

# Decadal Agromet Bulletin of Pakistan



## Highlights....

- ❖ Light to moderate with isolated heavy rainfall reported from the most of the agricultural plains of the country during the last decade.
- ❖ Highest maximum temperature recorded as 46.0°C at Turbat during the decade.
- ❖ Highest amount of rainfall recorded as 194.0mm at Murree during the last decade.
- ❖ Lower values of relative humidity reported from Balochistan GB and higher values reported from Sindh & Punjab during the last decade.
- ❖ Higher values of ETo reported from the agricultural plains of Sindh and lower values reported from GB during the last decade.
- ❖ Day temperatures may rise in most parts of the country especially southern parts, while in upper parts day temperature may fall during the 2<sup>nd</sup> half of the decade.
- ❖ Gusty wind pattern may prevail in most parts of the country during the 2<sup>nd</sup> half of the decade.
- ❖ Chances of scattered rain-thundershower in upper & central parts of the country.
- ❖ Onset of monsoon is expected in different parts of the country from the 2<sup>nd</sup> half of the decade (during last days of the decade).
- ❖ Average ( $\pm 10\%$ ) rainfall is expected during monsoon season 2013.
- ❖ Intensity and frequency of monsoon will be less during July. It will increase gradually during August over central parts of the country. However, during last phase of the monsoonal rainfall (September) above normal rainfall is expected.

