

APRIL 2021

Highlights

- National rainfall for the month of April 2021 was below normal (-29.4%) with large deficit over all six administrative regions; Sindh (-47.5%), Balochistan (-26.5%), GB (-31%), KP (-25.8%), Punjab (-34.8%) & AJK (-29.4%). Chief amounts of monthly rainfall recorded across Pakistan are shown in Table:1.
- During the month of May 2021, Near Normal precipitation is expected over the country. Rise in temperatures in high altitudes are likely to cause snowmelt in the Northern Areas subsequently the chances of increase in water availability in the Upper Indus basin and some GLOF events over the Glaciers. Heat wave conditions may arise in major cities of Sindh and south Punjab during May, 2021.
- Precipitation during April 2021 was not good enough for drought prone areas of Balochistan and Sindh.
- Moderate to severe Drought Conditions are prevailing over NW areas of Balochistan and SE Sindh. The disaster management authorities may continue surveillance in these areas and plan DRM activities accordingly.

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1. Weather Summary for the month of April, 2021

During the month of April 2021, rainfall received across Pakistan is shown in Fig. 1. Moderate to Heavy rainfall events were reported at a most places in Azad Jammu and Kashmir , Khyber Paktunkhawa and few parts in upper Punjab while the rest of the country received light to no rainfall comprising Gilgit Baltistan, south Punjab, Sindh and Blochistan. Chief amounts of monthly rainfall recorded during April, 2021 is shown in Table:1

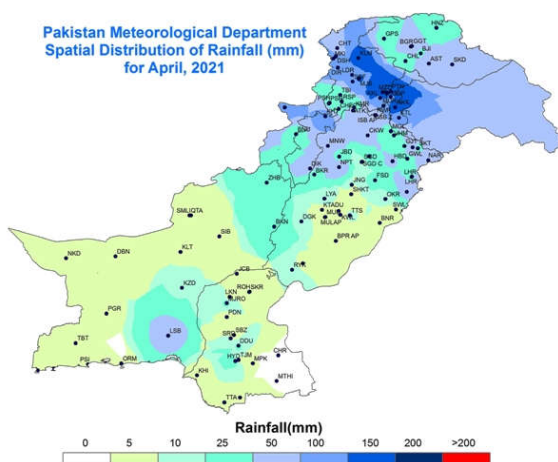


Figure 1: Rainfall distribution for the month of April-2021

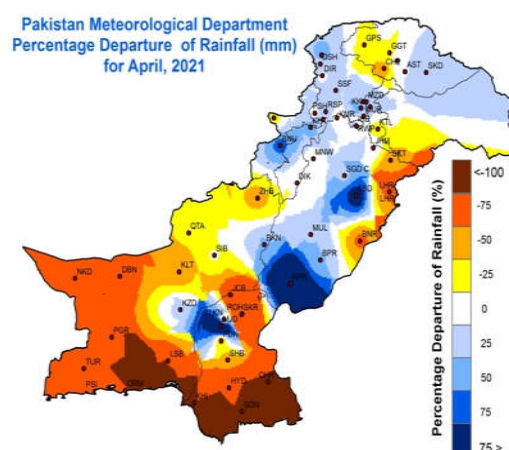


Figure 2: Percentage Departure of Rainfall for the month of April-2021

The Fig. 2 depicts the Percentage Departure of Rainfall from the normal. Above Normal rainfall was received in most areas of KP and few in Punjab while below normal at isolated stations in Gigit Baltistan and southern areas of Sindh and Blochistan.

Table:1					
Sr.No.	Station	Rainfall (mm)	Sr.No.	Station	Rainfall (mm)
1	Chakothei	161.9	11	Tandali	106.4
2	Haraman	155.0	12	Brarkot	106.0
3	Balakot	152.0	13	Kakul	87.8
4	Bandi Abbaspur	143.9	14	Garhi Dupatta	85.6
5	Kalam	134.6	15	Chattar Kalas	81.4
6	Rawalakot	130.0	16	Kohat Airbase	79.0
7	Pattan	127.2	17	Murree	75.0
8	Muzaffarabad Airport	126.6	18	Kotli	75.0
9	Besham	118.3	19	Parachinar	71.0
10	Malam Jabba	116.0	20	Panjera	71.0

2. Drought Situation Analysis

Spatial drought analysis results using different indices are represented in Fig. 3. Normal conditions prevailed over some places in the northern parts of the country. During the month of April, the rains associated with hailstorms at isolated places in the agricultural plains of Khyber Pakhtunkhwa and Punjab damaged the standing crops.

