



Dekedal Hydro Meteorology Bulletin



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Forward

This Dekedal 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 Dekedal Bulletin reviews the April 1-10 2025-month climate condition and its impacts over the river catchment across the country and highlights the April 11-20, 2025 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.

Hydro Meteorological Impact Assessment April 1-10, 2025

During the first ten days of April, most of the Omo-Gibe, Rift valley, Baro-Akobo, middle and lower Abay, as well as Tekeze and middle Awash sub-basins experienced moderate to high moisture levels. Additionally, the lower Omo-Gibe, Abay, and upper Baro-Akobo sub-basins recorded very high moisture. According to hydro meteorological data, this moisture was beneficial for replenishing soil and water resources. In contrast, most parts of the Afar Depression, Wabi Shebele, Ogaden, lower Genale-Dawa, upper Omo-Gibe, Rift valley, and both upper and lower Awash sub-basins experienced partially dry to dry moisture conditions. This dryness, combined with elevated daytime temperatures, contributed to increased evapotranspiration and had a negative impact on moisture availability.



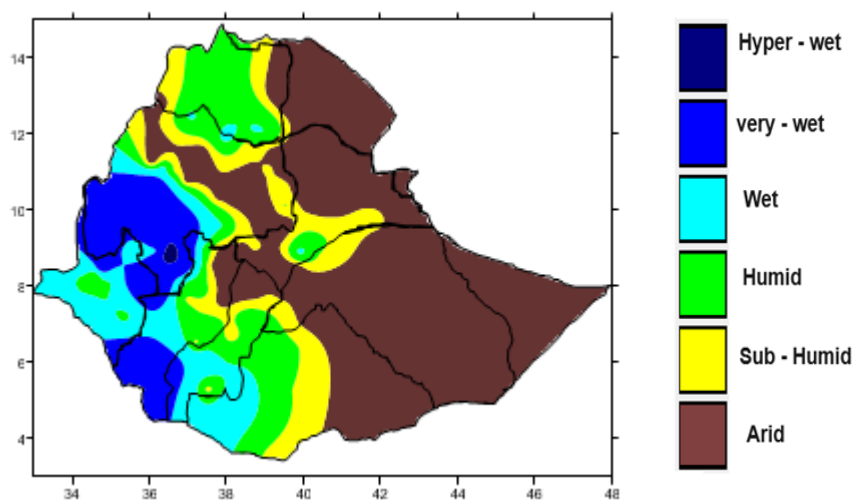


Figure 1 Dekedal Hydro Meteorological Assessments from April 1-10, 2025

1.2 Hydro Meteorological Impact Outlook for April 11-20, 2025

During the second ten days of April, the Basins benefiting from the Belg season experienced moderate to high moisture levels. This condition enhances both surface water flow and ground water resource availability. On the other hand, the excessively high moisture occurring intermittently in some sub-basins such as Omo-Gibe, Rift valley, and in urban centers as well as flood-prone rural areas, may lead to localized flooding. To mitigate and prevent such negative impacts, and to effectively manage the high moisture observed, it is advisable to implement early preparedness and pre-emptive measures based on the recommendations outlined below.



Ethiopian River Basins	Expected Moisture Level	Positive Impacts	Negative Impacts	Hydro meteorological Advisory
Most of Omo-Gibe, Rift Valley, and Genale-Dawa	Moderate to High	• Improved surface water flow • Improved drinking water supply • Increased water levels in domestic and hydropower dams	• Flash floods • Waterlogging and traffic congestion in urban roads • Increased risk of waterborne and flood-related diseases • Sediment inflow to dams • Soil erosion and land degradation	• Clean drainage systems • Protect existing water resources from pollution • Promote efficient use of drinking water • Implement local environmental protection measures • Promote water harvesting and distribution • Closely monitor forecasts
Most of Awash, Wabi-Shebelle, Ogaden, Middle and Lower Abay, and Upper Tekeze	Low to Moderate	Slight improvement in surface water flow	• High water scarcity • Inadequate drinking water supply • Water stress for livestock, especially in arid and semi-arid areas	• Harvest and distribute rainwater using various methods • Manage the available rainwater to prevent evaporation and contamination • Strengthen rooftop rainwater harvesting initiatives in dry areas
Aysha and Mereb-Gash sub-catchments	Dry moisture condition		• Decline in surface water flow • Decrease in water volume in reservoirs • Water shortages in livelihood and hydropower dams • Shortage of drinking water supply	• Ensure water accessibility in areas facing shortages • Manage available water efficiently and sustainably • Utilize surface water resources properly • Encourage effective use of drinking water



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