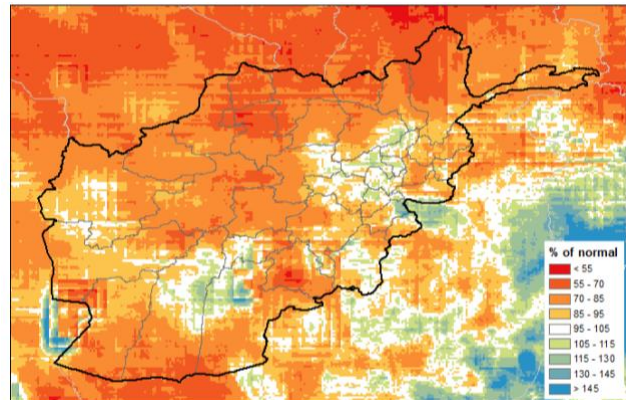


Below-average wheat harvest is expected due to below-average soil moisture and low water availability

KEY MESSAGES

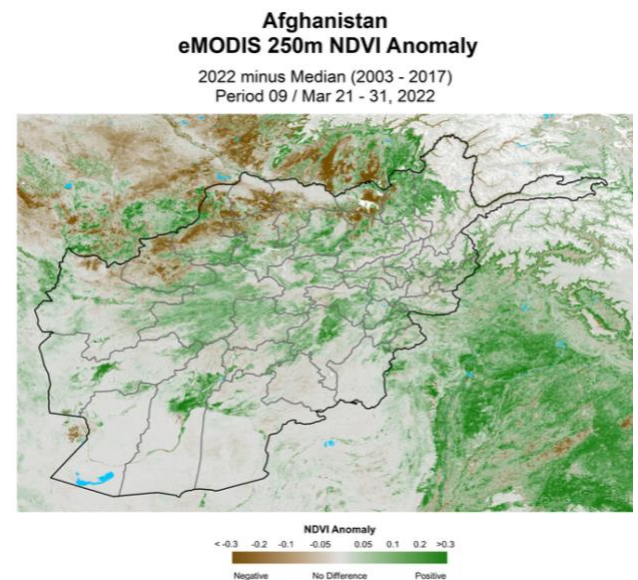
- Below-average cumulative precipitation from October 1, 2021, to April 15, 2022, was observed in southwestern, northern, central highlands, and northeastern parts of the country. Average to above-average cumulative precipitation for the same period was observed in some parts of the central and southern regions (**Figure 1**).
- Low soil moisture and low snow water volumes have already led to moisture stress in the northern wheat belt (**Figure 2**). As of April 19, 2022, **below-average and near-record low snow water** volumes persist in most basins of the country (**Figure 3**).
- The European Centre for Medium-Range Weather Forecasts (ECMWF) indicates above-average precipitation from April 18 to April 25, and below-average precipitation thereafter during the week ending May 2 (**Figure 4**). Wheat will be in the critical flowering stage during the next two-three weeks. Although above-average precipitation during the week ending April 25 may provide relief to the stressed crop, dry weather in the following weeks may hurt yield prospects at the time of harvest.
- Below-average precipitation and above-average temperatures (**Figure 5**) are most likely through the end of August in Afghanistan due to the ongoing **La Niña**. Less than average second crop cultivated area may result from low water availability in most basins across the country.

Figure 1: October 1, 2021 – April 15, 2022, precipitation percent of average from CHIRPS.



Source: USGS/NOAA

Figure 2: eMODIS (250m) NDVI anomaly, with respect to median (2003-2017) for 21-31 March 2022.



Source: USGS/EROS

UPDATE ON SEASONAL PROGRESS

Current conditions:

Meteorological, agricultural, and hydrological droughts are observed for the second successive year during the ongoing wet season. As of April 21, large negative NDVI anomalies are observed in a swath from Herat in the west to Kunduz in the northeast. Field reports indicate that above-average temperatures, below-average precipitation, and low snow water volumes from the beginning of April have resulted in the onset of moisture stress in wheat crop in this swath. Flash floods are likely in the low-lying areas consequent to the above-average precipitation during the week ending April 25.

Precipitation anomalies:

