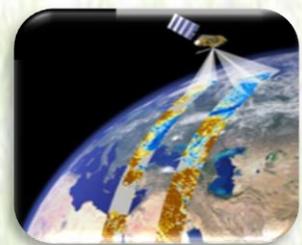


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FORE WARD

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.

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አህጽሮት

በኢትዮጵያ ሚቲዎሮሎጂ ኢንስቲትዩት የወቅቶች አከፋፈል መሰረት የበጋ ወቅት ከጥቅምት እስከ ጥር ያለውን ጊዜ የሚያጠቃልል ሲሆን፣ በመደበኛ ሁኔታ ፀሐያማ፣ ደረቅ እና ነፋሻማ የአየር ፀባይ በአብዛኛዎቹ የሀገሪቱ አካባቢዎች ላይ የሚያመዘንበት እና አልፎ አልፎ ወቅቱን ያልጠበቀ ዝናብ የሚታይበት ጊዜ ነው። እንዲሁም በሰሜን ምስራቅ፣ በምስራቅ፣ በመካከለኛው እና በደቡብ ደጋማ አካባቢዎች ላይ ከፍተኛ ቅዝቃዜና የውርጭ ክስተት የሚስተዋልበት ወቅት ሲሆን በሌላ በኩል ይህ ወቅት ለደቡብ እና ደቡብ ምሥራቅ ቆላማ የሀገሪቱ አካባቢዎች ሁለተኛና አጭሩ የዝናብ ወቅታቸው ጭምር ነው። ከዚህ ምቹ የአየር ፀባይ ጋር ተያይዞ በአብዛኛው የመኸር አብቃይ በሆኑ አካባቢዎች የተለያዩ ሰብሎች እድገታቸውን የሚጨርሱበት ከመሆኑ ጋር ተያይዞ የሰብል ስብሰባና ድህረ ሰብል ስብሰባ ተግባራት በስፋት የሚካሄድበት ጊዜ ሲሆን በደቡብና በደቡብ ምሥራቅ የአርብቶ አደሩና ከፊል አረብቶ አደር አካባቢዎች ለግጦሽና ለመጠጥ ውሃ እንዲሁም መጠነኛ የሆነ እርሻ እንቅስቃሴ የሚካሄድበት ጊዜ ነው።

እ.ኤ.አ የኦክቶበር ወር 2022 በአብዛኛው የሀገሪቱ ክፍሎች ላይ የበጋው ደረቅ ፀሐያማና ነፋሻማ የአየር ሁኔታ አመዝኖ እንደነበረ የተሰበሰቡ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ። ይህም ሁኔታ በመድረቅ ሂደትና በመሰብሰብ ላይ ለሚገኙ ሰብሎች አዎንታዊ ሚና ነበረው። ሆኖም ግን ለእርጥበት መጨመር ምቹ ከነበረው የሚቲዎሮሎጂ ክስተት መጠናከር ጋር ተያይዞ በጋ ሁለተኛ የዝናብ ወቅታቸው የሆኑት የደቡብ ኦሮሚያና የደቡብ ሶማሌ በተጨማሪም የመካከለኛው ኦሮሚያ፣ በአንዳንድ የሰሜን ምዕራብ፣ የምዕራብና የደቡብ ምዕራብ የሀገሪቱ ክፍሎች ላይ ከቀላል እስከ ከባድ መጠን የሚደርስ የእርጥበት ይዘት እንደነበራቸው የተተነተኑ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ። ይህም ተጠናክሮ የታየው እርጥበታማ ሁኔታ እድገታቸውን ላልጨረሱና በተለያዩ የእድገት ደረጃ ላይ ለሚገኙ የመኸር ሰብሎችም ሆነ ለቋሚ ተክሎች እድገት የሚያስፈልጋቸውን እርጥበት ከማስገኘት አንጻር አዎንታዊ ሚና ነበረው። በተጨማሪም በጋ ሁለተኛ የዝናብ ወቅታቸው ለሆኑት የአርብቶ አደርና የከፊል አርብቶ አደር አካባቢዎች የተለያዩ የግብርና እንቅስቃሴዎችን እንዲያከናውኑ አዎንታዊ ሚና ነበረው ሲሆን ለግጦሽ ሳርና ለመጠጥ ውሃ አቅርቦት መሻሻልም ገንቢ ሚና ነበረው። ሆኖም ግን በአንዳንድ ሥፍራዎቻቸው ላይ ከባድ መጠን ያለው ዝናብ ከመኖሩ ጋር ተያይዞ የእርጥበት መጠኑም እየተሰፋፋ እንደሄደ የተሰበሰቡ የግብርና

ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ። ይህም ሁኔታ ምንም እንኳን የደረሰን ሪፖርት ባይኖርም አልፎ አልፎ ባሉት ቀናት በተወሰኑ የሀገሪቱ ክፍሎች ላይ የነበረው ከባድ ዝናብ በተለያዩ የእድገት ደረጃ ላይ ባሉ ሰብሎች ላይ አሉታው ተፅእኖ ቢኖረውም ውሃ አጠር ለሆኑ አካባቢዎች ውሃን ለመሰብሰብና ለማከማቸት ጥሩ አጋጣሚን የፈጠረ ነበር፡፡

እ.ኤ.አ ባሳለፍነው የኖቨምበር ወር 2022 በአብዛኛዎቹ የሀገሪቱ ክፍሎች ላይ የበጋው ደረቅ፣ ፀሐያማና ነፋሻማ የአየር ሁኔታ ተስተውሏል። ይህም ሁኔታ በዚህ ጊዜ የሰብል ስብሰባቸውን በሚያካሄዱ በአንዳንድ ሰብል በደረሰባቸው አካባቢዎች ለሰብል ስብሰባና ድህረ ሰብል ስብሰባ አመቺ ሁኔታን የፈጠረ እንደነበረ የተሰበሰቡ የግብርና ሚቲዎሮሎጂ መረጃዎች ያመለክታሉ። በአንፃሩም ከደረቃማው የአየር ሁኔታና ከደመና ሽፋን መሳሳት ጋር ተዳምሮ በአብዛኛው የሀገሪቱ ስፍራዎች ላይ የማለዳውና የሌሊቱ ቅዝቃዜ በተለይም ከሁለተኛው አስር ቀን ጀምሮ በአንፃራዊ ሁኔታ ተጠናክሮ እንደነበረ መረጃዎች የሚያመለክቱ ሲሆን፣ በተለይም በአንዳንድ ደጋማ የሀገሪቱ ክፍሎች ላይ የቀኑ ዝቅተኛ የሙቀት መጠን በተከታታይ ቀናት ከ5 ዲግሪ ሴልሽየስ በታች ሆኖ ተመዝግቧል። ይህም ሁኔታ ሙሉ ለሙሉ ባልደረሱና በተለያዩ የእድገት ደረጃ ላይ በሚገኙ ሰብሎች ላይ በመጠኑም ቢሆን የራሱን አሉታዊ ተጽዕኖ አሳድሯል፡፡ በሌላም በኩል የበጋው ወቅት ዝናብ ተጠቃሚ የሆኑት የደቡብ፣ የደቡብ ምስራቅ፣ የደቡብ ምዕራብ አካባቢዎች በአንዳንድ ቦታዎቻቸው ላይ ዝናብ ነበራቸው። ይህም ሁኔታ ሙሉ ለሙሉ እድገታቸውን ላልጨረሱ ሰብሎች፣ ለቋሚ ተክሎች እንዲሁም በመኸር ወቅት መጨረሻ ላይ በአፈር ውስጥ በተከማቸው እርጥበት በመታገዝ ለሚዘሩ የጥራጥሬ ሰብሎች የተገኘው እርጥበት የጎላ ጠቀሜታ የነበረው ሲሆን በአንጻሩም በጋ ሁለተኛ የዝናብ ወቅታቸው በሆኑት የደቡብና የደቡብ ምስራቅ የሀገሪቱ ክፍሎች ላይ የተገኘው እርጥበት በደጋማው አካባቢ ለተዘሩ ሰብሎች የውሃ ፍላጎት መሟላት እንዲሁም በቆላማው አካባቢ ለሚኖሩት አርብቶ አደሮችና ከፊል አርብቶ አደሮች ለግጦሽ ሣርና ለመጠጥ ውሀ አቅርቦት አዎንታዊ አስተዋጽዖ ነበረው። በተጨማሪም በመጀመሪያዎቹ ቀናት ከተጠናከሩት የሚቲዎሮሎጂ ገጽታዎች ጋር በተያያዘ የወቅቱ ዝናብ በማይጠበቅባቸው በመካከለኛው፣ በምስራቅ፣ በሰሜን ምሥራቃዊ ዳርቻዎች እንዲሁም በሰሜን ምዕራብ የሀገሪቱ አካባቢዎች ላይ ዝናብ ተስተውሎባቸዋል። ይህም ሁኔታ ምንም እንኳን የደረሰን ሪፖርት ባይኖርም በተወሰኑ ቦታዎች ላይ የነበረው ወቅቱን ያልጠበቀ እርጥበት እድገታቸውን ሙሉ ለሙሉ ባልጨረሱና በመሰብሰብ ላይ ባሉ ሰብሎች ላይ በተወሰነ ሁኔታ አሉታው ተፅእኖ ነበረው። በተጨማሪም ከወሩ

አጋማሽ በኋላ አልፎ አልፎ ከነበረው የደመና ክምችት ጋር ተያይዞ በደቡብ፣ በደቡብ ምዕራብ፣ በምዕራብ እና በደቡብ ምስራቅ በጥቂት ስፍራዎቻቸው ላይ ከባድ ዝናብ ተመዝግቧል። ይህም የተገኘው ከባድ ዝናብ በተወሰነ ቦታዎች በተለያየ የእድገት ደረጃ ላይ ባሉ ሰብሎች ላይ አሉታው ተፅእኖ ቢኖረውም ውሃ አጠር ለሆኑ አካባቢዎች ውሃን ለመሰብሰብና ለማከማቸት ጥሩ አጋጣሚን የፈጠረ ነበር።

