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Outlook for September-October-NOVEMBER (SON), 2025

1. Current meteorological conditions

During the June–July–August (JJA) season, the last two months remained notably wet, with above-normal rainfall observed across most parts of the country. Since the onset of the monsoon in the last week of June, around eight rainfall spells have been recorded. Rainfall over Gilgit-Baltistan and Khyber Pakhtunkhwa, however, stayed close to normal during the season. Some isolated heavy downpours triggered severe urban and flash flooding, particularly in the northern and eastern regions. Temperatures generally remained normal to slightly above normal, with the highest positive departures observed over Gilgit-Baltistan (Table 1).

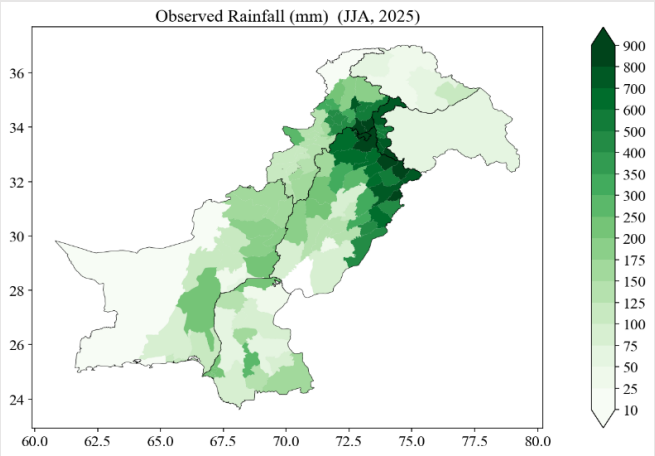

Figure 1: Observed rainfall (mm), JJA 2025

Table 1: Summary of the JJA 2025 Observed Rainfall and Temperature

Region	Total Rainfall (mm)	Normal* Rainfall (mm)	Rainfall Departure (%)	Mean Temp (°C)	Anomaly (°C)
Pakistan	261.0	215.9	+21.2	30.8	+0.4
AJK	713.4	589.3	+21.0	28.8	+0.04
Balochistan	64.5	59.1	+10.0	31.8	+0.5
Gilgit-Baltistan	52.0	54.9	-5.3	26.9	+2.1
Khyber Pakhtunkhwa	277.2	275.0	+1.6	29.0	+0.6
Punjab	521.9	384.3	+35.8	31.2	-0.3
Sindh	121.2	100.7	+20.3	33.6	+0.2

* Normal Period (1990 – 2020)

2. Seasonal Rainfall Outlook:

The seasonal outlook is based on the outputs of nine global seasonal prediction models with optimal skill. The models' outputs are combined using the Multi-Model Ensemble (MME) technique to generate operational outlooks for seasonal rainfall and temperature. Currently, the Indian Ocean Dipole (IOD) is in a negative phase and is expected to remain negative during the season. Meanwhile, the El Niño–Southern Oscillation (ENSO), currently in a marginally negative phase, is expected to persist in this state during the forecast month.

Given these conditions, the forecast indicates a general tendency for **normal*** **to slightly above-normal** rainfall across the eastern parts of the country, with the highest departures expected in the central to southern parts of Punjab and southeastern Sindh. In contrast, the northern and western regions are likely to experience **normal to slightly below-normal** rainfall with maximum departure over northern Khyber Pakhtunkhwa, Gilgit-Baltistan and Kashmir (Figure 2, 3). The first month of the season is expected to be wetter than the rest of the season.

