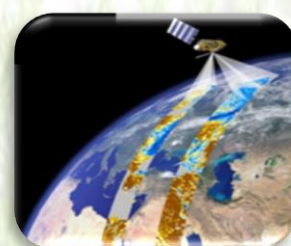


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Ethiopia Meteorology Institute P.O.BOX 1090, ADDIS ABABA, ETHIOPIA

Website: [http:// www.ethiomet.gov.et](http://www.ethiomet.gov.et)E-mail nmsa@ethionet.etFax 251-1-517066, Tel. 251-1-512299

TABLE OF CONIENTS

FORE WARD	2
SUMMARY	6
1. WEATHER ASSESSMENT	14
1.1. Rainfall amount (21 – 30) September 2022	14
1.2. Rainfall Anomaly (21 – 30) September 2022	15
1.3. Moisture status (21 – 30) September 2022	16
1.4. Rainfall amount on the month of September 2022	17
1.5. Rainfall Anomaly on the month of September 2022	18
1.6. Moisture status on the month of September2022	19
1.7. Rainfall Amount on Kiremt season 2022	20
1.8. Rainfall Anomaly on Kiremt Season 2022	21
2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE	22
2.1. VEGETATION CONDITION AND IMPACT ON AGRICULTURE DURING KIREMT 2022	22
2.2. EXPECTED WEATHER IMPACT ON AGRICULTURE DURING THE COMING BEGA, 2022_23 SEASON	23
3. DEFNITION OF TERMS	25

FORE WARD

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.

Director General
NMA
P.O.Box 1090
Tel: 011661-57-79
FAX 00251-11-6625292
E-mail nmsa@ethionet.et
Addis Ababa

አህፅሮት እ.ኤ.አ ክረምት 2022

የክረምት ወቅት ዝናብ በኤፕሪልና ሜይ ወሮች ቀደም ብለው ለተዘሩ እንደ በቆሎና ማሽላ ለመሳሰሉ የረጅም ጊዜ የመኸር ሰብሎች በተሟላ ሁኔታ እንዲያድጉ የሚኖረው አስተዋፅዖ ከፍተኛ ሲሆን እንዲሁም ከጁን ጀምሮ ለሚዘሩ የተለያዩ የመካከለኛ ጊዜ አዝርዕቶች ያለው ጠቀሜታ ከፍተኛ ነው። በተጨማሪም በአርብቶ አደርና በከፊል የአርብቶ አደር አካባቢዎች ለግጦሽ ሳርና ለመጠጥ ውኃ አቅርቦት የሚኖረው አስተዋፅዖ የጎላ ነው።

እ.ኤ.አ በጁን ወር 2022 ለክረምት ዝናብ መኖር አመቺ ሁኔታ የሚፈጥሩ የአየር ሁኔታ ክስተቶች ከዕለት ወደ ዕለት ተጠናክረው የተስተዋሉ ሲሆን፤ በሂደትም ከደቡብ ምዕራብ ወደ ተለያዩ የክረምት ዝናብ ተጠቃሚ የሀገሪቱ አካባቢዎች በመስፋፋት ኡባዛኛውን 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 ያለው ዝናብ ተመዝግቧል። ይህም የተገኘው ዝናብ የአፈር ውስጥ እርጥበትን ከማሻሻልም አልፎ ከጁን ጀምሮ የዘር ጊዜና የማሳ ዝግጅት በሚካሄዱባቸው አካባቢዎች በወቅቱ ለመዝራት አመቺ ሁኔታ የነበረ ሲሆን፤ ቀደም ብለው በበልግ ወቅት ለተዘሩትና በተለያዩ ዕድገት ደረጃ ላይ ለነበሩት እንደ በቆሎና ማሽላ ለመሳሰሉ የረጅም ጊዜ የመኸር ሰብሎች የሚያስፈልጋቸውን የአፈረ ወስጥ እርጥበት በተሟላ ሁኔታ እንዲያገኙ የጎላ አስተዋፅዖ ነበረው። ከዚህ በተጨማሪ በአርብቶ አደርና በከፊል የአርብቶ አደር አካባቢዎች የነበረው አነስተኛ የእርጥበት ሁኔታ ለግጦሽ ሳርና ለመጠጥ ውኃ አቅርቦት አዎንታዊ አስተዋፅዖ ነበረው። በሌላ በኩል በአንዳንድ አካባቢዎች ላይ የነበረው ከባድ ዝናብ እንዲሁም በተከታታይ ዝናብ በማግኘት ላይ በነበሩ ቦታዎች ላይ የአፈር ውስጥ እርጥበት መብዛት እና በአንዳንድ ቦታዎች ላይ ለወንዝ መሙላትና ለጎርፍ ተጋላጭ በሆኑ አካባቢዎች ላይ የጎርፍ መከሰት የነበረ ቢሆንም፤ በወሩ ውስጥ የታየው ይህ ክስተት በግብርናው አንቅስቃሴ ላይ ያደረሰው የጎላ አሉታዊ ተፅዕኖ ያልነበረ ቢሆንም ነገር ግን በአንዳንድ አካባቢዎች ላይ ለመጥቀስም ያህል በበደሌና በባህር ዳር በረዶ የቀላቀለ ዝናብ በሰብሎች፤ በዛፎችና በንብረት ላይ መጠነኛ ጉዳት አደረገል።

በቀጣዩ የጁላይ ወርም ምንም እንኳን ከቦታ ቦታ በመጠን ይለያይ እንጂ በስርጭት ረገድ ብዙ የክረምት ዝናብ ተጠቃሚ አካባቢዎችን ያዳረሰ እርጥበት ነበራቸው። ይህም የተገኘው ዝናብ የአፈርን እርጥበት ከማሻሻልም አልፎ ከጁላይ ጀምሮ ለሚዘሩ የተለያዩ የመካከለኛ ጊዜ ሰብሎችን ለመዝራት አመቺ ሁኔታ የነበረው ሲሆን፤ አስቀድሞው ተዘርተው በተለያዩ የእድገት ደረጃ ላይ ለነበሩ የመኸር ሰብሎች የውኃ ፍላጎታቸውን ከሟሟላት አንፃር የጎላ ሚና ከመኖሩም በላይ ለተለያዩ ቋሚ ተክሎች እንዲሁም በአረንጓዴ አሻራ መርሀ ግብር ለተተከሉ የተለያዩ የዛፍና የፍራፍሬ ችግኞች በተሟላ መልኩ እንዲያድጉ አዎንታዊ ሚና

ነበረው። ከዚህ በተጨማሪ በተለይም በሰሜን ምስራቅ፣ በምስራቅ እና በደቡብ ኦሮሚያ የአርብቶ አደርና በከፊል የአርብቶ አደር አካባቢዎች የተገኘው የተለያዩ መጠን ያለው እርጥበት ለግጦሽ ሳርና ለመጠጥ ውኃ አቅርቦት አዎንታዊ አስተዋፅኦ ከማበርከቱም በላይ ሰው ሰራሽም ሆነ የተፈጥሮ ምንጮችን ከማጎልበት አንፃር አዎንታዊ ሚና ነበረው። በሌላ በኩል ከባድ ንፋስና በረዶ የቀላቀለ ዝናብ ያስከተለው ጎርፍ በባህርዳር ዙሪያ በንብረት ላይ ጉዳት ያስከተለ ሲሆን በሌላ አንጻር ደግሞ በተከሰተ የመብረቅ ክስተት በፊቹ ዙሪያ በሁለት ሰዎች ህይወት ላይ አደጋ ያሰከተለ እንደነበረ ከሚቲዎሮሎጂ ጣቢያዎች የተገኙ መረጃዎች አመልክተዋል። በመደበኛ ባህሪያቸው በእርጥበት መብዛት በሚታወቁ ስፍራዎች ላይ በተከታታይነት ይጥል የነበረው ዝናብ የአፈር ውስጥ እርጥበት መብዛትን ያስከተለ ሲሆን፤ ይህም ሁኔታ በወቅቱ ሲከናወን በነበረው የእርሻ ስራ እንቅስቃሴ ላይ አሉታዊ ጎን ነበረው። በተጨማሪም የነበረው ከፍተኛ እርጥበት ለአረም መስፋፋትም ሆነ ለተለያዩ የሰብል በሽታዎች መከሰት ምቹ ሁኔታ ነበረው።

በተመሳሳይ ሁኔታ በአገሪት ወር ለዝናብ መኖር አመቺ የሆኑ የአየር ሁኔታ ክስተቶች ከመጠናከራቸው ጋር ተያይዞ የክረምት ዝናብ ተጠቃሚና የመኸር ሰብል አብቃይ በሆኑ የሀገሪቱ አካባቢዎች ላይ በመጠንም ሆነ በሥርጭት ረገድ ጥሩ የእርጥበት ሁኔታ ነበራቸው። ይህም ሁኔታ የአፈርን እርጥበት ከማሻሻሉና ተክሎች የሚያስፈልጋቸውን ውኃ ከማቅረብ አንጻር ገንቢ ሚና ነበረው። እንዲሁም በተከታታይ ዝናብ በማግኘት ላይ በነበሩ በአንዳንድ የሀገሪቱ አካባቢዎች ላይ ከባድ ዝናብ የነበረ ሲሆን፤ ባለፈው ወር አልፎ አልፎ ከነበረው ጠንካራ የደመና ክምችት በሃያ አራት ሰዓታት ውስጥ ከ125 ሚ.ሜ በላይ የሆነ ከባድ መጠን ያለው ዝናብ በመጣሉ ቅፅበታዊ ጎርፍ በተለያዩ አካባቢዎች ላይ አስከትሏል። በዚህም ምክንያት በአንዳንድ አካባቢዎች ላይ የመሬት መንሸራተትና የአፈር ውስጥ እርጥበት መብዛትናን ያስከተለ ሲሆን ይህም ሁኔታ በተለያዩ የእድገት ደረጃዎች ላይ ባሉ ሰብሎች፣ በሰው እና በንብረት ላይ መጠነኛ ጉዳት ያስከተለ ሲሆን እንዲሁም በአፈር ጥበቃ ሥራ ላይ አሉታዊ ጎን ነበረው። በአጠቃላይ በዚህ ወር የተገኘው እርጥበት ቀደም ባሉት ጊዜ የእርጥበት እጥረት በነበረባቸው ቆላማ የአገሪቱ አካባቢዎች ላይ ለሚኖሩት አርብቶ አደርና ከፊል አርብቶ አደሩ አካባቢዎች ለግጦሽ ሳርና ለመጠጥ ውሃ አቅርቦት ጥሩ አስተዋፅኦ ነበረው ።

