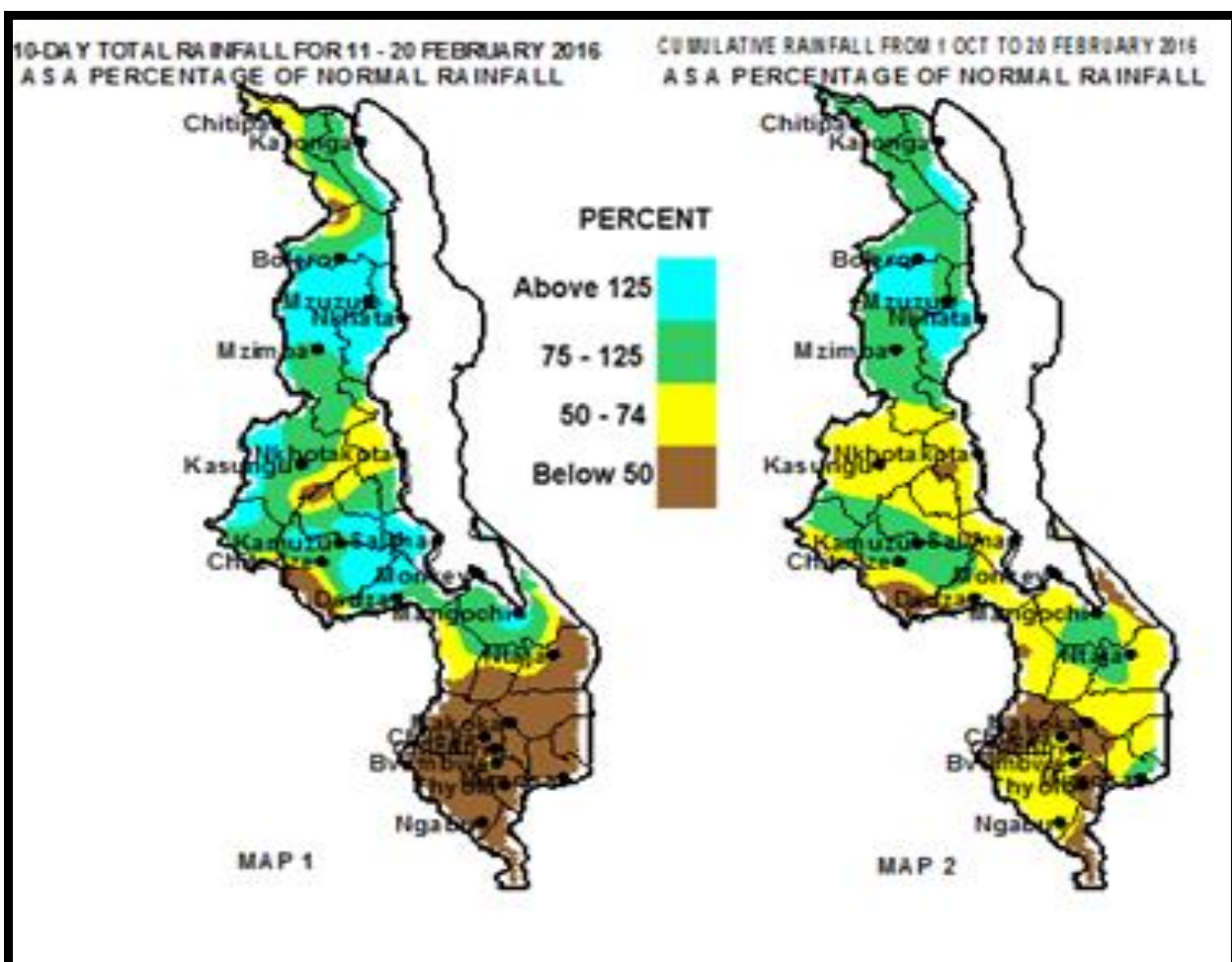


Figure 1: Rainfall Maps for 11 to 20 February 2016

## 1.0 WEATHER SUMMARY

During the period 11 to 20 February 2016, the main rain belt was active over northern and central areas of Malawi. As a result consistent moderate to heavy rainfall was experienced over most areas in northern and central Malawi while the most areas in extreme southern Malawi (Brown colour in Map 1 in Figure 1) continued to experience low rainfall and prolonged dry spells throughout the period.

