

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light rainfall reported from few agricultural plains of the country during the last decade.
- ❖ Lowest minimum temperature recorded -9.2°C at Skardu during the last decade.
- ❖ Highest amount of rainfall recorded as 4.0mm at Murree & Islamabad during the last decade.
- ❖ Lower values of relative humidity reported from Quetta, Gilgit & Skardu region and higher values reported from upper and central parts of the country during the last decade.
- ❖ Higher values of ETo reported from Dera Ismail Khan while lower values reported from Gilgit Baltistan, Punjab and upper parts of KP during the last decade.
- ❖ Normal to below normal temperatures are expected in most of the agricultural plains of the country during the current decade.
- ❖ Normal wind pattern may prevail in most parts of the country during the current decade.
- ❖ Light to moderate rain/snowfall over hills is expected in isolated upper parts of the country at the end of current decade.
- ❖ Dry weather is expected in most of the agricultural plains of Sindh.
- ❖ Night temperatures are expected to drop ($1-2^{\circ}\text{C}$) in most agricultural plains of the

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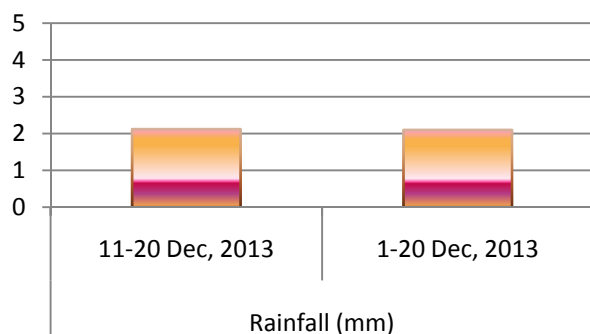
Meteorological conditions during 2nd Decade of December, 2013

Sr. No.	Station	Precipitation (mm)			Air Temperature (°C)			Soil Temperatures (°C)						Sunshine Duration (hours)	Wind Speed (km/hr)	R.H (%)	ET _o (mm/day)
		Normal	Actual	Dep	Tmin Dep	Tmax Dep	Mean	5cm	10cm	20cm	30cm	50cm	100cm				
1	TANDOJAM	0.4	0.0	-0.4	2.1	2.3	19.9	24.3	22.7	22.0	22.2	23.5	***	87.2	1.2	62	2.0
2	SAKRAND ☆	1.0	0.0	-1.0	0.9	3.4	17.5	25.3	23.6	***	***	24.0	26.3	84.9	1.2	60	1.8
3	ROHRI	1.2	0.0	-1.2	2.3	2.3	19.2	25.0	23.2	22.2	23.6	23.0	27.4	82.7	3.0	54	2.2
4	USTA MUHAMMAD	0.1	0.0	-0.1	2.1	3.3	18.4	21.8	21.9	22.3	22.6	***	25.8	***	***	75	2.4
5	QUETTA	0.2	0.6	0.4	1.7	1.8	8.6	14.6	13.7	9.8	8.9	9.3	13.6	91.5	4.2	39	1.9
6	KHANPUR	1.6	0.0	-1.6	3.0	0.0	16.5	***	18.4	19.1	19.8	20.9	23.0	48.0	2.6	71	1.6
7	MULTAN	0.6	0.0	-0.6	3.3	-2.7	15.1	***	***	***	***	***	***	39.1	1.1	77	1.1
8	LAHORE	0.4	0.0	-0.4	-1.7	-1.9	14.2	16.8	16.4	15.9	16.2	***	20.0	43.6	2.3	80	1.2
9	FAISALABAD	0.2	0.0	-0.2	2.8	-1.1	15.2	17.0	16.2	15.5	15.5	14.1	19.5	37.3	1.4	72	1.2
10	SARGODHA	0.6	0.0	-0.6	2.4	-2.2	15.0	17.8	17.2	17.4	18.1	19.7	21.5	39.3	0.9	76	1.1
11	JHELUM	0.4	0.2	-0.2	-0.1	-0.7	14.4	15.4	14.7	14.2	14.5	16.2	***	51.9	1.5	68	1.1
12	RAWALPINDI	1.5	2.1	0.6	0.4	0.4	12.8	14.2	13.4	12.6	13.7	14.5	17.6	58.7	2.8	61	1.4
13	DI KHAN	0.1	0.0	-0.1	1.7	-1.2	14.2	***	***	***	***	***	***	61.7	***	69	3.3
14	PESHAWAR	0.6	0.1	-0.5	-0.4	0.8	13.6	15.9	14.3	13.7	15.4	***	18.4	27.1	1.0	59	1.0
15	SKARDU	1.2	1.1	-0.1	-1.6	2.2	1.2	***	***	***	***	***	***	45.7	0.5	55	0.6
16	GILGIT	0.3	0.0	-0.3	-0.2	1.6	5.9	***	***	***	***	***	***	38.5	2.2	53	1.1