የክረምቱ የመጨረሻ ወር በነበረው የሴፕቴምበር ወር 2022 ለክረምት ዝናብ መኖር አመቺ ሁኔታ የሚፈጥሩ የአየር ሁኔታ ክስተቶች ተጠናክረው የቀጠሉ በመሆኑ ምንም እንኳን እርጥበታማው ሁኔታ በሴፕቴምበር ወር ከሰሜንና ከሰሜን ምሥራቅ የሀገሪቱ አካባቢዎች ላይ በመደበኛ ሁኔታ እየቀነሰ የሚሄድ ቢሆንም እነዚህ አካባቢዎችም ዝናብ ሲያገኙ ቆይተዋል። ይህም ሁኔታ የአፈር ውስጥ እርጥበትን ከማሻሻል ጋር ተያይዞ እድገታቸውን ላልጨረሱና በተለያዩ እድገት ደረጃ ላይ ለሚገኙ የመኸር ሰብሎችም ሆነ ለቋሚ ተክሎች የሚያስፈልጋቸውን ውኃ ከማቅረብ አንጻር ገንቢ ሚና ነበረው። እንዲሁም ቀስ በቀስም ወደ ደቡብ አካባቢዎች ላይ የተስፋፋው የእርጥበት ሁኔታ በደጋማው አካባቢ የማሳ ዝግጅት

ለማከናወንና በአርብቶ አደርና በከፊል አርብቶ አደር አካባቢዎች ለግጦሽ ሳርና ለመጠጥ ውኃ አቅርቦት አዎንታዊ አስተዋፅዖ ከማበርከቱም በላይ ሰው ሰራሽም ሆነ የተፈጥሮ ምንጮችን ከማጎልበት አንፃር አዎንታዊ ሚና ነበረው። በሌላም በኩል ከነበረው ጠንካራ የደመና ክምችት በአንዳንድ በአማራ፣ በምዕራብና በመካከለኛው አሮሚያ፣ በጋምቤላ፣ በደቡብ ብሄር ብሄረሰቦችና ህዝቦች ክልል እንዲሁም በደቡብ ደጋማ ቦታዎች ላይ ከባድ መጠን ያለው ዝናብ ተመዝግቧል። ከዚህም ጋር ተያይዞ በመደበኛ ባህሪያቸው በእርጥበት መብዛት በሚታወቁ ስፍራዎች ላይ ተከታታይነት የነበረው እርጥበታማ ሁኔታ በሰብል ማሳዎች ላይ የውሃ መተኛት ያስከተለ ሲሆን፣ ይህም ሁኔታ በተወሰኑ ቦታዎች ላይ እየተከናወነ በሚገኘው የእርሻ ስራ እንቅስቃሴ ላይ አሉታዊ ጎን ነበረው።

በአጠቃላይ እ.ኤ.አ ክረምት 2022 በግብርና እንቅስቃሴ ላይ የነበረውን ሁኔታ ስንመለከት ዝናብ ሰጪ ክስተቶች በአብዛኛዎቹ የክረምት ተጠቃሚ የአገሪቱ ክፍሎች ላይ ወቅቱን ጠብቆ የጀመረና ከዚህም ጋር ተያይዞ የተለያዩ አካባቢዎች በመጠንና በስርጭት የተስተካከለ የእርጥበት ሁኔታ ነበራቸው። ይህም የተገኘው እርጥበት ቀደም ሲል በሚያዝያና በግንቦት ተዘርተው በተለያዩ የእድገት ደረጃ ላይ ለነበሩ የረጅም ጊዜ ሰብሎችም ሆነ ከጁን ጀምሮ የዘር ጊዜና የማሳ ዝግጅት በሚካሄድባቸው አካባቢዎች እንደ ስንዴ፣ ጉብስ፣ አጃ እና ጤፍ ለመሳሰሉት የብርዕ ሰብልች፣ የጥራጥሬና የቅባት እህልች በወቅቱ ለመዝራትና በተሟላ ሁኔታ እንዲያድጉ የጎላ አስተዋፅዖ ነበረው። በተጨማሪም ለቋሚ ተክልች የወሃ ፍላጎት መሟላት ምቹ ሁኔታን ከመፍጠሩም ባሻገር የወቅቱ ዝናብ ተጠቃሚ በሆኑት በምስራቅና በሰሜን ምስራቅ አርብቶ አደርና ከፊል አርብቶ አደር አካባቢዎች ላይ የነበረው የእርጥበት ሁኔታ ለግጦሽ ሣርና ለመጠጥ ውሀ አቅርቦት ጥሩ አስተዋፅዖ ነበረው። በአወጣጥ ረገድም ከመካከለኛውና ምሥራቅ የሀገሪቱ ክፍሎች ላይ ለተወሰኑ ቀናት በመዘግየቱ ምክኒያት እድገታቸውን ላልጨረሱ እና ዘግይተው ለተዘሩ የመኸር ሰብሎች በጎ ጎን የነበረው ሲሆን በሌላ በኩል አልፎ አልፎ በአንዳንድ መኸር አብቃይ አካባቢዎች ከባድ ዝናብ ከመስተዋሉ ጋር ተያይዞ በሰብሎች ማሳ ላይ የውኃ መተኛት፣ ለወንዞች ሙላትና ለቅጽበታዊ ጎርፍ መከሰት እና የመሬት መንሸራተት ያስከተለበትና ይህም ሁኔታ በሰብሎች፣ በንብረትና በሰው ሕይወት ጭምር ጉዳት ያስከተለበት ሁኔታ እንደነበረ ከተለያዩ ምንጮች የተገኙ መረጃዎች ያሳያሉ። በአጠቃላይ በክረምት ወቅት የነበረው የእርጥበት ሁኔታ በመጠንና በስርጭት የክረምት ዝናብ ተጠቃሚ በሆኑ አካባቢዎች የእርጥበት መብዛት ከታየባቸውና አልፎ አልፎ በደቡብ ደጋማ ስፍራዎች እና በምስራቅ የሀገሪቱ ጥቂት ቦታዎች ላይ መጠነኛ የእርጥበት እጥረት ከመኖሩ በስተቀር የክረምት 2022 ወቅት የዝናብ መጠንና ስርጭት በግብርናው ላይ የነበረውን ሁኔታ ስንመለከት ለአብዛኛው የመኸር ሰብሎችና አጠቃላይ የእርሻ ሥራ እንቅስቃሴ በቂና አመቺ ሁኔታ ነበረው።

SUMMARY

Kiremt 2022

Kiremt is the season that fulfills the water requirement of long cycle crops which are planted in the months of April-May and Meher crops that achieve maturity during the Bega season. In addition to the Kiremt rain, the Belg seasonal rainfall, the rainfall amount and distribution during the months of April and May has significant impact on the performance of long cycle crops (maize and sorghum).

During the 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, Nejjo, 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.

During the month of July 2022, Conducive weather condition was strengthening from day to day and that favor most Kiremt rain benefiting areas to receive ample amount of moisture with good coverage. Occasionally, some places experienced heavy fall up to 117 mm in a single day which potentially could trigger flash flood over some flood prone areas. Light to heavy rainfall was observed over most zones of Tigray, Amhara, Benshangule,

south, west and central Oromia, southern high lands, northern Somali, Hareri, Dire Dawa, Gambella, SNNPR, Sidama, South West Ethiopia and Afar. Among, heavy rainfall ranging from 30.0 to 117.0mm was recorded over Bahir Dar, Shawra, Alem Ketema, Tsitska, D/Tabor, Nifasmewcha, Enewari, Aykele, Amba Mariam, Metema, Debark, D/Work, Wereilu, Gonder, Mota, Pawi, D/Birehan, Kachise, Gundomeskel, Nekemt, Nejo, Chewaka, Bore, Bure, Fitcha, Addele, Arijo, Jimma, Gore, Mtehora, Woliso, Addis Ababa, Gewane, Masha, Hossana, Aman, Worabe, Emdibir, Assosa, Masha and Aliya. The observed enhanced moisture during the Month might have positive implication toward improving soil moisture, sustaining early planted Meher season long and mid-term crops, for land preparation and sowing various crops that often planted from July, to fulfill the daily water need of perennial plants. The observed moisture over the northeastern, eastern and southern Oromia was positive implication toward ensuring the availability of pasture and drinking water over pastoral and agro-pastoral areas. In addition, the received moisture also played significant role to enrich both natural and artificial water points. Moreover, the condition was favorable to undertake various environmental protection activities as well as to achieve the national green legacy plan of planting fruit and trees. On the other hand, the heavy and continuous rainfall with hail and strong wind over Bahir dar resulted moderate damage on properties while two life loss was reported due to lightening in Fitcha. The observed continuous moist conditions in some places resulted excessive soil moisture accumulation which in turn had a negative impact on the ongoing agricultural activity and might cause weed infestation and the occurrence of some excess moisture driven crop diseases.

During the month of August 2022, meteorological weather phenomenon was strengthening in amount and coverage over most part of Kiremt rain benefiting and Meher growing areas of the country. In line with this, Tigray, Amhara, Benshangul-Gumuz, Gambela, SNNPR, Sidama, western and central Oromia, southern high lands, eastern parts of the country, Afar, Harer, Dire Dawa and northern Somali received slight to heavy rainfall. This situation could have a significant and positive contribution with respect to satisfying the water need of early sown long cycle crops (Maize, sorghum) which were at different phenological stages, late sown cereal crops like (Teff, wheat and barley), pulses (beans, peas and haricot beans) and oil seeds perennial plant as well as it improved pasture and drinking water availability over pastoral and agro pastoral areas of the country. On the other hand, during the month under review, extreme heavy fall were reported in many places from different weather stations in one rainy day over Gore 125.4, Alge 40, Arjo, 46.6 and 40.2, Assosa 42.3 mm, Bati 52.0 mm, Chagni 63.2 mm, Chefa 53.1 mm, Combolcha 45.0 mm,

Dire dewa 98.7 mm, Debark 58.8 mm, Ejaji 47.2 mm, Gambella 109.0 and 87.2 mm, Gonder 42.7 mm, Lalibela 65.4 mm, Mirababay 66.0 mm, Majete 59.9 mm, Masha 40.2 mm, Nejo 47.1 mm, Nuraera 45.1 mm, Shola gebeya 50.0 mm, Sirinka 62.5 and 51.4 mm, Shawera 54.3 mm, Woreilu 59.9 mm, Lare 50.5 mm, Gidayana 68.7 mm, Gundomeskel 52.8 and 49.0 mm, Werilu 60.9 mm, Aliua 65.2 and 36.7 mm, Abobo 40.0 and 40.2 mm, Bahir dar 48.8 and 60.4 mm, Dangila 41.5 mm, Bure 70.6 and 51.0 mm, Ginbi 45.6 mm, Lare 82.0 mm, Fungido 49.0 and 46.7 mm, Sawola 51.8 mm, Maji 58.0 and 53.0 mm, and Dalifagi 48.2 mm. The observed continuous and high humid moisture condition might have cause soil erosion and water logging particularly where land is sloppy and in areas where normally affected by excess moisture. The received heavy rainfall particularly over north western, central and eastern parts of the country it occurred flood and land slide cause of heavy fall, it affected crops, life and property.