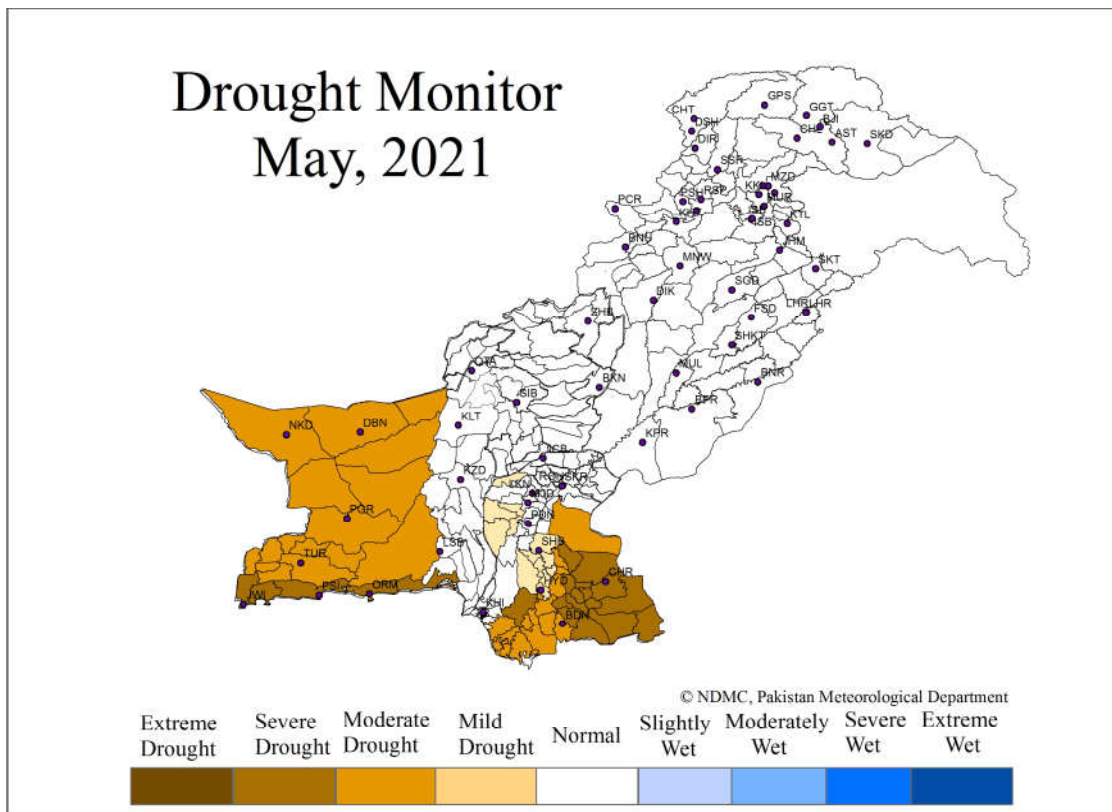
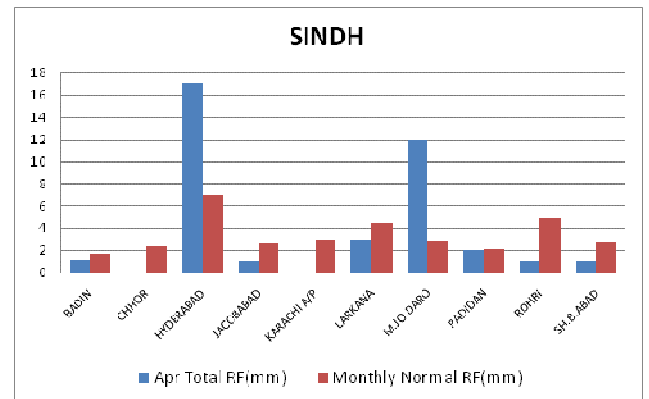
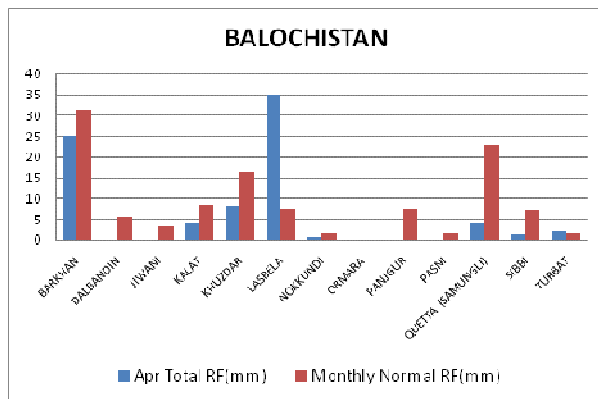