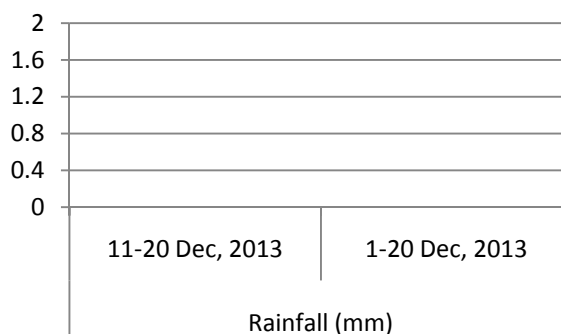
Table-1: Meteorological parameters for selected station of Pakistan. “Dep” in the table stands for difference from climatic normal, i.e. actual value minus normal. And “% Dep” is calculated by the formula; **Dep divided by Normal multiplied by 100**. Tmin & Tmax stands for minimum and maximum temperatures respectively. ET_o 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 December, 2013

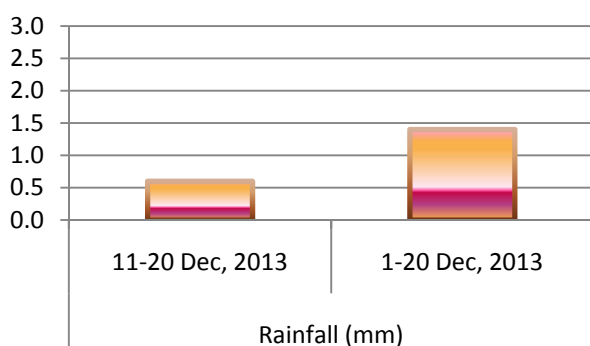
RAMC RAWALPINDI



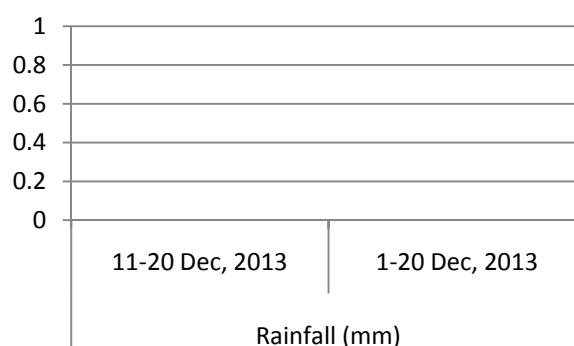
RAMC FAISALABAD



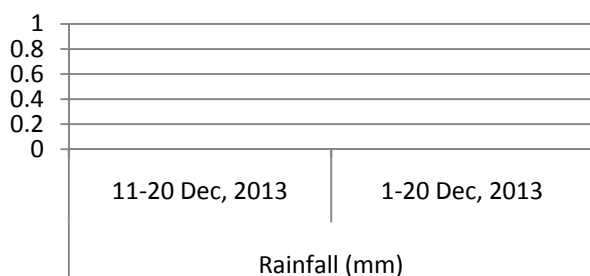
RAMC QUETTA



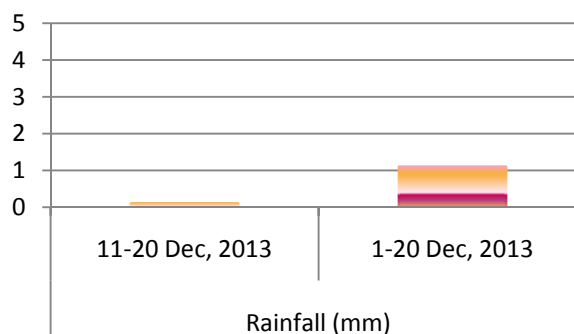
RAMC TANDOJAM



RAMC USTA MUHAMMAD



RMC PESHAWAR



Past Weather (11th to 20th December, 2013)

Light rainfall reported from few agricultural plains of Punjab (Potohar Region), KP, GB and Kashmir and dry weather reported in Sindh and Balochistan.

1.1 Punjab

Light rainfall reported in the agricultural plains of Punjab. Chief amount of rainfall received in Murree & Islamabad. Decadal minimum raised above normal by 1.4°C & maximum temperature dropped below normal by 1.2°C, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 45.4hrs, 1.8km/hr, 72% and 1.2mm/day respectively.

