Pakistan Meteorological Department

National Drought Monitoring Centre (NDMC)
Meteorological Headquarters
Islamabad, Pakistan

Islamabad, 29th May 2024

SUBJECT: FLASH DROUGHT ADVISORY-I

The flash drought occurs when low rainfall is accompanied by consistent abnormally high temperatures e.g., heat waves over a short period of time. Flash droughts develop and intensify very quickly, often within weeks or even days. These rapid changes can quickly raise evapotranspiration rates and remove available water from the top layer of the soil.

The country overall received slightly above normal rainfall from January to 29th May, 2024. However, the below normal rainfall and soaring temperature of May with consistent heatwave period particularly in southern parts of Pakistan, flash drought may likely emerge. The province wise rainfall departure (mm) detail is as under in the Table-1. The spatial variations can be seen in Figure-2 (ANNEX-1).

Table-1 Area weighted rainfall departure (mm) from January to 29th May 2024

	2024					
	January	**February**	**March**	**April**	**May (till 29th)**	**January to 29th May**
Pakistan	-13.5	5.7	14.2	36.8	-8.8 (-64%)	34.4
AJK	-48.7	-0.7	40.1	85.3	-42.5 (-75%)	33.5
Balochistan	-9.9	20.4	18.5	47.3	-2.6 (-48%)	73.7
GB	-15.1	-8.6	17.8	4.3	-21.4 (-82%)	-23
KP	-31.9	-5.1	36	101.1	-23.2 (-57%)	76.9
Punjab	-13.9	-11.5	-0.1	14.9	-9.2 (-66%)	-19.8
Sindh	-2.2	9.1	2.9	2	-2.6 (-100%)	9.2

2. May and June are the hottest months of the years with higher probability of heat waves. Due to an abrupt increase in day and night time temperatures for the last three weeks, the heatwave episodes are observed . This leads to increase in the land surface temperature and evaporative demands and has resulted in soil moisture stress. Satellite based Land Surface Temperature (LST) and Temperature Vegetation Dryness Index (TVDI) of Pakistan from 9th to 23rd May 2024 is shown in Figure 4 and 5 (Annexure-1). The drought vulnerable districts of particularly southern half of the country (Sindh, Balochistan, South Punjab) including Tharparkar, Cholistan , Thal as well as rainfed regions may experience flash drought in the coming days. Keeping in view the impact of the heatwave, the flash drought-like situation may emerge over most of the high-temperature regions of the country shown in Figure-6 (Drought Monitor). The province wise temperature anomaly is shown in Figure-1 and the spatial variation is shown in Figure-3 (ANNEX-1).

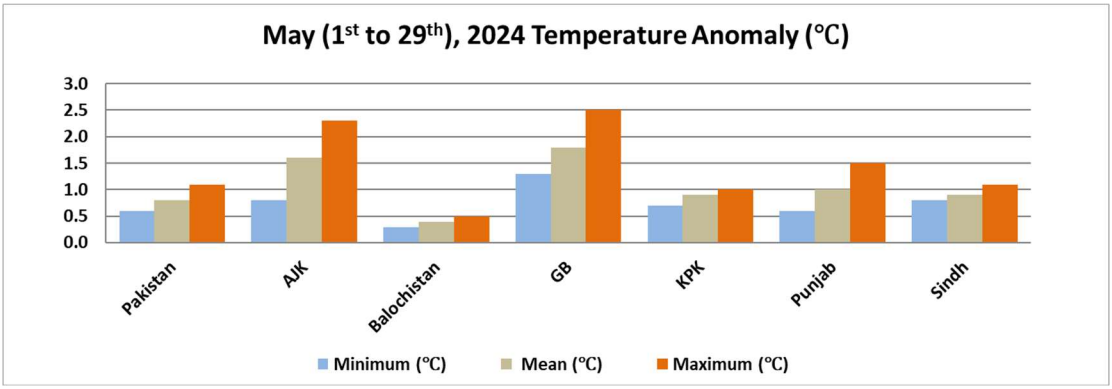

Figure 1: PMD station based provincial temperature anomaly (°C)

3. Keeping in view the climatology and current forecast for the month of June, drought conditions may exacerbate and affect the agriculture, water resources and live stocks, before the arrival of the summer monsoon.

