# NATIONAL METEOROLOGY AGENCY Agrometeorological Bulletin

### MONTHLY AGROMETEOROLOGICAL BULLETIN

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#### FOREWARD

This Agro met Bulletin is prepared and disseminated by the National Meteorological Agency (NMA). The aim is to provide those sectors of the community involved in Agriculture and related disciplines with the current weather situation in relation to known agricultural practices.

The information contained in the bulletin, if judiciously utilized, are believed to assist planners, decision makers and the farmers at large, through an appropriate media, in minimizing risks, increase efficiency, maximize yield. On the other hand, it is vital tool in monitoring crop/ weather conditions during the growing seasons, to be able to make more realistic assessment of the annual crop production before harvest.

The Agency disseminates ten daily, monthly and seasonal weather reports in which all the necessary current information's relevant to agriculture are compiled.

We are of the opinion that careful and continuous use of this bulletin can benefit to raise ones agro climate consciousness for improving agriculture-oriented practices. Meanwhile, your comments and constructive suggestions are highly appreciated to make the objective of this bulletin a success.

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#### አህፅሮት

#### እ.ኤ.አ ጁን 2022

ባለፈው የጁን የመጀመሪያዉ አስር ቀናት ወደ ሀገራችን ይገባ የነበረዉ ዕርሞበት አዘል አየር በአብዛኛዎቹ ክረምት ተጠቃሚ የሀገሪቱ አካባቢዎች ላይ ተጠናክሮ የነበር ሲሆን በተለይም በምዕራብ አጋማሽ ላይ ይበልዋ ከመጠናከሩ ጋር በተደደዘ በአንዳንድ የምዕራብ አማራ፣ ምዕራብ ኦሮሚደ፣ በደቡብ ምዕራብ ኢትዮጵደና ጋምቤላ አካባቢዎች ላይ ከባድ ዝናብ እንዲኖር ከፍተኛ ሚና ነበረዉ፡፡ ከዚህም ,ጋር ተያይዞ የነበረዉ ዝናብ የአፌር ውስጥ እርጥበትን ከማሻሻል አንፃር አስቀድመው የተዘሩና በተለያየ የዕድገት ደረጃ ላይ ለሚገኙ የበልግም ሆነ የረጅም ጊዜ የመኸር ሰብሎች ፤ለመኸር የእርሻ ስራ እንቅስቃሴ፣ ለዘር፣ ለማሳ ዝግጅት እንዲሁም ለተለያዩ የቋሚ ተክሎችና የጓሮ አትክልቶች የውሀ ፍላጎታቸውን ከማሟላት አንፃር ከፍተኛ ጠቀሜታ ነበረዉ። ከዚህ በተጨማሪ በአርብቶ አደርና በከፊል የአርብቶ አደር አካባቢዎች የነበረው አንስተኛ የእርዋበት ሁኔታ ለግጦሽ ሳርና ለመጠጥ ውኃ አቅርቦት አዎንታዊ አስተዋፅዖ ነበረው። እንዲሁም በአንዳንድ አካባቢዎች ላይ የነበረው ከባድ ዝናብ፤ እንዲሁም ባሳለፍናቸው ቀናት በተከታታይ ዝናብ በማግኘት ላይ በነበሩ ቦታዎች ላይ የአፈር ውስዮ እርዮበት መብዛት እና በአንዳንድ በታዎች ላይ ለወንዝ መሙላትና ለነርፍ ተጋላም በሆኑ አካባቢዎች ላይ የተርፍ መከሰት የነበረ ቢሆንም በግብርናዉ አንቅስቃሴ ላይ ያን ያሀል ያደረሰዉ አሉታዊ ተፅዕኖ አልነበረም፡፡ በሌላ በኩል በበልግ አብቃይ አካባቢዎች የነበረዉ ደረቅ ሁኔታ የደረሱ የበልግ ሰብሎችን ለመሰብሰብ ዋሩ ጎን ነበረዉ ፡፡

