



# **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 May 2026-month climate condition and its impacts over the river catchment across the country and highlights the June 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.*

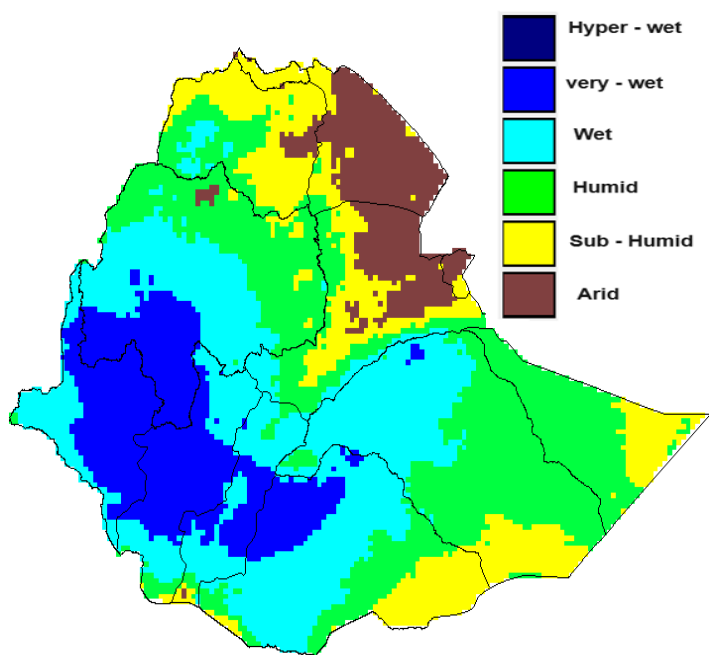
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## 1. Introduction

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 May Monthly Climatology of the Ethiopian River Basin



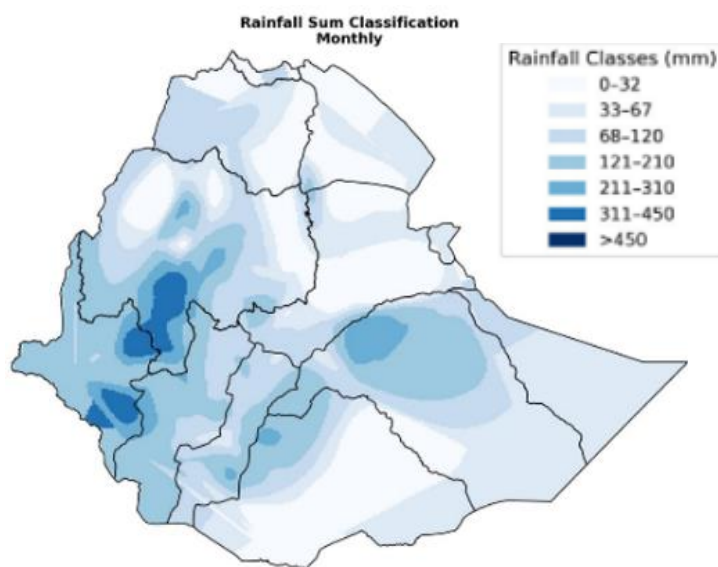
As shown in Figure 1, most parts of the Baro–Akobo, Abay, Omo–Gibe, Rift Valley, and Genale–Dawa basins experienced favorable moisture conditions ranging from wet to very wet, with some areas in the southwestern parts exhibiting hyper-wet conditions where moisture availability exceeded potential evapotranspiration. The Tekeze, Wabi Shebelle, Ogaden, and upper to middle Awash basins were predominantly characterized by humid to sub-humid conditions, while arid conditions were mainly confined to the northeastern and lower Awash areas.

**Figure 1 Monthly climatology of the Ethiopian river basin (May)**

In general, the moisture distribution indicates generally adequate to surplus water availability across most river basins, which is beneficial for groundwater recharge, reservoir inflow, and the maintenance of river flows, thereby supporting water resources.

