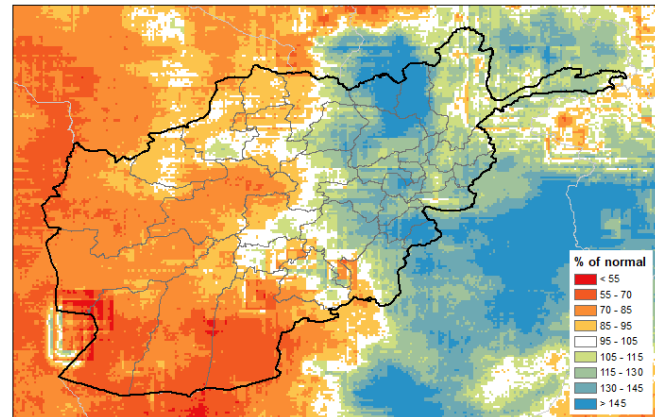


*Dry conditions persist in the west and south at the beginning of the main harvest season*

**KEY MESSAGES**

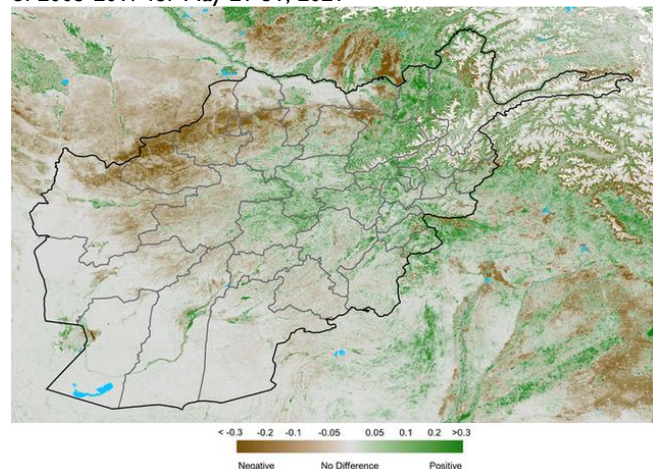
- At the conclusion of the 2020/21 wet season as of May 31, cumulative precipitation deficits were recorded in western, southern, and some central and northern parts of the country. Meanwhile, average to above-average precipitation conditions were observed in southeastern, eastern, northeastern, and portions of the central and northern regions of the country. Storms in April resulted in flash floods in the first week of May in northern and northeastern parts of the country.
- Rapid depletion of snow since mid-January led to record minimum or near-minimum snow water volumes (SWV) in many southern, southwestern, western, and northwestern basins. In eastern and northeastern basins with annual cycles, SWV levels were below average as of May 27. In general, snow water availability has been below-average in basins across the country since mid-January. This is likely to affect upcoming second season cultivation which depends on snowmelt for irrigation water.
- According to the eMODIS Normalized Difference Vegetation Index (NDVI) for the dekad ending May 31, below-normal crop and rangeland conditions have continued in many southern, western, northwestern, and northern parts of the country.
- According to international forecast models, average precipitation and above-average temperature conditions are expected from June to August 2021.

**Figure 1.** October 1, 2020 - May 31, 2021 percent of average (1981-2010) cumulative precipitation



Source: USGS/UCSB

**Figure 2.** eMODIS (250 m) NDVI anomaly relative to the median of 2003-2017 for May 21-31, 2021



Source: USGS/EROS

**UPDATE ON SEASONAL PROGRESS**

**Precipitation anomalies:**

Early in the 2020/21 wet season, average to above-average precipitation across the country from mid-November to the end of December 2020 contributed to overall normal completion of planting of winter wheat in most areas. However, below-average precipitation from January to mid-February resulted in cumulative precipitation deficits across the country, except in some northern and central areas. The precipitation deficits in January/February did not impact the planted wheat (mostly irrigated) as the crop was in dormancy. From March to May, average to slightly above-average spring precipitation across the country erased the precipitation deficits and resulted in slightly above-average cumulative precipitation in eastern, southeastern, and some central parts of the country by the end of May. Significant precipitation events during April and May

