FEWS NET
Famine Early Warning Systems Network

Afghanistan Seasonal Monitor January 31, 2025

Precipitation in January may improve surface, groundwater resources, and benefit germinated wheat

Key Messages

- Deficit cumulative precipitation conditions (October 1, 2024, to January 20, 2025) were seen in most parts of the country. Field reports from places that received average to above-average precipitation by January 20, 2025, indicate that germinated winter wheat will be supported in the coming weeks by the resulting favorable soil moisture conditions.
- Currently, below-average snow water equivalent (SWE) conditions persist over high- to mid-elevations in some parts of the northern and central highlands while above-average SWE conditions exist in the central, southeast, central highlands, and western parts of the country.
- Snow water volume (SWV) levels are below-average in northeastern and northern basins while they are at average or above-normal in the remaining basins as of the reporting date. Surface and groundwater resources are expected to benefit in the coming months in the watersheds that show above-average snow volume levels.
- The **North American Multi-Model Ensemble (NMME)** predicts La Niña conditions during February – April 2025, to be followed by ENSO-neutral conditions during March – May 2025. Seasonal cumulative precipitation during February – April 2025, is expected to be below-average. **CHIRPS-GEFS** based short-term forecasts of cumulative precipitation (October 1, 2024 – February 5, 2025) and **ECMWF** weekly forecasts till February 10, 2025 show deficit cumulative precipitation conditions are likely across the entire country.
- Above-average daily mean temperature conditions are expected to continue country-wide during February – April 2025 and beyond. Earlier-than-normal snowmelt in the low- and mid-elevation areas may lead to early season floods and landslides especially in the northern, northeastern, central, and central highlands.
- Above-average temperatures and below-average precipitation, along with below-normal water availability during summer may cause moisture stress in rainfed crops and rangelands. Negative precipitation anomalies during spring are expected to increase notably from May through September 2025.

Update on Seasonal Progress

As per field reports, spatially well-distributed precipitation across different parts of the country has improved snowpack development over medium elevations in the central highlands, northern, and some western parts of the country. Below-average snowpack conditions continue over higher elevations in the northeastern, eastern, and central parts of the country as of the reporting date. Field reports show stable germinated winter wheat and rangeland vegetation as it is supported by the good soil moisture conditions this month.

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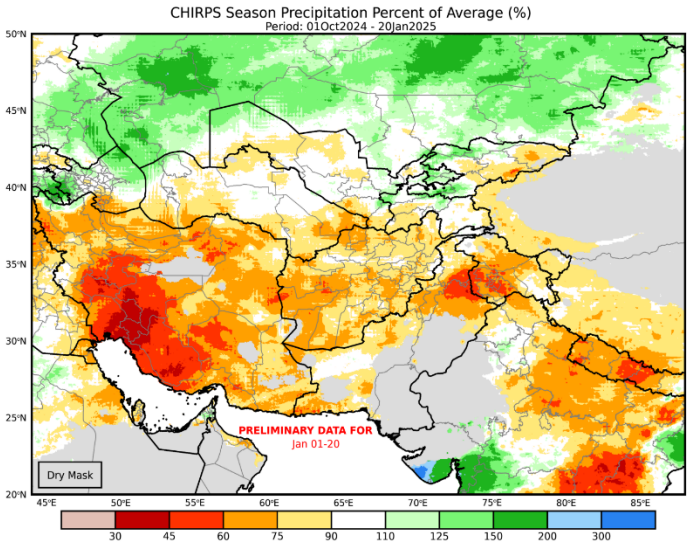
Precipitation

Below-average cumulative precipitation (October 1, 2024 to January 20, 2025) conditions are seen in most parts of the country. Cumulative precipitation deficits on the order of 60 – 75 percent of the average were seen in the northwestern, central highlands, and in some northern and western areas while precipitation deficits on the order of 75 – 90 percent of average were seen elsewhere (Figure 1). Field reports indicate that there is an increased likelihood of flooding and landslides in February 2025 due to recent precipitation.