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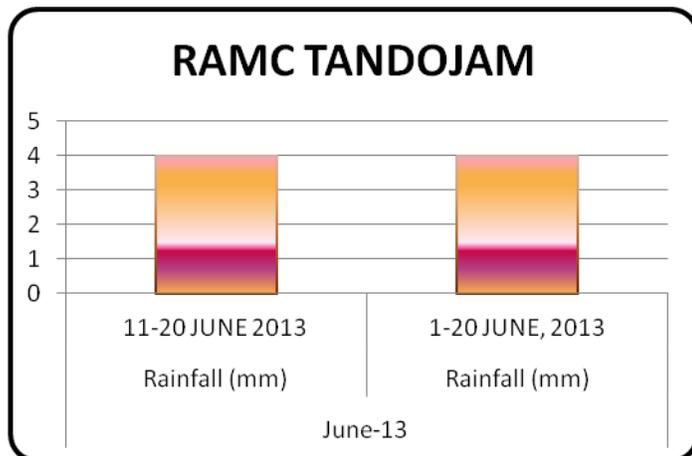
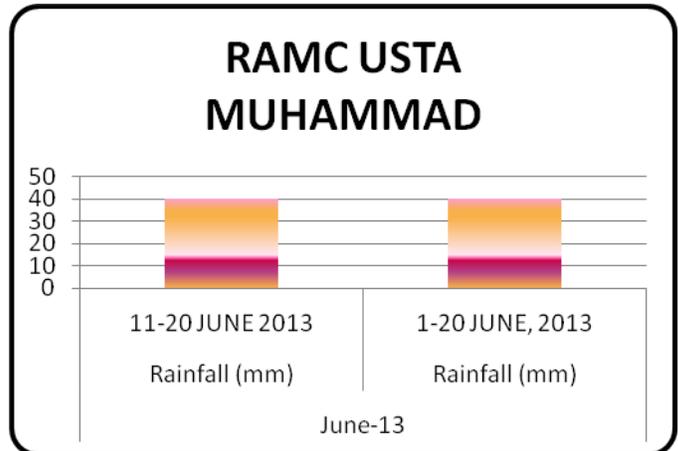
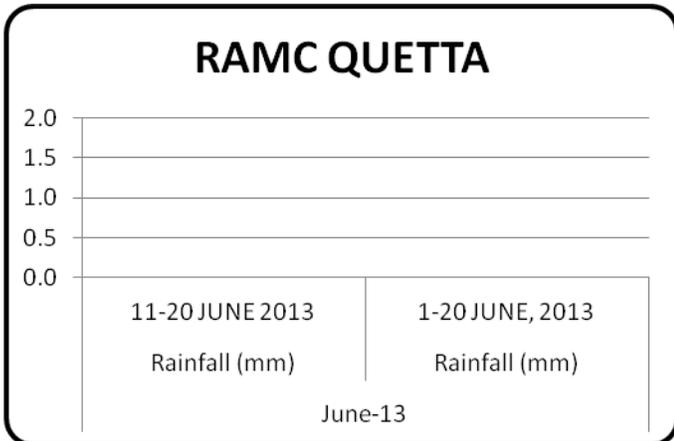
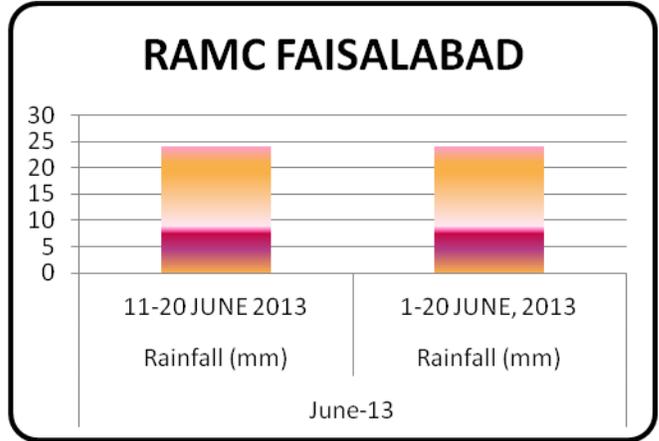
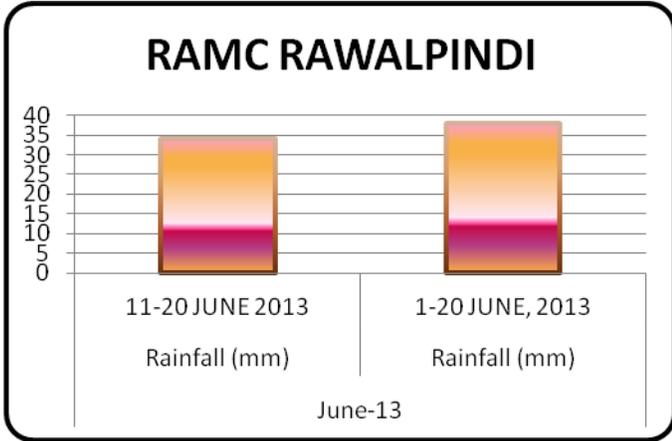
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## Meteorological conditions during 2nd decade of June, 2013