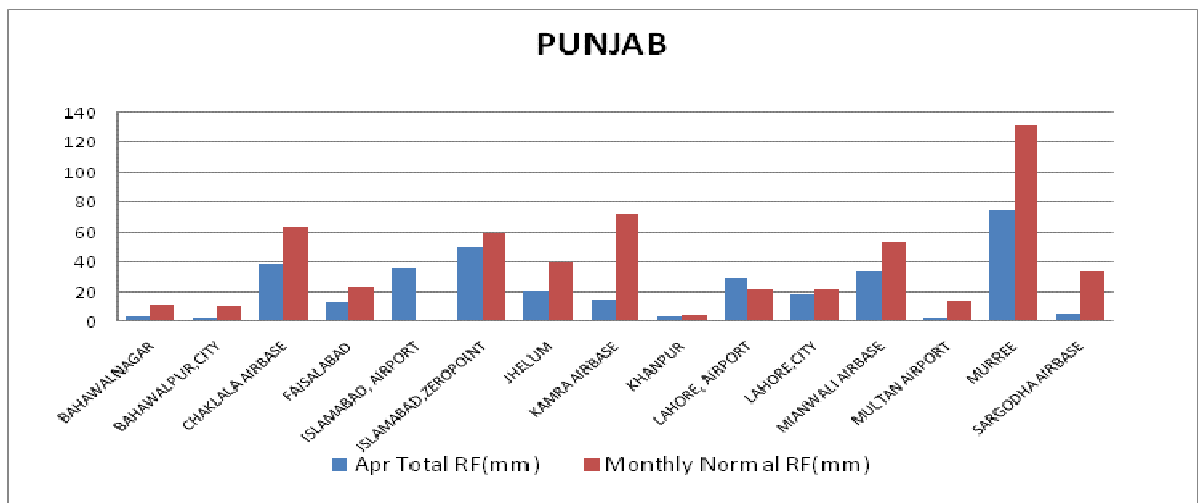
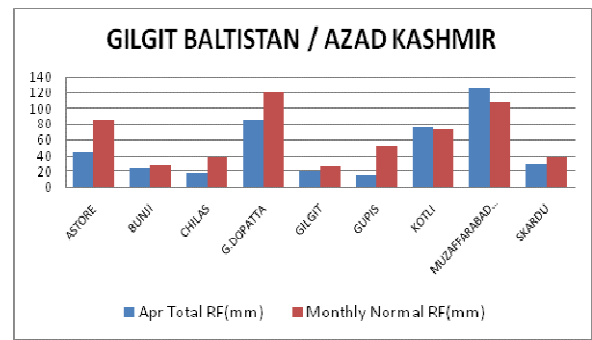
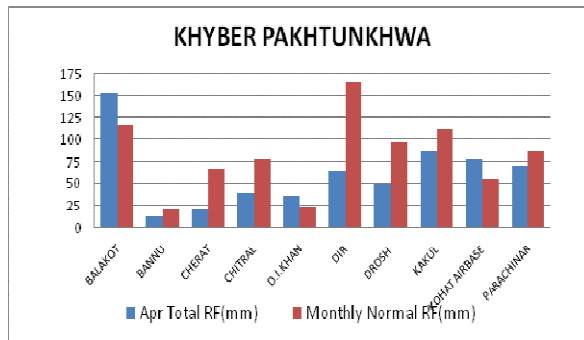


