



Monthly Hydro Meteorology Bulletin 2026



Forward

This Monthly Hydro Meteorological Bulletin is prepared and disseminated by the Ethiopia Meteorological institute (EMI). The ultimate objective of producing and disseminating this bulletin is to inform all level decision makers with the updated and relevant hydro meteorological information. This monthly Bulletin reviews the June 2026-month climate condition and its impacts over the river catchment across the country and highlights the July 2026 climate outlook along with the likely impact over the water dams and the rivers basins.

The information contained in this bulletin is believed to assist the water professionals for planning the capacity expansion of reservoirs, water supply, ecosystem restoration as well as rehabilitation of existing systems including dams, irrigation, canals, pumps, wetlands and the likes. In addition to the aforementioned benefit the bulletin also reveals the aridity levels of each basin, extremes heavy rainfall events and areas where significant amount of moistures loss through evapotranspiration. In the impact outlook section of the bulletin it provides the likelihood of the climate in the coming month and its potential impact over various aspect of the river basins including the hydraulic structures such as culverts, bridges, reservoir spillways, road embankments and dikes. It also indicates the measures need to be taken as the early actions so as to reduce the possible negative impact of the upcoming month climate condition. Meanwhile, your comments and constructive suggestions are highly appreciated to make the objectives of this bulletin a success.



1. Introduction

The provision of hydro meteorological services can contribute a significant role toward water resource management and socio-economic development. Both surface water and groundwater management are essentially linked to climate variability. Therefore, the provided climate information and knowledge in this monthly hydro meteorological bulletin have a critical importance for efficient, equitable and sustainable development and management of the national water resources and for coping with any climate related risks. The information illustrates the impact of previous month climate on each and every water basins and the associated climate risks observed during the month under review. In addition to the previous month impact assessment, the bulletin also provided the expected climate condition for the coming months and its impact on the water resource. The design of water-use and flood-control facilities, mainly dams and reservoirs, is frequently based on these analyses. Estimating the likelihood of precipitation, the distribution of precipitation and the rate of evaporation in location and time, the heavy rainfall and the subsequent runoff, extreme temperature and wind are among issues that hydro meteorologists are concerned with.

1.1 Monthly Hydro Meteorological Assessments

1.1.1 June Monthly Climatology of the Ethiopian River Basin

As shown in Figure 1, moisture conditions during the assessment period displayed a clear west-to-east gradient across Ethiopia. The western and southwestern river basins, including most of the Baro–Akobo, Abay, Omo–Gibe, and Upper Rift Valley basins, experienced wet to very wet conditions, with localized areas reaching extremely wet conditions. The Tekeze, upper Awash, and upper Genale–Dawa basins were generally characterized by humid to sub-humid conditions, while the eastern lowlands, including most of the Wabi Shebelle, Ogaden, Afar–Danakil, and lower Awash basins, remained predominantly arid, indicating limited moisture availability and relatively dry surface conditions.



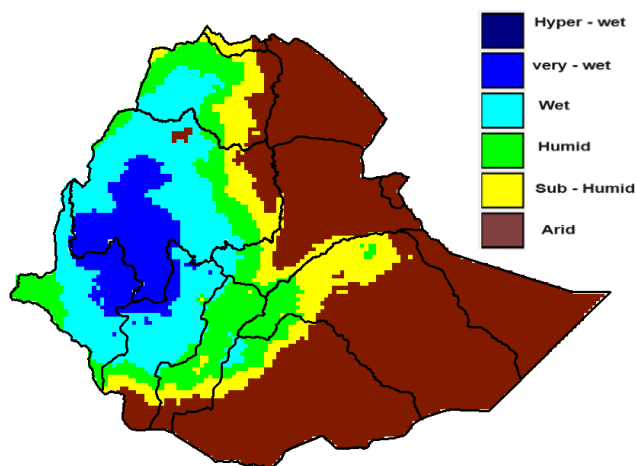


Figure 1 June Monthly Climatology of the Ethiopian river basin

1.1.2 June 2026 Rainfall Assessment over the River Basins

During June 2026, the observed rainfall distribution (Figure 2) showed a distinct west-to-east decreasing pattern across Ethiopia. The highest monthly rainfall totals (200–500 mm) were recorded over the southwestern parts of the Baro–Akobo Basin, with adjacent areas of the Abay, Omo–Gibe, and western Rift Valley basins receiving between 100 and 200 mm. Moderate rainfall (60–100 mm) extended across parts of the Tekeze, central Abay, Omo–Gibe, and Upper Rift Valley basins. In contrast, much of the eastern and southeastern basins, including the Afar–Danakil, Ogaden, Lower Awash, Wabi Shebelle, and eastern Genale–Dawa basins, received relatively low rainfall, generally below 60 mm, with many areas recording less than 30 mm. Overall, the rainfall pattern indicates favorable moisture conditions over the western river basins, while the eastern lowlands remained comparatively dry.