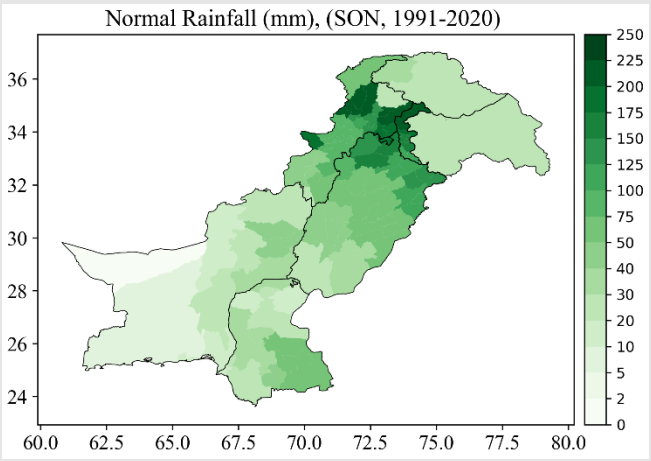

Figure 2: Normal (1991-2020) rainfall (mm) for SON

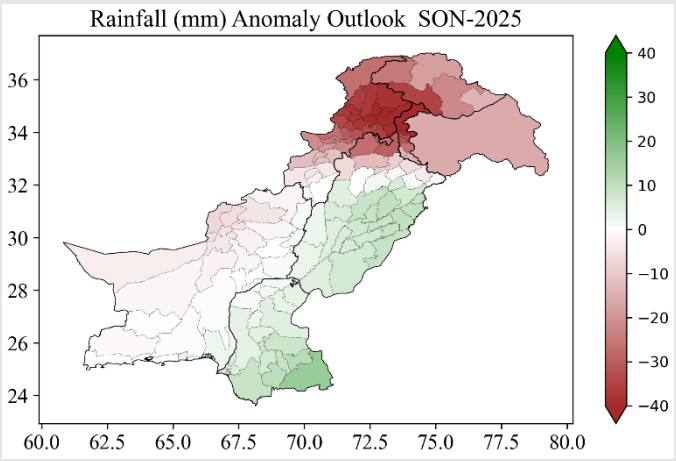

Figure 3: Monthly rainfall (mm) anomaly for SON 2025

The probabilistic rainfall outlook reflects a consensus among all models used in the ensembles. The tercile probability output (Figure 4) indicates that most ensemble members predict the likelihood of near normal rainfall in southern half of the country, whereas, the northern half is likely to receive below normal rainfall during the season SON 2025.

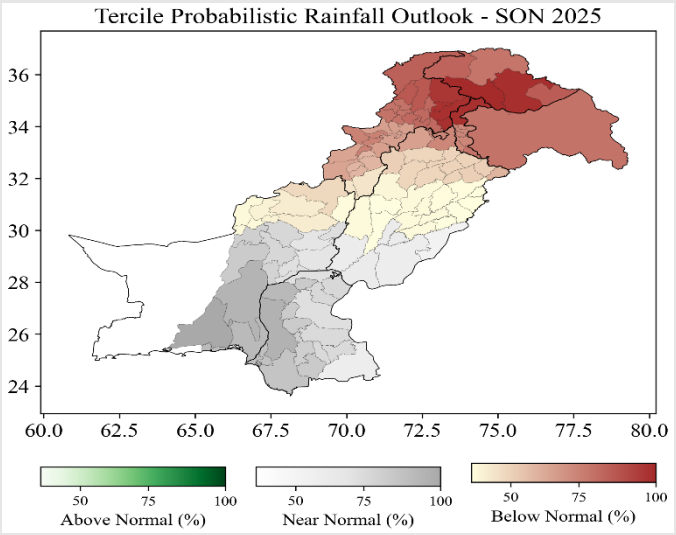

Figure 4: Probabilistic (%) rainfall outlook for SON 2025

* Normal = 30-years average climatology

3. Seasonal Temperature Outlook:

Mean temperatures are expected to remain **above normal*** throughout the country, with maximum departure over Gilgit Baltistan and adjoining areas of Khyber Pakhtunkhwa and Kashmir (Figure 6).