እ.ኤ.አ በዲሴምበር ወር 2022 በተለይም በመጀመሪያውና ሁለተኛው አስር ቀናት የሰሜን ምሥራቅ፣ የመካከለኛው፣ የምሥራቅ እና የደቡብ ደጋማ የሀገሪቱ ክፍሎች ላይ ደረቅ፣ ፀሃያማ እና ነፋሻማ የአየር ሁኔታ አይሎ ተስተዋል። ይህም ከሚጠበቀው ወቅታዊ የግብርና እንቅስቃሴ አንጻር ሰብል ለመሰብሰብና የድህረ ሰብል ስብሰባ ተግባራትን ለማከናወን አመቺ ሁኔታን የፈጠረ ነበር። በተጨማሪም የለሊትና የማለዳው ቅዝቃዜ በአንዳንድ የሰሜን፣ መካከለኛው፣ ደቡብና ምስራቅ የሀገሪቱ ደጋማ ስፍራዎች ላይ ከዕለት ወደ ዕለት ጨምሮ የተስተዋለ ሲሆን። ይህም ሁኔታ ሙሉ ለሙሉ ባልደረሱና በተለያየ የእድገት ደረጃ ላይ በሚገኙ ሰብሎች ላይ በመጠኑም ቢሆን አሉታዊ ተጽዕኖ አሳድሯል። ይሁን እንጂ በዲሴምበር የመጨረሻዎቹ አስራ አንድ ቀናት አንፃራዊ የሆነ የደመና ሽፋን በአንዳንድ የሀገሪቱ አካባቢዎች ላይ ስለነበር የለሊትና የማለዳው ቅዝቃዜ በአንዳንድ የሀገሪቱ ደጋማ ስፍራዎች ላይ ጋብ ብሎ ተስተዋል። በሌላ በኩል ከነበረው የደመና ሽፋን በአንዳንድ የደቡብ ምዕራብና የሰሜን የሀገሪቱ አካባቢዎች ላይ ከቀላል እስከ ከባድ መጠን ያለው ዝናብ በመኖሩ አልፎ አልፎ ባሉት ቀናት የእርጥበታማ ሁኔታው በአመዛኙ ነበራቸው። ይህም ሁኔታ ሙሉ ለሙሉ እድገታቸውን ላልጨረሱ ሰብሎች፣ ለቋሚ ተክሎች እንዲሁም በመኸር ወቅት መጨረሻ ላይ ለሚዘሩ ሰብሎች ጠቀሜታ የነበረው ቢሆንም በአንዳንድ ስፍራዎች በደረሱና በመሰብሰብ ሂደት ውስጥ ባሉ ሰብሎች ላይ አሉታዊ ተጽእኖ ነበረው።

እ.ኤ.አ የጃንዋሪ ወር 2022 የበጋው ደረቃማ፣ ፀሃያማና ነፋሻማ የአየር ሁኔታ በአብዛኛው የሀገሪቱ ስፍራዎች ላይ ተስተዋል። ይህም ሁኔታ በወቅቱ እየተከናወነ ካለው የግብርና እንቅስቃሴ አንጻር በጎ ጎን ነበረው። በመሆኑም በወሩ ውስጥ የተስተዋለው ደረቅ የእርጥበት ሁኔታ የደረሱ ሰብሎች እንዲደርቁ፣ በጊዜ እንዲሰበሰቡና የድህረ ሰብል ስብሰባ ተግባራትን ለማከናወን ምቹ ሁኔታ ነበረው። በሌላ መልክ በአንዳንድ የሰሜን፣ የመካከለኛው እና የምስራቅ የሀገሪቱ ደጋማ ስፍራዎች ላይ ከቀኑ ዝቅተኛ የሙቀት መጠን የተነሳ የለሊትና የማለዳው ቅዝቃዜ ከዐ

ዲግሪ ሴልሽየስ በታች ሆኖ ተመዝግቧል። ለአብነት ያህል በደብረብርሀን -1.2፣ -0.8፣ በሐሮማያ -1.4፣ -1.2፣ -0.6 -0.2፣ እንዲሁም በመሐል ሜዳ -1.5 እና 0.0 ዲግሪ ሴልሽየስ ሆኖ ተመዝግቧል። ይህም የተስተዋለው ቅዝቃዜ በእንሰሳት ጤናና፣ በመስኖ በመታገዝ በሚለሙ የፍራፍሬ ተክሎችና በጓሮ አትክልቶች ላይ በጥቂት ቦታዎች ላይ በተወሰነ መጠን አሉታዊ ጎን ነበረው። ይሁንና አልፎ አልፎ ባሉት ቀናት ከነበረው የደመና ሽፋን በምእራብ አጋማሽ፣ በምስራቅ፣ በሰሜንና በሰሜን መስራቅ በአንዳንድ ቦታዎች ላይ መደበኛና ከመደበኛ በላይ መጠን ያለው እርጥበት ተመዝግቧል። ይህም ሁኔታ በተለይም ለደረሱና በመሰብሰብ ሂደት ውስጥ ለነበሩ ሰብሎች በጥቂት ቦታዎች አሉታዊ ጎን የነበረው ቢሆንም በጋ ሁለተኛ የዝናብ ወቅታቸው ለሆኑትም ሆነ ለቋሚ ተክሎች፣ ለአትክልቶችና ለእንሰሳት የግጦሽ ሳርና የመጠጥ ውኃ አቅርቦት ላይ የተገኘው እርጥበት ጠቀሜታ ነበረው።

በአጠቃላይ ባሳለፍነው 2022/23 የበጋ ወራት የነበረው የእርጥበት ሁኔታ ሲገመገም በተለይም የክረምቱ ሲስተም ቶሎ ካለመዳከሙ ጋር ተያይዞ የእርጥበት ሁኔታው ከሰሜንና ከሰሜን ምስራቅ በአወጣጥ ረገድ በተወሰነ ደረጃ የቆየበትና በተጨማሪም የበጋ ወቅት በመጀመሪያዎቹ ሁለት ወራት (ጥቅምት እና ህዳር) በብዙ የሀገሪቱ ቦታዎች ላይ የተለያየ መጠን ያለው እርጥበት እንደነበረ ተስተውሏል። ይህም ሁኔታ በነዚህ አካባቢዎች ዘግይተው ለተዘሩ እድገታቸውን ላልጨረሱና ተጨማሪ እርጥበት ለማያስፈልጋቸው ሰብሎች ለቋሚ ተክሎች የውሀ ፍላጎት መሟላት በጎ ጎን ነበረው። በአንፃሩም የበጋው ወቅት ከመግባቱ ጋር ተያይዞ የተለመደው ደረቅ፣ ፀሃያማና ነፋሻማ የአየር ሁኔታ አመዝኖ ከመቆየቱ ጋር የደረሱ ሰብሎችን ለመሰብሰብና የድህረ ሰብል ስብሰባ ተግባራትን ለማከናወን አመቺ ሁኔታን የፈጠረ ይሁን እንጂ በተለይም በወቅቱ መገባደጃ በነበሩት ሁለት ወራት የነበረው ቅዝቃዜ ለውርጭ ተጋላጭ በሆኑ በሰሜን፣ በሰሜን ምስራቅ፣ በምስራቅ፣ በመካከለኛውና በደቡብ ከፍተኛ ቦታዎች ዝቅተኛው የሙቀት መጠን ከ5°C በታች በአንዳንድ ቦታዎችም ከ0°C በታች ወርዶ ነበር። ይህም ሁኔታ ሙሉ ለሙሉ ባልደረሱና በተለያየ የእድገት ደረጃ ላይ በሚገኙ ሰብሎች በመስኖ በሚለሙ የጓሮ አትክልቶችና የፍራፍሬ ተክሎች እና በእንሰሳ ጤና ላይ በመጠኑም ቢሆን የራሱን አሉታዊ ተጽዕኖ አሳድሯል። በአጠቃላይ ባለፈው የበጋ ወቅት በሰሜን ምስራቅ፣ በመካከለኛው፣ እንዲሁም በጋ ሁለተኛ የዝናብ ወቅታቸው የሆነው (Hageya/Deyr) ወቅታዊ ዝናብ ማግኘት በሚገባቸው በደቡብና በደቡብ ምስራቅ የሀገሪቱ ሥፍራዎች በተለይም በቦረና፣ ጉጂና በባሌ ቆላማ ኪስ ቦታዎች

የእርጥበት ሁኔታ አመለካከት (Moisture Index), ከሳተላት የሚሰበሰበው የእፅዋትን ሽፋን አመለካከት (NDVI) እንዲሁም በአረብኛ አደሩ አካባቢ የሚሰላው (Rangeland index based on WRSI) የሚጠቁመው መረጃ እንደሚያሳየው የእርጥበት እጥረት ታይቶባቸው ነበር። በዚህ የተነሳም የእንሰሳት መኖም ሆነ የመጠጥ ውኃ አቅርቦት ላይ እጥረት እንደነበርና የምግብ ዋስትናቸውም ዝቅተኛ መሆኑን ከመስክ በተገኙ መረጃዎች ማረጋገጥ ተችሏል።

SUMMARY

Bega 2022/23

During the month of October 2022, according to the analyzed agro meteorological information some of the northern half, central and eastern part of the country was under the influence of dry moisture condition. This situation is believed to be favorable for harvest and post-harvest activities of fully matured Meher season crops. On the other hand, the observed enhanced moisture over enhanced moisture condition prevail over southern and central Oromia, southern Somali and some parts of western, south-western and north-western parts of the country received slight to heavy rainfall. This situation was believed to be more favorable for perennials plants and various crops which are found from vegetative to grain filling stages toward attaining their water need for further growth and development. Similarly, since Bega is the second rainy season for the southern and south-eastern parts of the country, the received rain during the month could play very crucial role to perform different agricultural activities. Additionally, the condition had positive impact for improving the availability of pasture and drinking water over both the pastoral and agro pastoral community. In relation to the dry condition, the night and morning time coldness was observed below 5 degree centigrade over some high lands. This condition might be slightly negative impact for crops which were lately planted and currently found at various growing stages and requiring additional moisture for their further development. However the observed heavy fall over southern half of the country had good opportunity to collect rain water harvesting. On the other hand the observed heavy fall over some areas which are characterized as moisture excess areas, particularly the western and south western parts of the country might experience slight water logging, runoff and soil erosion due to continuous rainfall and heavy fall.