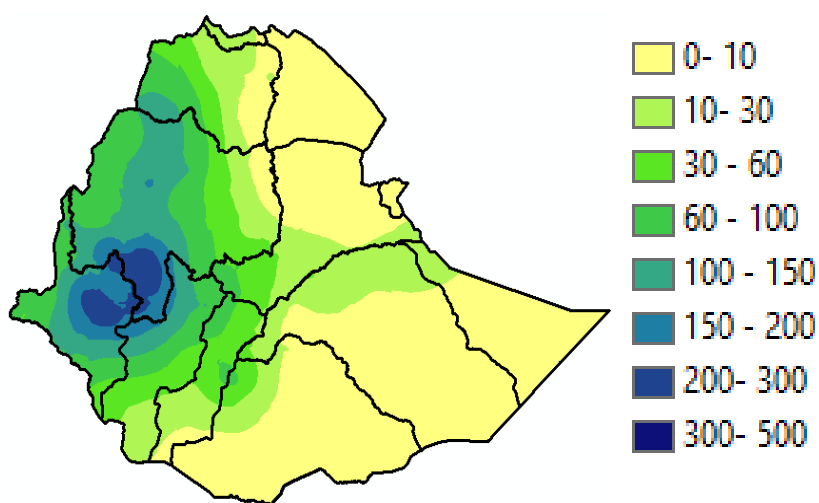


Figure 2 June Monthly Mean Rainfall over Ethiopian River Basin



1.1.3 Monthly Mean Temperature over the River Basin

During June 2026, the observed mean air temperature (Figure 3) exhibited a clear spatial variation across Ethiopia's major river basins. Most of the western, central, and southern basins, including the Abay, Tekeze, Baro–Akobo, Omo–Gibe, Rift Valley, Upper Awash, and Upper Genale–Dawa basins, experienced mean temperatures ranging from 15–25°C, indicating relatively moderate atmospheric conditions and comparatively lower evapotranspiration rates. In contrast, the eastern and northeastern lowland basins, particularly the Afar–Danakil, Ogaden, Lower Wabi Shebelle, Lower Awash, and eastern Genale–Dawa basins, recorded higher mean temperatures of 25–35°C, with localized areas exceeding 35°C. These warmer conditions are expected to enhance evapotranspiration and increase moisture loss, potentially reducing soil moisture and surface water availability in these basins.

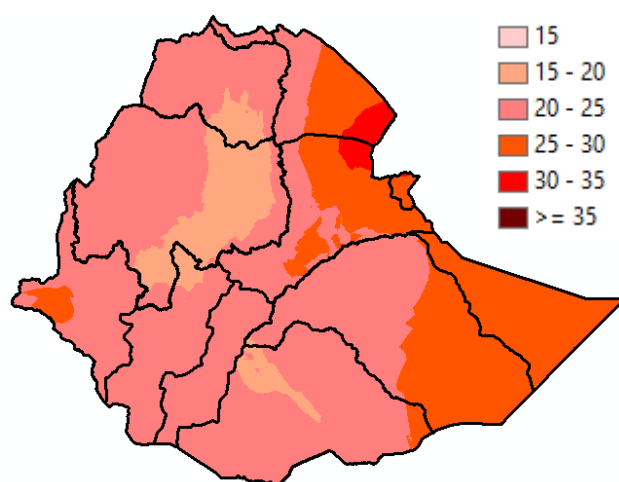


Figure 3 June Monthly Mean Temperature over Ethiopian River Basin

1.1.4 Assessments of Aridity Index during the month of June

During June 2026, the observed Aridity Index (Figure 4) revealed a pronounced west-to-east moisture gradient across Ethiopia. Wet to hyper-wet conditions dominated the western and southwestern parts of the country, particularly across the Baro–Akobo, Abay, Omo–Gibe, and western Rift Valley basins, indicating abundant moisture availability where precipitation substantially exceeded atmospheric water demand. Moderate to humid conditions extended into parts of the central Rift Valley, Upper Awash, and Upper Genale–Dawa basins, with a few localized wet pockets in the southern basins. In contrast, much of the eastern and northeastern regions, including the Afar–Danakil, Ogaden, Lower Awash, Lower Wabi Shebelle, eastern Genale–Dawa, and northeastern Tekeze basins, experienced predominantly arid conditions, reflecting limited moisture availability and high evaporative demand.



In general, the observed moisture conditions during June 2026 were favorable for groundwater recharge, reservoir inflow, and surface water availability across the western and central river basins, while the eastern lowland basins continued to experience moisture deficits and relatively dry hydrological conditions.