1.2 Sindh

No rainfall reported in the agricultural plains of Sindh. Decadal minimum & maximum temperature both raised above normal by 1.8°C & 2.7°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 84.9hrs, 1.8km/hr, 59% and 2.0mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

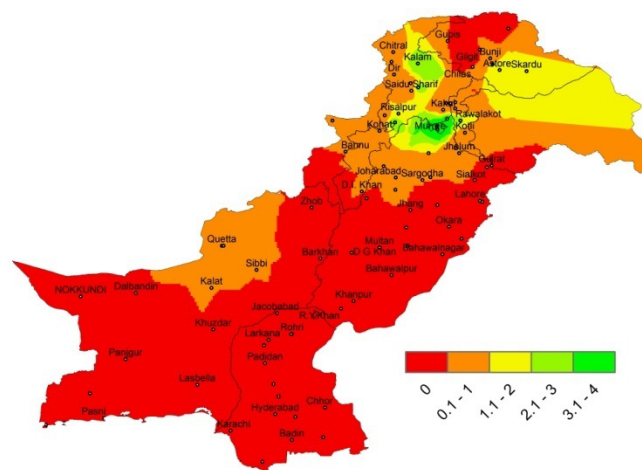
Light rainfall reported at few agricultural plains of KP. Chief amount of rainfall reported in Kalam, Cherat & Malam Jabba. Decadal minimum raised above normal by 0.7°C & maximum temperature dropped below normal by 0.2°C, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 44.4hrs, 1.0km/hr, 64% and 2.2mm/day respectively.

1.4 Balochistan

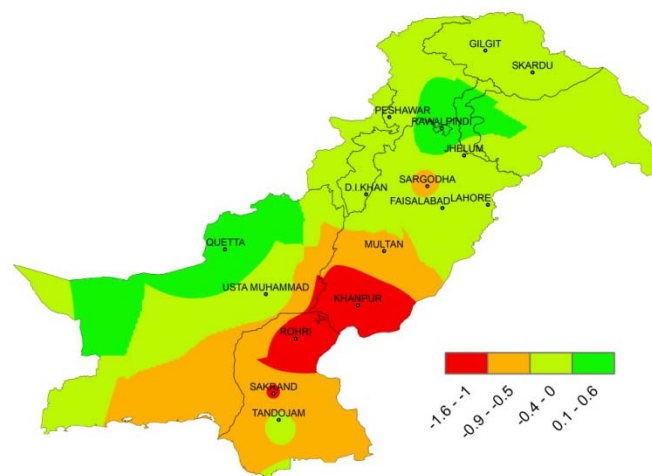
Rainfall reported as Trace (not measurable) at one place of Balochistan i.e Quetta (Sammungli). Decadal minimum & maximum temperature both raised above normal by 1.9°C & 2.6°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were 91.5hrs, 4.2km/hr, 57% and 2.2mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