During the month of November 2022, according to the analysed agro meteorological information the observed dry, Sunny and windy Bega weather condition could favourable for harvest and post-harvest activities of fully matured Meher season crops. As the result harvest and post-harvest activities were under way in most parts of Meher growing areas. Moreover in relation to the dry condition, the night and morning time coldness was observed and minimum Temperature below 5 degree centigrade continuously recorded over some high lands. This condition might be slightly negative impact for crops which were lately planted and currently found at various growing stages as well as fruits and vegetables which grow under irrigation. On the other hand, the observed enhanced moisture condition prevail over

southern, south-eastern and south-western Bega rainfall benefiting areas experienced slight to heavy rainfall. This condition might have favourable to satisfy the water need of various early planted Meher season crops which found different phenological stages, late sown cereal and pulse crops, as well as perennial plants. Similarly, since Bega is the second rainy season for the southern and south-eastern parts of the country, the received rain during the month could play very crucial role to perform different agricultural activities. Additionally, the condition had positive impact for improving the availability of pasture and drinking water over both the pastoral and agro pastoral community. However due to the observed occasional unseasonal rainfall particularly the last few days of the first dekad and the beginning of the second dekad experienced over central, eastern, north-western and north-eastern margins of the country could have negative impact in areas where they are normally supposed to get dry moisture condition at this time of the year and the situation might have negative impact for areas which are under harvest and post-harvest activities. Moreover, the observed heavy fall after the second half of the month over some areas of southern, south-western, western and south-eastern parts of the country might have negative impact for areas which are under harvest and post-harvest activities. While the observed moisture over south and south-eastern pastoral and agro-pastoral areas had been positive impacts for improvement of pasture and drinking water and good opportunity to collect rain water harvesting.

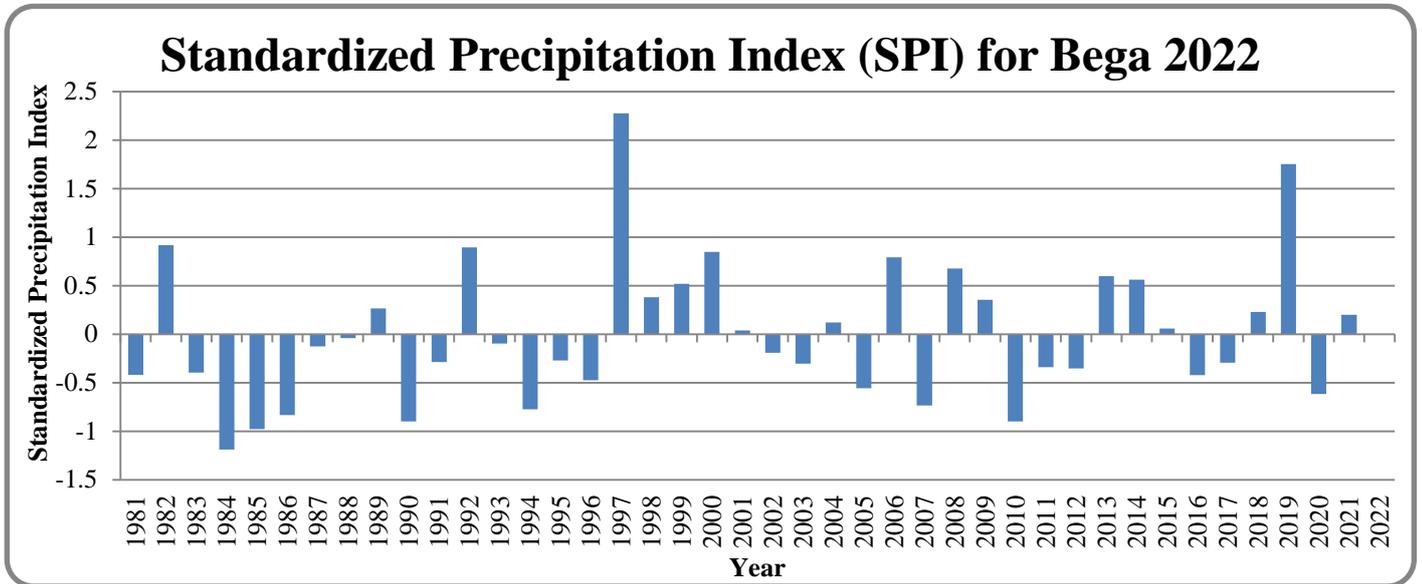
During the month of December 2022, the Bega season dry, sunny and windy climate condition prevailed across the country and this situation was more pronounced during the first and second dekad of the month. In the current and on-going agricultural activities, the dry condition was favourable for the timely conduct harvest and post-harvest activities. On the other hand, in line with the dry condition some of the northern, central, southern and eastern parts of the country recorded minimum temperatures below 5⁰C while some few places remained below zero degree Celsius. In line with this Debre Berhan -0.8, 1.4, 4.2, 3.6, 3.2, 4.8 and 3.0 °Haromaya 0.6, 0.2, 2.0, 1.8, 2.4, 1.0, 1.8, 1.8 and 2.4, Bui 4.0, 3.0, 4.0, 4.5, 4.0, 4.6 and 4.0 Cheffa 2.4, 2.8, 3.0, 2.4, 3.2, 2.4, 3.4, 3.6, 4.8 and 4.2, Adelle 4.0, 2.5, 2.2, 4.0 and 4.5, Mehal Meda 2.2, 2.8, 3.2, 4.5, 4.2, 4.8 and 2.2, Arsi Robe 4.0, 4.5, 4.5, 4.0, 4.0 and 3.0, Dangila 4.6, Debark 4.5, 4.5 and 4.4, Debre Work 4.8 and 4.8, Jimma 4.5 Robe 3.4, 3.6, 4.2 and 4.4 Nekemt 1.0 Yetnora 4.1 and Wegel Tena 4.5, 4.0, 4.0, 2.0 -0.2, 1.4, 2.6, 3.2, 2.6 and 3.2 ⁰C recorded. This cold and chill condition might have some negative impact on irrigated fruits, vegetables and perennial plants as well as livestock health. However during the last dekad of December slight to humid moisture was experienced over western, south-western, central and northern parts of the country. This condition favours toward the water

satisfaction of not fully matured crops, perennial plants and horticulture crops and for some of legumes which often planted after harvest of Meher crops. In addition, it might have positive impact on ensuring the availability of pasture and drinking water over pastoral and agro pastoral areas. However the received heavy rain might be negatively affected harvested and ready to harvested crops.

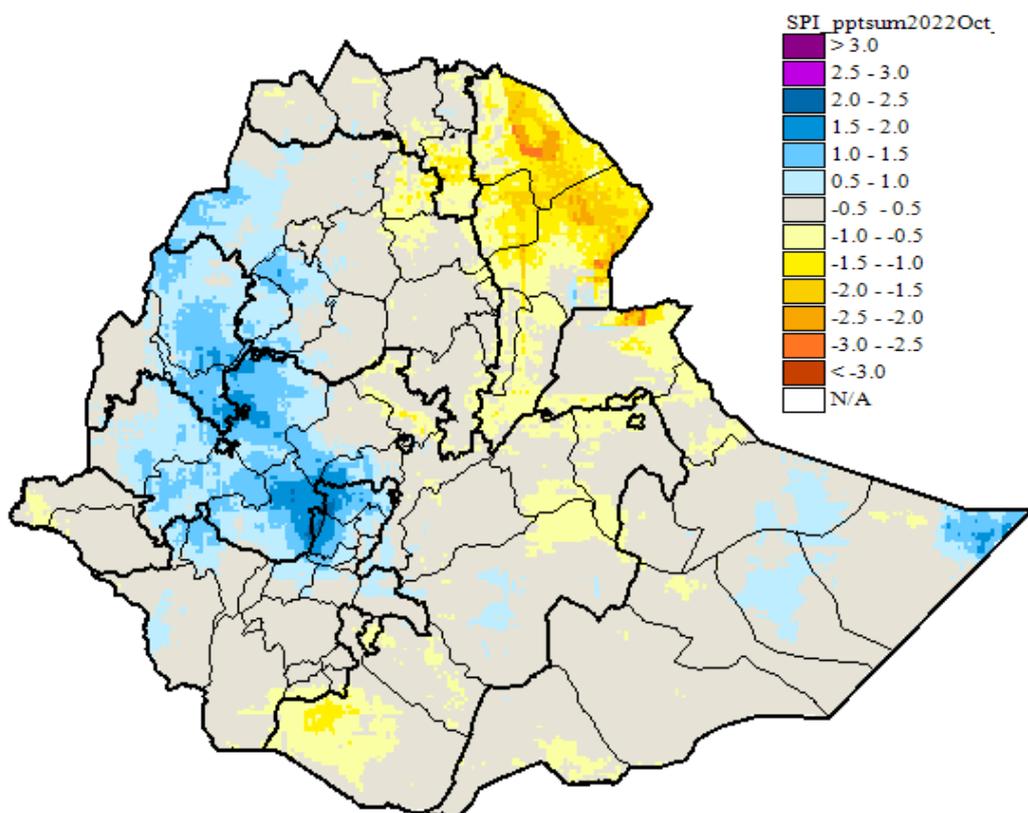
During the month of January 2023, the information obtained from agro meteorological stations indicated that during the month of January 2023, the Bega season dry moisture condition prevailed across most parts of the country. This condition was favorable for the ongoing post-harvest activities for Meher season crops. In relation to the prevailing dry condition some station recorded below zero degree Celsius. In line with this, Debre Berhan -1.2 -0.8, Haromya -1.4, -1.2, -0.6 and -0.2 and Mehal Meda -1.5 and 0.0 °C recorded. This situation could have slightly negative impact on fruits and vegetables grown under irrigation as well as animals and their products. However, the station report also indicated that during the month certain places in the western half, eastern, north east and northern parts of the country received light to normal to above normal rainfall. This condition may slightly affected ready to harvest crops. However, this situation might be positive to sustain the growth of fodder and pasture and the availability of drinking water in the pastoral and agro pastoral area. In addition, it also positive implication toward fulfilling the daily water need of perennial plants as well as improving the soil moisture content and thus may favor the early time land preparation.