Sr. No.	Station	Precipitation (mm)			Air Temperature (°C)			Soil Temperatures (°C)						Sunshine Duration (hours)	Wind Speed (km/hr)	R.H (%)	ETo (mm/day)
		Normal	Actual	Dep	Tmin Dep	Tmax Dep	Mean	5cm	10cm	20cm	30cm	50cm	100cm				
1	TANDOJAM	0.0	4.0	4.0	-1.7	-1.3	31.5	40.1	34.9	37.6	35.4	34.6	31.3	81.2	2.8	59	5.2
2	SAKRAND ☆	0.0	22.0	22.0	-1.9	-3.3	31.8	45.0	43.5	46.4	36.2	37.4	34.3	93.0	5.9	60	5.6
3	ROHRI	0.3	29.0	28.7	0.6	-2.6	35.3	45.4	43.6	38.1	36.4	34.9	34.4	95.7	4.9	49	6.5
4	USTA MUHAMMAD	0.0	40.0	40.0	0.1	-3.2	34.6	34.9	36.2	35.8	34.7	34.5	29.3	***	3.1	47	5.1
5	QUETTA	0.0	0.0	0.0	1.6	-0.8	27.0	37.3	34.3	30.6	29.0	27.6	26.8	94.6	6.1	33	6.0
6	KHANPUR	0.2	2.0	1.8	0.2	-3.4	33.4	38.6	37.8	37.8	37.8	37.9	35.5	79.7	6.0	58	5.1
7	MULTAN	0.4	33.2	32.8	-1.5	-3.5	32.7	***	***	***	***	***	***	54.5	7.1	55	5.4
8	LAHORE	3.5	118.7	115.2	-3.8	-3.6	29.5	33.9	33.4	31.4	30.6	***	29.5	64.7	3.8	64	4.7
9	FAISALABAD	2.7	24.2	21.5	-0.6	-2.1	31.2	37.3	35.5	33.6	32.4	32.2	30.4	78.6	6.8	65	5.5
10	SARGODHA	1.8	50.4	48.6	-1.1	-3.4	31.3	35.1	33.6	32.2	31.9	32.2	31.2	82.1	5.3	60	4.8
11	JHELUM	2.8	43.0	40.2	-1.6	-1.5	31.2	38.2	36.3	34.2	33.3	33.6	***	87.5	5.4	48	6.0
12	RAWALPINDI	3.5	34.0	30.5	4.4	-1.3	31.8	38.4	36.1	33.4	32.3	31.5	28.7	86.0	3.8	45	5.5
13	DI KHAN	1.5	86.7	85.2	-1.6	-3.4	30.4	***	***	***	***	***	***	84.9	4.3	56	5.5
14	PESHAWAR	0.8	10.0	9.2	-1.7	-2.1	30.4	38.2	33.2	33.0	30.3	***	27.4	80.3	3.0	51	5.1
15	SKARDU	0.3	0.8	0.5	-0.3	-2.8	20.1	***	***	***	***	***	***	66.7	5.9	35	4.8
16	GILGIT	0.3	5.4	5.1	2.1	-1.1	25.3	***	***	***	***	***	***	84.1	5.0	30	5.6

Table-1: Meteorological parameters for selected station of Pakistan. "Dep" in the table stands for difference from climatic normal, i.e. actual value minus normal. And "% Dep" is calculated by the formula:  $\text{Dep} \div \text{Normal} \times 100$ . Tmin & Tmax stands for minimum and maximum temperatures respectively. ETO stands for reference crop evapotranspiration. \*\*\* stands for no data and (☆) indicates the station with five years climatic (normal) data for computing departures.

**Graphs for Rainfall (mm) during June 2013**



**Past Weather (11<sup>th</sup> to 20<sup>th</sup> June, 2013):**

Light to moderate with isolated heavy falls reported from most of the agricultural plains of the country during the period.

**1.1 Punjab**

Light to moderate with isolated heavy rainfall reported at a number of places in the agricultural plains of Punjab; chief amount received at, Murree, Lahore and Joharrabad etc. Decadal maximum temperature & decadal minimum temperature both dropped below normal by 2.7°C and 0.6°C respectively in the province. Mean values of wind speed, relative humidity and ETo were recorded as 5.5 km/hr, 56%, and 5.3 mm/day respectively.

**1.2 Sindh**

Light to moderate with isolated heavy rainfall reported from the agricultural plains of Sindh during the decade; chief amount received at, Padidin, Jaccobabad and Chorr. Decadal maximum temperature & decadal minimum temperature both dropped below normal by 2.4°C and 1.0°C respectively, in the province. Mean values of wind speed, relative humidity and ETo were recorded as 4.5 km/hr, 56%, and 5.8 mm/day respectively.

**1.3 Khyber Pakhtunkhwa (KP)**

Light to moderate with isolated heavy rainfall reported from most of the places in the agricultural plains of KP; chief amount received at Malamjabba, D I Khan and Bannu etc. In KP region; Decadal maximum raise and minimum both dropped below normal by 2.8°C & 1.7°C in the province. Mean values of wind speed, relative humidity and ETo were recorded as 3.7 km/hr, 54%, and 5.3 mm/day respectively.