ባለራው የጁን የሁለተኛ አስር ቀናት ወደ ሀገራችን ይገባ የነበረዉ ዕርጥበት አዘል አየር በአብዛኛዎቹ ክረምት ተጠቃሚ የሀገራቱ አካባቢዎች ላይ ተጠናክሮ የነበር ሲሆን በተለይም በምዕራብና ደቡብ ምዕራብ የሀገራቱ አካባቢዎች ላይ ይበልጥ ከመጠናከራቸዉ ጋር በተያያዘ በቤንሻንጉል፣ በምዕራብ ኦሮሚያና ምዕራብ አማራ አንዳንድ ቦታዎች ላይ አልፎ አልፎ ባሉት ቀናት ቅዕበታዊ ነርፍ የማስከተል አቅም ያለዉና እስከ 135 ሚ.ሜ የሚደርስ ከባድ ዝናብ ተመዝግቧል፡፡ ከዚህም ጋር ተያይዞ የነበረዉ ዝናብ የአፌር ውስጥ እርጥበትን ከማሻሻል አንፃር አስቀድመው የተዘሩና በተለያየ የዕድንት ደረጃ ላይ ለሚገኙ የበልግም ሆነ የረጅም ጊዜ የመኸር ሰብሎች ፣ለመኸር የእርሻ ስራ አንቅስታሴ፣ ለዘር፣ ለማሳ ዝግጅት እንዲሁም ለተለያዩ የቋሚ ተክሎችና የጓሮ አትክልቶች የውሀ ፍላንታቸውን ከማሟላት አንፃር ከፍተኛ ጠቀሜታ ነበረዉ፡፡ ከዚህ በተጨማሪ በእርብቶ አደርና በክራል የአርብቶ አደር አካባቢዎች የነበረው አንስተኛ የእርጥበት ሁኔታ ለግጦሽ ሳርና ለመጠጥ ውኃ አቅርቦት አዎንታዊ አስተዋዕዖ ነበረው፡፡ እንዲሁም በአንዳንድ አካባቢዎች ላይ የነበረው ከባድ ዝናብ፤ እንዲሁም ባሳለፍናቸው ቀናት በተኪታታይ ዝናብ በማግኘት ላይ በነበሩ ቦታዎች ላይ የአፌር ውስጥ እርጥበት ውርብት

ባሳለፍነው የጁን ወር የመጨረሻዎቹ አስር ቀናት ለክረምት ዝናብ መኖር አመቺ ሁኔታን የሚፈዋሩ የሚቲዎሮሎጂ ገጽታዎች የተሻለ ጥንካሬ የነበራቸው በመሆኑ በአብዛኛው የክረምት ዝናብ ተጠቃሚና የመኸር ሰብል አብቃይ አካባቢዎች ላይ ብዙ ቦታዎችን የሸራነ እርጥበታማንት እንደነበራቸው ከተለያዩ የሀገሪቱ ክፍሎች የተሰበሰቡና የተኑተኑ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ፡፡ ይህም የተገኘው እርዋበት ለመኸር የእርሻ ስራ እንቅስቃሴ አዎንታዊ ሚና የነበረው ሲሆን አስቀድመው ለተዘሩም ሆነ በዘር ላይ ለሚገኙ እንዲሁም በምዕራብና በደቡብ ምዕራብ የሀገሪቱ ክፍሎች ላይ ቀደም ብለው ለተዘሩ ለረጅም ጊዜ ሰብሎች የየቀኑን ውሃ ፍሳጎታቸውን ከማሟላት አንጻር አዎንታዊ ሚና ነበረው:: በተጨማሪም ምስራቃዊ የሀገሪቱን አካባቢዎችን ጨምሮ የሰሜን ሱማሌ፣ ሐረሪና ድሬዳዋ እንዲሁም በደቡባዊ የአፋር ክፍል ለሚገኙ የአርብቶ አደሮችና የከፊል አርብቶ አደሮች የተገኘዉ እርዋበት ለሰው ሰራሽም ሆነ የተፈዋሮ ምንጮችን ከማንለበቱም በላይ የተሻለ የመጠዋ ውሃና የግጦሽ ሳር አቅርቦት እንዲኖር አዎንታዊ ሚና ነበረው፡፡ በአንጻሩ ተጠናክሮ ከነበረው የሚቲዎሮሎጄ ገጽታ አንጻር በአንዳንድ ለንርፍ ተጋሳም በሆኑ አካባቢዎች ላይ የነበረው ከባድ ዝናብ የሳርፍ ክስተት እንዲኖር ያደረገ ሲሆን በሌላ በኩል ደግሞ ከነበረው ተከታታይ ዝናባማ ቀናት ጋር ተያይዞ በተወሰኑ አካባቢዎች ላይ መጠነኛ የአፈር ውስጥ እርዋበት መብዛት ክስተት ተስተውሏል::