Generally during the past Bega 2022/23 season due to the influence of kirt system the moisture condition existed over North and North Eastern regions of the country .in particular during the month of October and November with good moisture condition was observed over most part of the country. The observed moisture was favorable for the performances of Meher crops that are late sown and not yet fully matured, and perennial plants to satisfy the water requirement. On the other hand, the observed dry and sunny Bega season should be taken as a good opportunity to perform harvest and postharvest activities over the place where Meher season crops are fully matured. However Particularly during the last month of Bega season decrease in extreme minimum temperature as low as 5⁰ C lowering up below 0⁰ C over Northern, North Eastern, Eastern, Central and Southern highlands might have been frost risk on Meher crops that were not yet fully matured crops, irrigated Fruits, vegetables and animal's products. In General, the observed agro meteorological indicators that poor performance of moisture index, vegetation cover and Rangeland index during Bega 2022_23 over North Eastern Central and Bega benefiting areas (Hageya/Deyr) rain over

southern and south-eastern pastoral and Agro-pastoral regions. The situation was confirmed by field reports due to persistent of severe moisture stress and consistently emerging of severe drought situations particularly Southern Oromia regions of Borena, Gugi, and pocket areas of Bale low land are affected by availability of pasture and drinking water.



Standardized Precipitation Index (SPI) Bega 2022_23



Bega 2022/23 Moisture Status Map

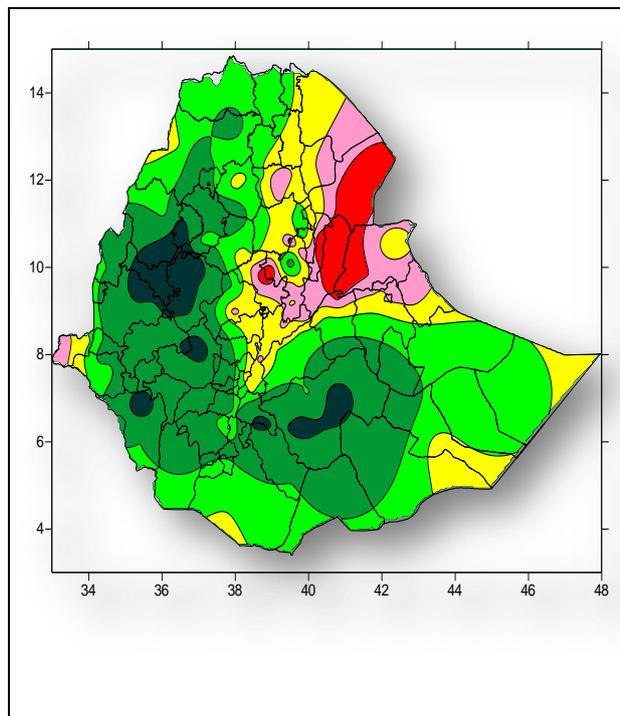


Figure 1. Moisture status for the month of October 2022

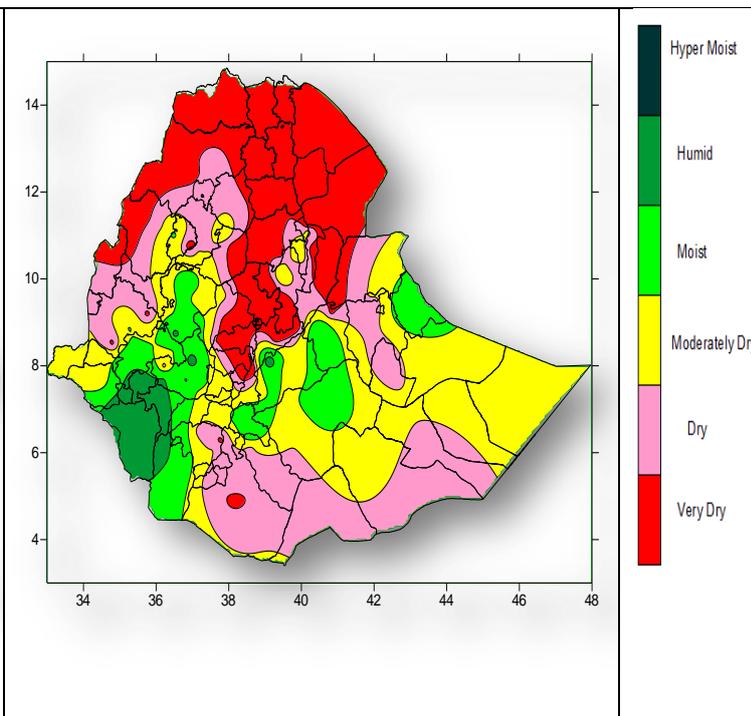


Figure 2. Moisture status for the month of November 2022

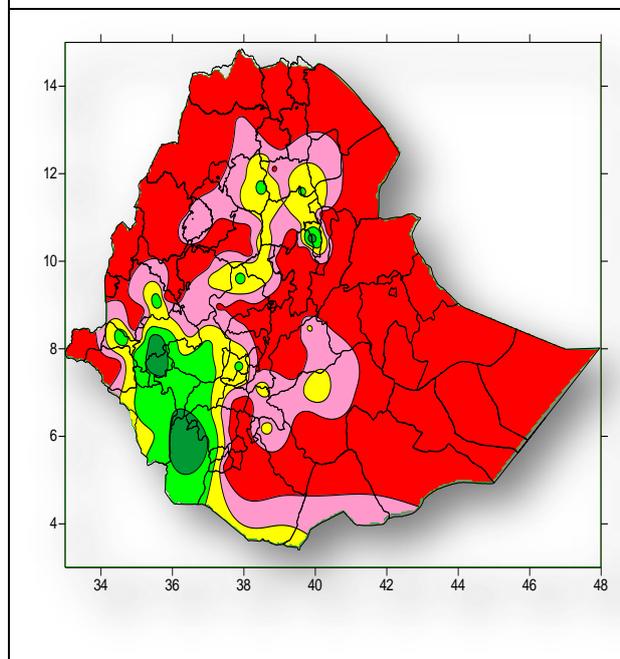


Figure 3. Moisture status for the month of December 2022

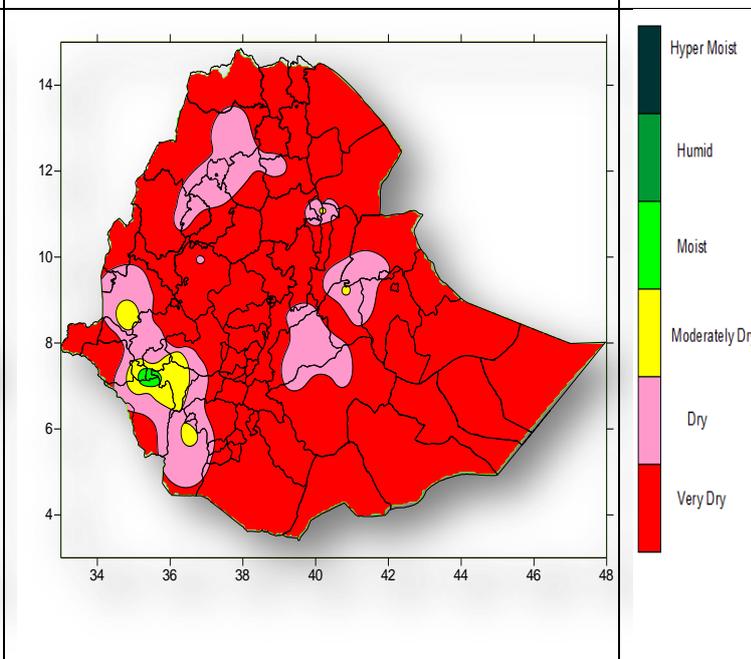
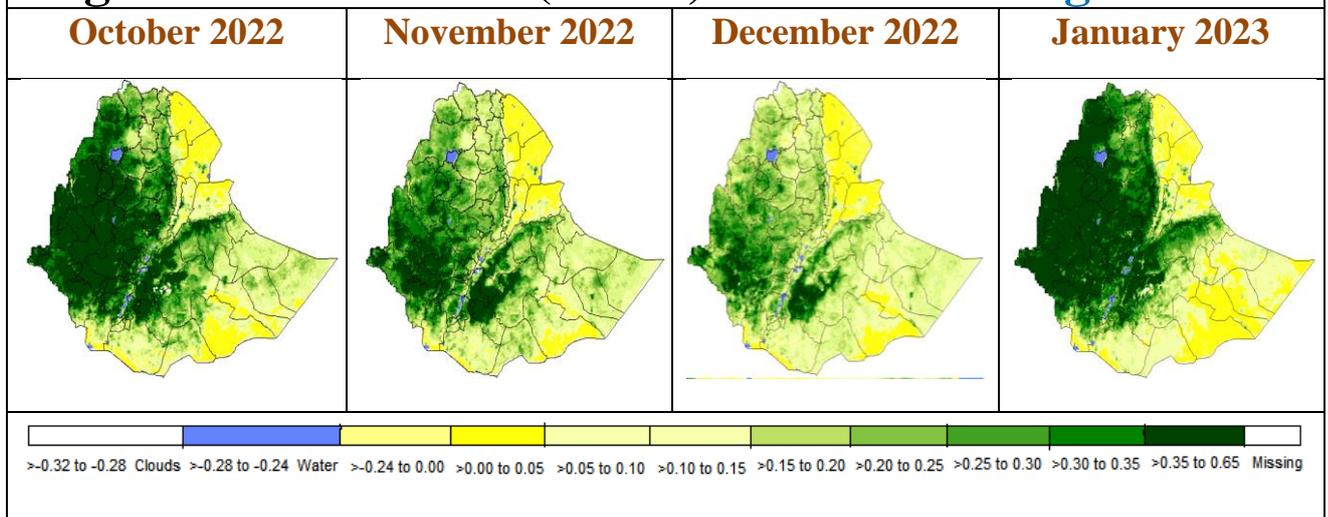