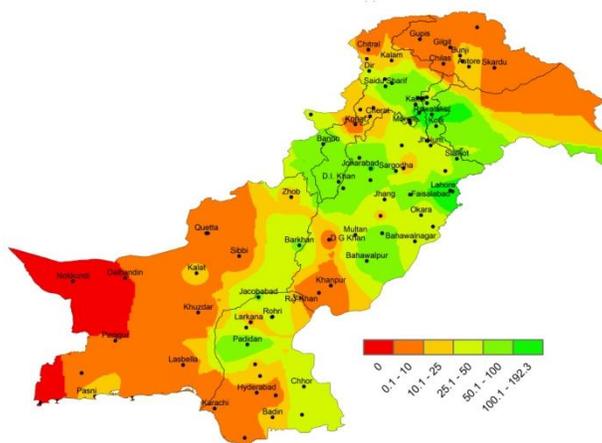
**1.4 Balochistan**

Light to moderate rainfall reported from few places in the agricultural plains of Balochistan; chief amount received at Barkhan, Passni and Zhob. Decadal maximum dropped below by 2.0°C & minimum temperature raised above normal by 0.9°C respectively, in the province. Whereas mean values of wind speed, relative humidity and ETo were 4.6 km/hr, 40%, and 5.6 mm/day respectively.

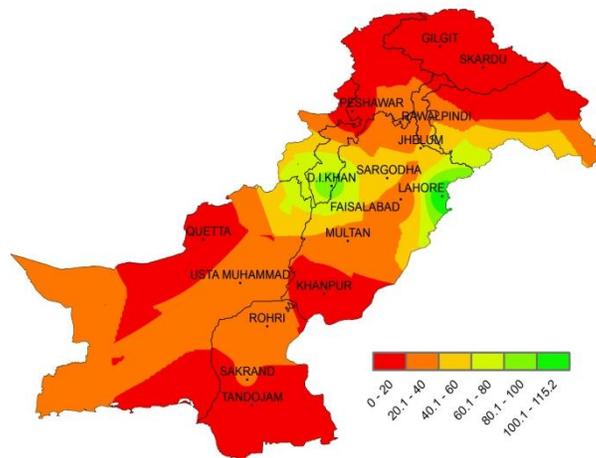
**1.5 Gilgit Baltistan and Azad Jammu & Kashmir**

Light to moderate with isolated heavy rainfall from the agricultural plains of GB & Kashmir; chief amount received at Rawalakot, Kotli and Muzzafrabad etc. In GB & AJK region; Decadal maximum dropped below normal by 2.0°C and minimum raised above normal 0.9°C in the province. Whereas mean values of wind speed, relative humidity and

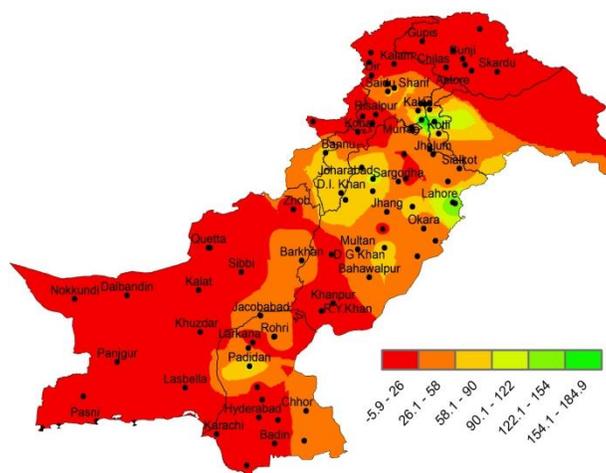
ETo were recorded 5.5 km/hr,33%, and 5.2 mm/day respectively.



a) Actual rainfall



b) Departure of rainfall from Normal



c) Departure of rainfall from Previous Decade

Figure.1: Rainfall distribution during previous decade in “mm”

**2 (a) Past Weather for Major Agricultural Plains  
Past Weather (11<sup>th</sup> to 20<sup>th</sup> June, 2013)**

**2.1 RAMC, Rawalpindi (Potohar region)**

Rainfall reported as 34.0 mm during the decade, weather remained cloudy for 07 days, average relative humidity recorded as 45%. Mean night temperature was 27.5°C while day temperature recorded as 36.0°C with 86.0 hours bright sunshine duration. Wind speed recorded as 3.8 Km/hr with mean direction *westerly*.