5. Flash droughts can have a significant impact on agriculture, water resources, and ecosystems. They can lead to crop failure, wildfires, and water shortages. It is advised to all stakeholders to take pre-emptive measures for disaster-prone districts. Farmers/agriculturists are advised to keep themselves updated on the PMD website http://www.pmd.gov.pk.

6. NDMC is continuously monitoring drought situations over the country and keeping the stakeholders and general public updated by issuing drought information on a weekly, fortnightly and monthly basis.

Dr. Syed Faisal Saeed
Director (NDMC)
Phone #: 051-9250598
Fax #: 051-9250368

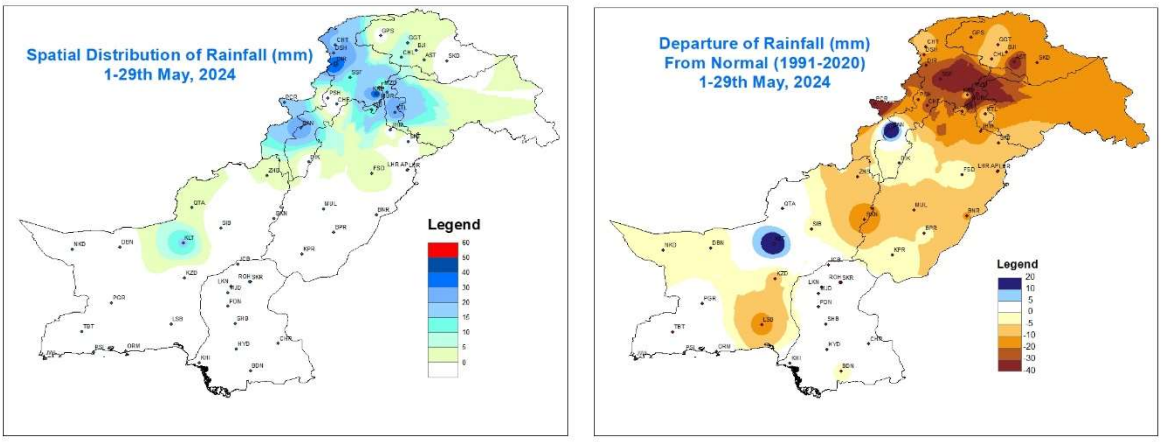

Figure 2: PMD station based rainfall (mm) departure and spatial distributation of May 2024 rainfall

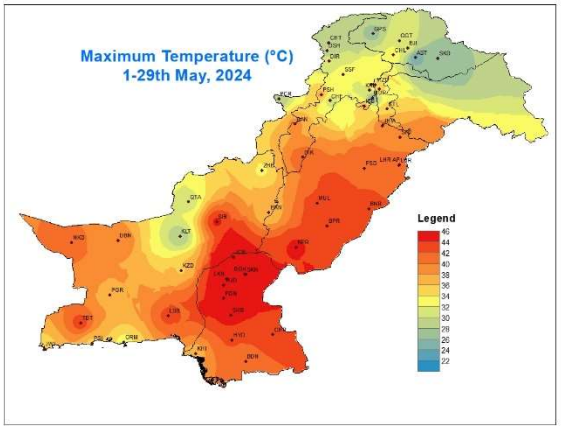

Figure 3: PMD station based maximum temperature (°C) for May 2024.