Figure 4. Moisture status for the month of January 2023

Vegetation Greenness (NDVI) in fraction - Bega 2022/23



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

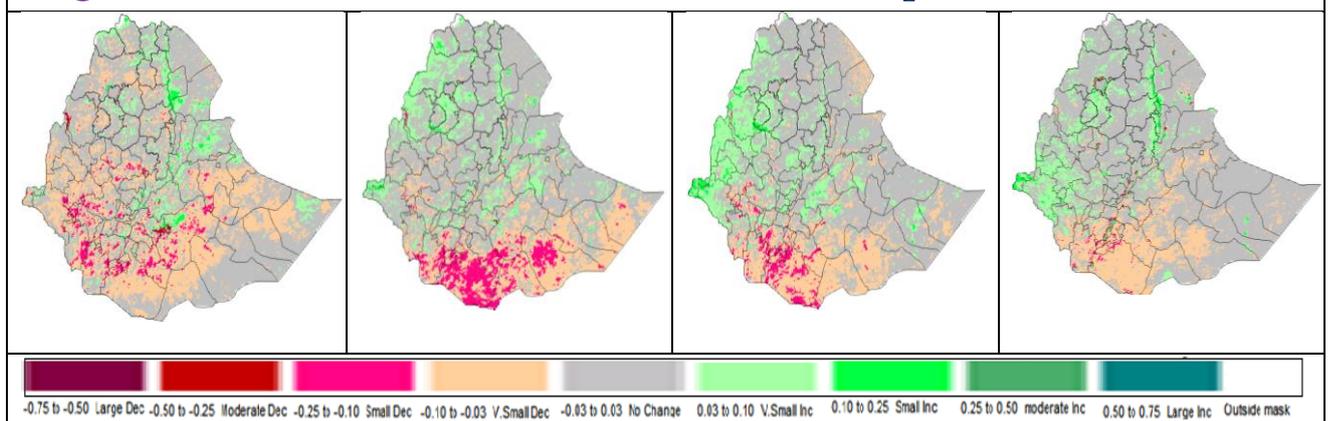


Fig. 5. Vegetation Greenness (NDVI) in fraction and Compared to Normal Kiremt (October 2022 – January) 2022_23

Rangeland WRSI in % - Bega 2022/23

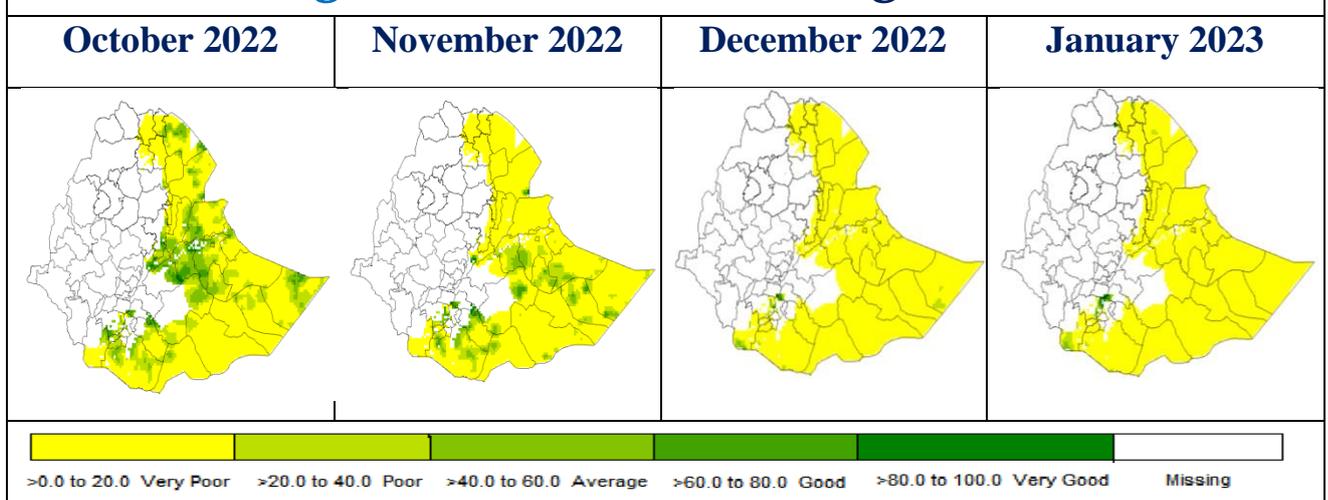


Fig.6. Rangeland WRSI in % Kiremt (October 2022- January 2023)

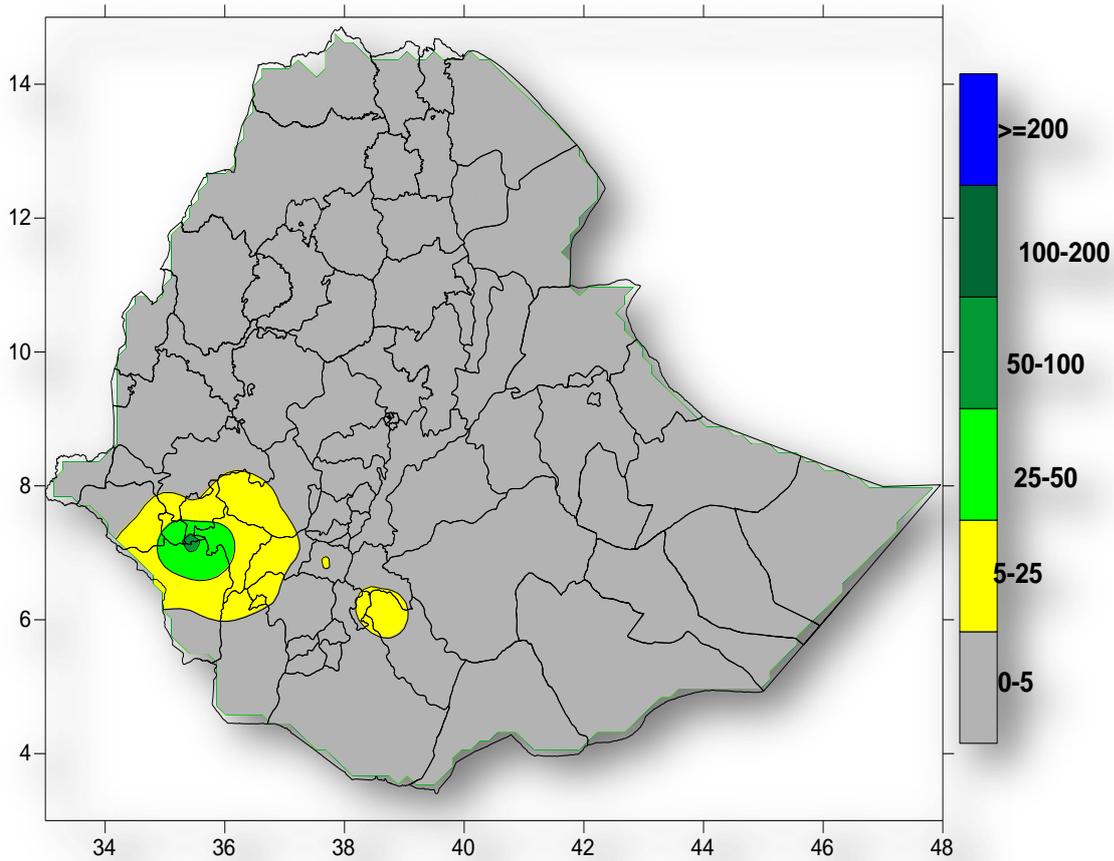


Fig 7. Rainfall distribution in mm (21 – 31) January 2023

1. WEATHER ASSESSMENT

1.1. Rainfall amount (21 – 31) January 2023

During the third dekad of January 2023 pocket areas of south western parts of the country received 5-25mm of rain fall. The rest parts of the countries received 0-5mm Rainfall.

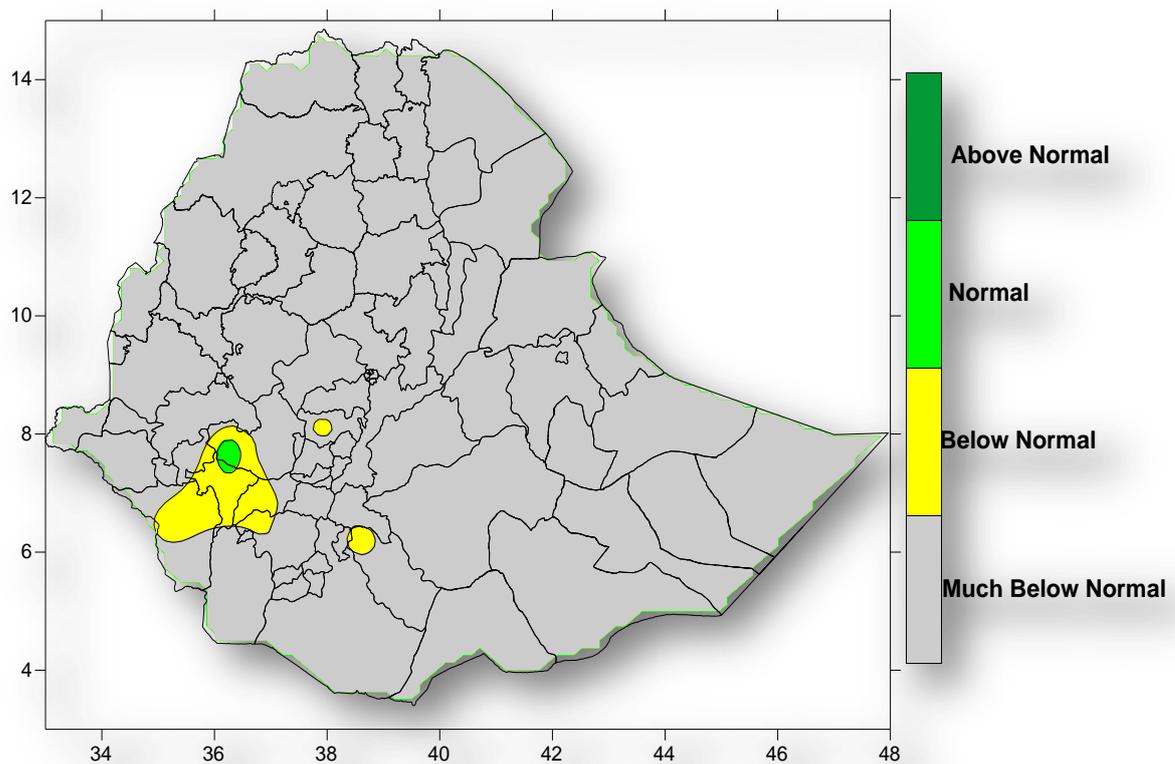


Fig. 8. Percent of normal rainfall distribution (21 – 31) January 2023

Explanatory notes for the Legend

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

1.2. Rainfall Anomaly (21 – 31) January 2023

During the third dekad of January 2023 except pocket area of western parts all parts of the countries exhibited below normal too Much below normal rain fall.