### 1.1 RAINFALL SITUATION

During the period 11 to 20th February 2016, consistent moderate to heavy rainfall fell over most areas in northern and central Malawi. As a result many stations had reported significant above average cumulative rainfall amounts. Rainfall amounts of 125mm or more in northern Malawi were reported at Zombwe Agric which had recorded 162mm in seven days, Euthini Agric had accumulated 147mm in five days, Bwengu Agric reported 130mm, Chintcheche Agric in Nkhata Bay had 154mm in four days while Rumphu Agric had recorded 128mm in seven days. These excessive rains in Mzimba north caused flooding of Kasito River. In central region such high rainfall amounts were only reported at Nthenje Agric (173mm). In contrast some areas in extreme southern parts of Malawi had experienced low rainfall and prolonged dry spells for more than twenty consecutive days. The areas that have been worst hit by prolonged dry spells are in Nsanje district and include Nsanje Boma and Makhanga. More details are in Table 1.

Map 2 in Figure 1 shows cumulative rainfall performance during the period October 2015 up to 20 February 2016. The map indicates that less than average rainfall (yellow and brown colours) has been received in most parts of southern and central Malawi and more rainfall has been received in northern Malawi. Refer to Map 2 and Table 1 for more details.

### 1.3 AIR TEMPERATURE

During the second ten days of February 2016 hot weather was experienced over most areas in Malawi. The average daily maximum temperatures had ranged from 25.6°C at Dedza to 37.2°C at Ngabu in Chikwawa district. The average minimum temperatures were between 16.7°C and 25°C at Dedza and Ngabu respectively. The highest maximum temperature was 38.5°C recorded at Ngabu in Chikwawa while the lowest temperature was 16.7°C reported at Dedza. For more details refer to Table 2.

### 1.4 WIND SPEEDS

During the period 11 to 20 February 2016 daily average wind speeds measured at a height of two metres above the ground level across Malawi had ranged from 1.4Km per hour at Mangochi to 9.4km per hour at Chileka International Airport. More details are in Table 2.

### 1.5 RELATIVE HUMIDITY

During the period 11 to 20 February 2016, relatively moist air had covered Malawi. The daily average relative humidity values had ranged from 57% at Ngabu in Chikwawa district to 81% at Chitipa and Mzuzu Airport Meteorological Offices. Details are on the Table 2.

### 1.6 SUNSHINE HOURS

The mean durations of bright sunshine hours in Malawi were on average between 6 and 9 hours. The highest mean sunshine hours was recorded in lower Shire districts of Nsanje and Chikwawa. Details are on the Table 2.

## 2. AGROMETEOROLOGICAL ASSESSMENT

During the period 11 to 20 February 2016 consistent good rainfall was confined to northern and central Malawi while low rainfall and prolonged dry spells continued to negatively affect agricultural production in some parts of southern Malawi. Good rains that fell in northern and most parts of central Malawi had supported growth and development of crops, improved water availability, soil moisture reserves and pasture availability. However, high rainfall amounts were reported to have caused flooding of Kasito River and destruction of property including washing away of crop fields in Mzimba north. In contrast, low rainfall and prolonged dry spells that persisted in most parts of southern Malawi had caused soil moisture stress and wilting of crops. In northern half of Malawi maize crop was reported doing well between vegetative and maturity stages.

The official crop production estimates from Ministry of Agriculture, Irrigation and Water Development (MoAIWD) revealed that this season maize production to be lower by 2.0 percent. The first round of 2015/16 Agriculture Production Estimates Survey has projected the national maize production at 2,719,425 metric tons, 2.0 percent lower than the 2014/15 final round estimate of 2,776,277 metric tons. The reduction has been attributed to negative impacts prolonged dry spells.