During the month of September 2022, rain bearing meteorological systems showed relative strength over most of Meher growing and Kiremt rain benefiting areas of the country. Normally the rainfall patterns withdrawal from north-eastern and northern parts of the country, in the current year most parts of Kiremt rain benefiting areas including the northern half of the country experienced good rainfall in amount and distribution. This condition might be favorable to satisfy daily crop water requirement for various early planted Meher season crops as well as perennial plants. The received enhanced moisture over the pastoral and agro pastoral areas might have played crucial role toward improving the availability of pasture and drinking water. Moreover, during the month enhanced moisture was extended over the southern section of the country the situation was favorable for land preparation and sowing of crops over the southern high land and availability of pasture and water over pastoral areas. On the other hand, during the month of September, heavy fall were reported from Amhara, western and central Oromia, Gambela, SNNP and southern high lands. The excessive moisture due to continuity of rainfall over areas which are characterized normally as prone to excess moisture might have led to water logging and which caused slightly damage on crops found at various stages.

Generally during Kiremt 2022, Well-organized and strong seasonal-rain-producing systems fully established on time and led to a wet Kiremt season, with extremely heavy rainfall outcomes in the central and northern areas of the country. Recurrent heavy rains and well-above average cumulative rainfall resulted in wetter than normal over Benishangul-Gumuz, western and central Oromia, Amhara, and Tigray regions. However, there has been

decreasing rainfall in some parts of southern margins and eastern parts of Meher crop-growing regions. The situation was a significant and positive contribution with respect to satisfying the water need of early sown long cycle crops (Maize, sorghum) which were at different phenological stages, late sown cereal crops like (Teff, wheat and barley) and pulses (beans, peas and haricot beans) and perennial plant as well as it improved pasture and drinking water availability over eastern and north-eastern pastoral and agro pastoral areas of the country. Moreover under normal condition, Kiremt rains start to retreat by the second dekad of September from northeastern Ethiopia. However, as the major rain-producing systems the June-to-September rainy season has remained active, with continuous rainy conditions across the central and northern half of Ethiopia. The situation had been favor the existing Meher crops where not yet fully matured and late sown pulses and oil seeds. On the other hand the observed continuous and heavy rainfall particularly over north western, central and eastern parts of the country might have caused soil erosion, water logging and land slide as well as the flood affected crops, life and property. Generally with the exception of the observed Moisture stressed over southern margin, some areas of central and eastern parts and crops affected due to heavy fall in some areas the overall situation was favorable for Kiremt season's agricultural activities.

Kiremt 2022 Moisture Status Map

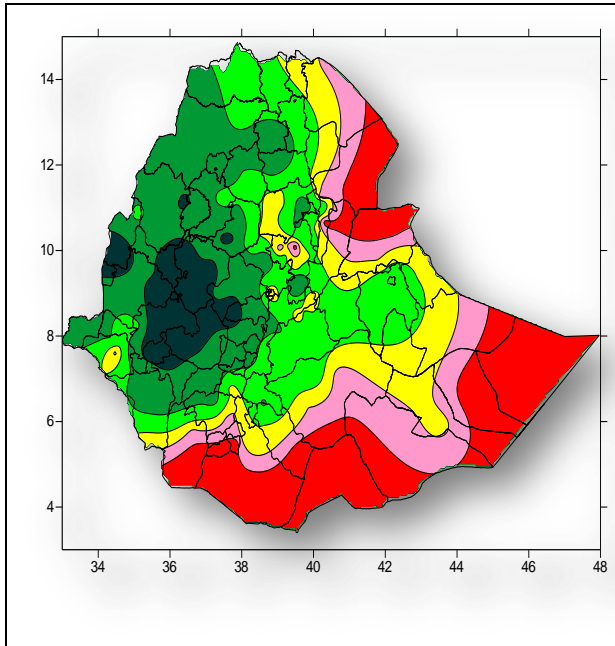


Figure 1. Moisture status for the month of June 2022

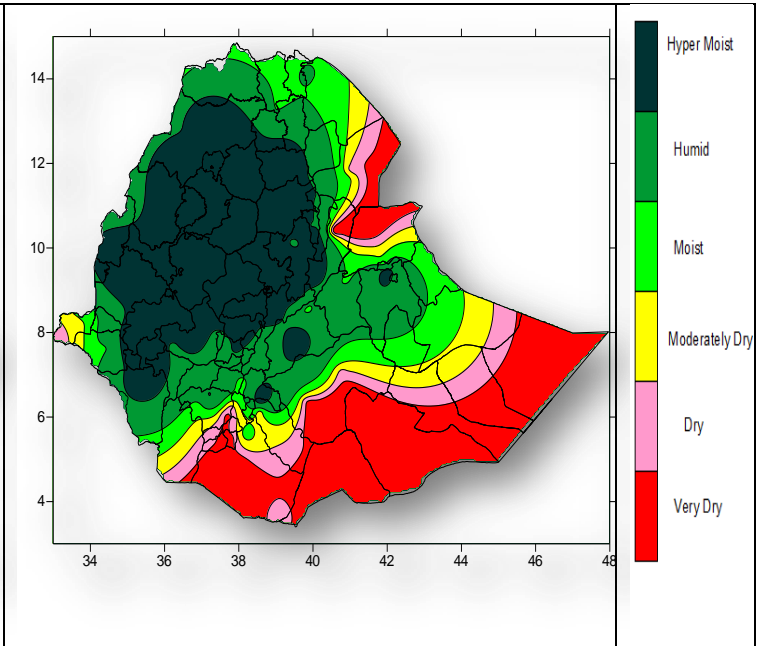


Figure 2. Moisture status for the month of July 2022

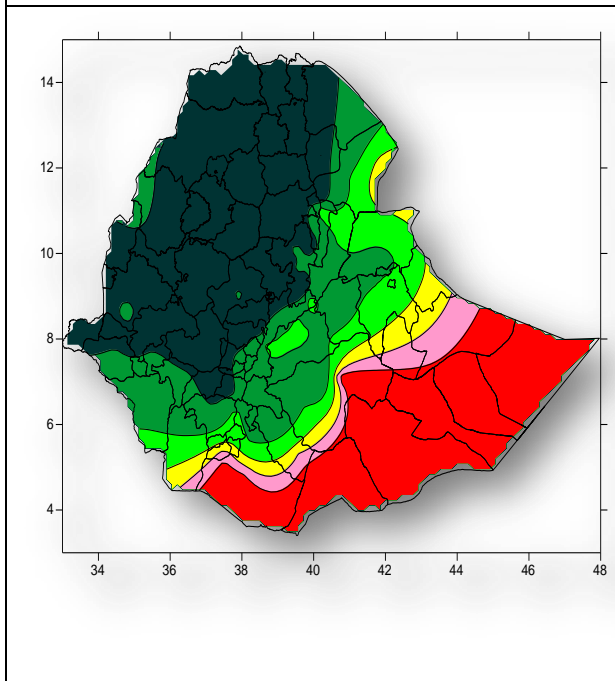


Figure 3. Moisture status for the month of August 2022

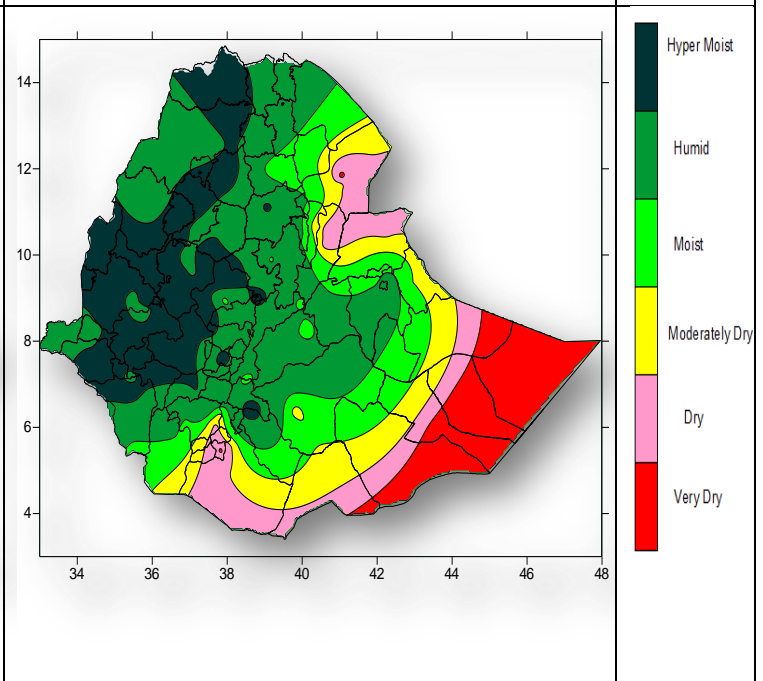
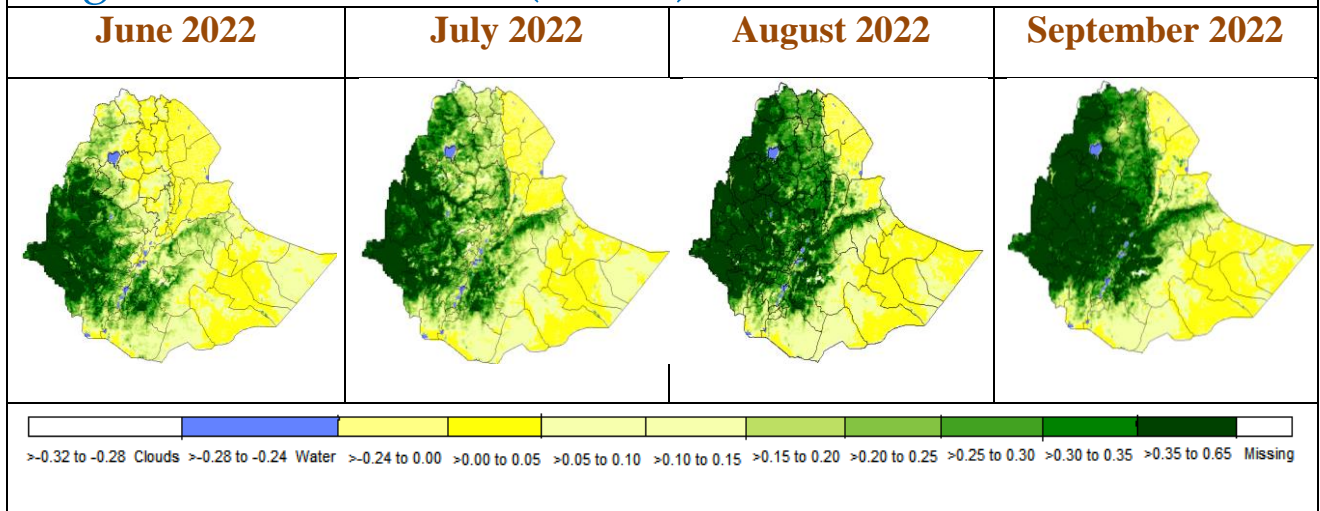