Figure 1

CHIRPS seasonal precipitation percent of average (%)
October 1, 2024 – January 20, 2025

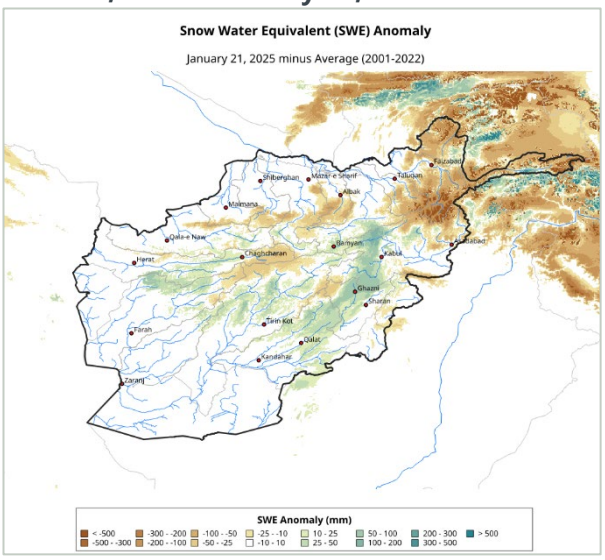


Light green to blue colors shows cumulative precipitation percent above normal while light brown to red colors shows percent of average below normal.