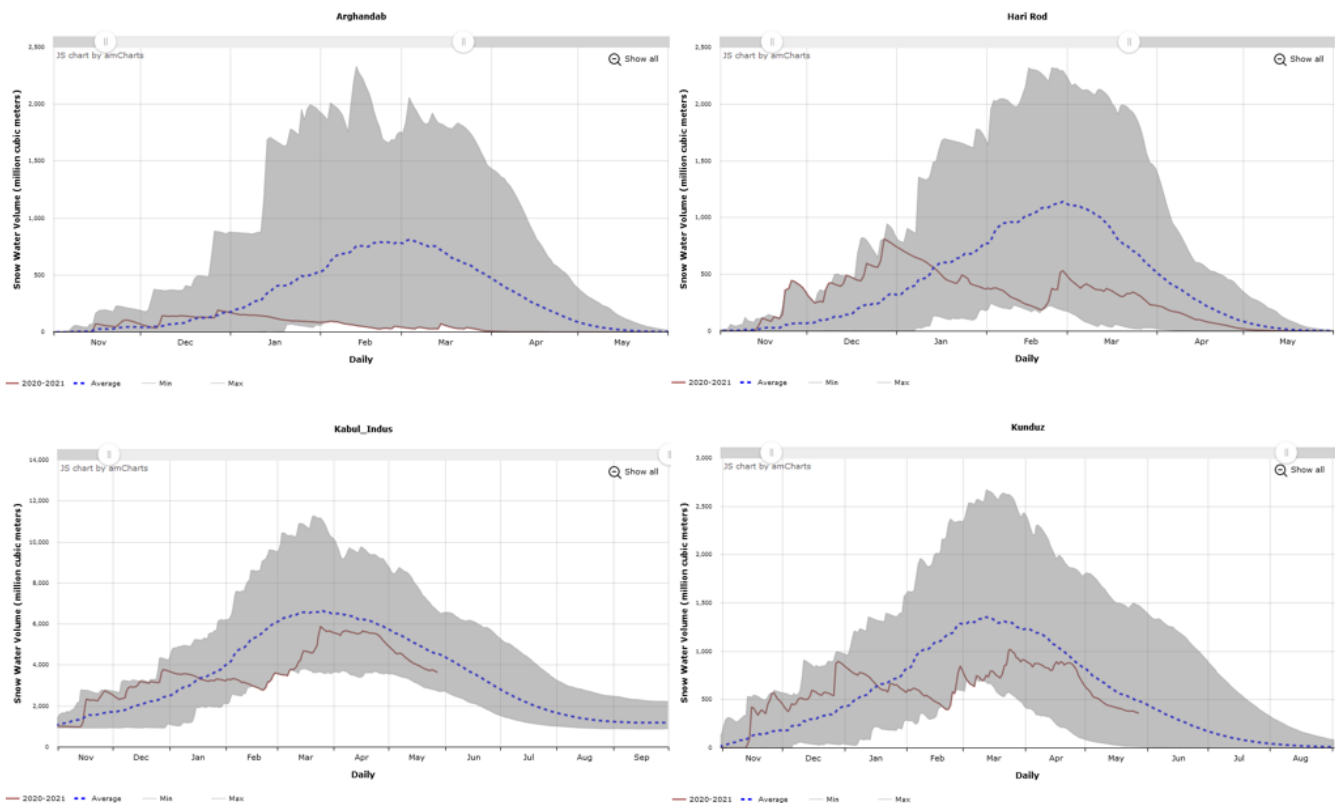
were beneficial for growth of irrigated wheat and assisted in timely planting and growth of spring wheat in those areas. However, storms in late April also resulted in flash floods in northern and northeastern parts of the country in the first week of May. Meanwhile, precipitation deficits in southern, western, northwestern, and some northern parts of the country continued into May. By the end of the 2020/21 wet season on May 31, 2021, cumulative precipitation deficits persisted in western, southern, and some central and northern parts of the country (Figure 1). As a result of continued below-average precipitation conditions from January to May, the health of rainfed wheat and rangeland vegetation is likely below-average in northwestern, western, southern, and some northern parts of the country (Figure 2).

**Snow depth and snow water volume:**

Average to above-average precipitation in November/December 2020 resulted in average to above-average snow water volumes (SWV) in all basins across the country at the end of December 2020 (Figure 3). However, significantly below-average precipitation in January/February 2021 prevented normal snowpack development and led to early depletion of snowpack starting in January. In most northwestern, western, southwestern, and southern basins with seasonal cycles,<sup>1</sup> SWV depleted early. In eastern and northeastern basins with annual cycles, SWV levels have been below normal from January onwards as of May 27. Below-normal SWV levels during spring and early conclusion of seasonal cycles will most likely lead to below-average availability of irrigation water for the second season crop.