Figure 3: Analysis for Drought conditions of Pakistan

I. Monthly Actual to Normal Rainfall Comparison for April-2021



II. Normalized Difference Vegetation Index (NDVI)

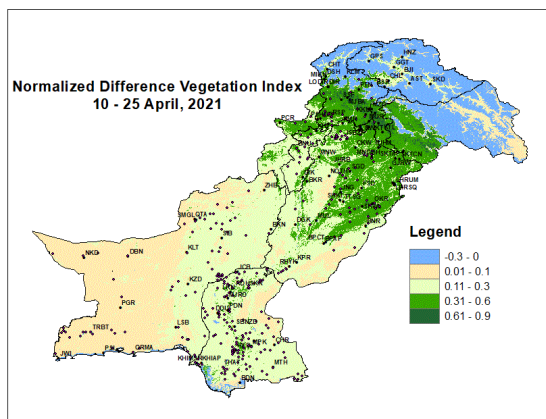


Figure 4: NDVI during 10-25 April, 2021

Normalized Difference Vegetation Index values for the month of April 2021 are shown in Fig. 4. NDVI conditions in Khyber Pakhtunkhwa, Punjab and along the Indus belt are good, depicting the impacts of well distributed rainfall during the month. Vegetation index is minimum over eastern Sindh and most parts of Balochistan.

III. Land Surface Temperature (LST)

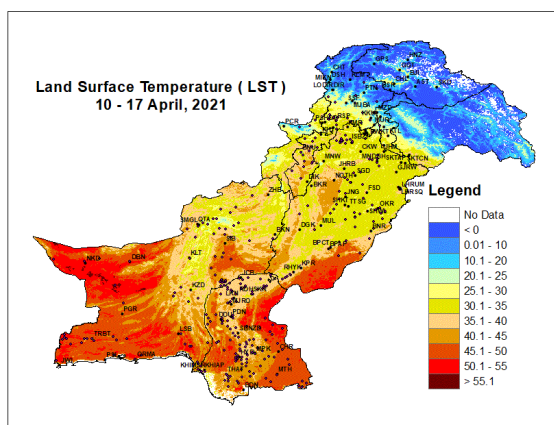


Figure 5: LST (°C) during 10-17 April, 2021

Land Surface Temperatures (LST) for the period 10 - 17 April, 2021 are represented by Fig. 5. In the central parts of the country, average daytime temperatures remained between 25°C to 35°C while in lower parts of the country, temperature ranges from 35°C to 45°C.

Land Surface Temperatures during the period 18 – 25, April 2021 are shown in Fig. 6. A slight increasing trend in temperatures has been observed in most parts of the country as compared to the previous week.

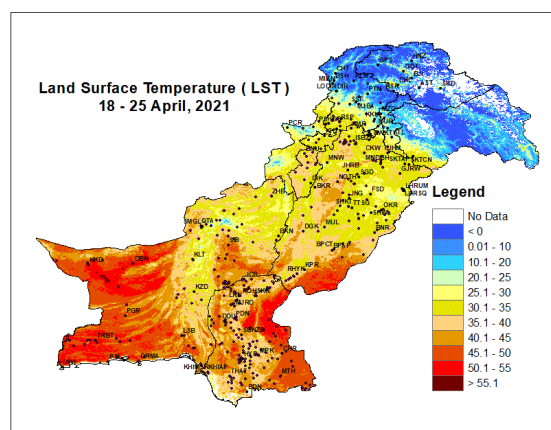
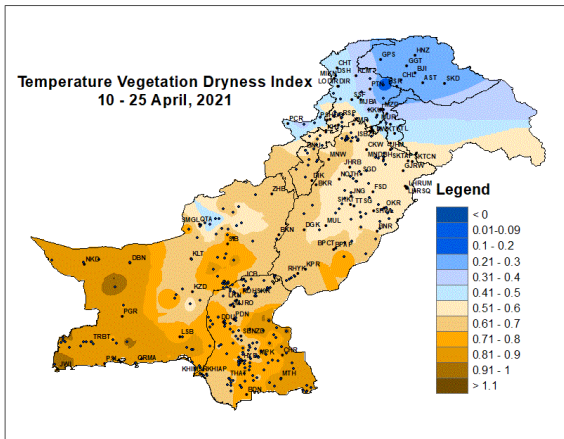