Source: UCSB CHC

Figure 2

Snow water equivalent anomaly (mm)
October 1, 2024 – January 20, 2025



As of January 21, 2025

Source: USGS/NASA

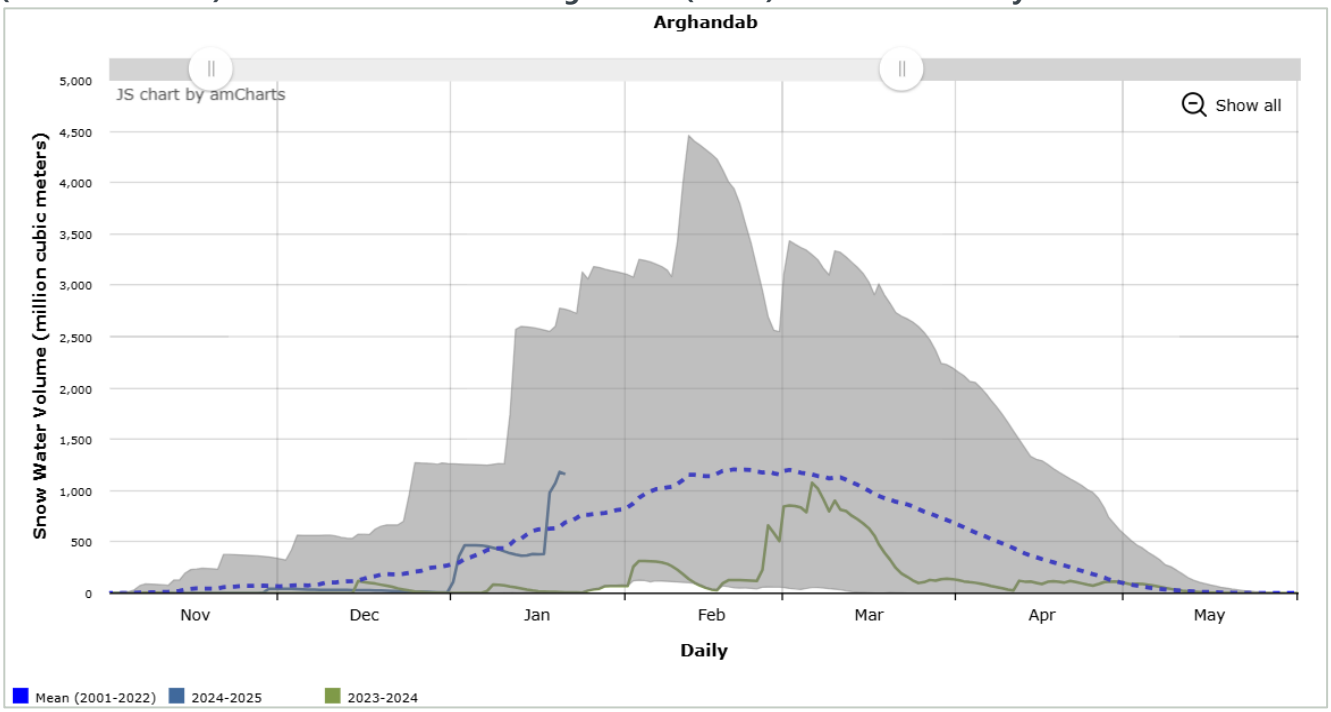
Snow water volume

Below-average SWE conditions are seen over higher elevations in the northeastern, eastern, and central highlands for the fourth year in-a-row as of the reporting date. Further, below-average SWE conditions are also present over mid-elevations in some northern and southern parts of the country. Above-average SWE conditions are seen in the central, southeast, central highlands, and western parts of the country (Figure 2).

Snow water volumes are currently below-normal in Panj, Kokcha_Ab-i-Rustaq, Khanabad, Khulm, Balkhab, Sari Pul, Shirin Taghab basins while they are at normal or above-normal levels in Kunduz, Bala Murghab Kushk, Hari Rod, Farah_Adraskan, Khash_Khuspas, Helmand, Arghandab, Ghazni, Shamal and Kabul basins. Figures 3 a-d, highlight the varying levels of snow water volumes in different basins: above-average in Arghandab and Helmand (south), normal in Hari Rod (west), and below-normal in Panj (northeast) as of January 21, 2025. However, SWV levels in all basins are higher than the previous year.

Figure 3a

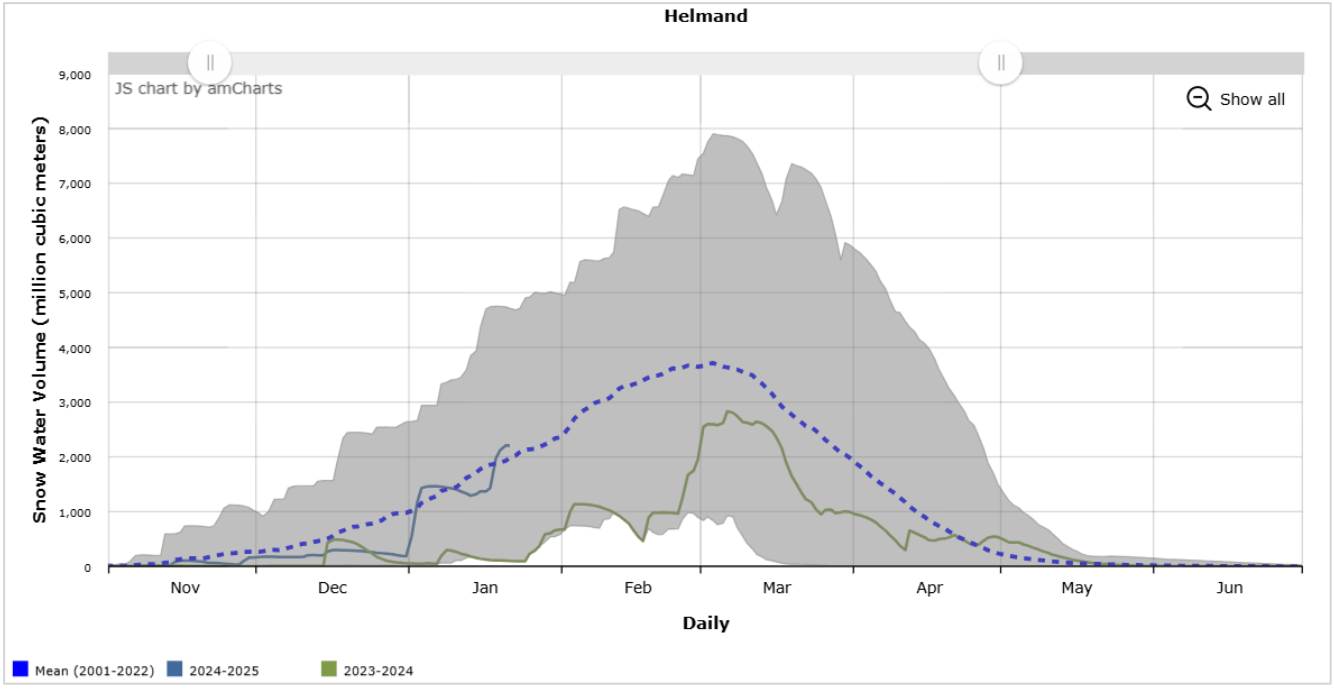
Seasonal snow water volume in 2023-24 (green line), 2024-25 (dark blue line), and historical average (blue dotted line) as a function of time in Arghandab (south) basin as of January 21.