**2.2 RAMC, Faisalabad (Central Punjab)**

Rainfall reported as 24.2 mm during the decade, weather remained cloudy for 09 days, average relative humidity recorded as 65%. Mean night temperature was 25.3°C while day temperature recorded as 37.0°C with 78.6 hours bright sunshine duration. Wind speed recorded as 6.8 Km/hr with mean direction *north easterly*.

Sugarcane: Very Good condition, Tillering completed.

Cotton: Very Good condition, Flowering stage.

**2.3 RAMC, Tandojam (Lower Sindh)**

Rainfall reported as 4.0 mm during the decade, weather remained cloudy for 09 days during the decade, average relative humidity recorded as 59%. Mean night temperature was 24.9°C while day temperature recorded as 38.1°C with 81.2 hours bright sunshine duration. Wind speed recorded as 2.8 km/hr with mean direction *south westerly*.

Cotton: BT 3701 Good condition, Budding stage.

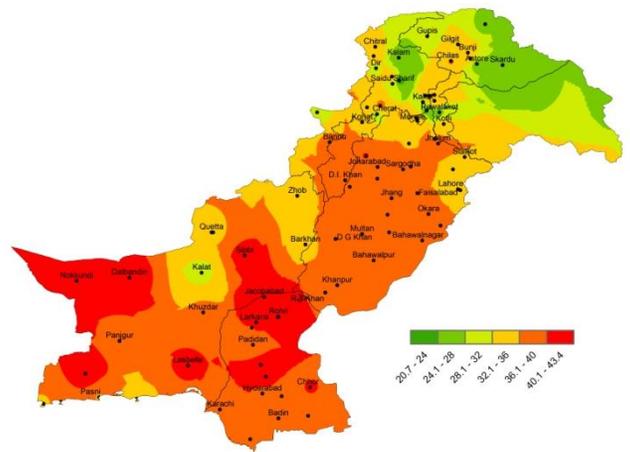
**2.4 RAMC, Quetta (Northern Balochistan)**

No rainfall reported during the decade, weather remained cloudy for 08 days, average relative humidity recorded as 33%. Mean night temperature was 20.1°C while day temperature recorded as 33.8°C with 94.6 hours bright sunshine duration and wind speed recorded as 6.1 Km/hr with mean direction *southerly*.

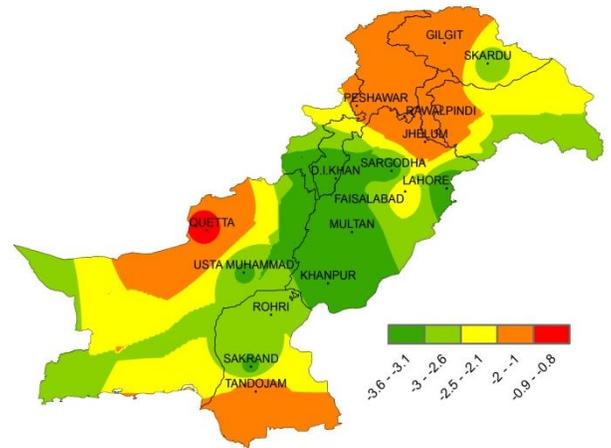
**2.5 RAMC, Usta Muhammad (Eastern Balochistan)**

Rainfall reported as 40.0 mm during the decade, weather remained clear during the decade, average relative humidity recorded as 47%. Mean night temperature was 27.9°C while day temperature recorded as 41.2°C with wind speed recorded as 3.1 Km/hr with mean direction *southerly*.