Figure 6: LST (°C) during 18-25 April, 2021

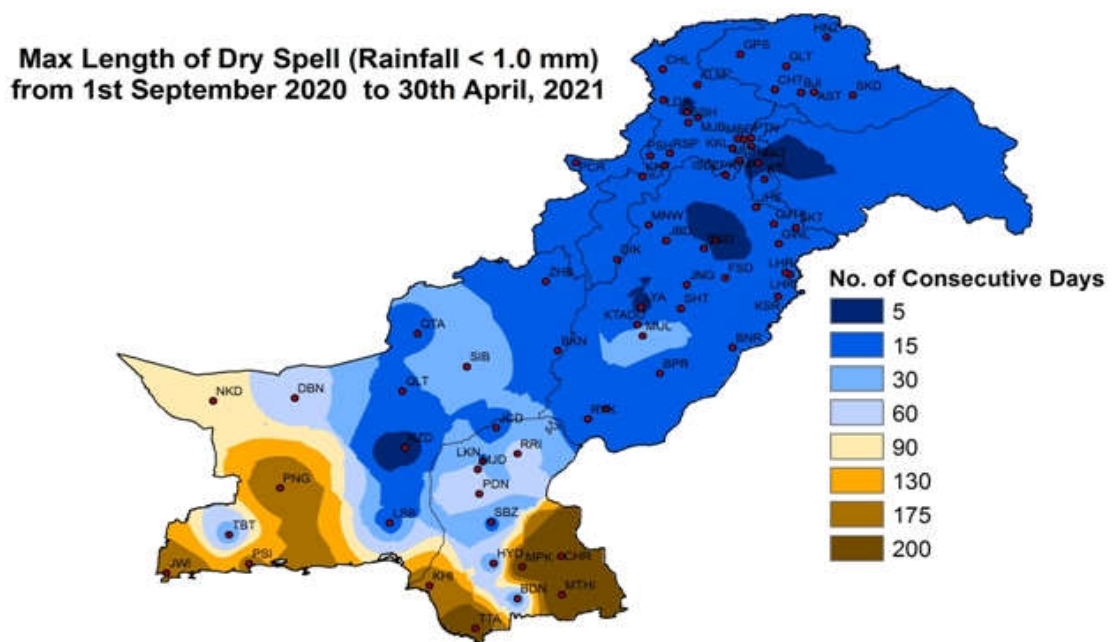
IV. Temperature Vegetation Dryness Index (TVDI)



Temperature Vegetation Dryness Index (TVDI) derived from MODIS product MOD13A2 (NDVI) and MOD11A2 (LST) is shown in Fig. 7, which indicates mild to moderate wet conditions in Gilgit Baltistan and adjoining areas of Khyber Pakhtunkhwa & Kashmir, while most parts of the country are under normal conditions.

Figure 7: TVDI for period 10-25 April -2021

V. Length of Consecutive Dry Days Spell



Source: National Drought Monitoring Center-PMD-Islamabad

3. Water availability/ Dams flow data:

During the month of April 2021, water inflow, outflow and level of Rawal, Khanpur, Tarbela and Mangla dams are shown in Fig. 8 & 9. An increasing trend in water level

is observed at Tarbela dam, but overall decreasing trend in levels is seen at other three dams. An increasing trend is observed in water inflow at Mangla dam.