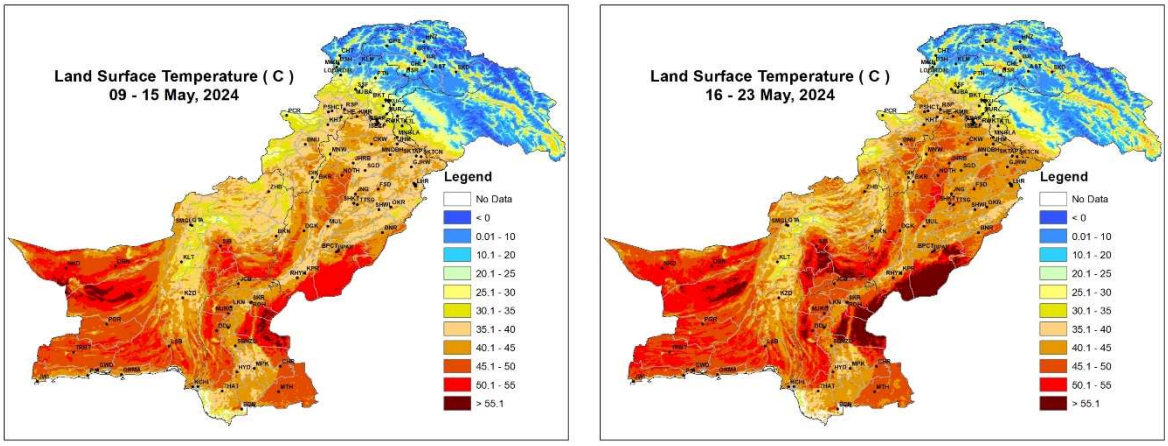

Figure 4: Satellite based Land Surface Temperature (LST) °C of Pakistan for May 2024

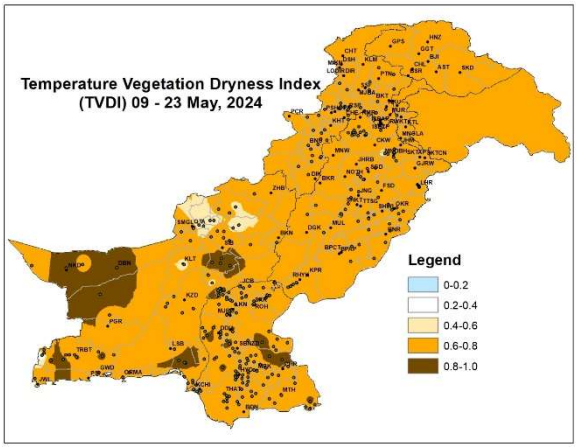

Figure 5: Satellite based Temperature vegetation dryness index (TVDI) of Pakistan from 9th to 23rd May 2024

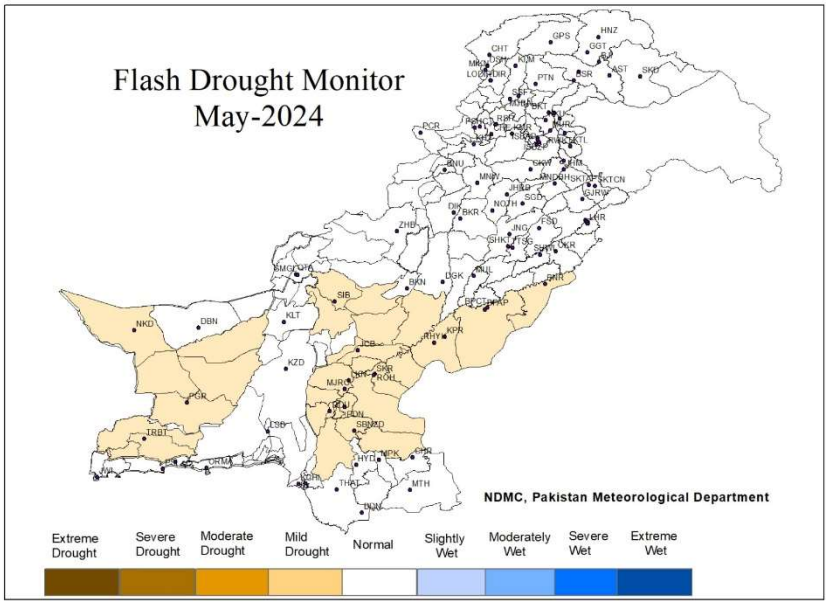

Figure 6: Drought condition of Pakistan May 2024