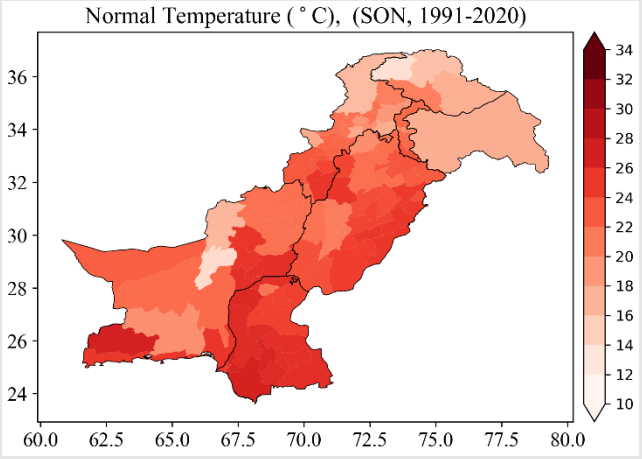

Figure 5: Normal (1991 - 2020) temperature for SON

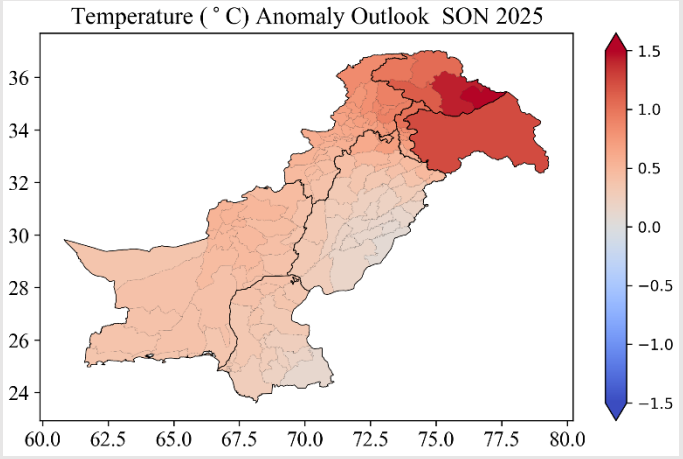

Figure 6: Monthly temperature anomaly outlook for SON 2025

The tercile probabilistic temperature outlook (Figure 7) shows that most models predict above-normal temperatures across the country, with the highest likelihood over the northern half of the country.

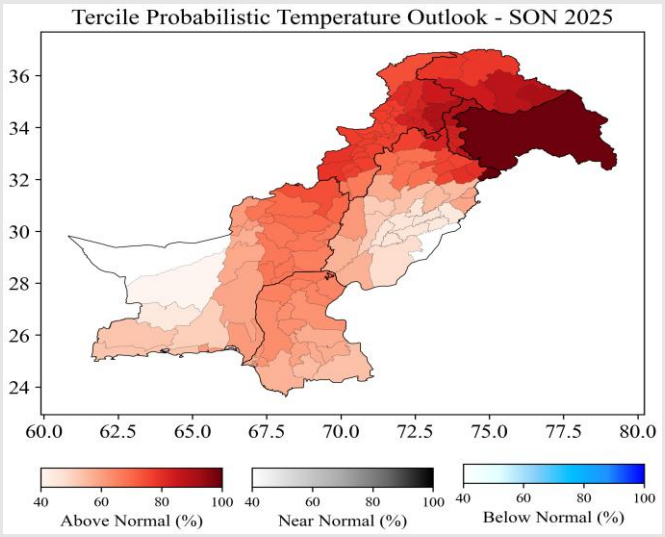

Figure 7: Probabilistic (%) temperature outlook for SON 2025

4. Impacts:

- Favorable soil moisture conditions are expected to support the sowing of upcoming Rabi crops, ensuring a satisfactory start to the season.
- Excess water may adversely affect the healthy growth and development of standing crop.
- Isolated showers, hail, or windstorms may pose a risk to Kharif crop harvesting activities, particularly in northwestern regions, potentially leading to crop damage and losses.
- The anticipated temperature and humidity conditions in major cities, especially in central and southern areas, may create an environment conducive to a dengue outbreak during October and November, warranting public health preparedness.
- High temperatures in upper Khyber Pakhtunkhwa, Gilgit-Baltistan, and Kashmir may increase the likelihood of Glacial Lake Outburst Floods (GLOFs) in these regions during September.
- Prolonged dry spells towards the end of the season may lead to an increased risk of fog and smog formation in plain areas, potentially resulting in deteriorated air quality and associated impacts on human health and visibility.

Note: The Seasonal Outlook is updated monthly in the first week of the month. The forecast reliability varies with location, time of year, and global ocean/atmospheric conditions. It provides general trends using probabilities rather than precise predictions and compares expected conditions to historical averages. For better decision-making, it should be used alongside short-term forecasts and other climate data.