ባሳለፍነው የጁን ወር ለክረምት ዝናብ መኖር አመቺ ሁኔታ የሚፈዋሩ የአየር ሁኔታ ክስተቶች ከዕለት ወደ ዕለት ተጠናክረው የተስተዋሉ ሲሆን፣ በሂደትም ከደቡብ ምዕራብ ወደ ተለያዩ የክረምት ዝናብ ተጠቃሚ የሀገሪቱ አካባቢዎች በመስፋፋት አብዛኛውን ቦታ ያዳረሰና በመጠንም ሆነ በስርጭት ረገድ እየተሻሻለ የመጣበት ሁኔታ እንደነበረ ከተለያዩ የሀገሪቱ ክፍሎች የተሰበሰቡና የተነተኑ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ፡፡ በተጨማሪም አልፎ አልፎ ባሉት ቀናት በአንዳንድ የግብርና ሚቲዎሮሎጂ ጣቢያዎች ላይ ከባድ መጠን ያለዉ ዝናብ ተመዝግቧል። ይህም የተገኘው ዝናብ የአፌር ውስዋ እርዋበትን ከማሻሻልም አልፎ ከጁን ጀምሮ የዘር ጊዜና የማሳ ዝግጅት በሚካሄድባቸው አካባቢዎች በወቅቱ ለመዝራት አመቺ ሁኔታ የነበረ ሲሆን፣ ቀደም ብለው ለተዘሩ እንደ በቆሎና ማሽላ ለመሳሰሉ የረጅም ጊዜ የመኸር ስብሎች በተሟላ ሁኔታ እንዲያድጉ የጎላ አስተዋፅዖ ነበረው፡፡ ከዚህ በተጨማሪ በአርብቶ አደርና በከፊል የአርብቶ አደር አካባቢዎች የነበረው አነስተኛ የእርሞበት ሁኔታ ለግጦሽ ሳርና ለመጠዋ ውኃ አቅርቦት አዎንታዊ አስተዋፅዖ ነበረው፡፡ በሌላ በኩል በአንዳንድ አካባቢዎች ላይ የነበረው ከባድ ዝናብ እንዲሁም ባሳለፍናቸው ቀናት በተከታታይ ዝናብ በማግኘት ላይ በነበሩ ቦታዎች ላይ የአፌር ውስጥ እርጥበት መብዛት እና በአንዳንድ ቦታዎች ላይ ለወንዝ መሙላትና ለንርፍ ተጋላጭ በሆኑ አካባቢዎች ላይ የንርፍ መከሰት የነበረ ቢሆንም፤ በግብርናዉ አንቅስቃሴ ላይ ያደረሰዉ አሉታዊ ተፅዕኖ አልነበረም፡፡

#### SUMMARY June 2022

During the first dekad of June 2022 under normal circumstance the rainfall activity expanded over western, central, East and southern parts of the country. In current rain bearing meteorological conditions intensified over most Kiremet rain fall benefiting parts of the country, in line with this most of the country had received good moisture particularly some parts of western Amhara, western Oromia, SNNPR and Gambela experienced better condition. The observed wide distribution of rainfall could have a positive contribution for belg crops, land preparation, sowing of long cycle Meher crops like maize and sorghum including pulse crops like haricot bean and also fevered for pasture and drinking water over the low lands pastoral and agro postural area of the country. On the other hand, occasional heavy fall ranging from (40.5 - 70.5) mm in one rainy day observed over western, southern and south-western parts of the country. Which may cause flood and water logging on crops field in low lying areas and soil erosion on sloppy areas as well as it could affect the sowing activities by washing away the newly sown seeds. However the observed widespread rainfall distribution could also have indispensable contribution on the availability of pasture and drinking water for pastoral areas. The dry condition on some areas of Belg growing area has positive advantage for harvesting and post harvesting activities of Belg production.