Figure 3 highlights the SWV in Arghandab, Hari Rod, Kabul, and Kunduz basins as of May 27. SWV seasonal cycles have concluded in Arghandab and Hari Rod basins. SWV levels are below normal at 80 and 75 percent of normal in Kabul and Kunduz basins, respectively, as of May 27.

**Figure 3.** Comparison of daily snow water volume progression in million cubic meters in Arghandab, Hari Rod, Kabul, and Kunduz basins as of May 27, 2021



Source: USGS/NASA

<sup>1</sup> In basins with seasonal cycles, snow is typically present for a portion of the year. In basins with annual cycles, some snow is typically present year-round.

**FORECAST**

**Precipitation:**

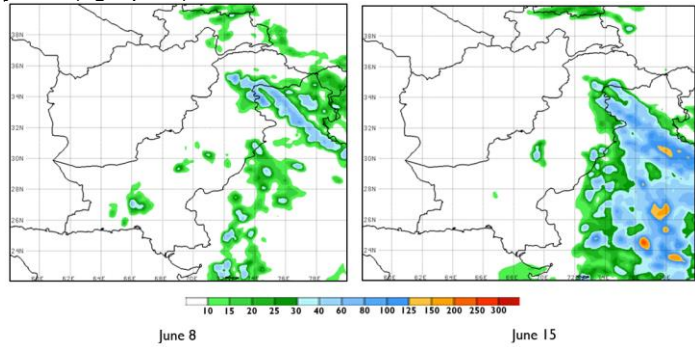
The Global Forecast System (GFS) forecasts for total precipitation in the weeks ending June 1 and June 8 indicate dry weather expected across the country. (Figure 4).

Harvesting of wheat is in progress in lower elevation areas of the country. In this context, the forecast of dry weather will likely be beneficial to the harvesting efforts in those areas.

**Temperatures:**

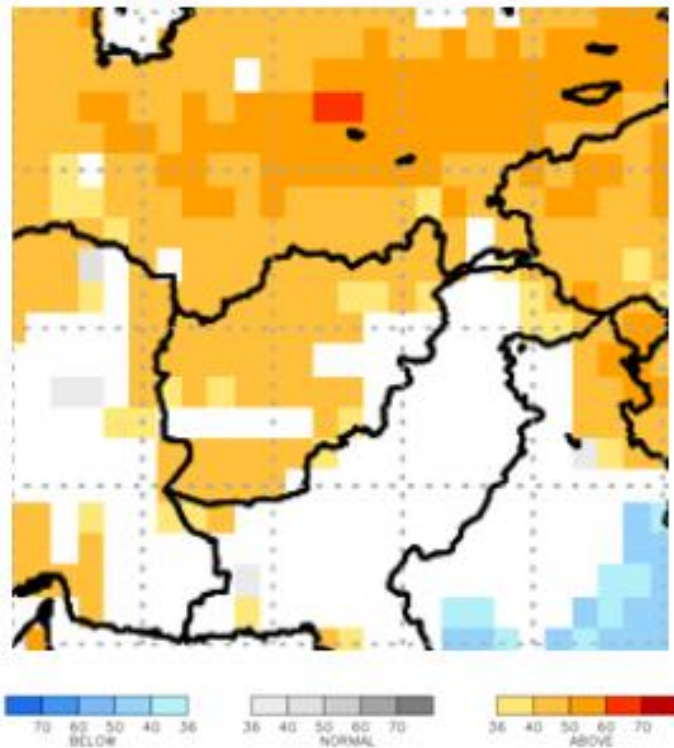
The North American Multi-Model Ensemble (NMME) forecast with May initial conditions indicates a high probability of above-average temperatures across the country during the June to August period (Figure 5). Rangeland vegetation and wheat that will be harvested later remain vulnerable to the above-average temperatures.

**Figure 4.** The Global Forecast System (GFS) forecast for total precipitation for the week ending June 1 (left panel) and the week ending June 8 (right panel)



Source: NOAA CPC

**Figure 5.** The North American Multi-Model Ensemble (NMME) temperature tercile probability forecast for June-August 2021 with May initial conditions



Source: NOAA CPC