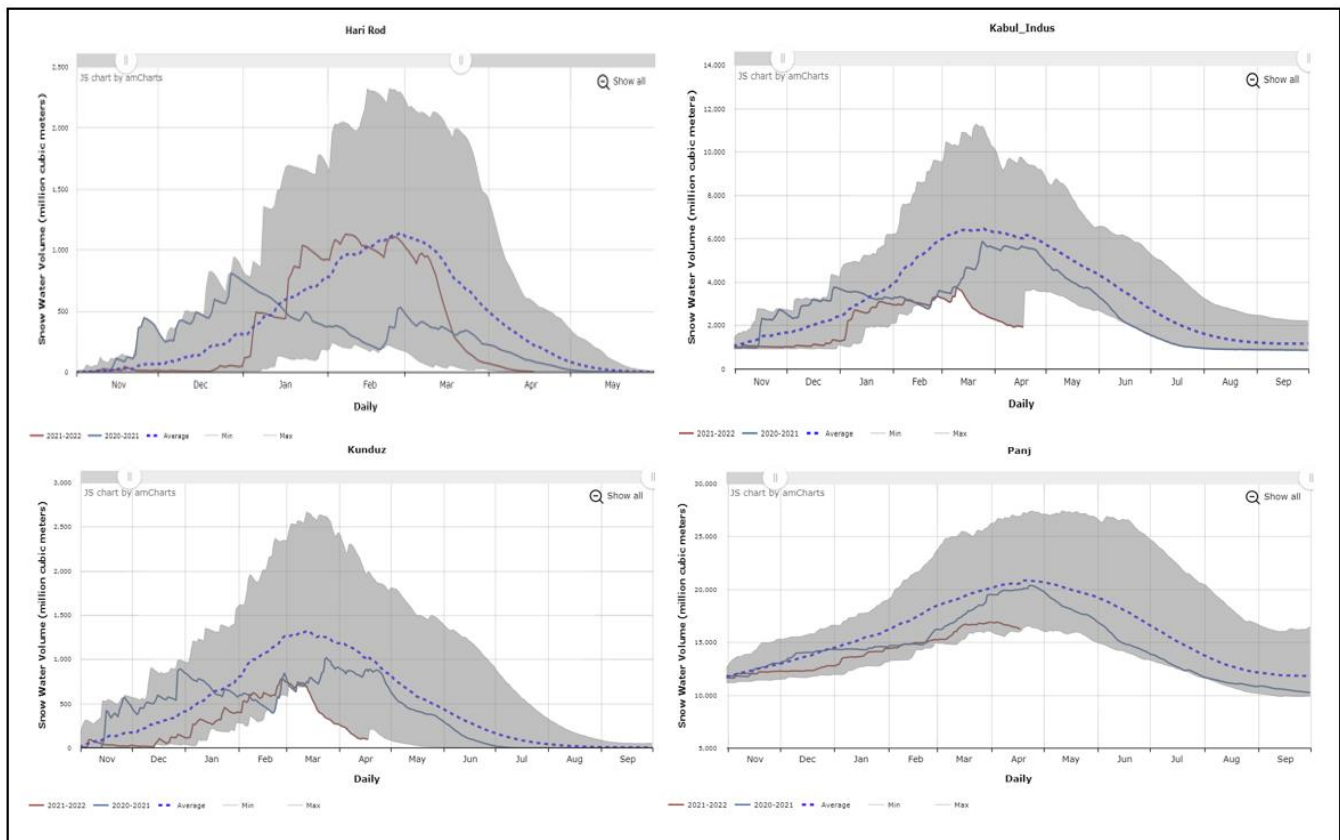
Below-average cumulative precipitation from October 1, 2021, to April 15, 2022 (55-70 percent of average), was observed in northern and northeastern parts of the country bordering Turkmenistan, Uzbekistan, and Tajikistan, and in some southern parts bordering Pakistan. Below-average cumulative precipitation (70-95 percent of average) was observed in central highlands. Above-average cumulative precipitation (105 to 115 percent of average) was observed in some eastern and southern parts of the country (**Figure 1**).

Snowpack and snow water volume (SWV):

Above-average temperatures have resulted in the rapid depletion of snow water volumes in all the basins in the country. As of April 17, record minimum snow water volumes were observed in Panj, Kokcha-Ab-I-Rustaq, Khanabad, Kunduz, and Kabul basins. Snow water volumes in the remaining basins were depleted at least 2-3 weeks sooner than average. The prospects of second crop cultivation from June will be adversely impacted because low snow water volumes and **low reservoir levels will reduce water availability**.

Figure 3 highlights the SWV in Hari Rod, Kabul-Indus, Kunduz, and Panj basins as of April 18. SWV seasonal cycle has concluded in the Hari Rod basin. SWV levels are below normal at 80 and 75 percent of normal in Kabul-Indus and Kunduz basins, respectively, as of April 18. SWV is at record low for the Panj basin.

Figure 3. Seasonal snow water volume accumulations, compared to the historical average, previous year, and minimum-maximum ranges, for the Hari Rod, Kabul-Indus, Kunduz, and Panj basins, as of April 18.