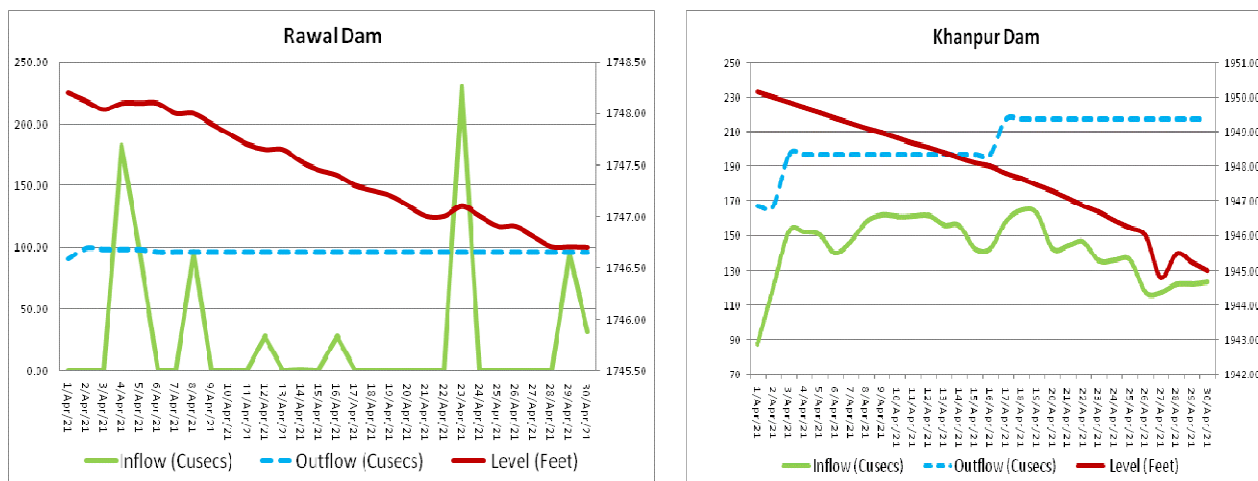


Figure 8: Water inflow, outflow and level of Rawal and Khanpur Dams

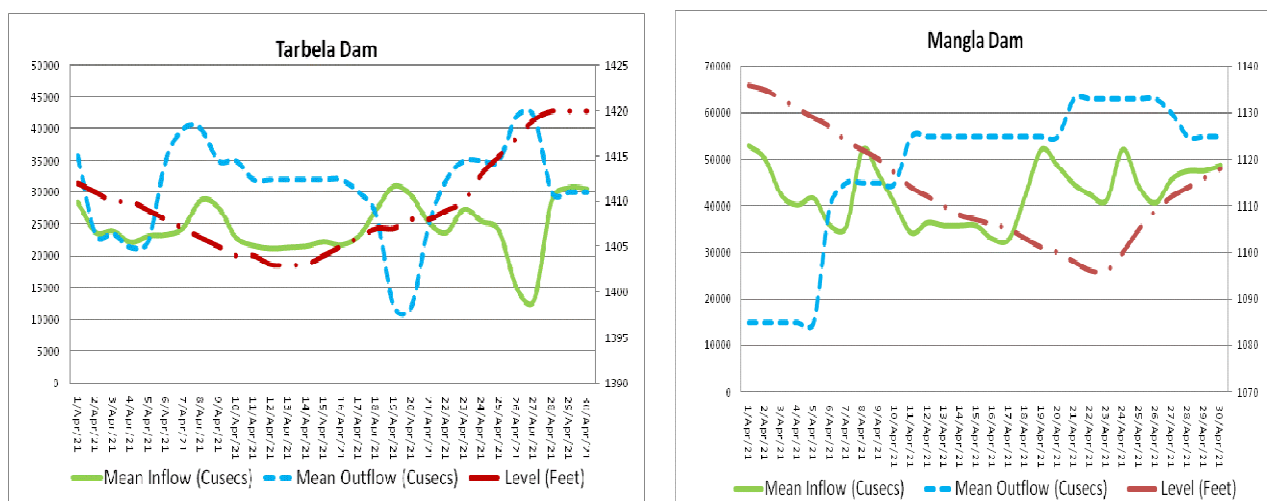


Figure 9: Water inflow, outflow and level of Tarbela and Mangla Dams

4. Weather outlook for May 2021

May is one of the hottest months of the year. Temperatures reach to maximum and less precipitation is observed in this month. Normal precipitation is expected over the country during May, 2021. Rise in temperature in the high altitudes is likely to cause snow-melt in the Northern Areas, subsequently the chances of increase in water availability in the Upper Indus basin and some GLOF events over the Glaciers. Heat wave conditions may arise in major cities of Sindh

and Punjab during May, 2021. Due to the north-south temperature gradient there are chances of dust raising winds in the central and southern parts of Pakistan.

5. Drought Outlook for May 2021

The month of April was not fairly good for drought prone areas of Balochistan and Sindh.