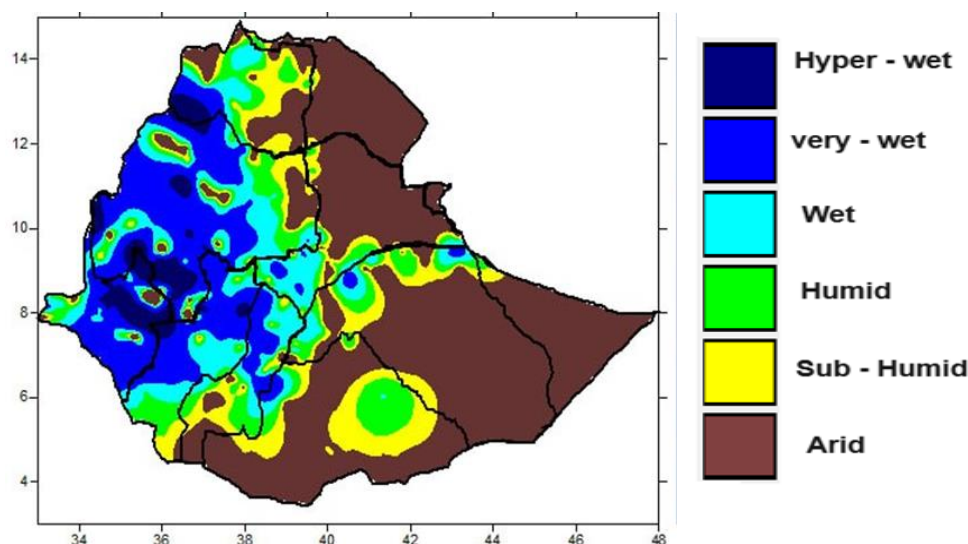


Figure 4 June Monthly Aridity index over Ethiopian River Basin

1.1.5 Distribution of Heavy fall

The spatial distribution of heavy rainfall frequency during June indicates that heavy rainfall events were predominantly concentrated over the western and southwestern river basins of Ethiopia. The highest frequencies, reaching up to 6 heavy rainfall events, were recorded over localized areas of the Baro–Akobo and southwestern Abay basins. Moderate frequencies (3–4 events) were observed across parts of the Abay, Omo–Gibe, and western Rift Valley basins, while isolated areas in the Tekeze and Upper Genale–Dawa basins experienced 1–2 heavy rainfall events. In contrast, the eastern and southeastern basins, including most of the Awash, Wabi Shebelle, Ogaden, Afar–Danakil, and eastern Rift Valley, recorded little to no heavy rainfall events during the month. This distribution reflects the seasonal northward progression of the Kiremt rainfall system, resulting in enhanced runoff generation, groundwater recharge, and reservoir inflows over the western basins, while the eastern lowlands remained comparatively dry with limited hydrological response.



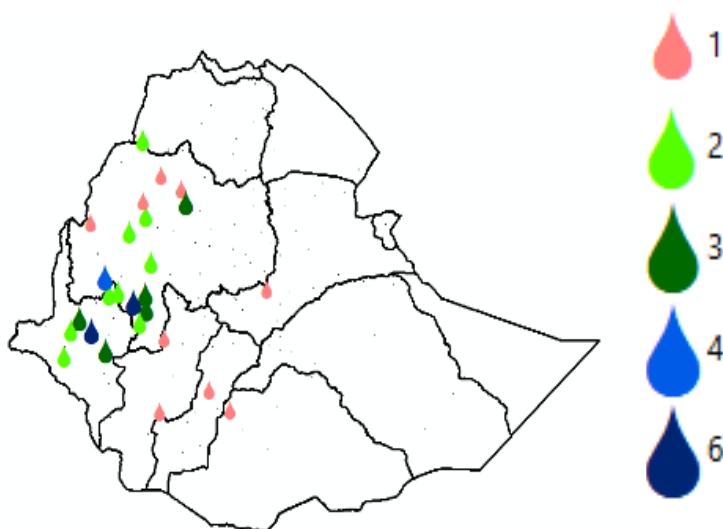


Figure 5 June Distribution of Heavy Fall Frequency over Ethiopian River Basin

2. Hydro Meteorological Impact Outlook for July 2026

2.1 Expected weather impact on water resource during the coming July, 2026

During July, moderate to high surface water flows are expected across most parts of the Tekeze, Mereb–Gash, Abay (Blue Nile), Baro–Akobo, Upper and Middle Omo–Gibe, Rift Valley, and Awash river basins. In addition, low to moderate surface water flows are anticipated over the Upper and Middle Genale–Dawa, Wabi Shebelle, and Ogaden basins. As a result, river basins expected to experience high surface runoff, particularly those that are flood-prone, are likely to face an increased risk of flash floods, river flooding, and landslides. Therefore, communities living in both urban and rural flood-prone areas are strongly advised to undertake appropriate preparedness and early precautionary measures to reduce potential impacts.

Although the anticipated rainfall during the month is expected to improve water resources in many basins by enhancing river flows, groundwater recharge, and reservoir inflows, it may also increase the risks of flooding and localized water-related hazards. Accordingly, strengthening water storage and drainage infrastructure, improving flood management systems, and implementing timely flood preparedness measures are strongly recommended. On the other hand, dry hydrological conditions are expected to persist across most parts of the Afar–Danakil, Middle and Lower Genale–Dawa, Wabi Shebelle, Ogaden, Aysha, Mereb–Gash, and Lower Awash basins. These areas are likely to continue experiencing limited surface water availability, underscoring the need for efficient water resource management and conservation practices.