Source: USGS/NASA

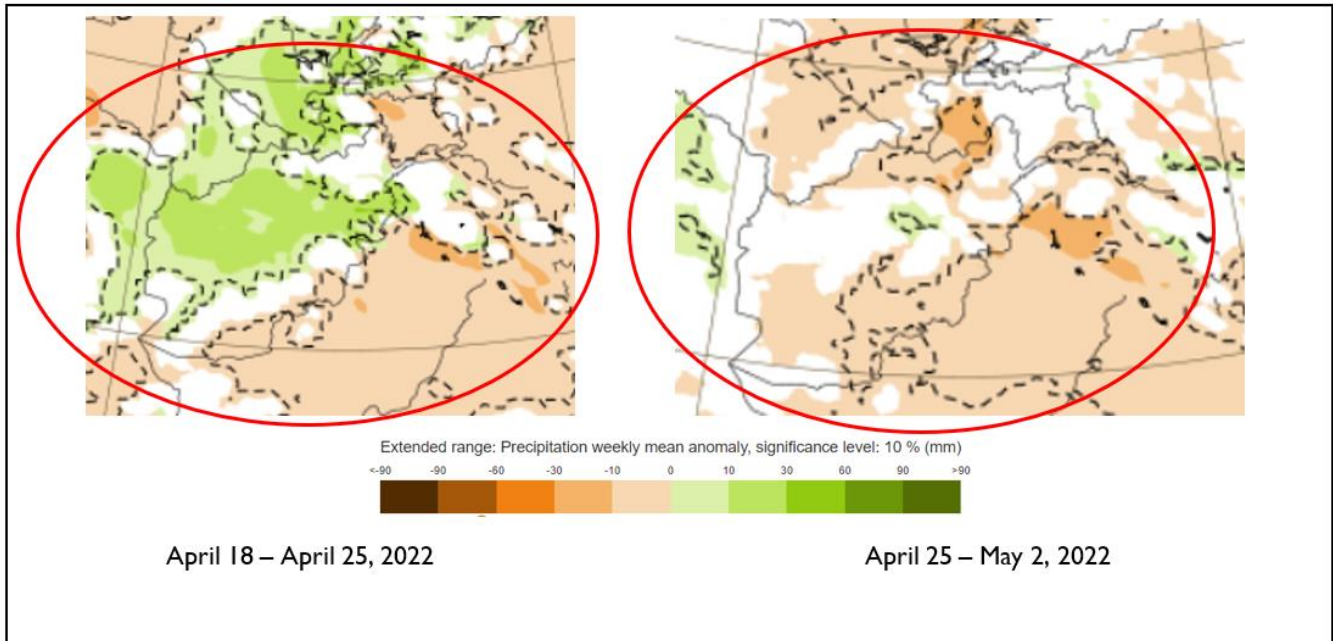
FORECAST

Precipitation:

Based on ECMWF forecasts, above-average precipitation is most likely for the majority of the country from April 18 – April 25 (**Figure 4**). Precipitation during the remainder of the season is expected to be below average, given the forecast **persistence of La Niña**. Above average precipitation during the week ending April 25, 2022, will provide timely relief to the wheat crop as

well as improve soil moisture, conditions especially in the northern and western parts of the country. Moisture stress in the following weeks does not bode well for the yield prospects of wheat.

Figure 4. Mean weekly precipitation anomalies from ECMWF made on April 18 for (left) April 18 – April 25 and (right) April 25 – May 2. The dashed lines indicate precipitation anomalies that are significant at the 1 percent confidence level while the color shaded areas indicate precipitation anomalies that are significant at the 10 percent confidence level. White shading indicates precipitation anomalies that are not significant at the 10 percent confidence level.



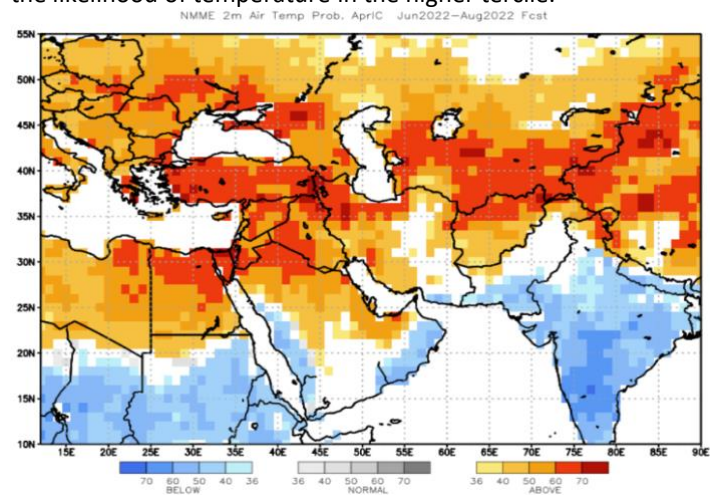
Source: ECMWF

Temperatures:

The North American Multi-Model Ensemble temperature forecast for Jun – Aug 2022 indicates a high probability of above-average temperatures across the country during the forecast period (**Figure 5**).

Current field reports indicate above-average temperatures, low snow water volumes, and low streamflow conditions in the country. Consequently, wheat crop may be subjected to more severe moisture stress conditions until harvest.

Figure 5. The North American Multi-Model Ensemble temperature tercile probability forecast for Jun-Aug 2022. Warm colors indicate the likelihood of temperature in the higher tercile.



Source: NOAA CPC