## 3. PROSPECTS FOR 2015-2016 RAINFALL SEASON

Most climate models predict that El Nino conditions are slowly weakening. However, rainfall outlook for the 2015-2016 season suggest higher than usual chances that northern half of Malawi is likely to receive average to above average rainfall amounts while the southern half of Malawi is expected to receive below average rainfall amounts during the period January to March (JFM) 2016.

## 4. OUTLOOK FOR 21 – 29 FEBRUARY 2016

Models for short and medium range rainfall forecasts suggest that a weak rain belt is likely to oscillate over Malawi during the period 21 to 29<sup>th</sup> February 2016. Therefore expect a slight rainfall recovery over southern Malawi during the last days of February 2016.

**TABLE 1: DEKADAL RAINFALL FOR SELECTED STATIONS FOR 11 TO 20 FEBRUARY 2016**

| ADD                   | RAINFALL STATION     | ACTUAL DEKADAL TOTAL RAINFALL (mm) | DEKADAL NORMAL (EXPECTED) RAINFALL (mm) | ACTUAL TOTAL AS PERCENTAGE OF NORMAL (EXPECTED) RAINFALL | ACTUAL TOTAL RAINFALL TODATE (mm) | NORMAL (EXPECTED) RAINFALL TODATE (mm) | ACTUAL TODATE AS PERCENTAGE OF NORMAL (EXPECTED) RAINFALL | RAINY DAYS $\geq 0.3$ mm |   |
|-----------------------|----------------------|------------------------------------|-----------------------------------------|----------------------------------------------------------|-----------------------------------|----------------------------------------|-----------------------------------------------------------|--------------------------|---|
| <b>KARONGA</b>        | Baka Res. Stn.       | 75.5                               | 63.4                                    | 119                                                      | 379.8                             | 560.9                                  | 68                                                        | 7                        |   |
|                       | Chitipa Met          | 49.1                               | 77.5                                    | 63                                                       | 725.4                             | 638.6                                  | 114                                                       | 7                        |   |
|                       | Karonga Met.         | 54.3                               | 49.1                                    | 111                                                      | 349.5                             | 485.5                                  | 72                                                        | 7                        |   |
|                       | Lupembe              | 86.0                               | 58.4                                    | 147                                                      | 648.5                             | 440.6                                  | 147                                                       | 3                        |   |
|                       | Vinthukutu Agric     | 92.6                               | 58.6                                    | 158                                                      | 756.3                             | 553.4                                  | 137                                                       | 5                        |   |
| <b>MZUZU</b>          | Bolero Met           | 66.1                               | 60.7                                    | 109                                                      | 606.4                             | 455.4                                  | 133                                                       | 6                        |   |
|                       | Bwengu Agric.        | 129.6                              | 66.2                                    | 196                                                      | 628.7                             | 531.9                                  | 118                                                       | 6                        |   |
|                       | Chikangawa forest    | 128.0                              | 75.6                                    | 169                                                      | 769.6                             | 670.4                                  | 115                                                       | 7                        |   |
|                       | Chelinda ( Nyika)    | 17.0                               | 81.0                                    | 21                                                       | 718.9                             | 740.9                                  | 97                                                        | 4                        |   |
|                       | Chintheche Agric     | 154.2                              | 77.4                                    | 199                                                      | 1397.3                            | 809.1                                  | 173                                                       | 4                        |   |
|                       | Ekwendeni Agric.     | 120.9                              | 78.6                                    | 154                                                      | 470.8                             | 566.7                                  | 83                                                        | 7                        |   |
|                       | Euthini Agric.       | 147.0                              | 63.4                                    | 232                                                      | 654.6                             | 534.2                                  | 123                                                       | 5                        |   |
|                       | Mbawa Res. Stn       | 87.2                               | 66.0                                    | 132                                                      | 439.7                             | 573.3                                  | 77                                                        | 6                        |   |
|                       | Mzimba Met           | 60.4                               | 79.3                                    | 76                                                       | 740.7                             | 622.8                                  | 119                                                       | 6                        |   |
|                       | Mzuzu Met.           | 104.8                              | 65.3                                    | 160                                                      | 767.4                             | 593.2                                  | 129                                                       | 8                        |   |
|                       | NkhataBay Met.       | 60.6                               | 62.1                                    | 98                                                       | 852.2                             | 666.4                                  | 128                                                       | 5                        |   |