Figure 4. Moisture status for the month of September 2022

Vegetation Greenness (NDVI) in fraction Kiremt 2022



Vegetation Greenness (NDVI) in fraction - [Compared to Normal]

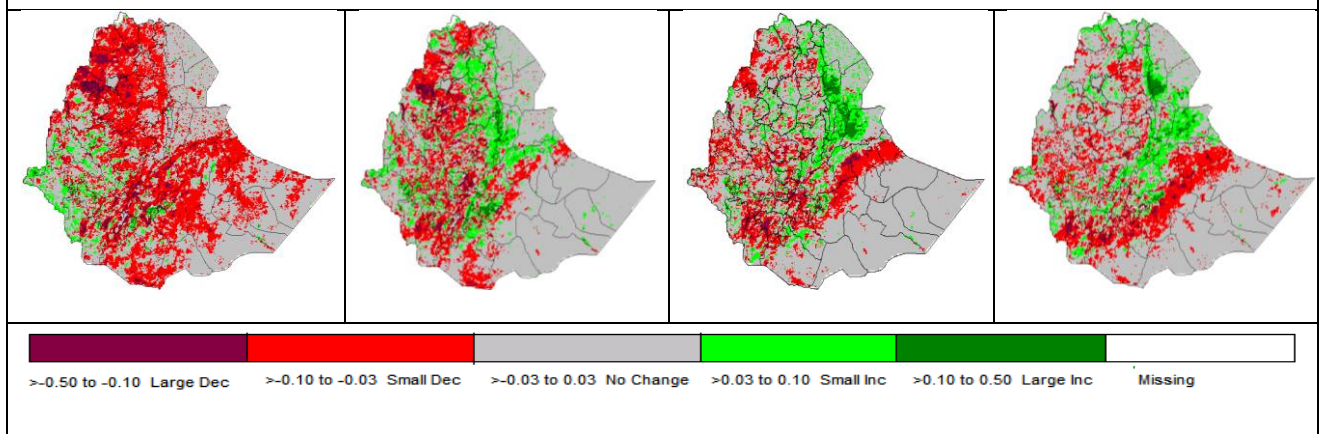


Fig. 5. Vegetation Greenness (NDVI) in fraction and Compared to Normal Kiremt (June-September) 2022

Rangeland WRSI in % - Kiremt 2022

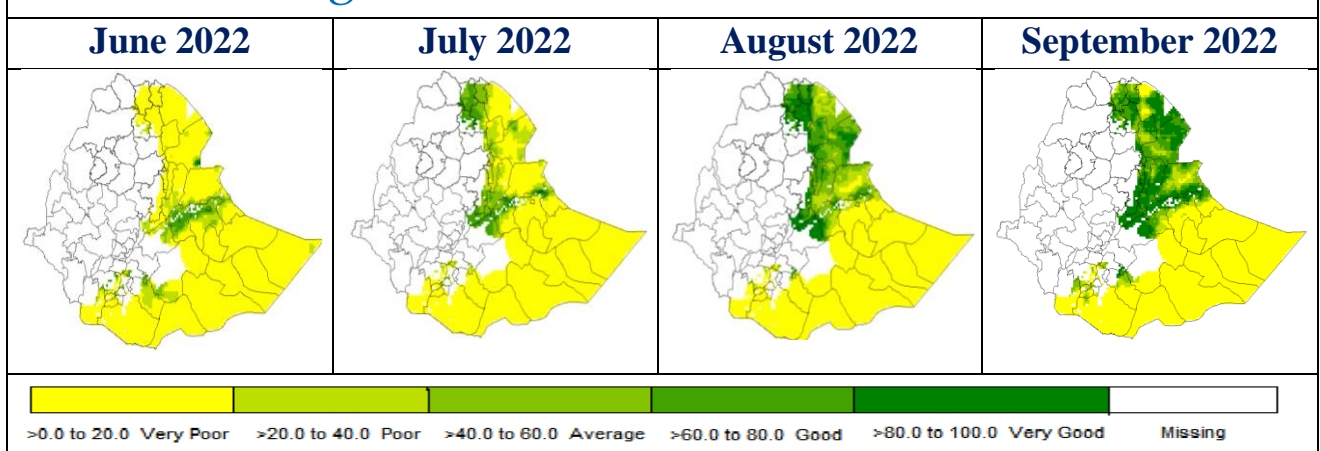


Fig.6. Rangeland WRSI in % Kiremt (June- September) 2022

Standardized Precipitation Index (SPI) For Kiremt 2022

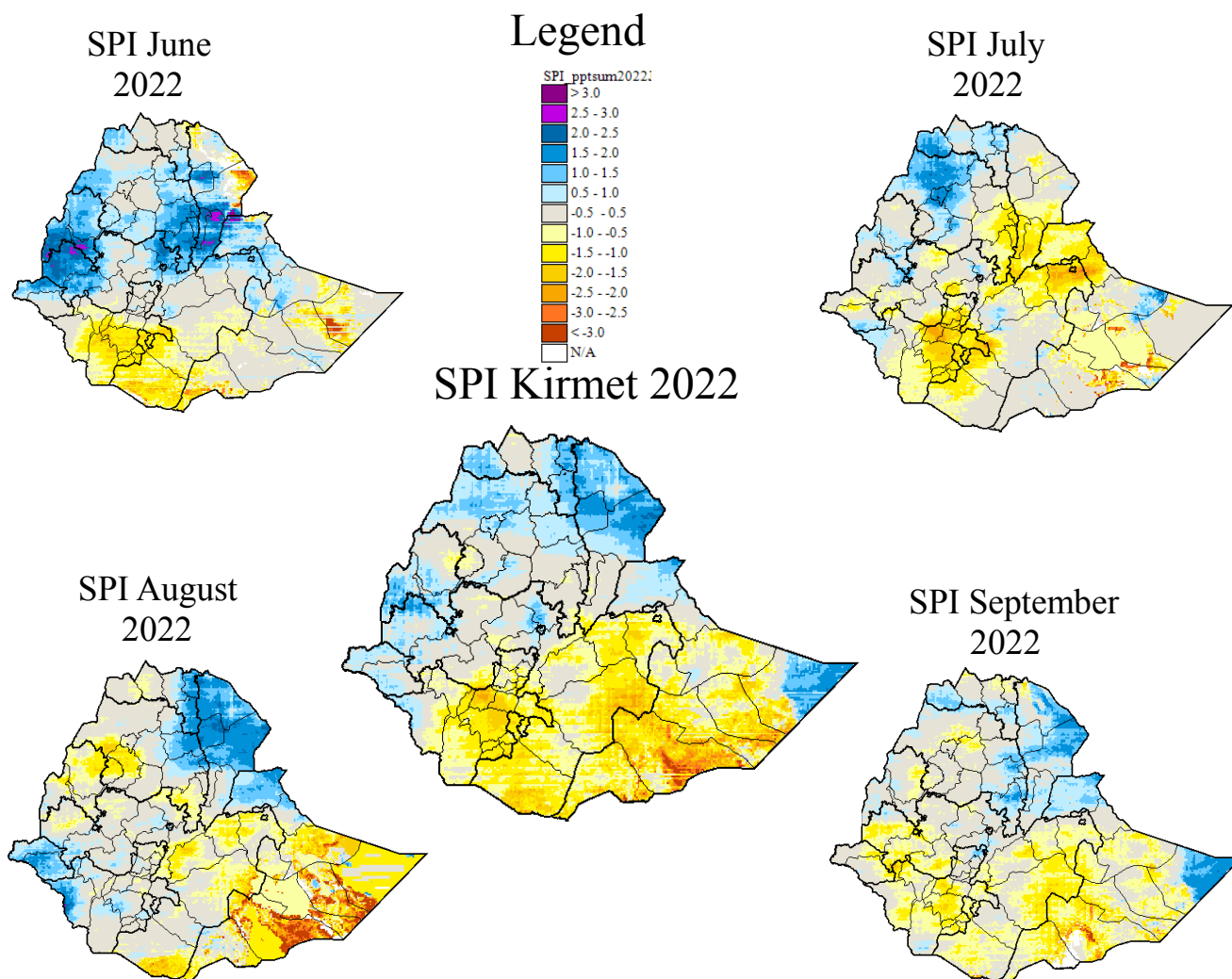
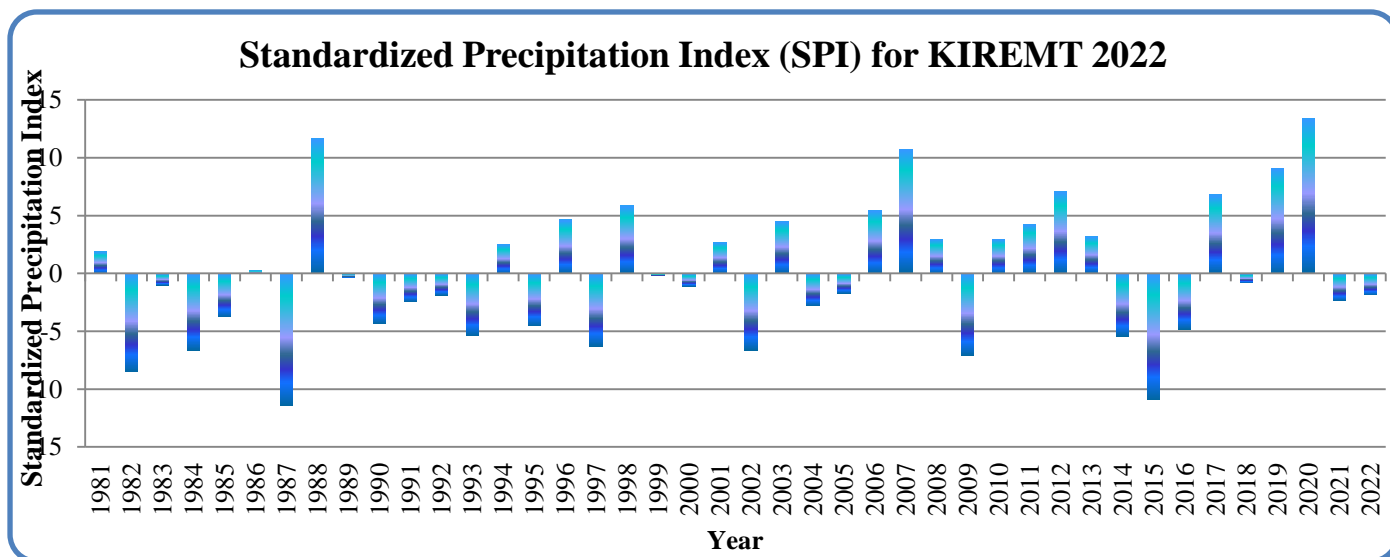