Source: USGS/NASA

Figure 3b

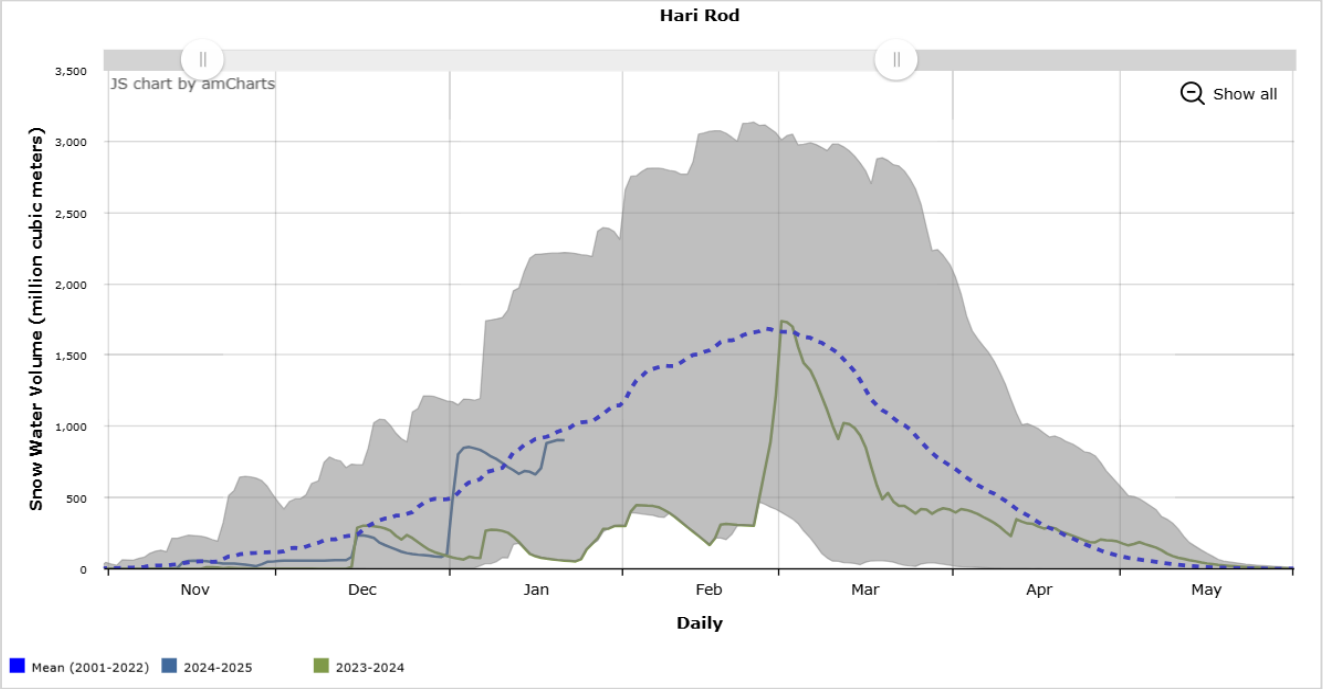
Seasonal snow water volume in 2023-24 (green line), 2024-25 (dark blue line), and historical average (blue dotted line) as a function of time in Helmand (south) basin as of January 21.