|                       | Rumpho Boma          | 128.2                              | 65.2                                    | 197                                                      | 723.7                             | 494.8                                  | 146                                                       | 7                        |   |
|                       | Zombwe Agric         | 162.4                              | 62.6                                    | 259                                                      | 719.2                             | 484.8                                  | 148                                                       | 7                        |   |
| <b>KASUNGU</b>        | Dowa Agric           | 97.1                               | 56.4                                    | 172                                                      | 418.1                             | 609.0                                  | 69                                                        | 7                        |   |
|                       | Kasungu Met          | 72.3                               | 63.3                                    | 114                                                      | 421.4                             | 549.5                                  | 77                                                        | 5                        |   |
|                       | Lisasadzi            | 26.6                               | 63.9                                    | 42                                                       | 419.8                             | 611.4                                  | 69                                                        | 4                        |   |
|                       | Malomo Agric         | 40.0                               | 65.7                                    | 61                                                       | 267.0                             | 581.5                                  | 46                                                        | 5                        |   |
|                       | Madisi Agric         | 23.9                               | 75.9                                    | 31                                                       | 437.7                             | 594.9                                  | 74                                                        | 3                        |   |
|                       | Mchinji Boma         | 68.0                               | 74.7                                    | 91                                                       | 479.4                             | 723.5                                  | 66                                                        | 5                        |   |
|                       | Mkanda Met           | 79.9                               | 55.1                                    | 145                                                      | 490.3                             | 623.2                                  | 79                                                        | 6                        |   |
|                       | Mponela Agric        | 94.2                               | 71.5                                    | 132                                                      | 445.4                             | 581.9                                  | 77                                                        | 5                        |   |
|                       | Mwimba Research      | 85.4                               | 72.3                                    | 118                                                      | 369.4                             | 624.9                                  | 59                                                        | 4                        |   |
|                       | Ntchisi Boma         | 84.8                               | 90.3                                    | 94                                                       | 478.7                             | 830.1                                  | 58                                                        | 7                        |   |
|                       | <b>SALIMA</b>        | Dwangwa                            | 31.2                                    | 60.1                                                     | 52                                | 514.8                                  | 722.0                                                     | 71                       | 3 |
| Lifuwu                |                      | 113.8                              | 91.1                                    | 125                                                      | 395.3                             | 793.4                                  | 50                                                        | 5                        |   |
| Salima Met            |                      | 112.7                              | 91.7                                    | 123                                                      | 419.0                             | 774.7                                  | 54                                                        | 6                        |   |
| <b>LILONGWE</b>       | Chileka Namitete     | 19.5                               | 68.3                                    | 29                                                       | 479.7                             | 677.3                                  | 71                                                        | 5                        |   |
|                       | Chitedze Met.        | 47.2                               | 57.7                                    | 82                                                       | 504.7                             | 602.6                                  | 84                                                        | 5                        |   |
|                       | Dzonzi Forest        | 46.9                               | 70.9                                    | 66                                                       | 517.3                             | 707.4                                  | 73                                                        | 5                        |   |
|                       | K.I.A Met            | 53.6                               | 61.9                                    | 87                                                       | 595.5                             | 586.1                                  | 102                                                       | 6                        |   |
|                       | Kasiya Agric         | 106.2                              | 63.6                                    | 167                                                      | 611.6                             | 668.8                                  | 91                                                        | 2                        |   |