Fig.7. Standardized Precipitation Index (SPI) Kiremt (June- September) 2022

Final Index (WRSI) in fraction - Meher 2022

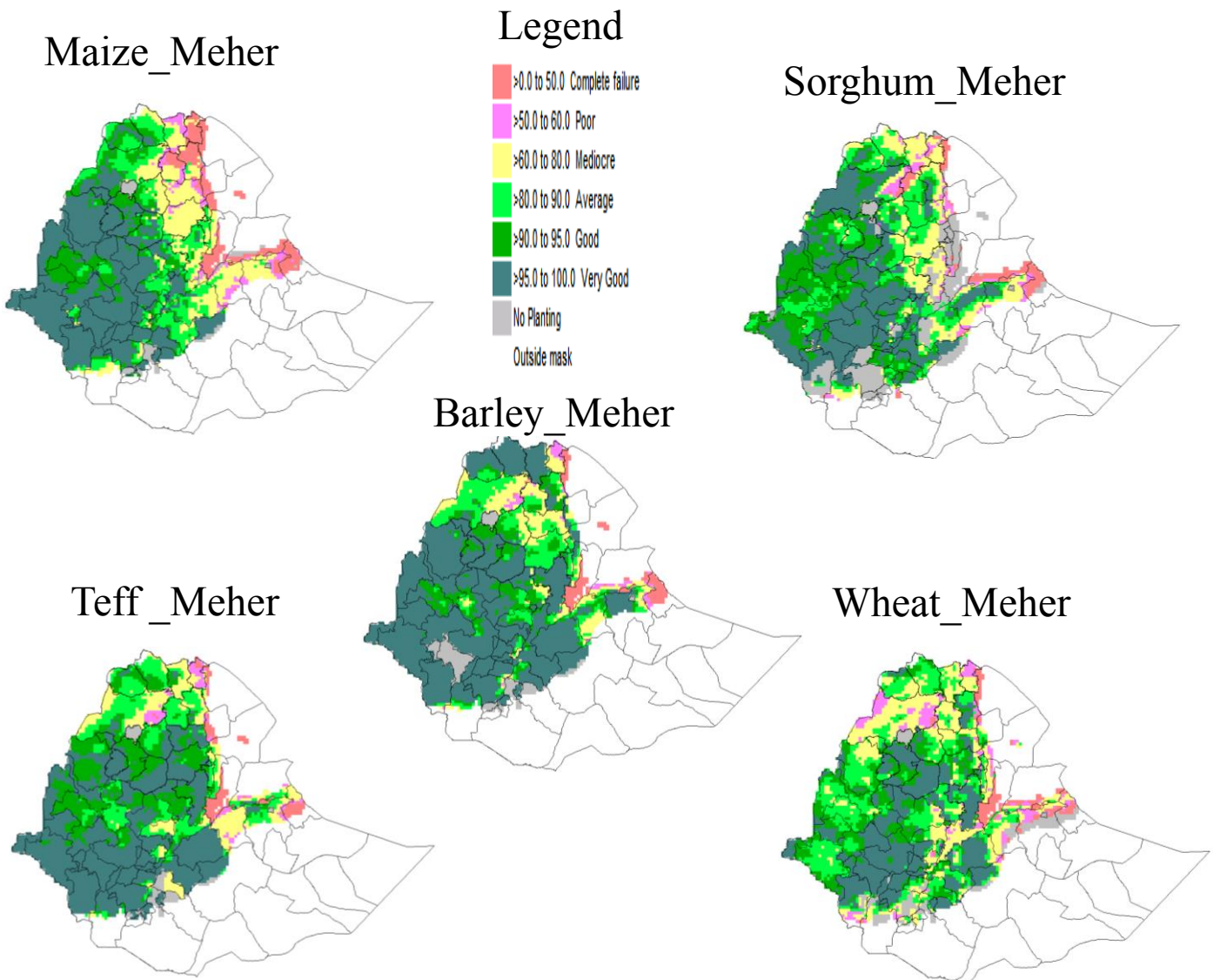


Fig.8. Final Index (WRSI) for Major crops (Maize, Sorghum, Barley, Teff and Wheat in fraction - Meher 2022

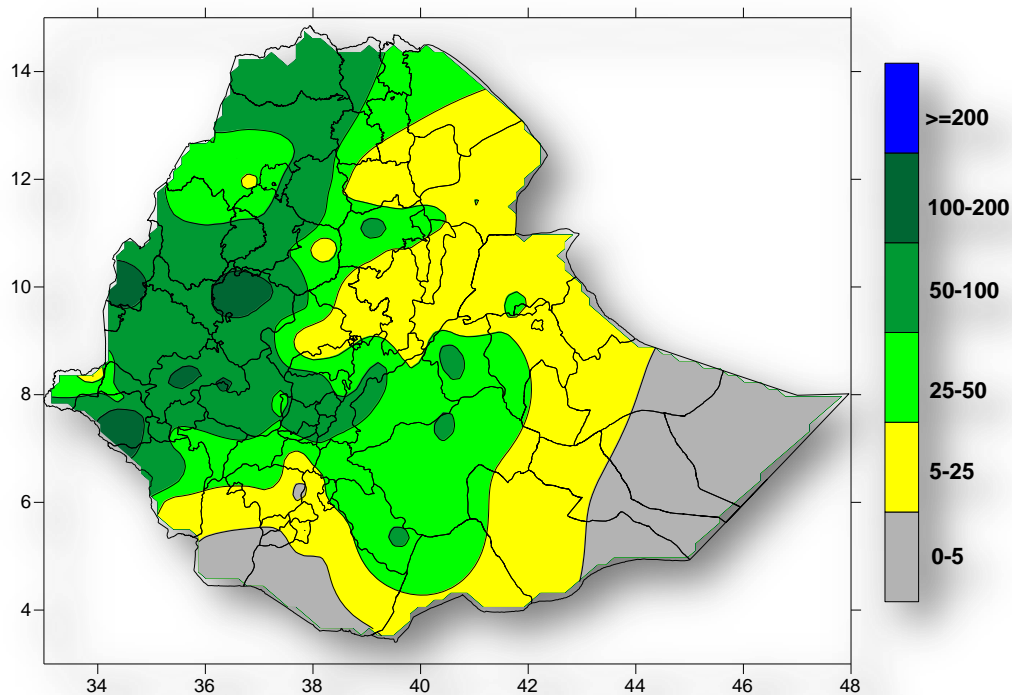


Fig 9. Rainfall distribution in mm (21 – 30) September 2022

1. WEATHER ASSESSMENT

1.1. Rainfall amount (21 – 30) September 2022

During first dekad of september 2022 pocket areas of (Illibabur , gambella region zone 1 ,east wellega and assosa) zone are recived 100 up to 200mm rain fall. Western and central Tigray,pocket areas of Noth and South Gonder, Bahirdar, West Gijjam Agew awi, Metkel, Kamashi, West and East Wellega , West and Nerth Shewa, Gambella Zone 1&2, Sheka, Godere pocket areas of, Illibabur, Jimma, Gurgi, SW siliti, Alaba, Hadiya, Arsi, Waghimera, Bali, Guji, Bench Maji Zone are are recived 50 up to 100 mm rain fall. East and south Tigray, Arsi, West Hararghe, Bale, Sidama, Guji, Gedo, Pocket areas of (Waghimra, south Wello, oromia zone, East Gojjam, south and North Gonder, Metkel, Bahir Dar, South and West Shewa, Liben, Afder, Dawero, Keffa, Bench Maji, Basketo) zones are recived 25 up to 50 mm rain fall. Central Tigray, North and South wello, Soth East Shewa, Addis Ababa Zone, Afar Zone 1,2,3,4,5, Shinlie, Jijiga, Fik pocket area of Degahabur, Gode, Afder, East Hararghe, Liben, Borena, South Omo Zones are are recived 5-25mm Rainfall. Wardar, Korahe pocket areas of Afder, Borena, Degahabur and Konso Zone are recived 0-5mm rain fall.