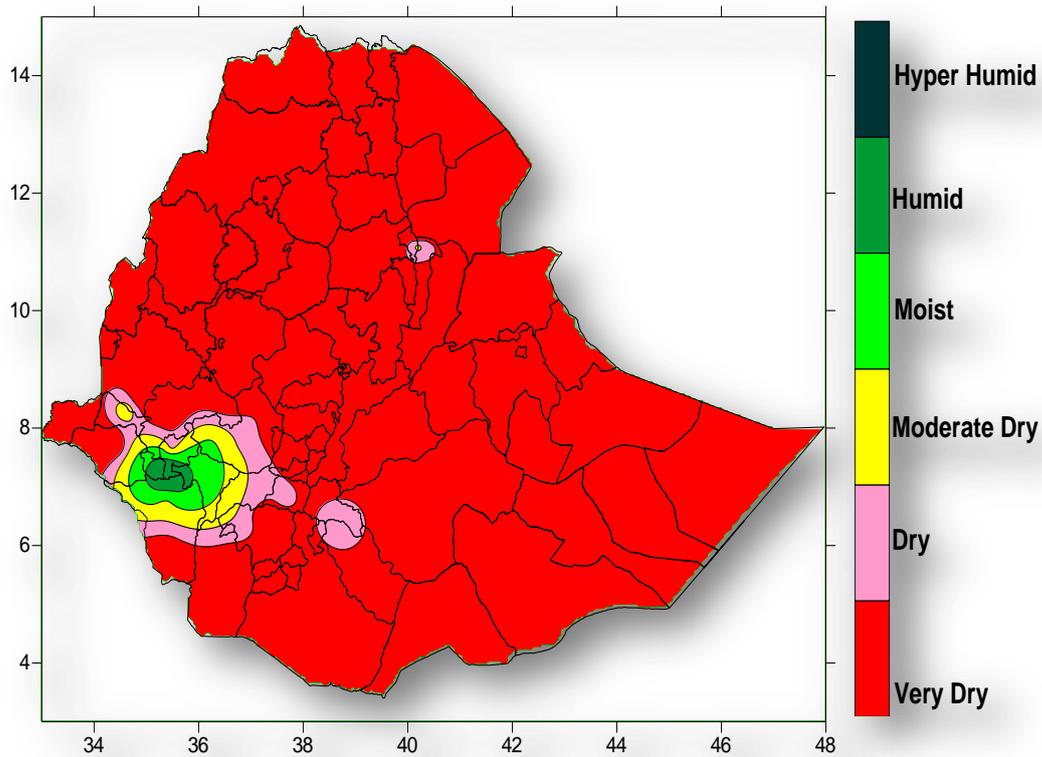


Fig.9. Moisture Status (21 – 31) January 2023

1.3. Moisture status (21 – 31) January 2023

During the third dekad of January 2023, some areas of south western parts of the country experienced Moist to Hyper moist moisture. The rest parts of the countries exhibited Moderately Dry to Very Dry.

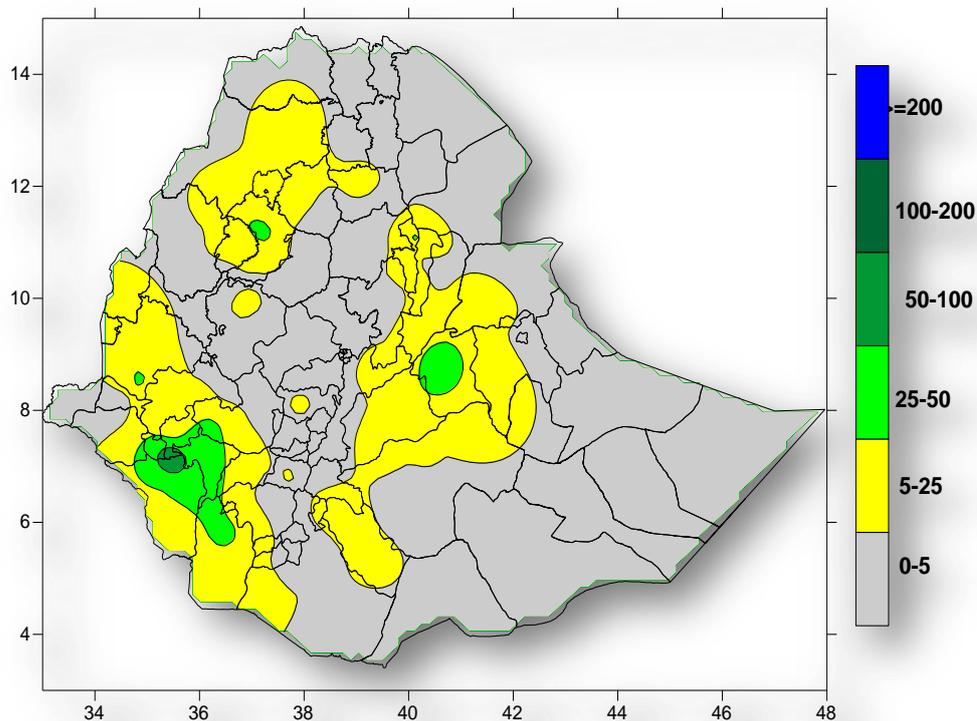


Fig. 10. Rainfall amount in mm for the month of January 2023

1.4. Rainfall amount on the month of January 2023

During the month of January 2023 the rainfall distribution over pocket areas of North and South Gonder, Bhir dar, Agew AWI, pocket areas of Metkel, East Gojjam, Assosa, Kamashi, West Wellega, North and West Shewa, Goffa, Amaro, Borena, Guji, Libem, Bale, Afder, Gode, Korahe, Degahabur, Shinilo, Oromia Zone, Afar Zone3&5 Zones are received 5-25mm rain fall. East Wellega, Gambela Zone 1, 2 & 3, Illibabur, Alaba, Hadiya, Dawero, West and East Hararghe, Bale, Fik, Afder, and Gode Zones are 25-50mm rain fall received. Illibabur, Jimma, Keffa, Dawero, Basketo, South Omo, Pocket areas of Sidama, Arsi, pocket West Hararghe, and Jimma Zones received 50-100 rain fall. The rest part of the country is 0-5 rainfall received.

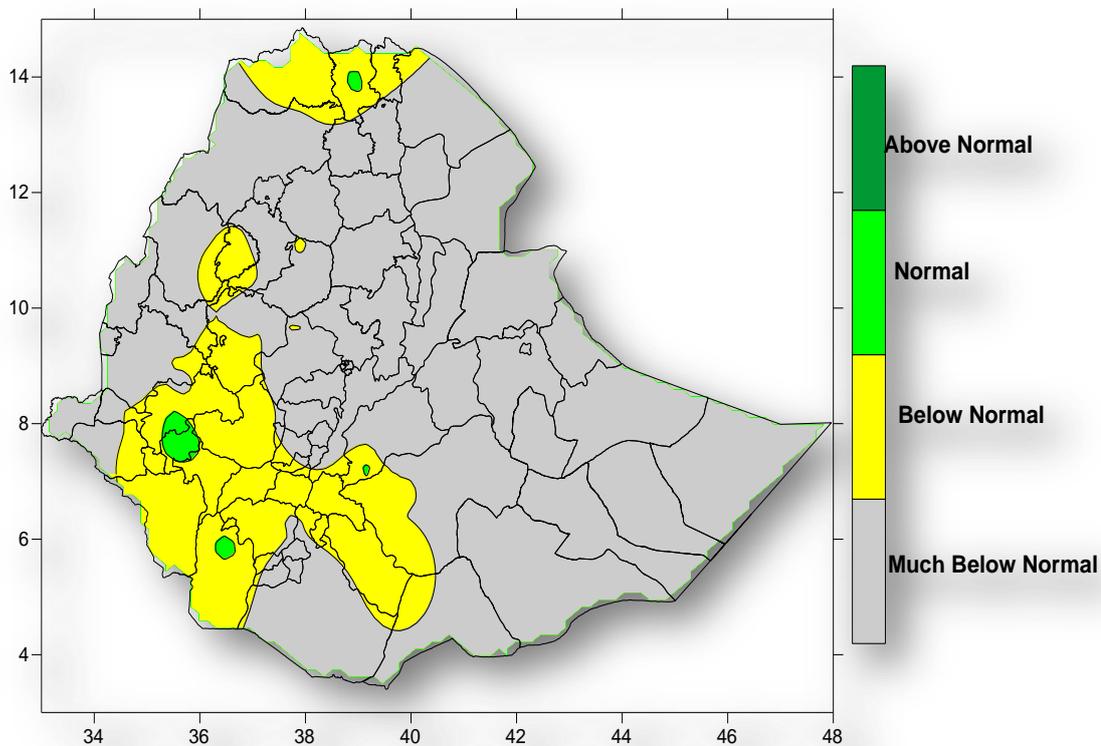


Fig. 11. Percent of Normal Rainfall for the month of January 2023

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 January 2023

Pocket area of western and southern exhibited Normal rainfall. The rest parts of the countries experienced below normal too much below normal.