Source: USGS/NASA

Figure 3c

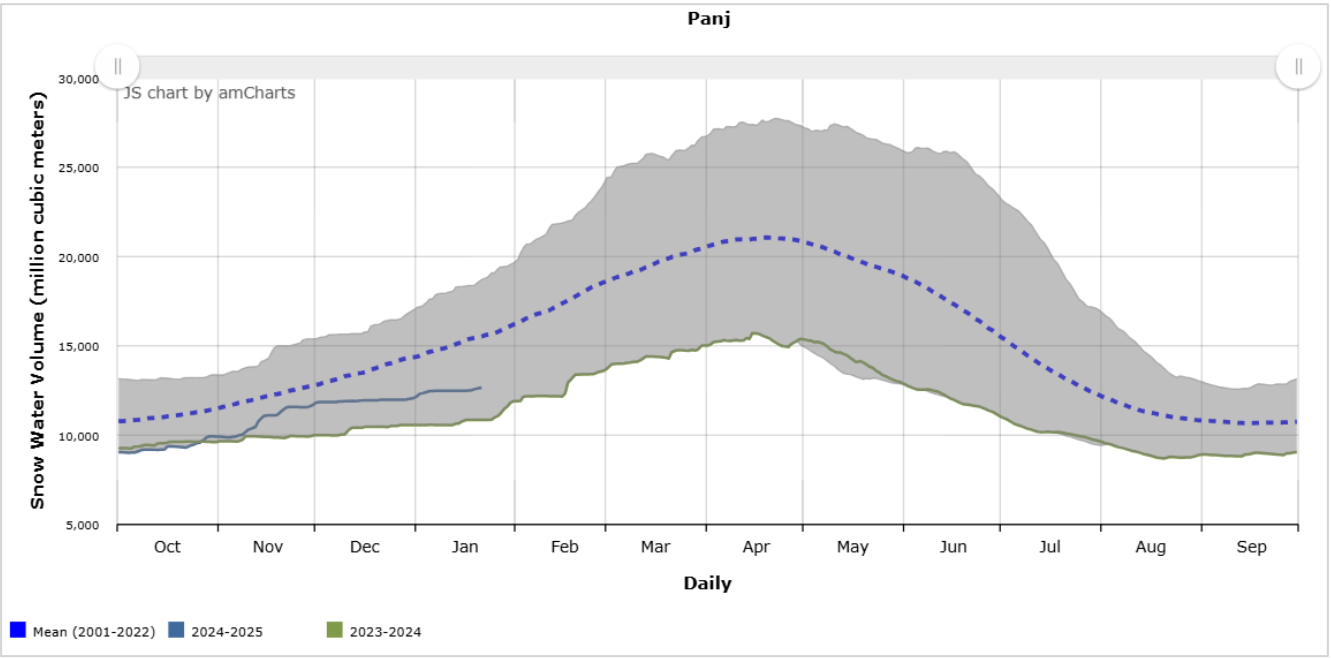
Seasonal snow water volume in 2023-24 (green line), 2024-25 (dark blue line), and historical average (blue dotted line) as a function of time in Hari Rod (west) basin as of January 21.



Source: USGS/NASA

Figure 3d

Seasonal snow water volume in 2023-24 (green line), 2024-25 (dark blue line), and historical average (blue dotted line) as a function of time in Panj (northeast) basin as of January 21.