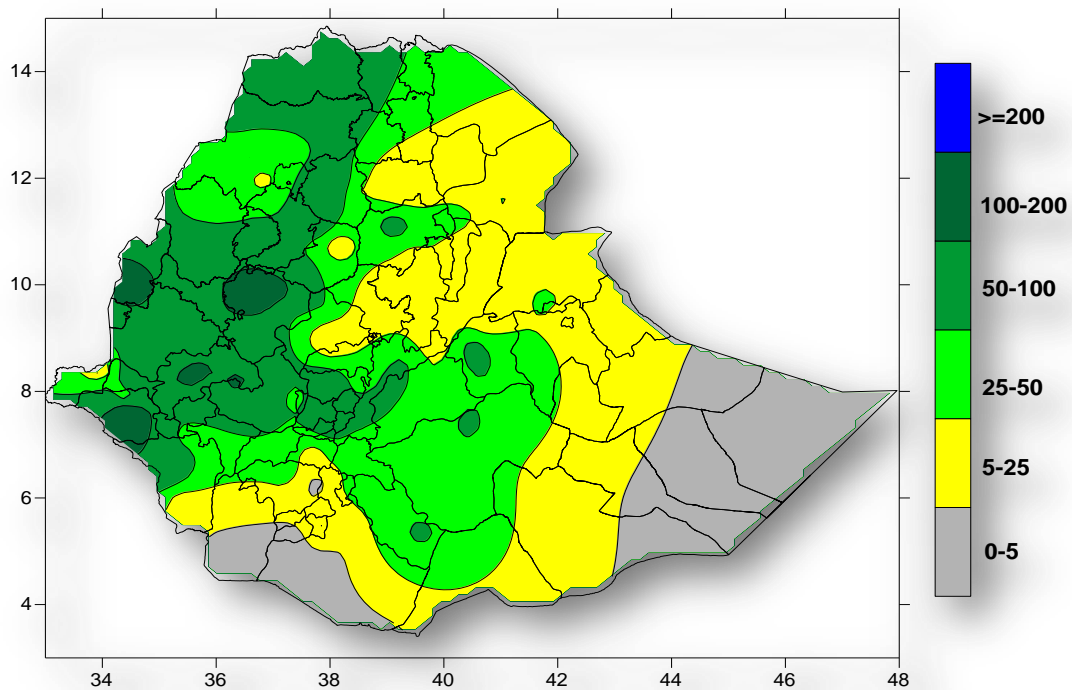


Fig. 10. Percent of normal rainfall distribution (21 – 30September 2022)

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) September 2022

Pocket area of Metekel, Agew-Awi, west and east Gojam, Tongo, Kamashi, west and east Wellega, north and west Shewa, Addis Ababa zone, north and south Wollo, Harer, Jigjiga, Dawero, Welayita, Sidama, Basketo, Gamo gofa, Gedeo, South Omo, Dirashe, Amaro and Guji exhibited Below Normal too Much Below Normal. The rest parts of the countries exhibited Normal to Above Normal.

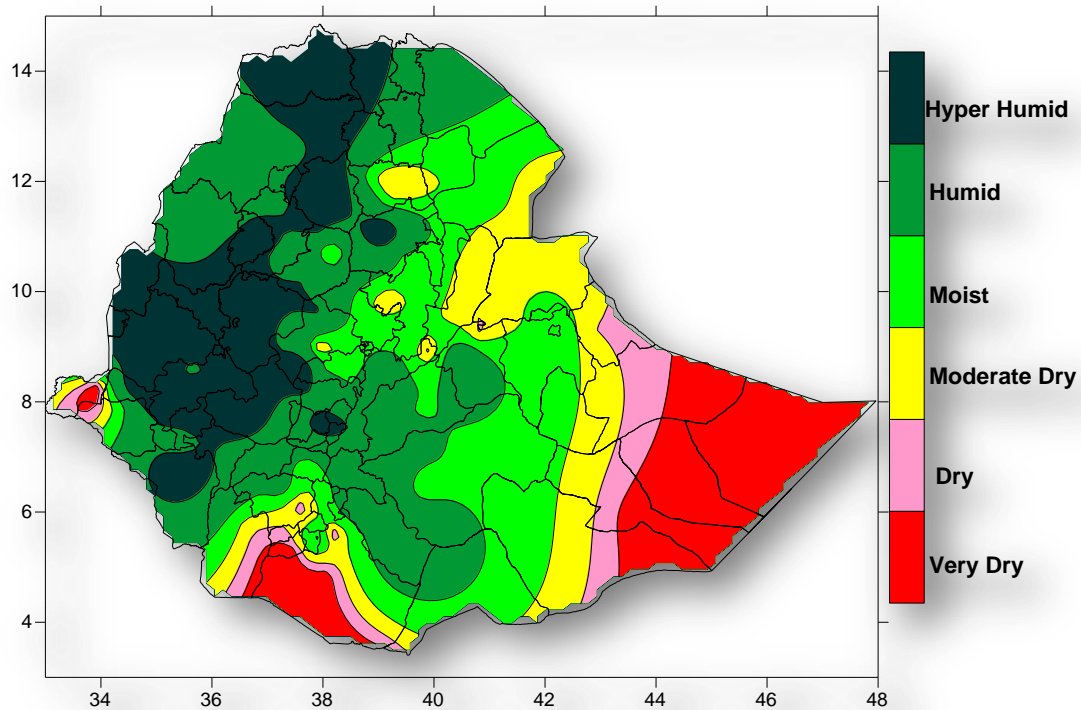


Fig.11. Moisture Status (21-31 August 2022)

1.3. Moisture status (21 – 30) September 2022

During the third dekad of September 2022, much of Kirmt and Meher rain fall benefiting areas some parts of Amhara, Benishangul Gumuz, West and Central Oromia, Gambella, Southern Mergen of Afar, Sidama, SNNRP and the Southern Highlands, Half of North East and Eastern part of the country exhibited moist to hyper humid moisture conditions. The rest parts of the country moderately dry to very dry moisture condition

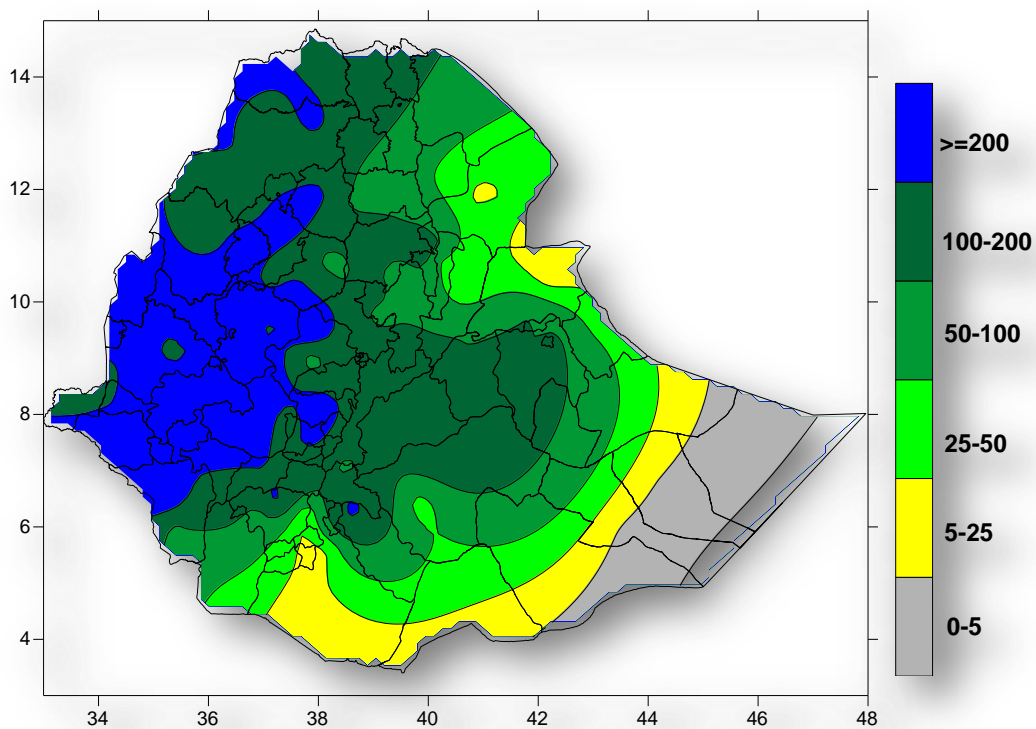


Fig. 12. Rainfall amount in mm for the month of September 2022

1.4. Rainfall amount on the month of September 2022

During the Month of September 2022 half of (West Tigray, Mekle, Baher Dar, South Gonder), Pocket areas of (North Gonder, East Gojam, Nand West Sehwa, Gurji, SW Silti), Assosa, Tango, Kamashi, West Wellega, Illibabur, Jimma, Sheka, Godere, Gambella Zone 1&2 zone received ≥ 200 mm Rain fall. Half of West, Central and East Tigray, Wagehimra, North and South Gonder, East Gojjam, South Wello, half of Metkel, South West Shewa, Addis Ababa Zone, West and East Hararaghe, Arsi, Half of Fik and Ble, Alaba, Hadiya, Woliyta, Dawero, Sidama, half of Bench Mji, Basketo, and Gedo Zones are received 100-200mm Rain fall. Half of South Tigray, North Wello, Half of Oromia Zone, Afar Zone 2,3,4 &5, Pocket areas of (Shinile, Jijiga, East Hararghe Fik, Degahabur), Gode, Afder, Bale, Guji, Gedo, Goffa and South Omo **South** Zones are received 50-100. Pocket areas of Afar Zone 1,2,3&4, half of Shinile, Jijiga, Degahabur, Gode, Afder, Liben, Bali, Guji, Goffa, Konso, and Borena zones are received 0-5mm Rainfall. Pocket areas of Shinile, Degahbur, Korahi, Gode, Afder, Liben, Borena. The rest parts of the country have received 0- 5 mm of rain fall.

