



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 September1-10/2025-month climate condition and its impacts over the river catchment across the country and highlights the September-11-20,2025 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 September 1st, 2025

During the first decade of September, wet to high surface water conditions were observed across most of the primary Kiremt rain-benefiting catchments. These include the Abay, Omo Gibe, Baro Akobo, Rift Valley, Mereb Gash, Afar Danakil, Awash, Upper and middle Wabi Shebelle as well as Genale Dawa catchments. Furthermore, very high to hyper-saturated water conditions were recorded in the middle and lower Tekeze, Omo Gibe, most part of Abay, Baro Akobo, and upper Awash catchments. According to hydro-meteorological information, this situation has enhanced surface water resources and is highly beneficial for water capture in dams and reservoirs. In contrast, the rest of the basins primarily in the Ogaden and the Middle and Lower Wabi Shebelle, Genale Dawa, the lower eastern part of Awash, the marginal lowland parts of Afar Danakil, and the Lower Tekeze catchments remained dry. These dry conditions have negatively impacted water availability by reducing surface water levels.



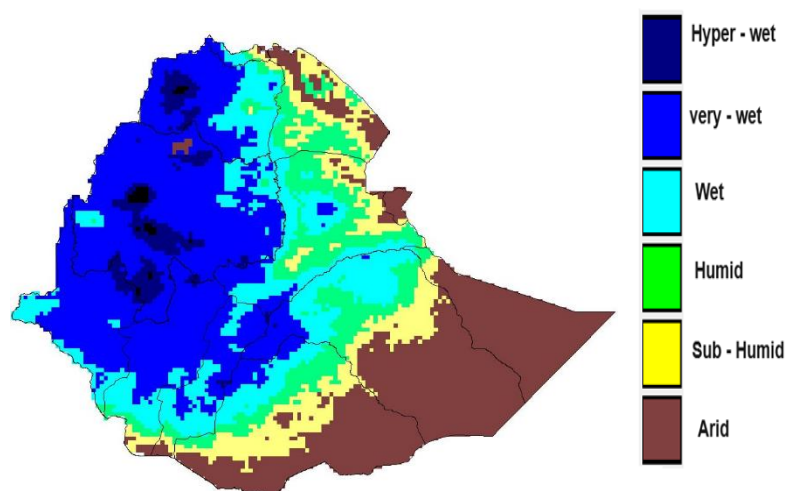


Figure 1. Hydro-Meteorological Assessments for 1st dekedal (September 1-10, 2025)

2. Hydro-Meteorological Impact Outlook for the 2nd decade of September, 2025

Moderate to high surface water flows are forecast for most Kiremt moisture-benefiting catchments during the period of September 11-20, 2025; this is expected to significantly enhance surface and groundwater recharge, increasing water levels in ponds and reservoirs and improving water resources for both natural systems and man-made infrastructure. However, the significant rainfall captured in the previous decade has saturated the ground, increasing the risk of flooding, and there is a high probability of flash floods and elevated river flows, particularly in flood-prone basins. Riverine flooding and inundation present a particularly high risk in the lower reaches of basins such as the Tekeze, Abay, Omo Gibe, and Lower Awash which receive water from upper catchment areas; consequently, communities residing along river banks, in wetlands, and in swamplands are advised to exercise heightened caution. Relevant sectoral bodies are urged to consider the basin-specific hydro-meteorological recommendations in the following table to mitigate potential risks and capitalize on the opportunities presented by the increased water availability.