|                       | Mlangeni Njolomole   | 34.1                               | 87.2                                    | 39                                                       | 515.5                             | 680.8                                  | 76                                                        | 4                        |   |
|                       | Mtakataka Airwing    | 31.0                               | 62.2                                    | 50                                                       | 126.4                             | 552.1                                  | 23                                                        | 5                        |   |
|                       | Nathenje Agric       | 173.5                              | 73.4                                    | 236                                                      | 713.8                             | 589.5                                  | 121                                                       | 4                        |   |
|                       | Dedza RTC - Met      | 55.2                               | 68.8                                    | 80                                                       | 451.3                             | 722.4                                  | 62                                                        | 6                        |   |
|                       | <b>MACHINGA</b>      | Balaka Township                    | 14.6                                    | 46.6                                                     | 31                                | 397.7                                  | 631.8                                                     | 63                       | 1 |
| Chikweo Agric.        |                      | 8.9                                | 65.1                                    | 14                                                       | 419.7                             | 738.9                                  | 57                                                        | 2                        |   |
| Chingale Agric        |                      | 4.6                                | 68.2                                    | 7                                                        | 387.2                             | 669.5                                  | 58                                                        | 1                        |   |
| Mpilipili (Makanjila) |                      | 83.0                               | 62.7                                    | 132                                                      | 355.9                             | 651.0                                  | 55                                                        | 4                        |   |
| Makoka Met            |                      | 13.4                               | 63.1                                    | 21                                                       | 320.2                             | 703.2                                  | 46                                                        | 4                        |   |
| Mangochi Met.         |                      | 99.6                               | 65.0                                    | 153                                                      | 467.3                             | 483.4                                  | 97                                                        | 3                        |   |
| Monkey Bay Met.       |                      | 58.8                               | 46.7                                    | 126                                                      | 239.6                             | 445.8                                  | 54                                                        | 4                        |   |
| Namiasi Agric         |                      | 45.1                               | 50.6                                    | 89                                                       | 283.2                             | 565.8                                  | 50                                                        | 3                        |   |
| Namwera Agric         |                      | 36.4                               | 61.7                                    | 59                                                       | 255.4                             | 717.0                                  | 36                                                        | 3                        |   |
| Ntaja Met.            |                      | 26.2                               | 56.7                                    | 46                                                       | 455.5                             | 618.5                                  | 74                                                        | 2                        |   |
| Phalula Agric         |                      | 25.7                               | 57.4                                    | 45                                                       | 323.9                             | 605.8                                  | 53                                                        | 2                        |   |
| Toleza Farm           |                      | 41.5                               | 48.6                                    | 85                                                       | 534.0                             | 617.5                                  | 86                                                        | 4                        |   |
| Zomba Agric           |                      | 28.7                               | 70.4                                    | 41                                                       | 590.3                             | 837.6                                  | 70                                                        | 3                        |   |
| <b>BLANTYRE</b>       |                      | Bvumbwe Met.                       | 40.6                                    | 73.8                                                     | 55                                | 550.4                                  | 771.3                                                     | 71                       | 1 |
|                       |                      | Chichiri Met.                      | 23.4                                    | 52.3                                                     | 45                                | 505.2                                  | 920.0                                                     | 55                       | 2 |
|                       | Chileka Airport      | 15.2                               | 50.4                                    | 30                                                       | 327.2                             | 636.9                                  | 51                                                        | 1                        |   |