Source: USGS/NASA

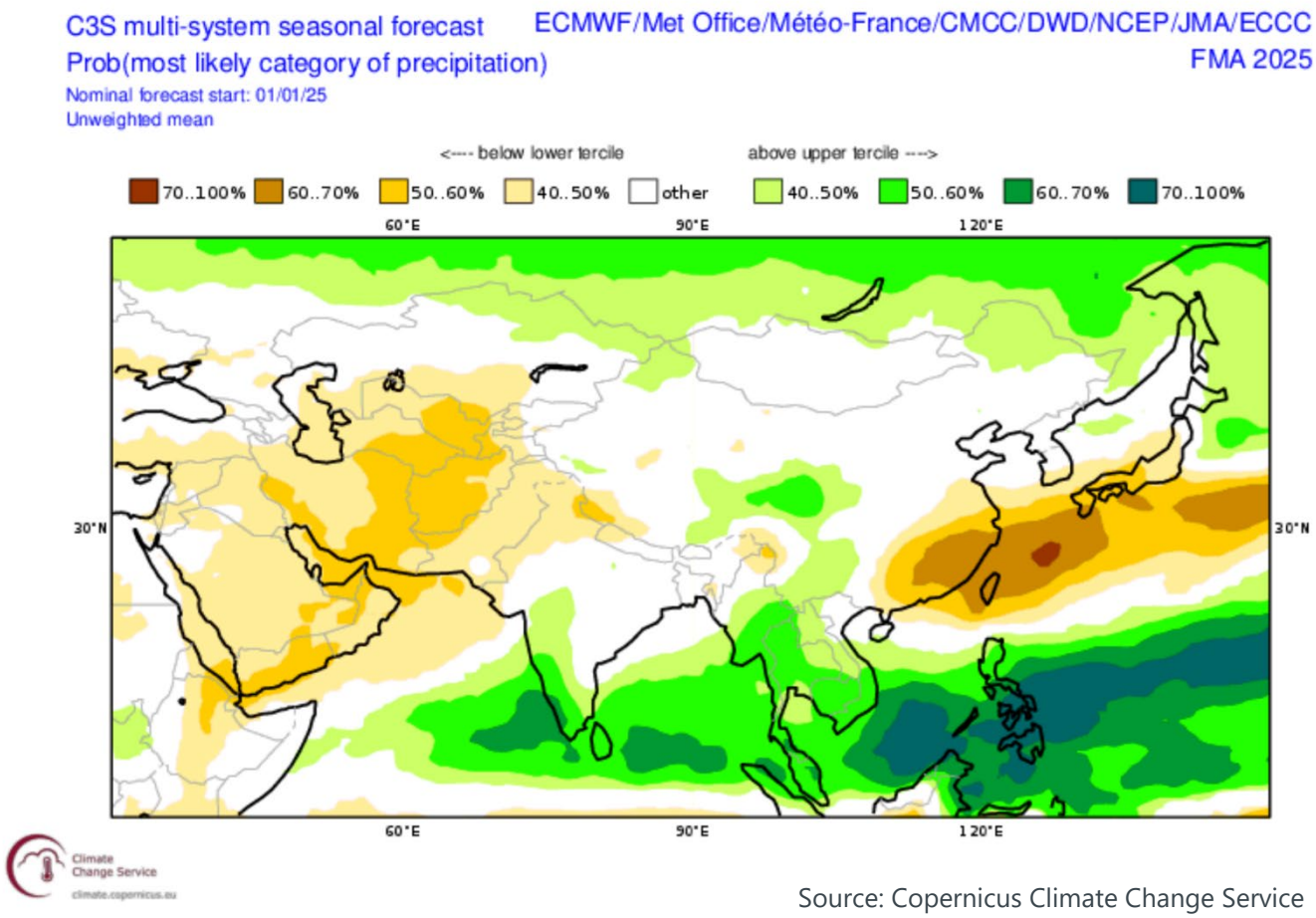
Forecast

Precipitation

The precipitation forecast for February – April 2025 from the Copernicus Climate Change Service (C3S) System in January 2025 shows increased probability of below average precipitation across the country (Figure 4). Consequently, it is expected that a milder-than-normal winter will result in lower likelihood of landslides and road blockages later in the 2024/25 winter season. The forecast of below-normal precipitation during this period is also likely to result in below-average spring wheat planting activities during March 2025, which in turn has a potential to reduce the total wheat production at the end of the 2024/25 season.

Figure 4

Copernicus Climate Change Service (C3S) multi-system seasonal precipitation forecast probabilities for February through April 2025 generated on January 1, 2025