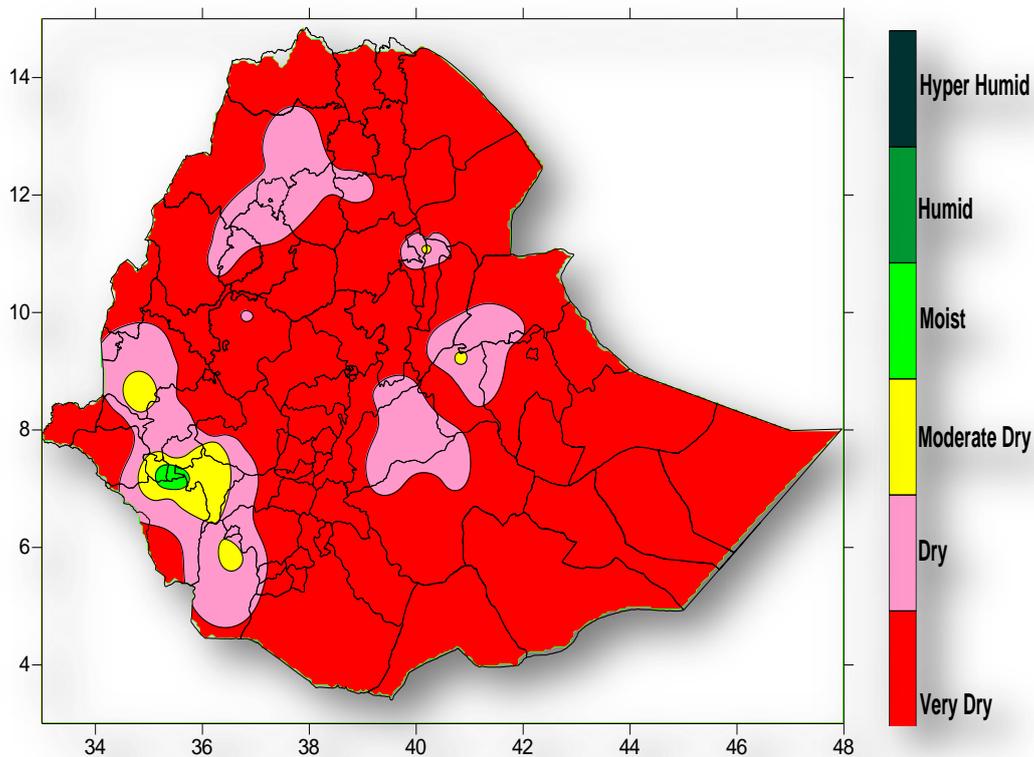


Fig. 12. Moisture status for the month of January 2023

1.6. Moisture status on the month of January 2023

During the month of January 2023 Pocket Area of west western part of the country exhibited moist condition. The rest parts of the countries experienced moderately dry too very dry.

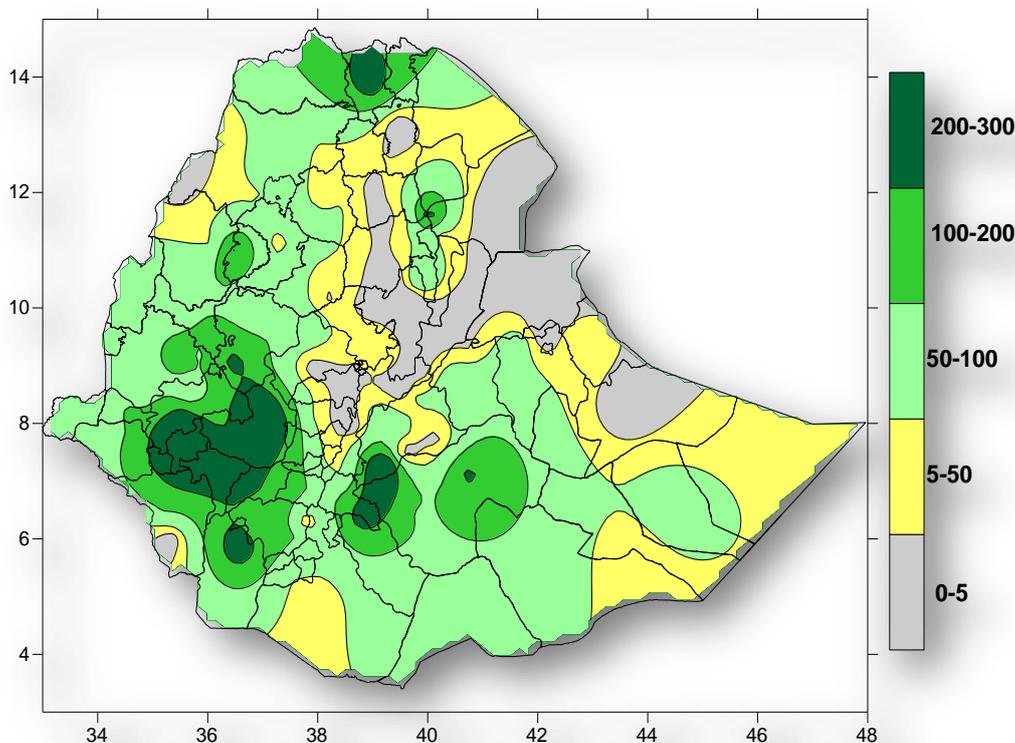


Fig.13. Rainfall amount in mm for Bega 2022/23

1.7. Rainfall Amount on Bega season 2022/23

During Bega Season 2022 the rain fall pocket areas of Central and West Tigray, Jimma, Sheka, Godere, Keffa, Pocket areas of Dawero, South Omo, Guji, Bale , Arsi Zones are received 200 up to 300mm rain fall. West Tigray, pocket areas of, Agew awi, pocket areas of West and East Wellega, Kamashi , Illibambur, Pocket areas of Godere and Dawero, Bench Maji, Basketo, Dirsha, Spouth Omo, pocket areas og Guji, Bali, Wolijta and Sidama, Gambella Zone 1&2, Tip areas of Arfar Zone 4 zones are recived 100-200mm rain fall. West Tigray, Pocket areas of South Tigray, North and South Gonder, Bahir Dar,Agew Awi, pocket areas of East Gojjam, Metkel, Assosa, KamashiTango, West and East Wellega, pocket areas of North and South West Shewa, Gambella Zone1,2&3, pocket areas of Benchmaji, South Omo, Konso, Goffa, Gedo, Sidama, Pocket areas of Siliti, Hadiya, Guragi, pocket areas of Borena, Guji, Bali, Liben, Afder, Gode, Korahе, Fik, West and East Haraghe zones are are recived 50-100mmrain fall. Pocket areas of North Gonder, Metkel, South Tigray, Waghimera, Pocket areas of South Gonder South and North Wello, Afar Zone 1,2&4, pocket East Gojjam, West Shewa, Borena and Bench Maji,half ofEast Hararghe, Pocket areas of Fik, and Degahabur, Wardar, pocket areas of Afder, Gode and Korahi zones are recived 5-50 mm rain fall. Tip areas of North Gonder and South Tigray, South Wello, Afar Zone 1&3, North Wello, Afar Zone 1&3, Tip areas of Addis Ababa Zone, South West Shewa, Shinili, tip areas of Jijiga, and Degahabur Zones are received 0-5mm rain fall.

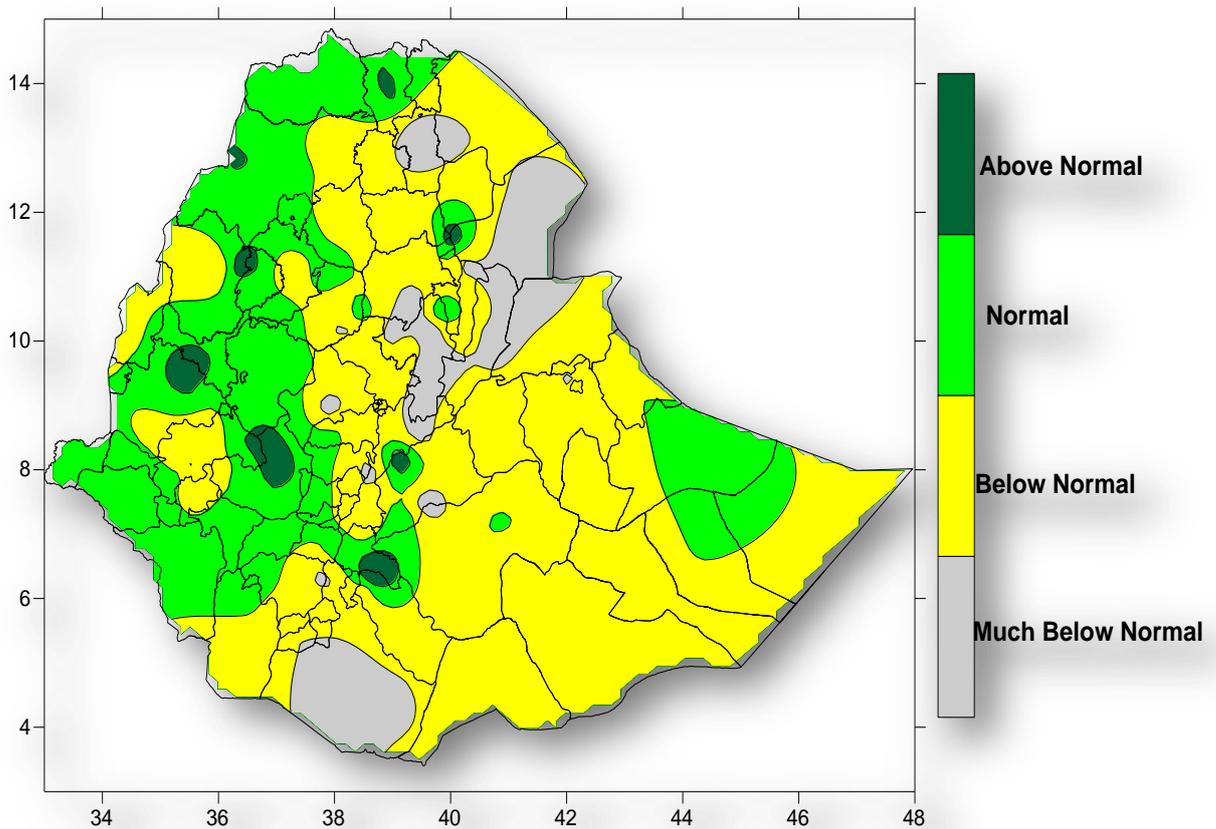


Fig.14. Percent of Normal Rainfall for Bega 2022/23

Explanatory notes for the Legend

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

1.8. Rainfall Anomaly on Bega Season 2022/23

During Bega Season 2022 West , Central, and East Tigray North Gondar, half of Metkel, Agew awi, and Bahir dar, pocket areas of Assosa, Kamashi, Tango, West and East Wellega, Gambella Zone 1,2 &3, Jimma, pocket areas of Illibabur, West Shewa, Guragi Hadiya, Sidama, Bale and WOLITA ZONE, Benchmaji, Keffa Dawero, Basketo, tip areas of Arsi, and afar Zone 4, half of Degahabur, Pocket areas of Horahi and Wardar Zones are exhibited Normal to Above Normal rain fall distribution. The rest parts of the countries exhibited Much Below Normal to Below Normal.