During the second dekad of June, the strong moisture condition was observed across most of Kiremt rain benefiting areas, particularly over the south and southwest parts of the country. As of the weather information gathered from different agro meteorological stations, relatively strong moisture was prevailed over part of the country. In line with this, west and central Oromia, Benshangule, southwest region, SNNPR, Sidama, Gambella, west Amhara, the southern highlands, and east of Ethiopia received light to moderate amount of rainfall. Some station recorded heavy fall up to 135 mm and that caused flash flood over some parts of the country. Among the stations Nekemte, Gimbi, Bedelle, Arjio, Gore, Limu Genet, Asossa and Danigla recorded heavy fall in the range of 35.5-135.0 mm in a single day. The observed wettest conditions over parts of Meher crop growing areas could favor toward improving the soil moisture and that in turn might sustain the growth of early planted Belg and long term Meher season crops and it was also positive for land preparation and sowing of mid-term Kiremt season crops as well as to satisfy the daily water need of perennials and vegetables. In addition, the received light amount of moisture over the pastoralist and agropastoralist areas could ensure the availability of pasture and drinking water. On the other hand, continuously observed rain since the previous dekads might cause soil moisture saturation and occurrence of flood. The field report indicated that the incidence of heavy rainfall with hail and strong wind resulted in excess soil moisture and floods over the Low-lying area of Beddel and west Harerge. As a result some damage on crops, trees, livestock's, properties and infrastructures was reported.

According to the weather information collected from different agro-meteorological stations, across most parts of Kiremt moisture benefiting areas had experienced enhanced moisture during the last dekad of June due to the strengthening of rain bearing meteorological systems. In addition some areas also experienced heavy fall with thunder during the dekad under review. In line with that, Tigray, Amhara, west and central Oromia, Benshangule, South West Ethiopia, SNPPR, Sidama, Gambella, the southern highland areas, north Somalia, Hareri, Dire Dawa and the southern part of Afar received light to heavy amount of rainfall. Some weather staions, including Werilu, Mehal meda, D/Brihan, Sirinka, Aykel, D/Markos, Nekemte, Kachise, Gidaayana, Adama, Jimmma, Limugenet, Ayra, Bedele and Sawla recorded rainfall above 30mm in a single day. The observed enhanced moisture might favor to sustain the growth and fulfill the daily water need of early planted Meher season crops including long and medium cycle crops. The moisture received over the eastern and northeastern pastoral and agro pastoral areas, including in north Somali, Hareri, Dire Dawa and south of Afar could have positive implication to replenish both artificial and natural water points as well as to ensure the availability of pasture and drinking water. On the other hand, the recorded heavy rainfall might trigger flash flood occurrence and water logging due to excess moisture.

During the previous month of June 2022, the strengthening of moisture bearing meteorological events was observed and it gradually progressed from south west to different parts of Kiremt rain benefiting areas and as a result wide area covered moisture was observed over most parts of the country. In line with that, Tigray, Amhara, west and central Oromia, Benshangule, South West Ethiopia, SNPPR, Sidama, Gambella, the southern highland areas, north Somalia, Hareri, Dire Dawa and the southern part of Afar received light to heavy amount of rainfall, In addition, some weather stations, including Werilu, Mehal meda, D/Brihan, Sirinka, Aykel, D/Markos, Nekemte, Kachise, Gidaayana, Adama, Jimmma, Limugenet, Ayra, Bedele, Sawla, Gimbi, Arijo, Gore, Nejio, Asossa, Dangila, Abebo, Lare, Masha, Aman, Gatira, Pawi, Shawra, B/Dar, and Harer recorded rainfall in the range of 30 to 135.0mm in a single day. The received enhanced moisture during the month of June might have positive impact toward improving the soil moisture and that in turn favored for sowing

of crops which supposed to be planted during June and had positive impact to sustain early planted various Meher season long term crops such as Maize and Sorghum. In addition the received light amount of moisture over the pastoralist and agro pastoralist areas might have significant contributions toward ensuring the availability of pasture and drinking water. On the other hand, the observed heavy rainfall might cause excess soil moisture and the occurrence of both flash floods over flood prone areas as well as riverine overflow. However, there were no adverse reports in relation to the occurrence of flood.