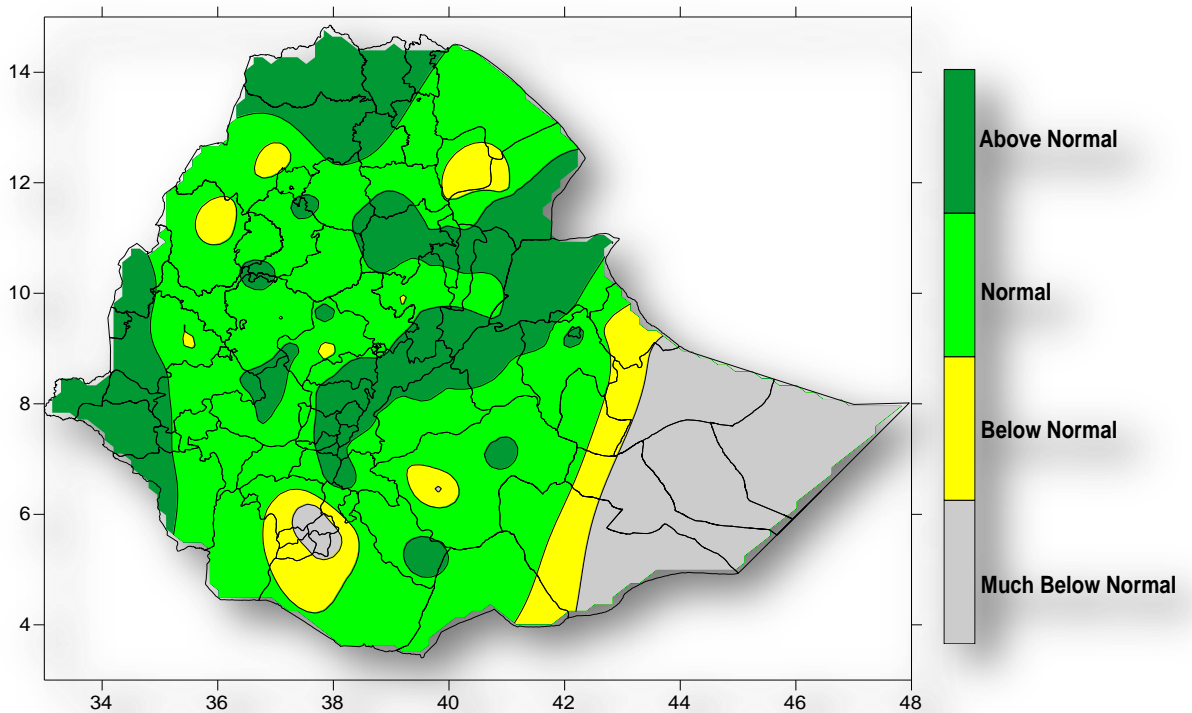


Fig. 13. Percent of Normal Rainfall for the month of September 2022

Explanatory notes for the Legend

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

1.5. Rainfall Anomaly on the month of September 2022

During the month of September 2022 West Central and East Tigray, pocket area of (South Tigray, North Wello, Oromia Zone, Afar Zone 1,3 &5, South West Shewa Arsi, East Hararge, Bale, Gurji, Gurage, SW Siliti, Alaba, Hadiya, Sidama, Jimma, Illibabur, Godere, Bench Maji,) South Wello, Shinile, Assosa, Tango, half of West Wellega, West Hararghe, North Gonder, Gambella Zone 1,2, &3, Wagihemra Zones are exhibited Normal to Above Normal. The rest parts of the countries exhibited Below Normal too Much Below Normal.

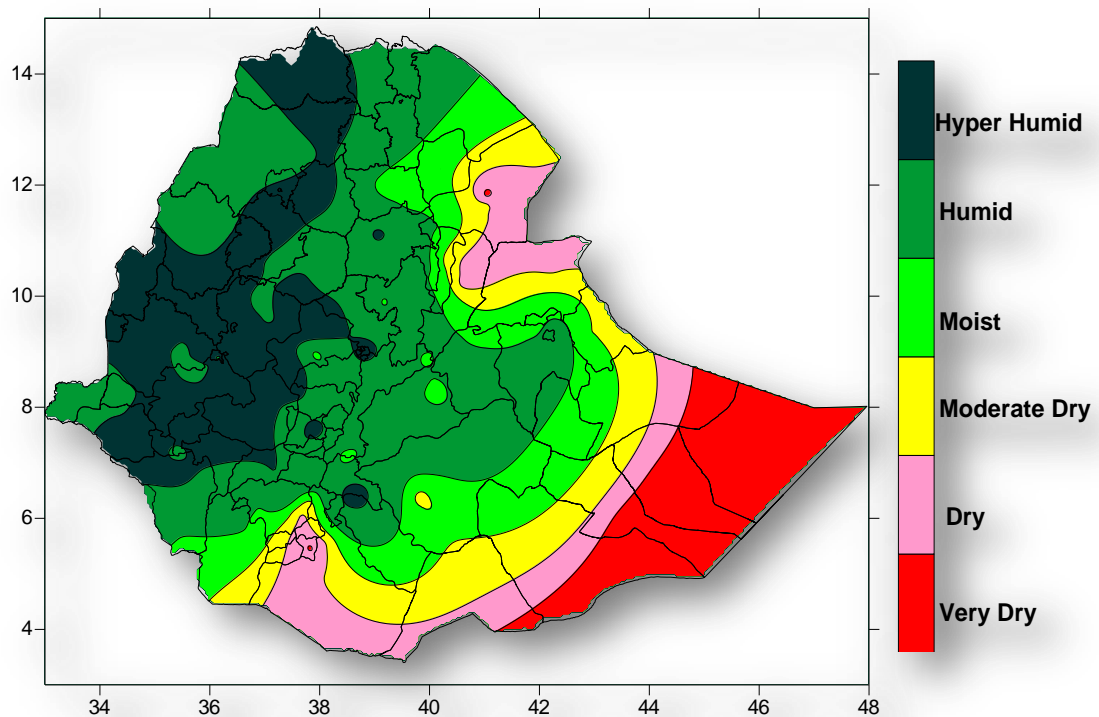


Fig.14. Moisture status for the month of September 2022

1.6. Moisture status on the month of September 2022

During the month of September 2022 West Central and East Tigray, pocket area of (South Tigray, North Wello, Oromia Zone, Afar Zone 1,3 &5, South West Shewa Arsi, East Hararge, Bale, Gurji, Gurage, SW Siliti, Alaba, Hadiya, Sidama, Jimma, Illibabur, Godere, Bench Maji,) South Wello, Shinile, Assosa, Tango, half of West Wellega, West Hararghe, North Gonder, Gambella Zone 1,2, &3, Wagihemra Zones are exhibited Normal to Above Normal. The rest parts of the countries exhibited Below Normal too Much Below Normal.

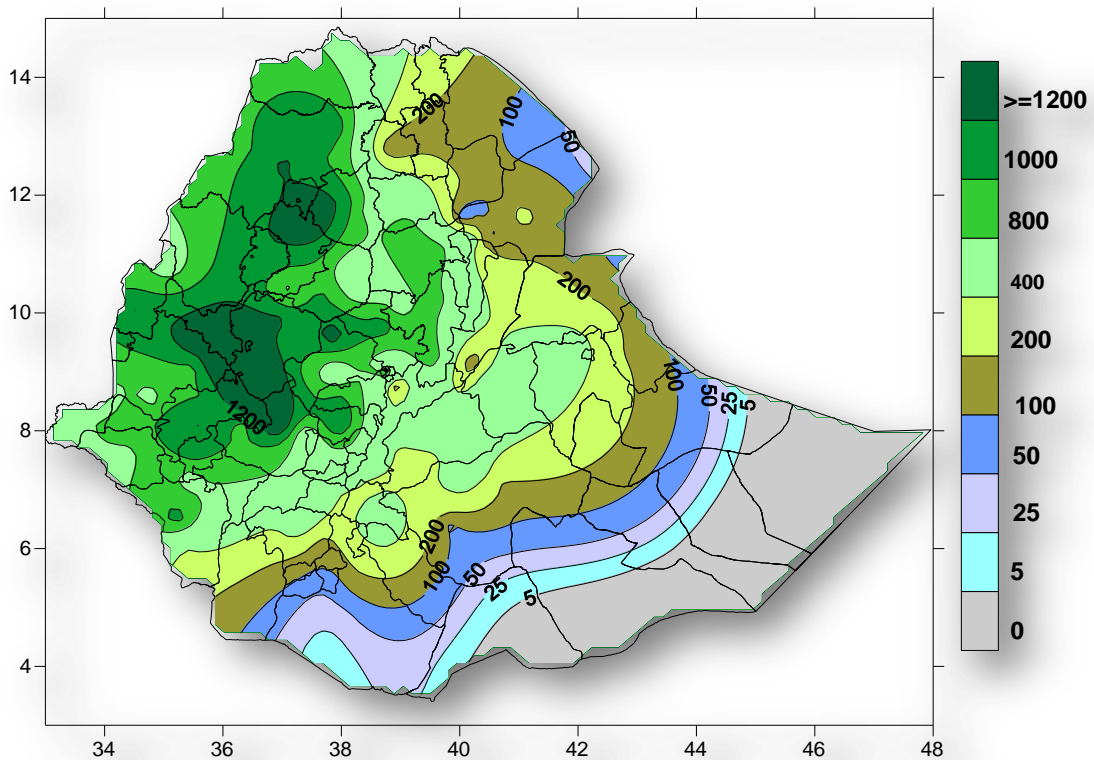


Fig.15. Rainfall amount in mm for Kiremt 2022

1.7. Rainfall Amount on Kiremt season 2022

During Kirmt Se 2022 West Tigray, North Gonder, South Gonder, Bahir Dar, South Wello, West Gojjam, Agew Awi, Metkel, Assosa, Tango, West and East Wellega, Kamashi, North Shewa, Addis Ababa Zone, West Shewa, Illibabur, Jimma, Guragi, Sheka, pocketareas of Keffa, Bench Maji., Gambela Zone 3&4 Zones are recived 800 up to 1200mm rain fall. Pocket areas of West Tigray, Central, East and Sout Tigray,Waghimera, North Wello,pocket areas of East Gojjam, South WELLO AND Oromia Zone, Afar Zone 1,2,3,4,&5, Shinili, Jijiga, West and East Hararghe, pocket areas of Addis Ababa zone and South Shewa, Arsi, Silti, Alaba, Hadiya, Dawero, Sidama,Basketo, Gore, Gedo, Goffa, South omo, Dirsha, Konso, Guji, Balie, Fik, half of Keffa, Degahabur and Bench Maji are recived 100 up to 400 mm rain fall. Pocket areas of Afar Zone 1&2, Bali and Guji, Degahabur, Gode, Wardar,, Korahi, Afder, Liben,,Borena zones are are recived 0-50mmrain fall