### 1.1.2 May 2026 Rainfall Assessment over the River Basins

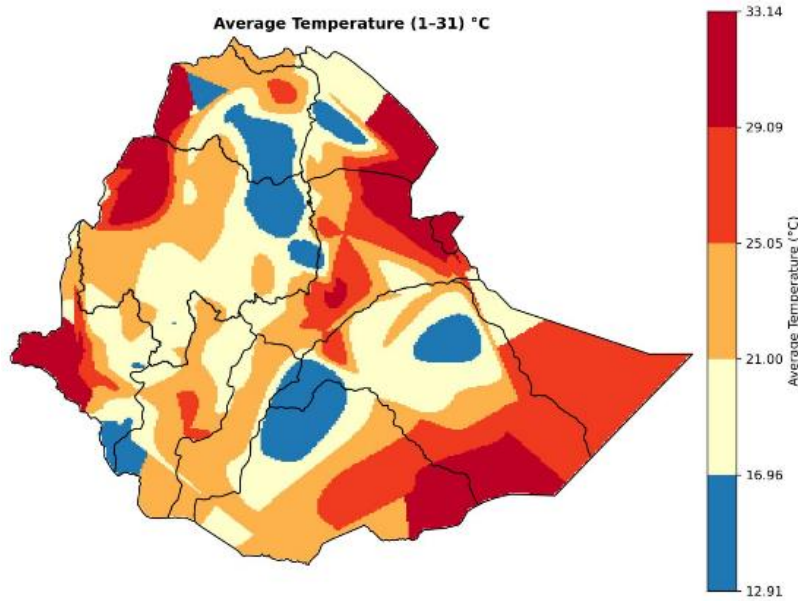
During May 2026, the observed rainfall over the basin illustrated in figure 2, a better monthly rainfall distribution is observed across the western. Southwest and southern half of the country's basins. The result shown over the most parts of Abay, Tekeze, Baro Akobo, Omo Gibe, Rift Valley, Genale Dawa, Wabisheble and Ogaden some parts of upper Awash, received above 120-450mm of rainfall. Secondly, most of Afar Danakil, Ogaden, the lower part of Wabisheble and lower Awash received below 120 mm of rainfall.



**Figure 2 May monthly mean rainfall over Ethiopian River Basin**

### 1.1.3 Monthly Mean Temperature over the River Basin

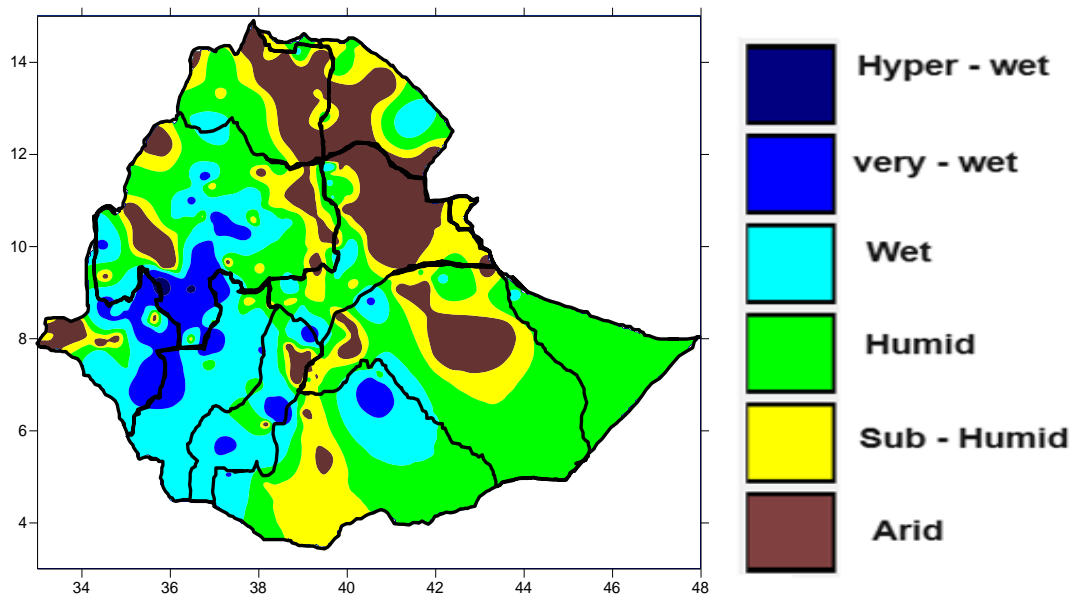
During May 2026, the observed mean temperature, as shown in Figure 3, was below 25°C in the majority of the central catchments, including in some part of upper Abay, Baro, Omo Gibe, Rift Valley, Wabisheble, Awash, and Genale Dawa basins have lower evapotranspiration. However, the monthly average temperatures reported in the Ogaden, Lower Wabisheble, Baro Akobo, Awash, Omo Gibe, Rift Valley and Afar Danakil catchments were above 25°C.