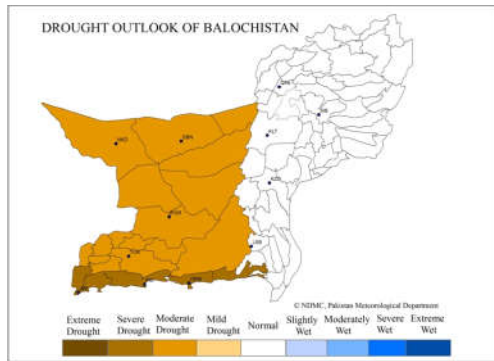


Fig-10: Conditions across Balochistan

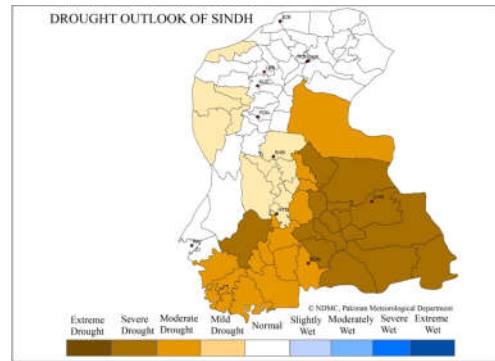
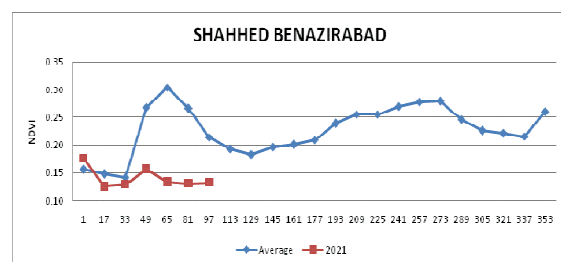
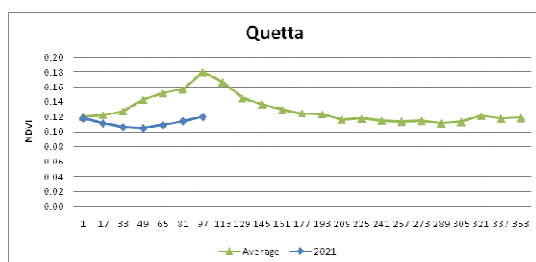
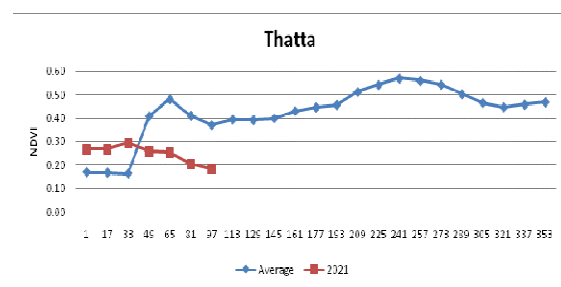
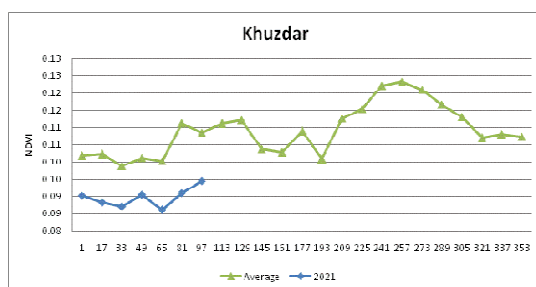
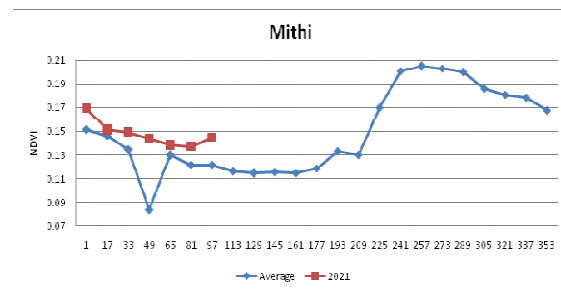
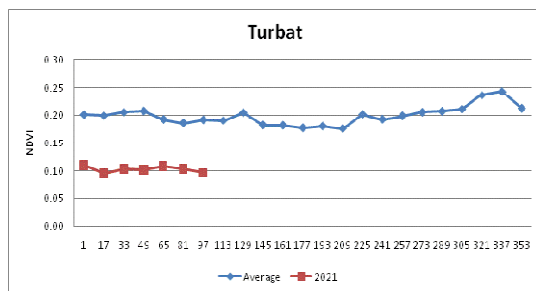


Fig-11 Drought Conditions across Sindh

Normalized Vegetation Index (NDVI) Comparison:



All stakeholders are requested to make all efforts to watch water availability situation across rain-fed areas of Sindh and Balochistan especially in drought affected areas and plan DRM activities accordingly.

6. Crop Condition:

The harvesting of Rabi crops, especially wheat is in full swing. The growth of oilseed crop is reported satisfactory and the crop is at a flowering/pod stage. No serious pest/insect attack has been reported so far. The sowing of some kharif crops has been started. Farmers need to be cautious about the watering of cotton crops. This may be done in accordance with the weather forecasts.

7. Advice for Farmers:

- i) Farmers of upper & central parts of the country are advised to complete the harvesting process at earliest possible and save the crop and fodder to avoid any weather induced losses from rains and strong winds during the month.
- ii) Farmers of the lower half of the country are advised to irrigate the fields for the Kharif crops as per requirement as no significant rains are likely to occur in those areas..
- iii) During harvesting, farmers are advised to be aware about the weather conditions and keep listening & watching carefully the weather advisories issued through radio and televisions on a regular basis.