2. AGROMETEOROLOGICAL CONDITIONS AND IMPACT ON AGRICULTURE

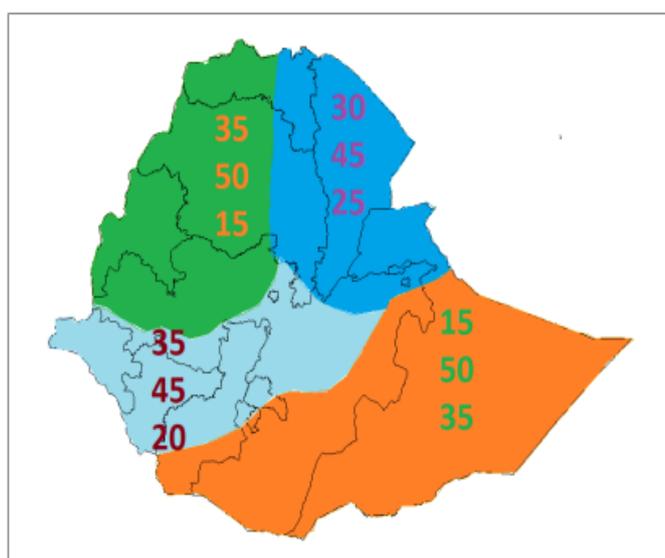
2.1. VEGETATION CONDITION AND IMPACT ON AGRICULTURE DURING BEGA, 2022/23

Generally during the past Bega 2022/23 season due to the influence of Kiremt system the moisture condition existed over North and North Eastern regions of the country .in particular during the month of October and November with good moisture condition was observed over most part of the country. The observed moisture was favorable for the performances of Meher crops that are late sown and not yet fully matured, and perennial plants to satisfy the water requirement. on the other hand, the observed dry and sunny Bega season should be taken as a good opportunity to perform harvest and postharvest activities over the place where Meher season crops are fully matured. However Particularly during the last month of Bega season decrease in extreme minimum temperature as low as 5⁰ C lowering up below 0⁰ C over Northern, North Eastern, Eastern, Central and Southern highlands might have been frost risk on Meher crops that were not yet fully matured crops, irrigated Fruits, vegetables and animal's products. In General, the observed agro meteorological indicators that poor performance of moisture index (Fig 1-4), vegetation cover (Fig.5) and Rangeland index (Fig.6) during Bega 2022_23 over North Eastern Central and Bega benefiting areas (Hageya/Deyr) rain over southern and south-eastern pastoral and Agro-pastoral regions. The situation was confirmed by field reports due to persistent of moisture stress and consistently emerging of severe drought situations particularly Southern Oromia regions of Borena, Gugi, and pocket areas of Bale low land are affected by availability of pasture and drinking water.

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

Belg season normally central parts of northern high lands, eastern highlands, part of central, south western and southern Ethiopia are known as Belg growing areas. The contribution of Belg rainfall is ranging from 5-30% over the north, north eastern and eastern highlands whereas 30-60% over south and south western parts of the country from annual total crop production of the areas.

TERCILE PROBABILITY FOR BELG (FMAM) 2023



IMPLICATION:-

- ENSO-neutral and IOD-neutral increase the chance of normal to below normal rainfall over South and South Eastern portion of Ethiopia and normal to above normal over northern half of the country;
 - Slightly late onset of the Belg 2023 season rainfall across north-east, southern and south eastern;
 - Dry days will occur in the season.
- Above-normal to slightly near-normal temperature expected over most parts of the country.

The analyzed moisture Status, Standardized Precipitation Index (SPI) and total crops water requirement (WRSI) in most of analogue years expected to favor sowing of long cycle crop over western half including south western Belg producing areas. However moderate to poor performance shows over south and south-eastern pastoral and agro-pastoral areas. Thus, farmers and the concerned body need to give attention for those areas and utilize rain water harvesting, moisture conservation and adoption of suitable crops needing less water requirement. Moreover the observed better NDVI and Range land WRSI after the month of February over all selected analogue years expected to favor Belg agricultural activities, planting of long cycle crops and availability of pasture and drinking water.

The expected to receive Normal to above normal seasonal rain over north eastern, central and north western including western half of the country enable get good moisture which would have an advantage of Belg agricultural activities, planting of long cycle crops, water requirement of perennial plants and availability of pasture and drinking water. Therefore, proper input should be utilized to take advantage of the relatively better condition and give proper attention to crop selection, for instance, on high yielding varieties in areas of expecting normal to above normal moisture. Whereas, the expected to receive normal to below normal seasonal rain to prevail across the South and South-eastern regions, where Belg is the main rainy season which will have expected probability of moisture stress and negatively affecting Belg crop performance and early depletion of water and pasture resources may lead to scarcity of milk and other livestock products and negatively impacting food security and nutrition and it may trigger resource-based conflicts, atypical pastoral migration. Therefore we advised proper moisture conservation, rain water harvesting and adopt irrigation, promote drought tolerant crops varieties /and early maturing crops, closely monitor pasture and water conditions across pastoral areas, conduct proper moisture conservation and water harvesting for use during times of water scarcity, facilitate conservation of crop residues, supply of animal feeds and water and make strategy to distribution of the feed from surplus to the deficit area which can help in coping with expected occurrences of moisture stress in the season.

Moreover the expected dry day occurrence in the season will have probability of moisture stress, increase the risk of crop failure and poor germination, the expected Slightly late onset across north-east, south and south east pastoral and agro-pastoral areas which negatively affecting Belg crop performance and pastoral water shortages, which may lead to scarcity of animal products such like milk, meat and butter and in south and south east of some areas might still experience dry spells as was the case in the recent past seasons which exacerbate the situation.

The late onset and erratic in distribution and amount over much portion of the country which will have expected probability of moisture stress and Intermittent moist condition might be favorable for pest and disease outbreak over moisture stress areas and the expected above normal day time maximum temperature particularly over the low land areas would affected the water need of crops, pastures and enhance evapo-transpiration.

Generally, the expected Normal Belg 2023 season would favor Belg agricultural activities. However due to the intera-seasonal variability nature of the Belg season and the occurrence of dry spells with slightly late onset may influence the season. Thus, farmers and the concerned bodies' proper attention should be given in terms of selection crop which tolerant to moisture stress and soil water conservations method and users should interpret the weather outlook in terms of their area of interest and the existing condition of their specific areas. Moreover 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.

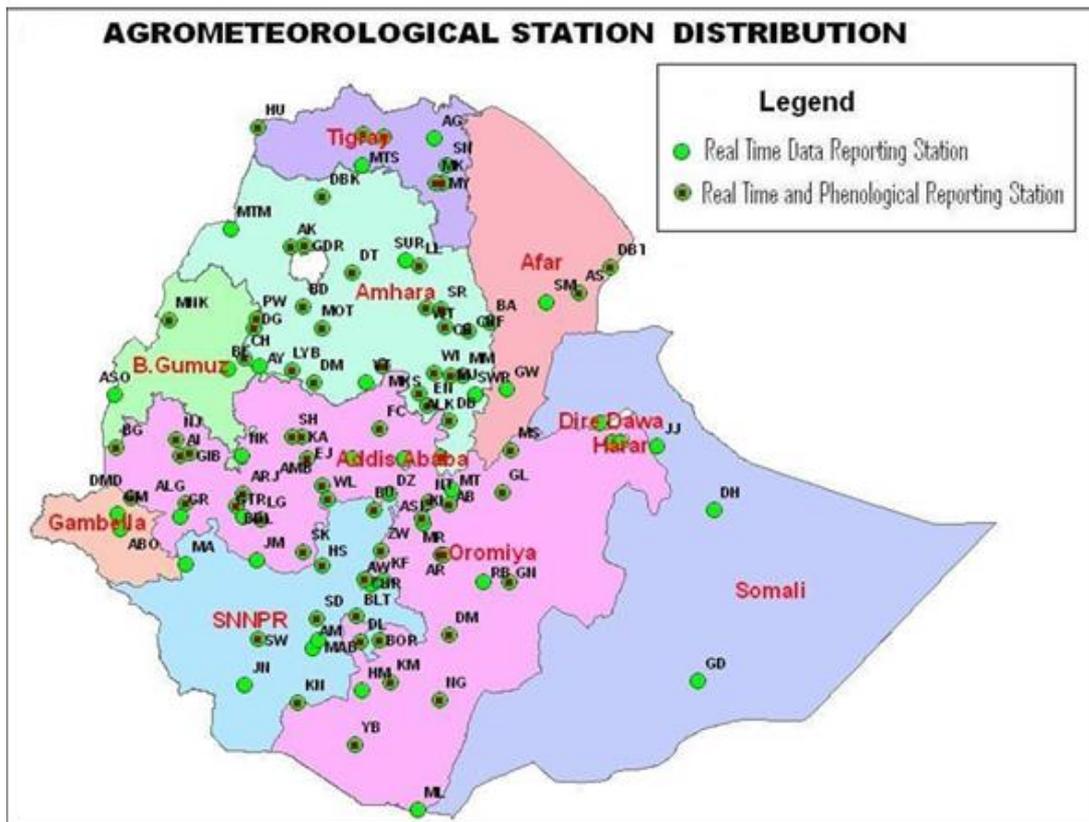
EXTREME TEMPERATURE:- The highest or the lowest temperature among the recorded maximum or minimum temperatures respectively.

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	Mashete	MJ	WegelTena	WT
Bati	BA	Gode	GD	Masha	MA	Woliso	WL
Bedelle	BDL	Gonder	GDR	Mekele	MK	Woreilu	WI
BUI	BU	Gore	GR	Merraro	MR	Yabello	YB
Combolcha	CB	H/Mariam	HM	Metehara	MT	Ziway	ZW
D. Berehan	DB	Harer	HR	Metema	MTM		
D. Habour	DH	Holleta	HL	Mieso	MS		
				Moyale	ML		