|                       | Chiradzulu Agric     | 19.6                               | 66.2                                    | 30                                                       | 206.1                             | 710.5                                  | 29                                                        | 3                        |   |
|                       | Chizunga Factory     | 9.3                                | 86.4                                    | 11                                                       | 373.4                             | 897.5                                  | 42                                                        | 3                        |   |
|                       | Lujeri Tea Estate    | 12.0                               | 138.8                                   | 9                                                        | 1333.7                            | 1341.2                                 | 99                                                        | 4                        |   |
|                       | Masambanjati Agric   | 22.1                               | 95.3                                    | 23                                                       | 455.9                             | 873.1                                  | 52                                                        | 3                        |   |
|                       | Mimosa Met.          | 38.7                               | 71.9                                    | 54                                                       | 735.3                             | 939.7                                  | 78                                                        | 3                        |   |
|                       | Mpemba Vet           | 49.5                               | 68.0                                    | 73                                                       | 460.7                             | 793.9                                  | 58                                                        | 2                        |   |
|                       | Mulanje Boma         | 9.6                                | 86.9                                    | 11                                                       | 1037.6                            | 1153.9                                 | 90                                                        | 1                        |   |
|                       | Mwanza Boma          | 22.7                               | 66.0                                    | 34                                                       | 270.4                             | 723.1                                  | 37                                                        | 2                        |   |
|                       | Naminjiwa Agric      | 4.9                                | 71.3                                    | 7                                                        | 466.0                             | 709.5                                  | 66                                                        | 2                        |   |
|                       | Neno Agric           | 17.4                               | 68.8                                    | 25                                                       | 320.0                             | 790.5                                  | 40                                                        | 2                        |   |
|                       | Satemwa Tea Est.     | 43.6                               | 76.1                                    | 57                                                       | 489.0                             | 732.6                                  | 67                                                        | 2                        |   |
|                       | Thuchila Agric       | 20.5                               | 57.8                                    | 35                                                       | 304.5                             | 621.0                                  | 49                                                        | 1                        |   |
|                       | Thyolo Boma          | 6.0                                | 78.7                                    | 8                                                        | N/A                               | 781.3                                  | N/A                                                       | 1                        |   |
|                       | Thyolo Met           | 3.2                                | 73.8                                    | 4                                                        | 508.8                             | 785.7                                  | 65                                                        | 1                        |   |
| <b>SHIRE VALLEY</b>   | Chikwawa Boma        | 1.2                                | 41.5                                    | 3                                                        | 395.0                             | 570.6                                  | 69                                                        | 1                        |   |
|                       | Kasinthula Res. Stn. | 0.0                                | 46.3                                    | 0                                                        | N/A                               | 487.8                                  | N/A                                                       | 0                        |   |
|                       | Makhanga Met         | 0.0                                | 52.0                                    | 0                                                        | 222.8                             | 530.7                                  | 42                                                        | 0                        |   |
|                       | Nchalo               | 0.0                                | 46.4                                    | 0                                                        | 285.2                             | 481.3                                  | 59                                                        | 0                        |   |
|                       | Ngabu Met.           | 0.0                                | 51.3                                    | 0                                                        | 339.7                             | 549.7                                  | 62                                                        | 0                        |   |
| Nsanje Boma           | 0.0                  | 72.5                               | 0                                       | 248.6                                                    | 767.8                             | 32                                     | 0                                                         |                          |   |