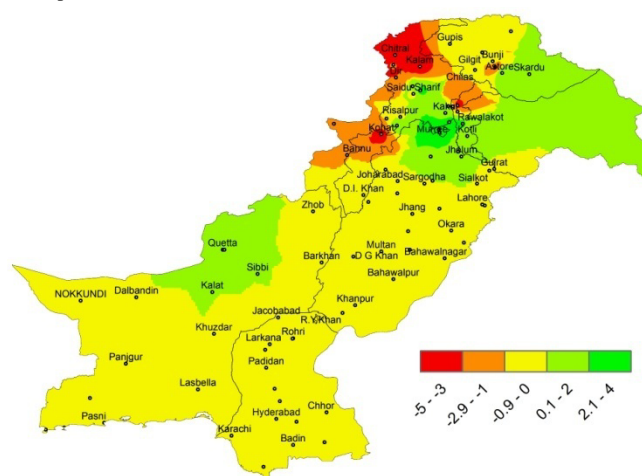
Light rainfall reported in the agricultural plains of GB & Kashmir. Chief amount of rainfall reported in Rawalakot & Astore. Decadal minimum dropped below normal by 0.9°C & maximum temperature raised above normal by 1.9°C, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded 42.1hrs, 1.4km/hr, 54% and 0.9mm/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** (11th to 20th December, 2013)

2.1 RAMC, Rawalpindi (Potohar region)

Rainfall reported as 2.1mm during the decade, weather remained cloudy for 02days, average relative humidity recorded as 61%. Mean night temperature was 4.8°C while day temperature recorded as 20.7°C with 58.7hours bright sunshine duration. Wind speed recorded as 2.8km/h with mean wind direction *westerly*.

Note: No crop is grown at the station.

2.2 RAMC, Faisalabad (Central Punjab)

No rainfall reported during the decade, weather remained cloudy for 03days, average relative humidity recorded as 72%. Mean night temperature was 9.1°C while day temperature recorded as 21.2°C with 37.3hours bright sunshine duration. Wind speed recorded as 1.4km/hr with mean wind direction *easterly*.

Wheat: Very Good condition, Tillering stage.

2.3 RAMC, Tandojam (Lower Sindh)

No rainfall reported during the decade, weather remained clear during the decade, average relative humidity recorded as 62%. Mean night temperature was 12.0°C while day temperature recorded as 27.8°C with 87.2hours bright sunshine duration. Wind speed recorded as 1.2km/hr with mean wind direction *south westerly*.

Wheat (TD-1): Good condition, 3rd true leaf stage.

2.4 RAMC, Quetta (Northern Balochistan)

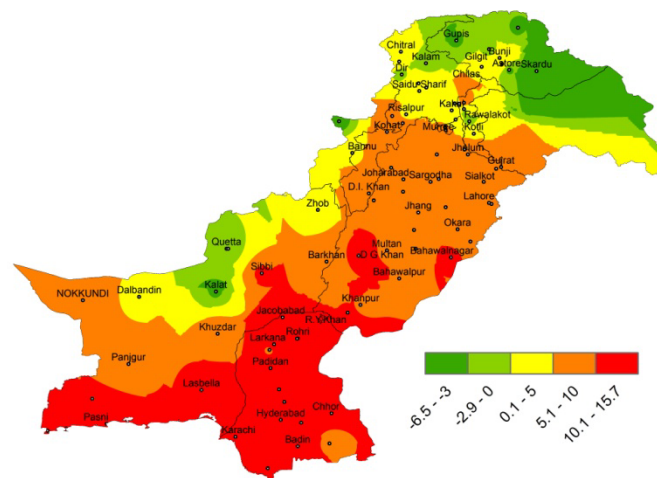
Rainfall reported as 0.6mm during the decade, weather remained cloudy for 04days, average relative humidity recorded as 39%. Mean night temperature was 0.9°C while day temperature recorded as 16.2°C with 91.5hours bright sunshine duration and wind speed recorded as 4.2km/hr with mean wind direction *northerly*.