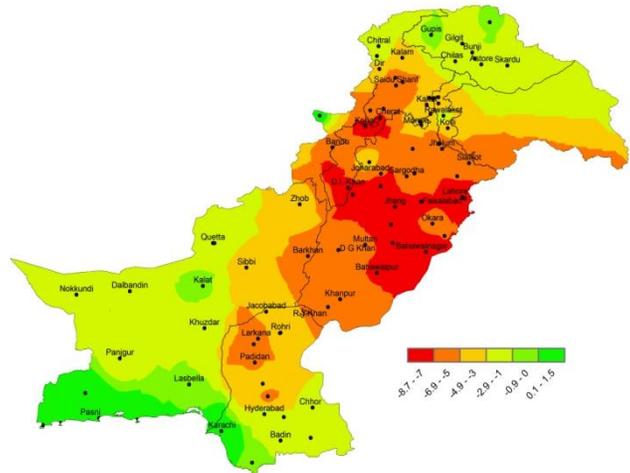
Rice: Good condition, Germination stage.



(a) Actual max-temp



(b) Departure of max-temp from Normal



(c) Departure of max-temp from Previous Decade

Figure.2: Maximum Temperature distribution during previous decade in “°C”

2(b) **Past Weather for sub regional Agricultural Plains (11<sup>th</sup> to 20<sup>th</sup> June, 2013):**

2.6 **Jhelum**

Rainfall reported as 43.0 mm during the decade, weather remained cloudy for 09 days and average relative humidity recorded as 48%. Mean night temperature was 25.0°C while day temperature recorded as 37.4°C with 87.5 hours bright sunshine duration. Wind speed recorded 5.4 Km/hr with mean direction *south easterly*.

2.7 **Lahore**

Rainfall reported as 118.7 mm during the decade, weather remained cloudy for 07 days, average relative humidity recorded as 64%. Mean night temperature was 24.2°C while day temperature recorded as 34.8°C with 64.7 hours bright sunshine duration. Wind speed recorded as 3.8 Km/hr with mean direction *north westerly*.

2.8 **Sargodha**

Rainfall reported as 50.4 mm during the decade, weather remained cloudy for 10 days during the decade, average relative humidity recorded as 60%. Mean night temperature was 26.0°C while day temperature recorded as 36.5°C with 82.1 hours bright sunshine duration. Wind speed recorded as 5.3 Km/hr with mean direction *north easterly*.

2.9 **Multan**

Rainfall reported as 33.2 mm during the decade, weather remained cloudy for 09 days, average relative humidity recorded as 55%. Mean night temperature was 27.4°C while day temperature recorded as 38.0°C with 54.5 hours bright sunshine duration. Wind speed recorded as 7.1 Km/hr with wind direction *north easterly*.

2.10 **Khanpur**

Rainfall reported as 2.0 mm during the decade, weather remained cloudy for 08 day during the decade, average relative humidity recorded as 58%. Mean night temperature was 28.2°C while day temperature recorded as 38.6°C with 79.7 hours bright sunshine duration. Wind speed recorded as 6.0 Km/hr with mean direction *north easterly*.

2.11 **Rohri**

Rainfall reported as 29.0 mm during the decade, weather remained cloudy for 08 days, average relative humidity recorded as 49%. Mean night temperature was 30.0°C while day temperature recorded as 40.6°C with 95.7 hours bright sunshine duration. Wind speed recorded as 4.9 Km/hr with mean direction *north easterly*.