Figure 1. Rainfall distribution in mm (21-30) June 2022

#### 1. WEATHER ASSESSMENT

#### 1.1. Rainfall amount (21 – 30 June, 2022)

During the third June 2022 pocket area of north Gonder, Bahir Dar, west and east Gojam, south Wollo, Oromia especial zone, north, east, west and south west Shewa, Addis Ababa zone, Illubabur, Sheka, YEM, and Jimma received 100-200mm Rain fall. west, central and south Tigray, north and south Gonder, north and south Wollo, Bahir Dar, west and east Gojam, Metekel, Agew Awi, Tongo, Assosa, Kamashi, west and east Wellega, north, west and south Shewa, Addis Ababa zone, Gambela zone 1, 2 & 3, Godere, Keffa, Jimma, YEM, Bench Maji, Dawuro, KT, Selti, Alaba, Hadiya, Sidama, Gurage, Harer, west and east Harergie, Arsi, Afar zone 1, 3, 4 & 5and Jimma received 50-100mm Rain fall. south, central and east Tigray, Metekel, Bahir Dar, west and east Gojam, north, west and southwest Shewa, Addis Ababa zone, Gurage, Alaba, KT, Hadiya, Welayita, Sidama, Gedeo, Guji, Bench Maji, Bale, Arsi, west and east Harergie, Harer, Fik, Jigjiga and Deghabur received 25-50mm Rain fall. Afar zone 1, 2, 3, 4 & 5, Arsi, Harer, Jigjiga, Gambela zone 2, South Omo, Derashe,

Gamo gofa, Konso, Amaro, Borena, Guji, Bale, Afder, Fik, Gode, Deghabur, Korahe and Warder received 5-25mm Rain fall. The rest parts of the countries received 0-5mm Rainfall.



Figure 2: Percent of normal rainfall distribution (21-30) June 2022

#### **Explanatory notes for the Legend**

< 50-Much below normal 50-75%-Below normal 75-125% - Normal > 125% - Above normal

#### 1.2. Rainfall Anomaly (21 – 30 June, 2022)

During third June 2022 Metekel, Kamashi, Agew-Awi, Gambela zone 1, Bench Maji, Keffa, Basketo, South Omo, Derashe, Konso, Amaro, Borena, Burji, Gedeo, Guji, Afder, Fik, Gode, Korahe, Jigjiga, Deghabur and Warder exhibited Below Normal too Much Below Normal. The rest parts of the countries exhibited Normal to Above Normal.



Figure.3. Moisture Status (21-30) June 2022

#### **1.3. Moisture Condition (21 – 30 June 2022)**

During June third dekad 2022, western half, central, eastern and north-eastern parts of the country experienced Moist to Hyper moist moisture status. The rest parts of the countries exhibited moderately dry to very dry.



Fig. 3 Rainfall amount in mm for the month of June 2022

#### 1.1. Rainfall amount on the month of June 2022

During the Month of June 2022 pocket area of north Gonder, Bahir Dar, west and east Gojam, south Wollo, Oromia especial zone, north, east, west and south west Shewa, Addis Ababa zone, west, central and south Tigray, north and south Gonder, north and south Wollo, Bahir Dar, west and east Gojam, Metekel, Agew Awi, Tongo, Assosa, Kamashi, west and east Wellega, north, west and south Shewa, Addis Ababa zone, Gambela zone 1, 2 & 3, Godere, Keffa, Jimma, YEM, Bench Maji, Dawuro, KT, Selti, Alaba, Hadiya, Sidama, Gurage, Harer, west and east Harergie, Arsi, Afar zone 1, 3, 4 & 5Illubabur, Sheka, YEM, and Jimma received 100-200mm Rain fall. west Tigray, north Gonder, Bahir Dar, west Gojam, Metekel, Agew Awi, Assosa, Kamashi, west and east Wellega, north, west and south Shewa, Addis Ababa zone, Gambela zone 1, 2 & 3, Godere, Keffa, Jimma, YEM, Bench Maji, Dawuro, KT, Selti, Alaba, Hadiya, Sidama and Gurage received 50-100mm Rain fall. west, central and east Tigray, south and north Gonder, Metekel, Bahir Dar, west and east Gojam, north, west and southwest Shewa, Addis Ababa zone, Gurage, Alaba, KT, Hadiya, Welayita, Sidama, Gedeo, Guji, Bench Maji, Bale, Arsi, west and east Harergie, Harer, Fik,

Jigjiga and Deghabur received 25-50mm Rain fall. Afar zone 1, 2, 3, 4 & 5, Oromia especial zone, Arsi, Harer, Jigjiga, South Omo, Derashe, Gamo gofa, Konso, Amaro, Borena, Guji, Bale, Afder, Fik, Gode, Deghabur, Korahe and Warder received 5-25mm Rain fall. The rest parts o f the countries received 0-5mm Rainfall.