Wheat (Local White): Good condition, Emergence stage.

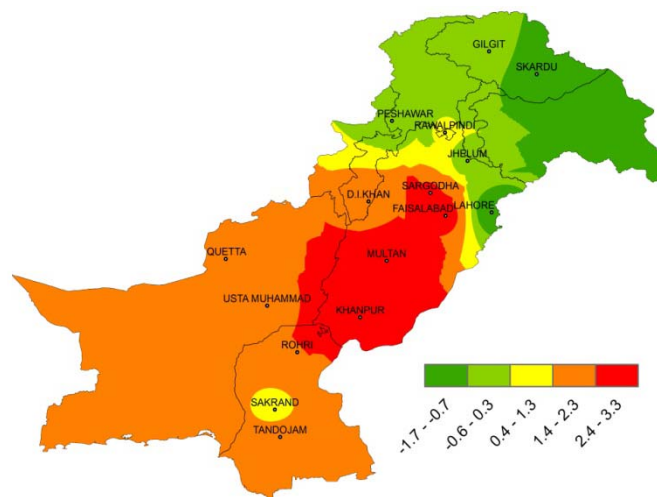
2.5 RAMC, Usta Muhammad (Eastern Balochistan)

No rainfall reported during the decade, weather remained clear during the decade, average relative humidity recorded as 75%. Mean night temperature was 10.8°C, while day temperature recorded as 26.0°C. The data of bright sunshine hour and wind speed was not available, while mean wind direction was *southerly*.

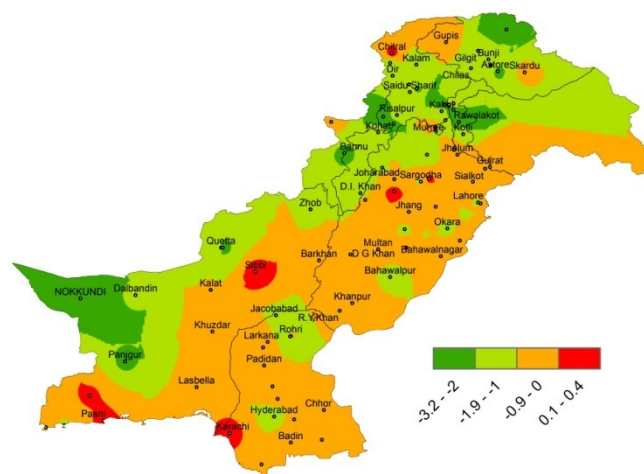
Wheat (Zardana): Good condition, Germination completed.



(a) Actual min-temp



(b) Departure of min-temp from Normal



(c) Departure of min-temp from Previous Decade

Figure.2: Minimum Temperature distribution during previous decade in "°C"

2(b) Past Weather for Sub-Regional Agricultural Plains (11th to 20th December, 2013)

2.6 Jhelum

Rainfall reported as 0.2mm during the decade, weather remained cloudy for 05days, average relative humidity recorded as 68%. Mean night temperature was 7.2°C while day temperature recorded as 21.5°C with 51.9hours bright sunshine duration. Wind speed recorded 1.5km/hr with mean wind direction *north westerly*.

2.7 Lahore

No rainfall reported during the decade, weather remained cloudy for 04days, average relative humidity recorded as 80%. Mean night temperature was 8.3°C while day temperature recorded as 20.0°C with 43.6hours bright sunshine duration. Wind speed recorded as 2.3km/hr with mean direction *northerly*.

2.8 Sargodha

No rainfall reported during the decade, weather remained cloudy for 06days, average relative humidity recorded as 76%. Mean night temperature was 9.6°C while day temperature recorded as 20.4°C with 39.3hours bright sunshine duration. Wind speed recorded as 0.9km/hr with mean direction *variable*.