Ethiopian River Basin	Expected Moisture	Positive Impacts	Negative Impacts	Hydro meteorological Advisory
Most of <ul style="list-style-type: none"> Abay, Tekeze, Baro, Akobo, Awash, 	High to Medium	<ul style="list-style-type: none"> Improvement of groundwater levels Increased coverage of drinking water supply 	<ul style="list-style-type: none"> Overflowing of rivers Flash floods Flash floods in the lower reaches of the basin due to runoff from the upper basin 	<ul style="list-style-type: none"> Clean drainage channels Develop flood diversion channels

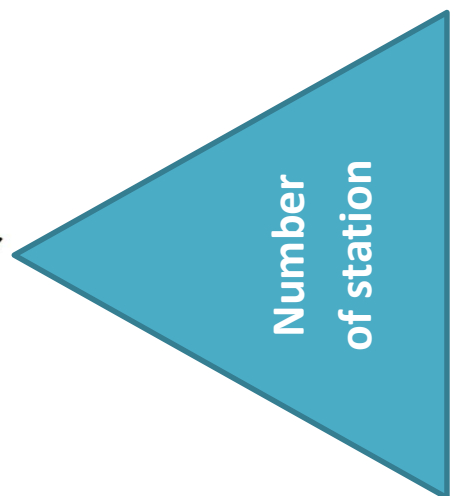
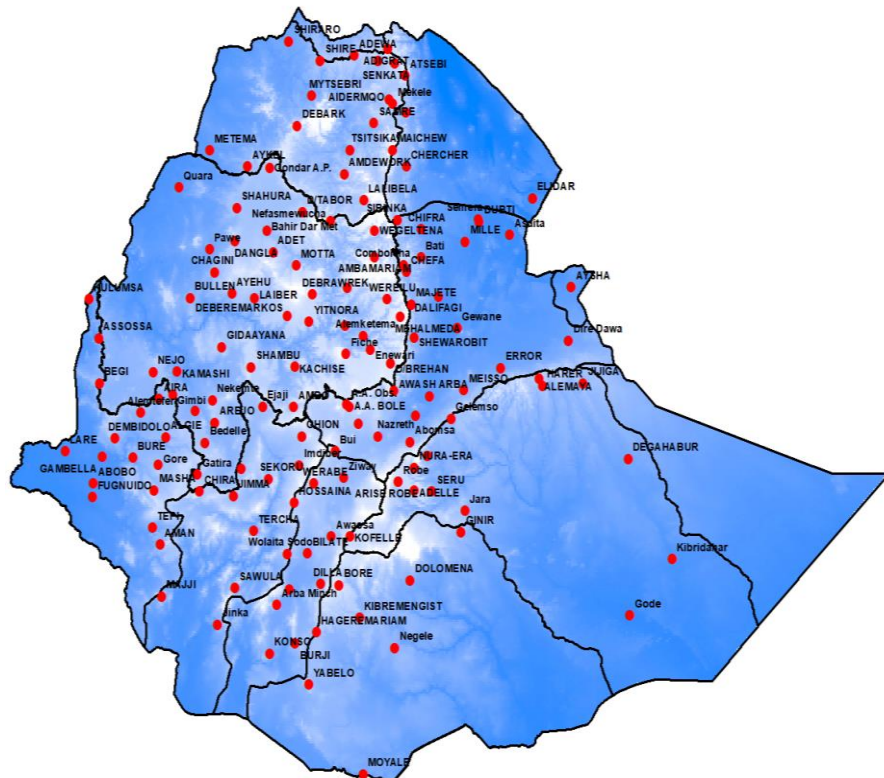
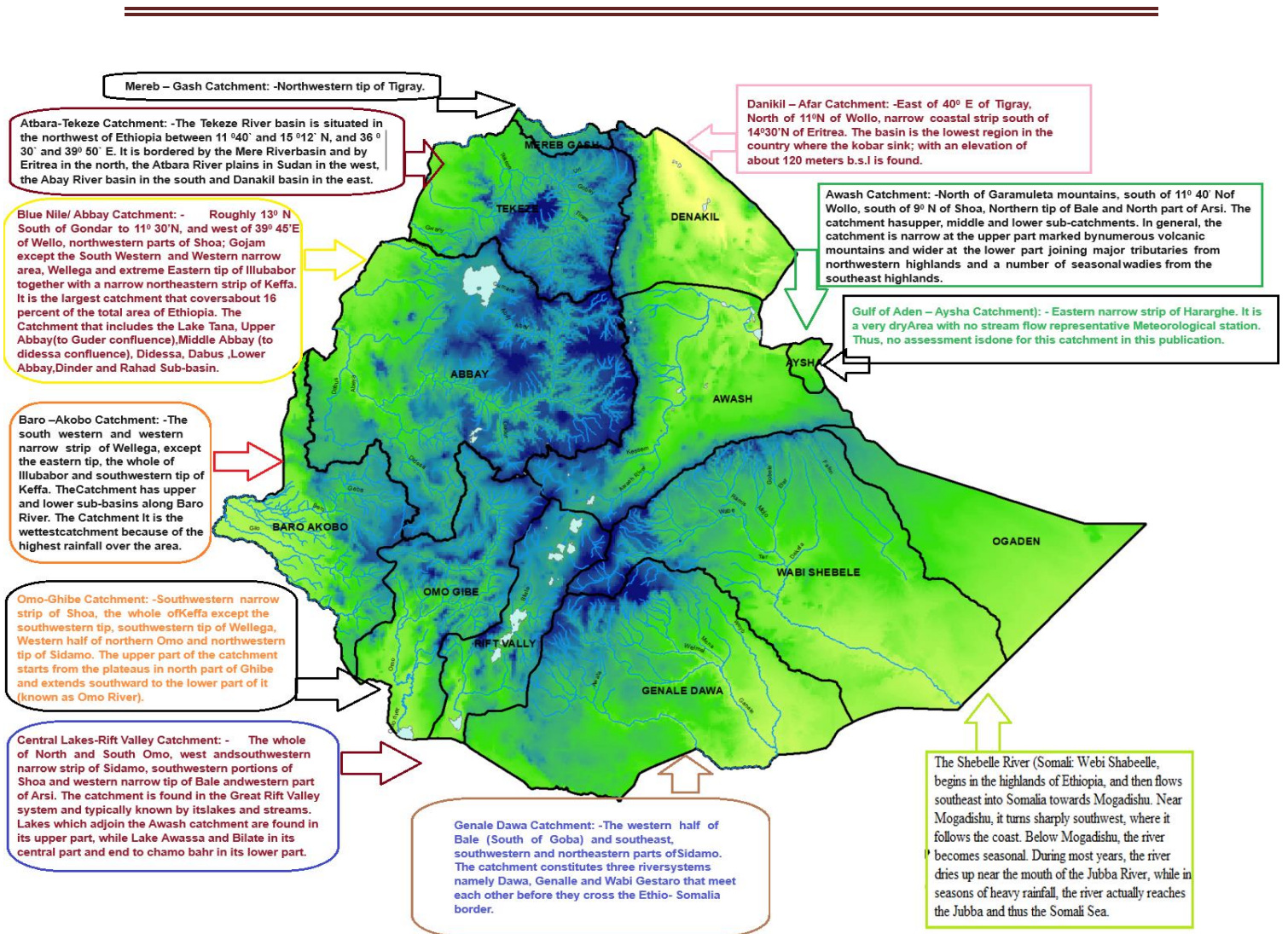


<ul style="list-style-type: none"> • Omo Gibe • Afar Dnakil • Aysha • Upper and Middle Rift Valleys 		<ul style="list-style-type: none"> • Improvement of surface water flow • Improvement of water levels in irrigation and hydroelectric dams 	<ul style="list-style-type: none"> • Increased risk of landslides • Flooding of roads and traffic congestion • Overflowing of rivers and lakes in the lower Omo Gibe 	<ul style="list-style-type: none"> • Avoid crossing floodwaters on foot or by light vehicle • Collect and store rainwater • Regularly monitor flood impact forecasts and recommendations follow forecasts • Harvest rainwater in areas with deficits
Most of middle and lower Genale Dawa, Wabe Shebele, and Ogaden	Moderate to dry conditions	<ul style="list-style-type: none"> • No risk of flooding or landslides • Suitable for various construction and other development activities 	<ul style="list-style-type: none"> • Low water flow • Water scarcity in humid areas • High evaporation 	<ul style="list-style-type: none"> • Proper use of water resources • Protecting available rainwater from waste and pollution • Collecting rainwater from roofs and ground surfaces



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