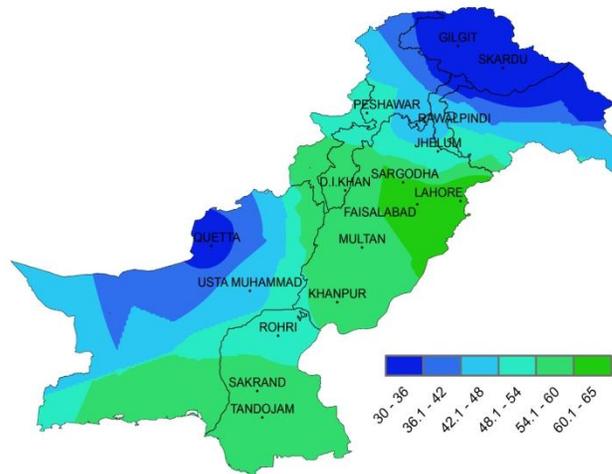


Figure.3: Relative Humidity in percentage

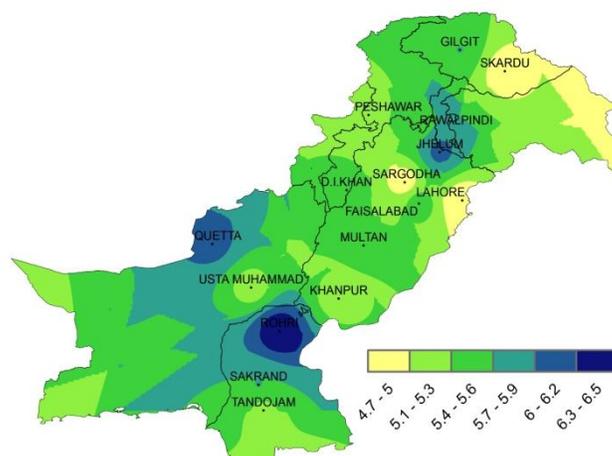


Figure.4: Reference Crop Evapotranspiration “ETo” in mm/day

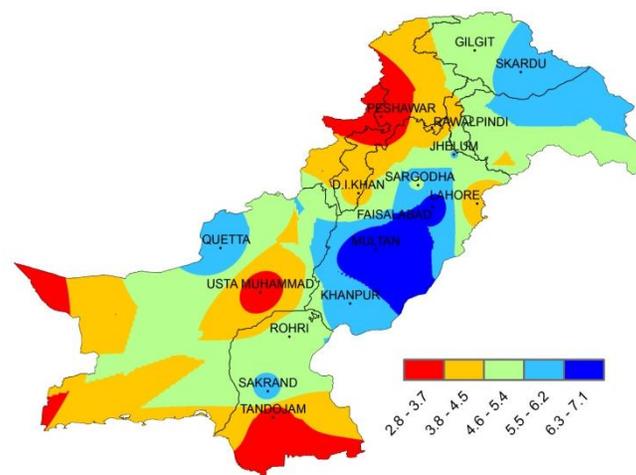


Figure 5: Wind Speed in kilometer per hour

**2.12 Sakrand**

Rainfall reported as 22.0 mm during the decade, weather remained cloudy for 07 day during the decade, average relative humidity recorded as 60%. Mean night temperature was 25.0°C while day temperature recorded as 38.6°C with 93.0 hours bright sunshine duration. Wind speed recorded as 5.9 Km/hr with mean direction *south easterly*.

**2.13 Peshawar**

Rainfall reported 10.0 mm during the decade, weather remained cloudy for 07 days, average relative humidity recorded as 51%. Mean night temperature was 24.0°C while day temperature recorded as 36.7°C with 80.3 hours bright sunshine duration. Wind speed recorded as 3.0 Km/hr with mean direction *north westerly*.

**2.14 D.I. Khan**

Rainfall reported 86.7 mm during the decade, weather remained cloudy for 07 days, average relative humidity recorded as 56%. Mean night temperature was 23.8°C while day temperature recorded as 37.0°C with 84.9 hours bright sunshine duration. Wind speed recorded as 4.3 Km/hr with mean direction *north easterly*.