2.9 Multan

No rainfall reported during the decade, weather remained cloudy for 05days, average relative humidity recorded as 77%. Mean night temperature was 9.7°C while day temperature recorded as 20.5°C with 39.1hours bright sunshine duration. Wind speed recorded as 1.1km/hr with mean wind direction *northerly*.

2.10 Khanpur

No rainfall reported during the decade, weather remained cloudy for 02days, average relative humidity recorded as 71%. Mean night temperature was 9.9°C while day temperature recorded as 23.0°C with 48.0hours bright sunshine duration. Wind speed recorded as 2.6km/hr with mean wind direction *north easterly*.

2.11 Rohri

No rainfall reported during the decade, weather remained cloudy for 01day, average relative humidity recorded as 54%. Mean night temperature was 12.8°C while day temperature recorded as 25.6°C with 82.7hours bright sunshine duration. Wind speed recorded 3.0km/hr with mean wind direction *north easterly*.

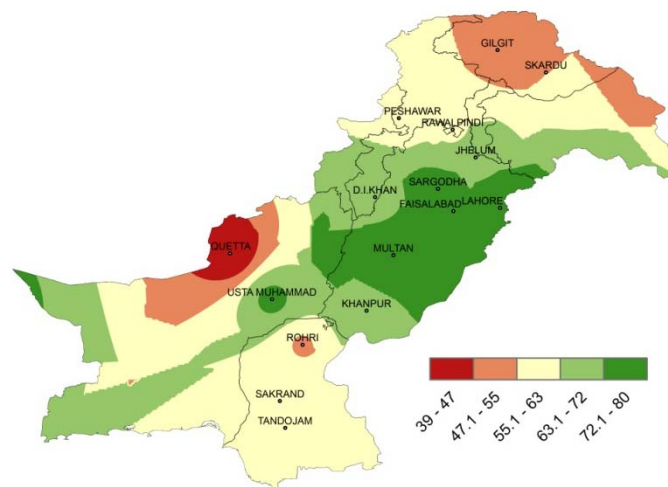


Figure.3: Relative Humidity in percentage (%)

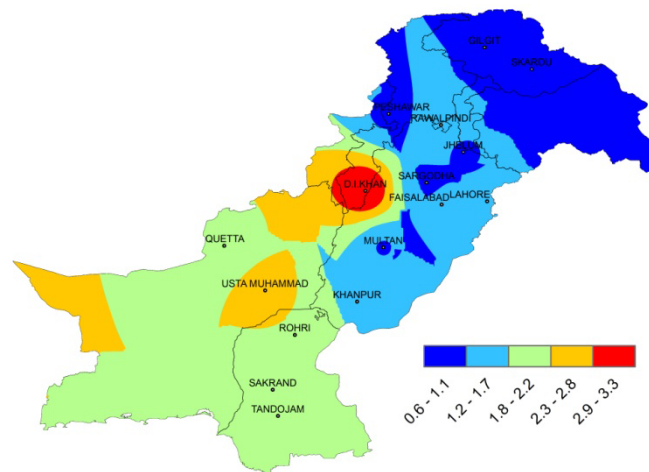


Figure.4: Reference Crop Evapotranspiration "ETo" in mm/day

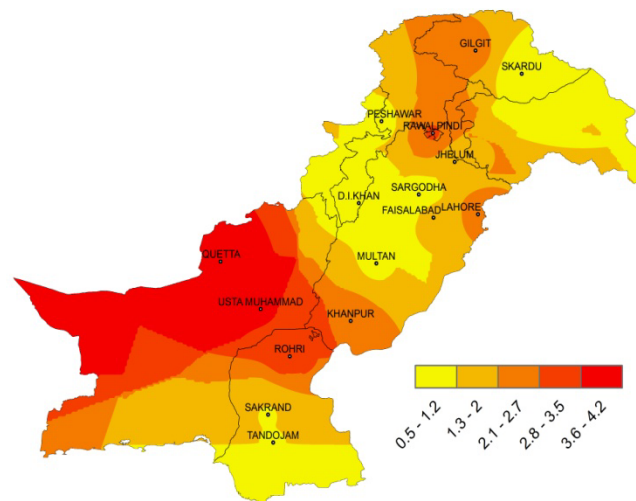


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Sakrand

No rainfall reported during the decade, weather remained cloudy for 02days, average relative humidity recorded as 60%. Mean night temperature was 8.9°C while day temperature recorded as 26.0°C with 84.9hours bright sunshine duration. Wind speed recorded as 1.2km/hr with mean wind direction *northerly*.