Fig. 4 Percent of Normal Rainfall for the month of June 2022

#### **Explanatory notes for the Legend**

< 50-Much below normal 50-75%-Below normal 75-125% - Normal > 125% - Above normal

#### 1.2. Rainfall Anomaly on the month of June 2022

During the Month of June 2022 Gambela zone 1, Godere, Keffa, Basketo, Dawuro, South Omo, Derashe, Welayita, Gedeo, Sidama, Amaro, Borena, Guji, Bale, Liben, Afder, Gode, Korahe and Warder exhibited Below Normal too Much Below Normal. The rest parts of the countries exhibited Normal to Above Normal.



Fig. 5 moisture status for the month of June 2022

#### 1.3. Moisture status on the month of June 2022

As indicated on the month During June 2022 western half, central, eastern and northeastern parts of the country experienced Moist to Hyper moist moisture status. The rest parts of the countries exhibited moderately dry to very dry.



Fig. 6 Vegetation Greenness (NDVI) in fraction and Compared to Normal June 2022

# 2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

#### 2.1. VEGETATION CONDITION AND IMPACT ON AGRICULTURE

Generally during the previous month of June 2022, the strengthening of moisture bearing meteorological events was observed and it gradually progressed from south west to different parts of Kiremt rain benefiting areas and as a result wide area covered moisture was observed over most parts of the country. In line with that, Tigray, Amhara, west and central Oromia, Benshangule, South West Ethiopia, SNPPR, Sidama, Gambella, the southern highland areas, north Somalia, Hareri, Dire Dawa and the southern part of Afar received light to heavy amount of rainfall, In addition, some weather stations, including Werilu, Mehal meda, D/Brihan, Sirinka, Aykel, D/Markos, Nekemte, Kachise, Gidaayana, Adama, Jimmma, Limugenet, Ayra, Bedele, Sawla, Gimbi, Arijo, Gore, Nejio, Asossa, Dangila, Abebo, Lare, Masha, Aman, Gatira, Pawi, Shawra, B/Dar, and Harer recorded rainfall in the range of 30 to 135.0mm in a single day. The received enhanced moisture during the month of June might have positive impact toward improving the soil moisture and that in turn favored for sowing of crops which supposed to be planted during June and had positive impact to sustain early planted various Meher season long term crops such as Maize and Sorghum. In addition the received light amount of moisture over the pastoralist and agro pastoralist areas might have significant contributions toward ensuring the availability of pasture and drinking water. On the other hand, the observed heavy rainfall might cause excess soil moisture and the occurrence of both flash floods over flood prone areas as well as riverine overflow. However, there were no adverse reports in relation to the occurrence of flood.

### 2.2. EXPECTED WEATHER IMPACT ON AGRICULTURE DURING THE COMING MONTH OF JULY 2022

During the month of July, under normal circumstances, the rain producing systems are expected to be strengthening across Meher producing area of the country. Hence, the rainfall activities both in distribution and amount would be better Kiremt rain benefiting areas.