**TABLE 2: AGROMETEOROLOGICAL PARAMETERS FOR 11 TO 20 FEBRUARY 2016**

| ADD/<br>STATION         | MAX<br>TEMP<br>(°C) | MIN<br>TEMP<br>(°C) | ABS<br>MAX<br>(°C) | ABS<br>MIN<br>(°C) | WIND<br>SPEED<br>Km/hour | RH<br>% | SUN<br>SHINE<br>HOURS | Eo<br>mm<br>per<br>day | Et<br>mm<br>per<br>day | RAD-<br>TION<br>calcm <sup>-2</sup><br>p/day |
|-------------------------|---------------------|---------------------|--------------------|--------------------|--------------------------|---------|-----------------------|------------------------|------------------------|----------------------------------------------|
| <b>KARONGA ADD</b>      |                     |                     |                    |                    |                          |         |                       |                        |                        |                                              |
| Chitipa                 | 27.5                | 18.3                | 28.8               | 17.6               | 5.4                      | 81      | 5.9                   | 5.9                    | 4.6                    | 8.4                                          |
| Karonga                 | 30.8                | 21.8                | 31.7               | 20.5               | 3.6                      | 74      | 6.3                   | 6.6                    | 5.2                    | 8.7                                          |
| <b>MZUZU ADD</b>        |                     |                     |                    |                    |                          |         |                       |                        |                        |                                              |
| Bolero                  | 28.6                | 18.9                | 30.0               | 17.9               | 3.6                      | 75      | 6.5                   | 6.2                    | 4.9                    | 8.8                                          |
| Mzimba                  | 28.0                | 17.8                | 30.0               | 16.7               | 2.5                      | 75      | 6.0                   | 5.9                    | 4.6                    | 8.4                                          |
| Mzuzu                   | 27.0                | 17.9                | 28.7               | 16.1               | 5.0                      | 81      | 5.8                   | 5.8                    | 4.5                    | 8.3                                          |
| Nkhata Bay              | 31.0                | 21.4                | 32.7               | 19.6               | 2.2                      | 76      | 6.8                   | 6.6                    | 5.2                    | 8.9                                          |
| <b>KASUNGU ADD</b>      |                     |                     |                    |                    |                          |         |                       |                        |                        |                                              |
| Kasungu                 | 29.7                | 19.3                | 32.0               | 18.1               | 4.3                      | 72      | 7.0                   | 6.6                    | 5.2                    | 9.1                                          |
| <b>LILONGWE ADD</b>     |                     |                     |                    |                    |                          |         |                       |                        |                        |                                              |
| Chitedze                | 28.5                | 19.6                | 32.0               | 16.2               | 2.2                      | 76      | 7.1                   | 6.4                    | 5.0                    | 9.1                                          |
| Dedza                   | 25.6                | 16.7                | 27.9               | 13.6               | 8.3                      | 75      | 7.0                   | 6.2                    | 4.9                    | 9.0                                          |
| K I A                   | 26.9                | 18.7                | 30.3               | 15.8               | 4.0                      | 74      | 6.8                   | 6.2                    | 4.9                    | 8.9                                          |
| <b>SALIMA ADD</b>       |                     |                     |                    |                    |                          |         |                       |                        |                        |                                              |
| Salima                  | 30.9                | 22.5                | 32.5               | 20.6               | 3.6                      | 76      | 7.3                   | 4.5                    | 3.4                    | 9.2                                          |
| <b>MACHINGA ADD</b>     |                     |                     |                    |                    |                          |         |                       |                        |                        |                                              |
| Makoka                  | 29.9                | 19.3                | 31.2               | 15.9               | 3.2                      | 69      | 7.0                   | 6.6                    | 5.2                    | 9.0                                          |
| Mangochi                | 32.8                | 23.0                | 35.5               | 21.0               | 1.4                      | 73      | 7.7                   | 7.2                    | 5.8                    | 9.5                                          |
| Monkey Bay              | 31.1                | 23.8                | 32.5               | 21.8               | 5.8                      | 74      | 8.0                   | 7.5                    | 6.0                    | 9.7                                          |
| Ntaja                   | 31.7                | 21.7                | 33.3               | 20.0               | 5.4                      | 68      | 7.9                   | 7.4                    | 5.9                    | 9.6                                          |
| <b>BLANTYRE ADD</b>     |                     |                     |                    |                    |                          |         |                       |                        |                        |                                              |
| Bvumbwe                 | 27.6                | 18.9                | 29.4               | 17.5               | 5.0                      | 68      | 8.9                   | 7.1                    | 5.6                    | 10.3                                         |
| Chichiri                | 29.3                | 19.4                | 31.3               | 17.4               | 3.6                      | 66      | 8.5                   | 7.1                    | 5.6                    | 10.0                                         |
| Chileka                 | 31.7                | 20.7                | 33.5               | 17.6               | 9.4                      | 63      | 8.9                   | 8.0                    | 6.5                    | 10.3                                         |
| Mimosa                  | 32.3                | 20.0                | 34.3               | 16.6               | 4.0                      | 65      | 8.5                   | 7.4                    | 5.9                    | 10.0                                         |
| <b>SHIRE VALLEY ADD</b> |                     |                     |                    |                    |                          |         |                       |                        |                        |                                              |
| Ngabu                   | 37.2                | 25.0                | 38.5               | 24.4               | 8.6                      | 57      | 9.0                   | 9.2                    | 7.5                    | 10.3                                         |

**Glossary of some terms on this table**

- Eo = Potential Evaporation, Et = Potential Evapotranspiration and RH = Relative Humidity
- Mean Temperature of the day =(Max of the day + Min of the same day )/2
- ABS Max (Min) = Absolute Maximum (minimum) is the highest (lowest) of maximum (minimum) temperatures observed for a given number of days (calendar month) of a specified period of months (years).
- To convert Kilometers per hour (Km/hr) to meters per second (mps) = (Km/Hr)/3.6