2.13 Peshawar

Rainfall reported as Trace (not measurable) during the decade, weather remained cloudy for 07days, average relative humidity recorded as 59%. Mean night temperature was 5.8°C while day temperature recorded as 21.4°C with 27.1hours bright sunshine duration. Wind speed recorded as 1.0km/hr with mean wind direction *north westerly*.

2.14 D.I. Khan

No rainfall reported during the decade, weather remained cloudy for 01day, average relative humidity recorded as 69%. Mean night temperature was 7.0°C while day temperature recorded as 21.3°C with 61.7hours bright sunshine duration. Wind speed was not available with mean wind direction *variable*.

2.15 Skardu

Rainfall reported as 1.1mm during the decade, weather remained cloudy for 03days, average relative humidity recorded as 55%. Mean night temperature was -6.5°C while day temperature recorded as 8.9°C with 45.7hours bright sunshine duration. Wind speed recorded as 0.5km/hr with mean wind direction *north-north westerly*.

2.16 Gilgit

No rainfall reported during the decade, weather remained cloudy for 10days, average relative humidity recorded as 53%. Mean night temperature was -1.8°C while day temperature recorded as 13.6°C with 38.5bright sunshine duration. Wind speed recorded as 2.2km/hr with mean wind direction *variable*.

3. Ten Days Weather Advisory for Farmers (21st to 31st December, 2013)

3.1 Temperature Forecast

Night temperatures are expected to drop slightly (1-2 °C) in most of the agricultural plains of the country especially in upper parts of the country during the decade.

3.2 Rain Forecast

- ❖ **Punjab:** Mainly cold & dry weather is expected all over the province except light rain at isolated places of Northern Punjab on 30th December.
- ❖ **Khyber Pakhtunkhwa:** Mainly dry & cold weather is expected in most parts of the province especially in upper parts during the decade, however light rainfall (with light snowfall over the hills) is expected at isolated places in upper parts of the province during the end of decade.
- ❖ **Sindh:** Mainly cold and dry weather is expected in most parts of the province during the decade.
- ❖ **Balochistan:** Mainly dry & cold weather is expected in most parts of the province during the decade.
- ❖ **Gilgit-Baltistan:** Mainly dry/partly cloudy & very cold weather is expected in most parts of the province during the decade. However; rain/thunderstorm with light snow over the hills may occur at isolated places during the last few days of decade.
- ❖ **Kashmir:** Mainly dry & cold weather is expected in most parts of the province during the decade. However; rain/thunderstorm with light snow over the hills may occur at isolated places during the last few days of decade.

3.3 Wind Forecast

Normal wind pattern may prevail in most of the agricultural plains of the country during the decade.

3.4 Advisory for Farmers

- ❖ Wheat crop is growing at early stages in most of the barani areas of the country. Farmers of barani areas, obtaining crop water through tube wells are advised to schedule the irrigation according to the expected weather mentioned above during the decade.
- ❖ Wheat cultivation is in progress in most of the irrigated areas. Farmers of irrigated areas should irrigate the crop as per requirement due to dry weather prevailing in most of the irrigated agricultural plains of the country. Normally first irrigation is given after 20-25 days after sowing and 2nd irrigation is given just before heading stage.
- ❖ Farmers of barani areas are advised to remove weeds from the fields, so that the present soil moisture may fully be utilized.
- ❖ Falling of leaves has started from trees in wheat & other Rabi crops. Farmers should collect leaves from the crops as early as possible so that crop normal growth may not be disturbed.