In the coming month of July 2022, the meteorological forecast information indicates that the seasonal rainfall activity is expected to continue over much of western half and extended over north eastern and eastern Meher rainfall benefiting area of the country. In line with this, Oromia region of all wolega zones, Buno Bedele, Jimma, Illubabur, all zones of Shewa, Eastern and western Harerge, Arsi and western Arsi, Bale and eastern Bale, Addis Ababa, Amhara regions of western and eastern Gojam, northern, central and Southern Gonder, Bahirdar zuria, Awi zone, Waghimra and north Shewa zones and north and south Wollo zones, all zones of Tigray, Afar, Gambela and Benshangul, sout-western Ethiopia Keffa, Bench, Sheko, Sheka and western Omo and Dawro and SNNP region of Gurage, Silti, Welayita, Hadya, Halaba Tembaro, Gamo Gofa, all zones of Sidama region Somali region of Sity and Fafen zone expected to get normal to above normal rainfall. This situation expect to improve moisture requirement of Meher and long cycle crops found at different phases of growth, perennial plants, pasture and drinking water availability in pastoral and agro pastoral areas. However, the expected heavy fall particularly over some parts of north western and central would have a negative impact on crop fields' particularly over low-lying areas and anticipated to generate flash floods. Thus, proper attention should be undertaken to minimize the risk in areas where there is no proper drainage system and low-lying areas making furrow and channel in order to reduce the effect of excess rain. Moreover, the expected excess moisture on crop fields favors for the infestation of weeds and outbreak of pest and disease. Thus, the concerned personnel should take proper precaution and take day to day visit crop fields' to mitigate the effect. On the other hand in normal condition moisture stress expecting areas the concerned bodies to use water properly and water harvesting mechanisms.

#### 1. **DEFNITION OF TERMS**

ABOVE NORMAL RAINFALL: - Rainfall in excess of 125% of the long term mean

BELOW NORMAL RAINFALL: - Rainfall below 75 % of the long term mean.

NORMAL RAINFALL: - Rainfall amount between 75 % and 125 % of the long term mean.

**BEGA:** - It is characterized with sunny and dry weather situation with occasional falls. It extends from October to January. On the other hand, it is a small rainy season for the southern and south eastern lowlands under normal condition. During the season, morning and night times are colder and daytime is warmer.

**BELG:** - Small Rainy season that extends from February to May and cover s southern, central, eastern and north-eastern parts of the country.

**CROP WATER REQUIREMENTS:** - the amount of water needed to meet the water loss through evapotranspiration of a disease free crop, growing under non-restricting soil conditions including soil water and fertility.

**DEKAD:** - First or second ten days or the remaining days of a month.

**EXTREME TEMPERATURE:**- The highest or the lowest temperature among the recorded maximum or minimum temperatures respectively.

**ITCZ:-** Inter-tropical convergence zone (narrow zone where trade winds of the two hemispheres meet.

**KIREMT:** - Main rainy season that extends from June to September for most parts of the country with the exception of the south-eastern lowlands of the country.

**RAINY DAY:** - A day with 1 or more mm of rainfall amount.



Station	Code	Station	Code	Station	Code	Station	Code
A. Robe	AR	D. Zeit	DZ	Humera	HU	Nazereth	NT
A.A. Bole	AA	D/Dawa	DD	Jijiga	JJ	Nedjo	NJ
Adigrat	AG	D/Mena	DOM	Jimma	JM	Negelle	NG
Adwa	AD	D/Odo	DO	Jinka	JN	Nekemte	NK
Aira	AI	D/Tabor	DT	K.Dehar	KD	Pawe	PW
Alemaya	AL	Dangla	DG	K/Mingist	KM	Robe	RB
AlemKetema	ALK	Dilla	DL	Kachise	KA	Sawla	SW
Alge	ALG	Dm.Dolo	DMD	Koffele	KF	Sekoru	SK
Ambo	AMB	Dubti	DBT	Konso	KN	Senkata	SN
Arba Minch	AM	Ejaji	EJ	Kulumsa	KL	Shambu	SH
Asaita	AS	Enwary	EN	Lalibela	LL	Shire	SHR
Asela	ASL	Fiche	FC	M.Meda	MM	Shola Gebeya	SG
Assosa	ASO	Filtu	FL	M/Abaya	MAB	Sirinka	SR
Awassa	AW	Gambela	GM	Maichew	MY	Sodo	SD
Aykel	AK	Gelemso	GL	Majete	MJ	WegelTena	WT
B. Dar	BD	Ginir	GN	Masha	MA	Woliso	WL
Bati	BA	Gode	GD	Mekele	MK	Woreilu	WI
Bedelle	BDL	Gonder	GDR	Merraro	MR	Yabello	YB
BUI	BU	Gore	GR	Metehara	MT	Ziway	ZW
Combolcha	CB	H/Mariam	HM	Metema	MTM		
D. Berehan	DB	Harer	HR	Mieso	MS		
D. Habour	DH	Holleta	HL	Moyale	ML		
D. Markos	DM	Hossaina	HS	M/Selam	MSL		