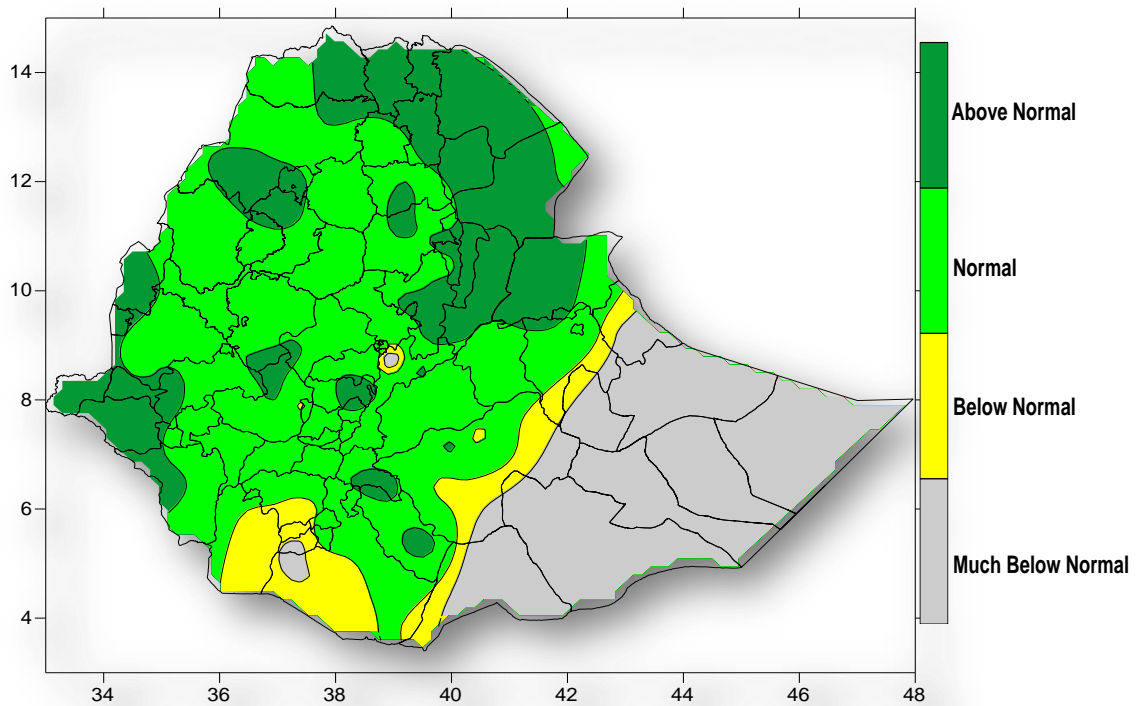


Fig.16. Percent of Normal Rainfall for Kiremt 2022

Explanatory notes for the Legend

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

1.8. Rainfall Anomaly on Kiremt Season 2022

During Kiremt Season 2022 Jijiga, Fik, Degahabur, Warder, Afder, Liben, Borena, Konso, half of Blie, pocket areas of East Hararaghe and South omo zones are exhibited Much Below Normal to Below Normal rain fall distribution. The rest parts of the countries exhibited Normal to Above Normal.

2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

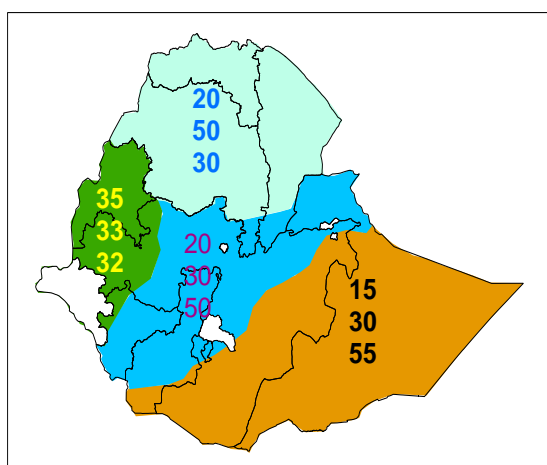
2.1. VEGETATION CONDITION AND IMPACT ON AGRICULTURE DURING KIREMT 2022

During Kiremt 2022, the observed good moisture condition throughout the months (figure 1 to 4) benefited Meher agricultural activities, availability of pasture and drinking water over eastern and north-eastern pastoral and agro-pastoral areas, without considerable the observed Moisture stressed over southern margin, some areas of central and eastern parts as well as crops affected due to heavy fall in some areas of the country. The computed WRSI (figure.8) for Meher Maize, Sorghum, Barley, Teff and Wheat indicates that Meher rain performed well. It indicates a good prospect for Meher crop production. The range land index based on WRSI (figure.6) and NDVI (figure.5) computed for Meher 2022 month to month shows good improvement. The situation was highly favorable for availability of pasture and water over eastern and north-eastern pastoral and agro-pastoral areas. Generally with the exception of the observed slight Moisture stressed at over some areas of southern margin, central and eastern part and soil erosion, water logging and land slide as well as the flood affected crops, life and property affected due to heavy fall in some areas the overall situation was favorable for kiremt season's agricultural activities. Finally the overall agricultural condition was good over most parts of Meher growing area with the exception of the observed adverse weather situations over some places.

2.2. EXPECTED WEATHER IMPACT ON AGRICULTURE DURING THE COMING BEGA, 2022_23 SEASON

Normally during Bega season, harvest and post-harvest activities are the major practices over most parts of Meher growing areas. It is time to perform water-harvesting activities for pastoral and agro pastoral areas of southern and south-eastern lowlands. The weather situation would favor the outbreak of pests if there were favorable environment, susceptible host and the pest itself. Under normal circumstance, there is a possibility of frost hazard during the season, mainly over north-eastern, central, eastern and southern highland.

TERCILE PROBABILITY FOR BEGA (ONDJ) 2022_23



Implication:-

- Late onset of the Bega season across Southern and South-eastern
- Increase the chances of below average Bega's rainfall in Southern Ethiopia.
- Frost is likely to occur across highlands;
- Above-normal to slightly near-normal temperature over the central, eastern and south-east

The expected dominantly normal to above normal rainfall across Benshangul-Gumuze, western Oromia, Gambela and south-western parts of the country would favor not fully matured existing Meher crops which are at different phenological stages. Besides, it would have significant contribution for the production of pulses crops which planted at the end of season with residual moisture and perennial plants.

The dry and cool Bega season likely to occur over northern half of Ethiopia will favor harvest and post-harvest activity of Meher crops also the dry conditions could suppress breeding of desert locust and water-borne livestock and human diseases. However the enhanced probabilities of below-normal temperatures over much of northern, north western

and south western parts favorable for the occurrence of frost across highlands of Northern, North-eastern, Eastern and southern parts of the country which would create negative impact on the normal growth and development of late planted Meher crops, irrigated vegetables and fruits, perennial plants and livestock conditions. Therefore, farmers are advised properly and regularly visit their farm fields for monitoring frost and proper precaution measures ahead of time to minimize the risk.

In general the expected to receive below normal seasonal rain and higher chances of delayed onset dates to prevail across the South and South-eastern regions, where Bega is the second rainy season and which will have expected probability of moisture stress and negatively affecting water and pasture availability and crop performance, early depletion of water and pasture resources may lead to scarcity of animal products such like milk, meat and butter, inadequacy of livestock fodder, forages and drinking water and negatively impacting food security and nutrition which may trigger resource-based conflicts, atypical pastoral migration and some areas might still experience dry spells as was the case in the recent past seasons which exacerbate the situation. Therefore we advise farmers adopt irrigation/water conservation techniques in areas expecting dry conditions, Closely monitor pasture and water conditions across pastoral areas, Plan for feed/water assistance (water tracking, fodder supplementations), strategy to distribution of the feed from surplus to the deficit area, farmers urged to undertake early land preparation and plant and activate the taskforce and provide drought monitoring information to affected areas such as Borena, Somali and southern parts of Oromia. Thus, users should interpret the weather forecast in terms of their area of interest and the existing condition of their specific areas.

Finally, we advise immediately disseminate this early warning information to decision makers, timely activation of the task force(s) on drought that involves the different sector ministries and also farmers advised using climate and weather updates as provided by the Ethiopia Meteorology Institute (EMI).

3. DEFINITION 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 covers 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.

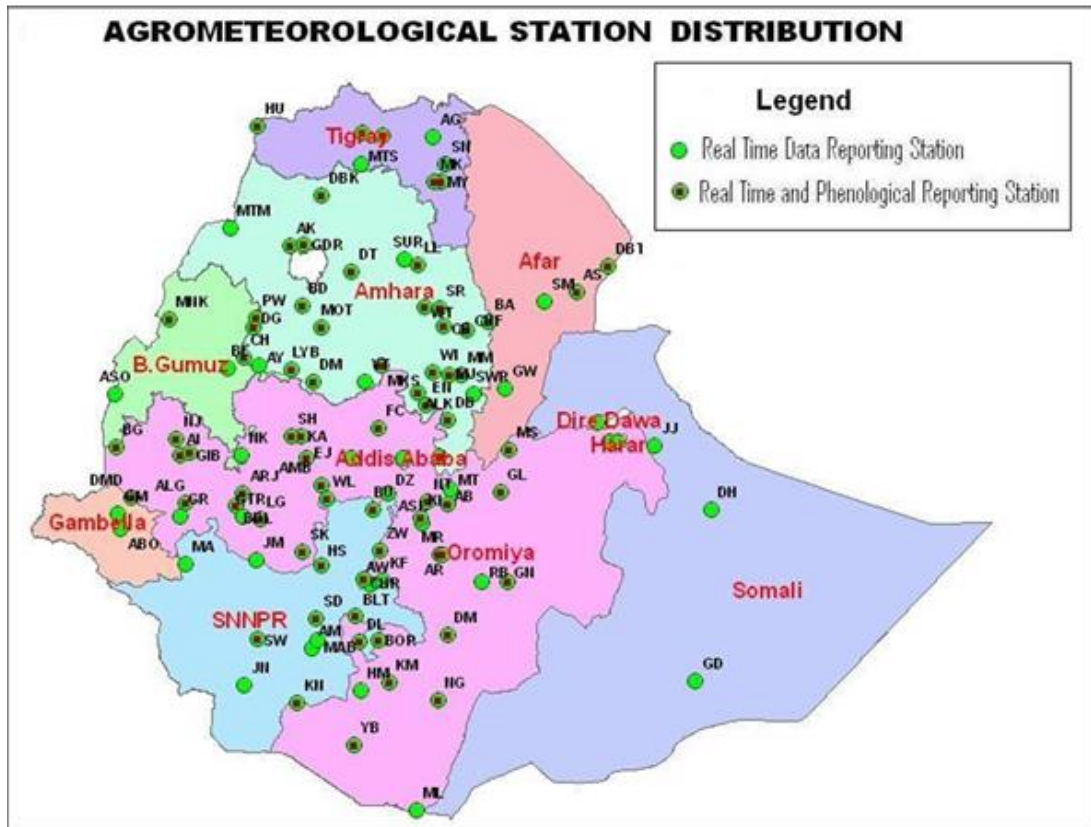
EXTREME TEMPERATURE:- The highest or the lowest temperature among the recorded maximum or minimum temperatures respectively.

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

AGROMETEOROLOGICAL STATION DISTRIBUTION



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	SG
Assosa	ASO	Filtu	FL	M/Abaya	MAB	Gebeya	SG
Awassa	AW	Gambela	GM	Maichew	MY	Sirinka	SR
Aykel	AK	Gelemso	GL	Majete	MJ	Sodo	SD
B. Dar	BD	Ginir	GN	Masha	MA	WegelTena	WT
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		