Source: Copernicus Climate Change Service

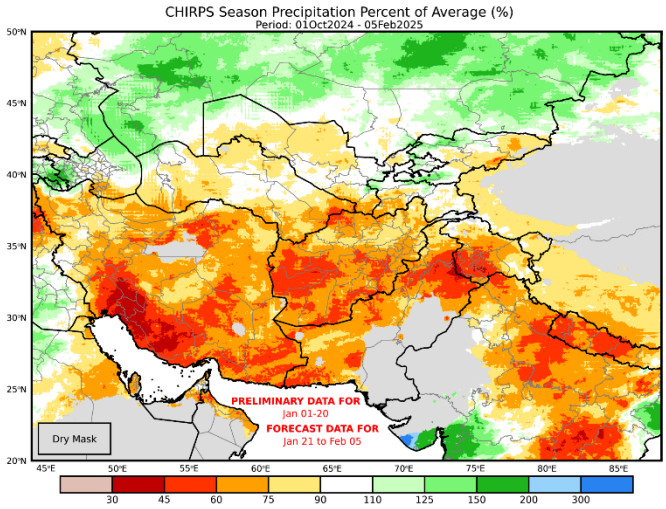
The **CHIRPS-GEFS** based short-term cumulative precipitation (October 1, 2024 – February 5, 2025) forecast shows a general increase in precipitation deficits across most parts of the country. Cumulative precipitation in western and

southern areas (Figure 5a) are expected to be only 45 to 75 percent of average, while the precipitation totals in remaining parts of the country are expected to be between 60 to 90 percent of average (2001-2022).

The **ECMWF** weekly precipitation forecasts between January 27 and February 3, 2025 show no tilt towards above- or below-average precipitation in most parts of the country (Figure 5b, left inset). However, in the following week ending February 10, 2025, there is an increased likelihood of below-average precipitation in the western, northern, northeastern, southeastern, and southern parts of the country, while there is no tilt towards above- or below-average precipitation elsewhere (Figure 5b, right inset).

Figure 5a

CHIRPS forecasted cumulative precipitation percent of average (%)
October 1, 2024 – February 5, 2025

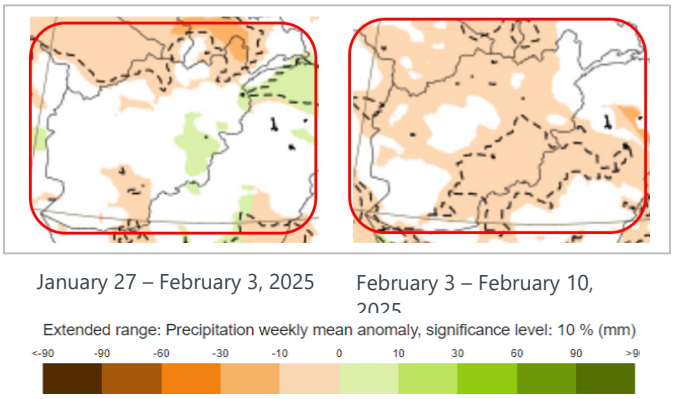


Light green to blue colors shows cumulative precipitation percent above normal while light brown to red colors shows percent of average below normal.

Source: UCSB CHC

Figure 5b

ECMWF weekly mean precipitation forecasts for January 27 – February 3, 2025 and February 3 – 10, 2025 as of January 23, 2025



Light to dark green colors show cumulative precipitation anomalies in percent above-mean while light brown to dark red colors show anomalies in percent below-mean.