**2.15 Gilgit**

Rainfall reported 5.4 mm during the decade. weather remained cloudy for 02 days and average relative humidity recorded as 30%. Mean night temperature was 16.9°C while day temperature recorded as 33.6°C with 84.1 hours bright sunshine. Wind speed recorded as 5.0 Km/hr with *variable* direction.

**2.16 Skardu**

Rainfall reported 0.8 mm during the decade, weather remained cloudy for 06 days, average relative humidity recorded as 35%. Mean night temperature was 13.4°C while day temperature recorded as 26.8°C with 66.7 hours bright sunshine duration with mean speed 5.9 Km/hr with *variable* direction .

**3. Ten days Weather advisory for Farmers  
(21<sup>st</sup> to 30<sup>th</sup> June, 2013)****3.1 Temperature Forecast:**

Day temperatures may rise in most parts of the country especially southern parts, while in upper parts day temperature may fall during the 2<sup>nd</sup> half of the decade.

**3.2 Rain Forecast:**

- ❖ **Punjab:** Scattered Rain dust-thundershowers with gusty winds is expected in Islamabad, upper Punjab (Rawalpindi, Sargodha, Gujranwala, Lahore and Faisalabad divisions) with occasional gaps during 2<sup>nd</sup> half of the decade.
- ❖ **Khyber Pakhtunkhwa:** Scattered rain dust-thundershowers with gusty winds is expected in upper/central KP (Malakand, Hazara, Peshawar, Kohat Divisions) with occasional gaps during 2<sup>nd</sup> half of the decade.
- ❖ **Sindh :** Isolated rain dust-thundershowers with gusty winds is expected in lower Sindh during 2<sup>nd</sup> half of the decade.
- ❖ **Balochistan:** Isolated rain dust-thundershowers with gusty winds is expected with occasional gaps in Northeastern parts during 2<sup>nd</sup> half of the decade.
- ❖ **Gilgit-Baltistan & Kashmir:** Isolated rain is expected in Gilgit-Baltistan, while scattered rain-thundershowers with strong gusty winds are expected with occasional gaps in Kashmir during the 2<sup>nd</sup> half of the decade.

**3.3 Wind Forecast:**

Gusty wind pattern may prevail in most of the agricultural plains of the country during 2<sup>nd</sup> half of the decade.

**3.4 Advisory for Farmers:**

- ❖ Monsoon rains are expected in different parts of the country from the 2<sup>nd</sup> half of the decade. Farmers are advised to take in time precautionary measures to protect their crops, livestock and other property.
- ❖ Due to expected weather and start of monsoon rains in different parts of the country, farmers of upper parts should stop irrigate the crops during the 2<sup>nd</sup> half of decade.

- ❖ Due to dry weather in lower half of the country, farmers of cotton and sugarcane crops of lower areas are advised to irrigate the crops as per requirement.
- ❖ Farmers of upper half of the country are advised to prepare the fields for the coming Kharif crops in time and save the moisture from coming monsoonal rains.
- ❖ Farmers of upper half especially rainfed areas of the country are advised to sow maize crop in time to utilize fully the present soil moisture.
- ❖ Farmers of rainfed areas obtaining crop water through tube wells are also advised to schedule the irrigation according to the expected weather mentioned during the decade.

### **3.5 Monsoon update for Farmers:**

- ❖ Onset of monsoon is expected in different parts of the country from the 2<sup>nd</sup> half of the decade (during last days of the decade).
- ❖ Average ( $\pm 10\%$ ) rainfall is expected during monsoon season 2013.
- ❖ Intensity and frequency of monsoon will be less during July. It will increase gradually during August over central parts of the country. However, during last phase of the monsoonal rainfall (September) above normal rainfall is expected over plain monsoonal areas of Punjab and Sindh.
- ❖ Rainfall activity would mainly concentrate over central and southern parts of the country. Therefore, effective water management practices may be adopted to fill the main reservoirs at optimum level.