*Figure 3 May monthly mean temperature over Ethiopian River Basin*

#### **1.1.4 Assessments of Aridity Index during the month of May**

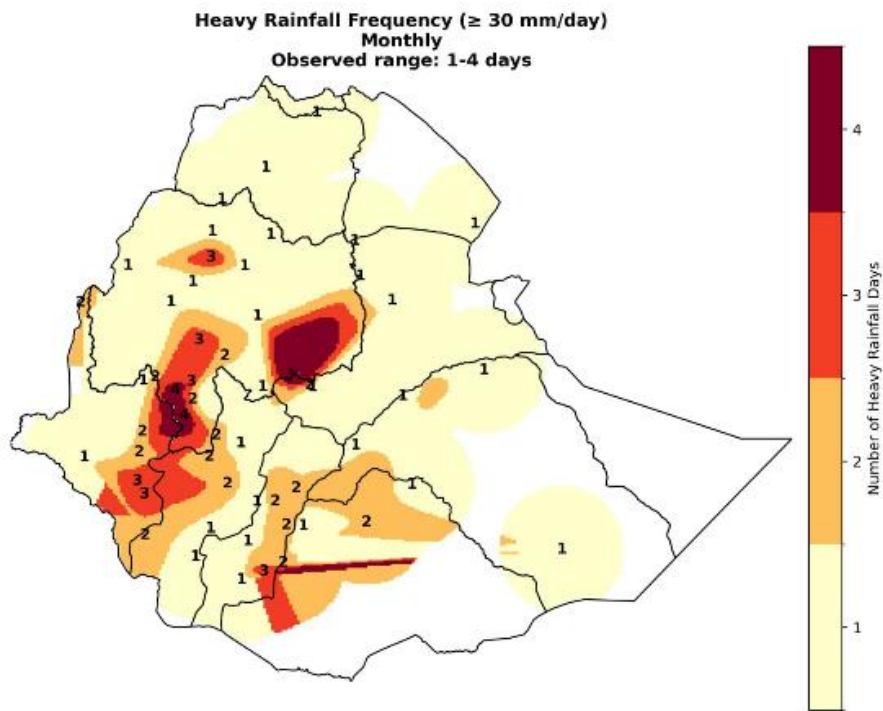
During May 2026, the observed Aridity Index shown in Figure 4 indicates generally favorable moisture conditions across much of Ethiopia. The western, southwestern, central, and parts of the southern regions exhibited good monthly moisture distribution, characterized by wet to hyper-wet conditions. These conditions were dominant over large portions of the Baro–Akobo, Abay, Omo–Gibe, Rift Valley, and Genale–Dawa basins, as well as parts of the Tekeze and Mereb–Gash basins. Localized very wet to hyper-wet conditions were particularly evident in the western and southwestern highlands. Meanwhile, humid to sub-humid conditions prevailed across extensive areas of the Awash, Ogaden, Wabi Shebelle, lower Rift Valley, and eastern Genale–Dawa basins, providing adequate moisture availability. In contrast, arid conditions were observed over much of the Afar–Danakil Depression, northeastern Tekeze, and scattered pockets of the eastern and southeastern lowlands, including parts of the lower Awash, Ogaden, and lower Wabi Shebelle basins. This condition, the moisture conditions during May 2026 were conducive to water resource and DAMS replenishment, and improved water level productivity across most major river basins of the country.



**Figure 4** May monthly Aridity index over Ethiopian River Basin

### 1.1.5 Distribution of Heavy fall

Based on the map titled "Heavy Rainfall Frequency ( $\geq 30$  mm/day), Observed Range: 1–4 days", the spatial distribution of heavy rainfall events during the period shows that most areas of the river basin experienced one to two heavy rainfall days, while higher frequencies were concentrated in localized parts of the country. The highest frequency, ranging from three to four days, was observed over portions of the western and southwestern parts of the Abay and Baro Akobo basins, with some localized areas in the central highlands and western Rift Valley also recording frequent heavy rainfall events. Moderate frequencies of two to three days were evident in parts of the Omo Gibe, Rift Valley, and upper Awash basins, whereas much of the Afar Danakil, Ogaden, lower Awash, lower Wabi Shebelle, and eastern Genale Dawa basins experienced only one day or less of heavy rainfall occurrence. Overall, the concentration of heavy rainfall events in the western and southwestern basins likely enhanced soil moisture, replenished water resources, supported localized flooding and runoff may have occurred in areas that experienced repeated heavy rainfall episodes.



***Figure 5 May monthly Heavy Fall Frequency over Ethiopian River Basin***

## **2. Hydro Meteorological Impact Outlook for June 2026**

### **2.1 Expected weather impact on water resource during the coming June, 2026**

During the upcoming month of June, surface runoff is expected to improve across most parts of the Abay, Omo Gibe, Rift Valley, Baro Akobo, Tekeze, upper and middle Awash, Genale Dawa, Wabi Shebelle, and Ogaden basins. In connection with this, the anticipated high surface runoff in flood-prone basins may lead to flooding, landslides, and river overbank flows. Therefore, communities living in both urban and rural flood-prone areas are advised to undertake precautionary measures in advance. Overall, the hydro-meteorological conditions expected during June are likely to improve water resource availability in some basins, while in others they may increase the risks of water shortages and flood hazards. Consequently, strengthening water storage and drainage systems, as well as implementing flood preparedness and mitigation measures, is recommended. On the other hand, most parts of the Afar Danakil, middle and lower Genale Dawa, Wabi Shebelle, Ogaden, Aysha, Merab Gash, and lower Awash basins are expected to remain under dry conditions.