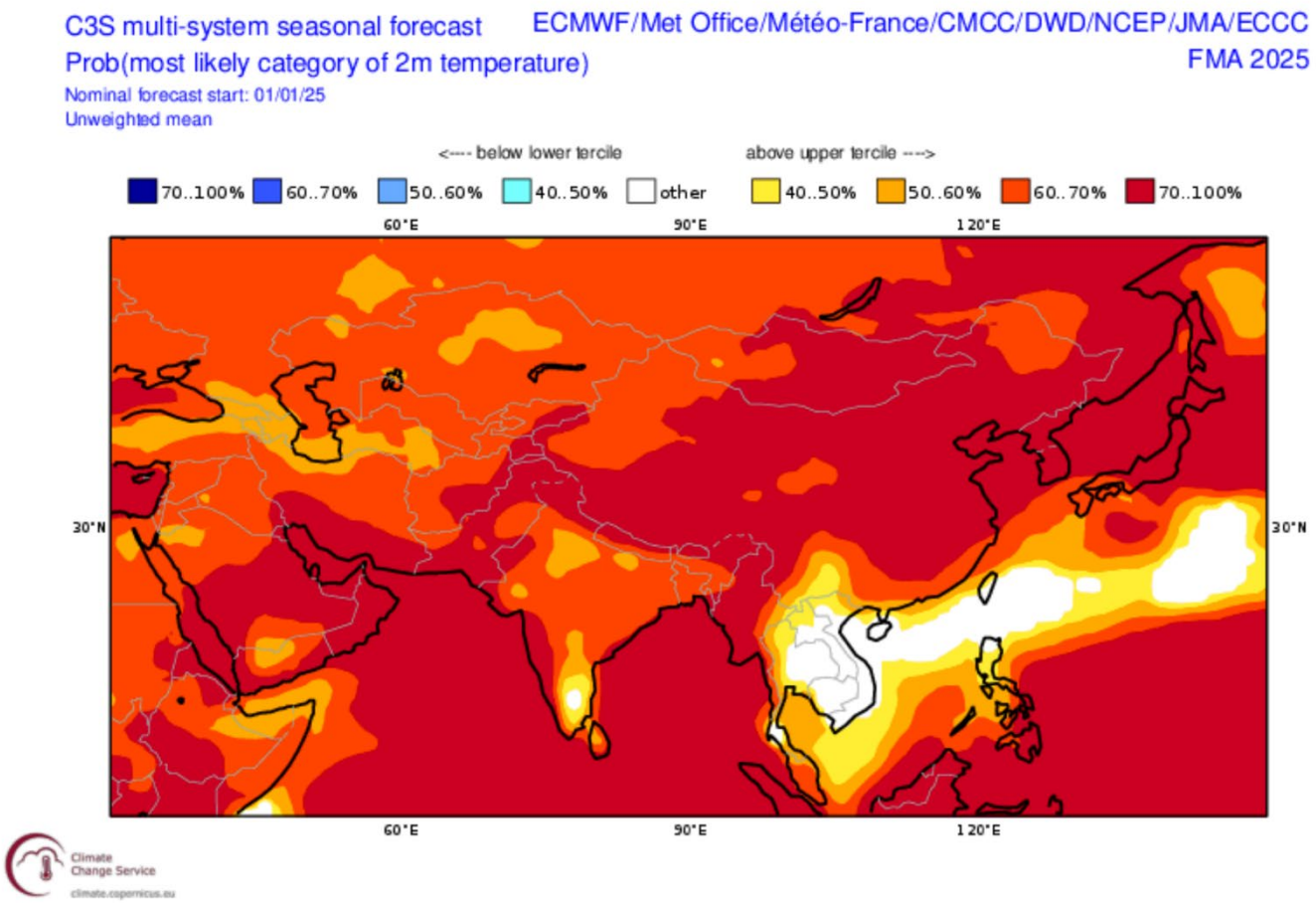
Source: ECMWF Forecast System

Temperature

There is a high probability of above-average temperatures for February – April 2025 in the forecast generated in January 2025 (Figure 6). Currently, the winter wheat crop is in its early vegetative stage and the recent precipitation has improved the soil moisture conditions, which in turn is expected to favor healthy crop growth till mid-February. However, the forecast of above-average day time temperatures may lead to early snow pack depletion, reducing water availability for irrigated crop water use, and causing moisture stress in rainfed crops and rangelands during spring months. The extended forecast of above-average temperatures and below-average precipitation, in summer months, may adversely affect second crop cultivation. Declining groundwater levels remain a major concern as farmers will again rely more on groundwater as a supplement in the coming months due to the below-average precipitation and above-average temperatures.

Figure 6

Climate Change Service (C3S) multi-system seasonal temperature forecast probabilities (2 m temperature) for February through April 2025 generated on January 1, 2025.



Light yellow to red colors show the likelihood of warmer temperatures in the upper tercile, while cyan to dark blue colors show the likelihood of cooler temperatures in the lower tercile.

Source: Copernicus Climate Change Service

About Seasonal Monitor

FEWS NET's Seasonal Monitor reports are produced for Central America and the Caribbean, West Africa, East Africa, Central Asia, and Somalia every 10-to-30 days during the region's respective rainy season(s). Seasonal Monitors report updates on weather events (e.g., rainfall patterns) and associated impacts on ground conditions (e.g., cropping conditions, pasture, and water availability), as well as the short-term rainfall forecast. Find more remote sensing information here.