

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light rainfall reported from few agricultural plains of the country during the last decade.
- ❖ Lowest minimum temperature recorded -8.6°C at Skardu during the last decade.
- ❖ Highest amount of rainfall recorded as 7 mm at Kalam during the last decade.
- ❖ Lower values of relative humidity reported from Sindh, Quetta & Skardu region and higher values reported from upper and central parts of the country during the last decade.
- ❖ Higher values of ETo reported from Balochistan and Sindh while lower values reported from Gilgit Baltistan 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 country especially in upper parts during the decade.

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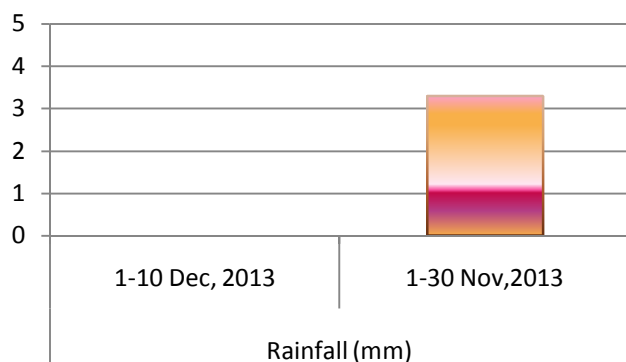
Meteorological conditions during 1st decade of December, 2013

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	0.3	0.0	-0.3	2.2	3.0	21.2	25.8	28.6	22.7	23.0	24.2	***	89.0	1.2	54	2.1
2	SAKRAND ☆	1.5	0.0	-1.5	0.7	3.9	18.7	26.5	24.3	***	***	25.1	27.6	90.8	1.7	56	2.1
3	ROHRI	1.1	0.0	-1.1	1.4	3.6	20.5	26.1	24.5	23.2	24.6	24.1	28.4	89.0	2.5	53	2.3
4	USTA MUHAMMAD	1.2	0.0	-1.2	3.6	3.7	19.6	23.1	22.8	23.3	23.6	***	26.7	***	***	68	2.8
5	QUETTA	0.8	0.8	0.0	2.8	2.2	9.5	15.7	14.5	10.3	9.5	9.8	14.4	89.7	5.0	41	2.2
6	KHANPUR	0.1	0.0	-0.1	1.6	3.3	18.6	***	19.6	20.3	21.0	22.3	24.5	74.6	2.3	60	2.0
7	MULTAN	0.5	0.0	-0.5	2.8	1.1	17.9	***	***	***	***	***	***	71.2	1.2	59	1.5
8	LAHORE	0.1	0.0	-0.1	-1.4	0.9	16.8	18.9	18.1	17.2	17.4	***	19.4	64.8	3.1	71	1.7
9	FAISALABAD	0.5	0.0	-0.5	2.0	2.4	17.5	20.4	19.1	17.5	17.5	18.8	22.0	72.1	2.9	56	1.9
10	SARGODHA	0.9	0.0	-0.9	2.9	1.5	18.0	20.3	19.2	18.8	19.5	21.0	22.6	59.4	0.9	64	1.3
11	JHELUM	1.1	0.0	-1.1	0.2	1.1	16.3	16.7	16.0	15.4	15.5	17.1	***	69.9	2.0	64	1.5
12	RAWALPINDI	1.4	0.0	-1.4	1.0	1.1	14.3	15.5	14.5	13.7	14.1	15.5	18.4	69.5	0.7	62	1.7
13	DI KHAN	0.3	0.3	0.0	2.2	2.3	17.2	***	***	***	***	***	***	75.5	***	59	1.4
14	PESHAWAR	0.9	1.0	0.1	0.6	1.5	15.3	17.0	15.6	15.0	16.9	***	19.0	40.6	0.4	65	0.9
15	SKARDU	0.6	TR	-0.5	-1.1	0.5	2.1	***	***	***	***	***	***	30.9	0.0	58	0.6
16	GILGIT	0.3	0.0	-0.3	1.4	1.2	7.6	***	***	***	***	***	***	21.1	1.2	59	1.0

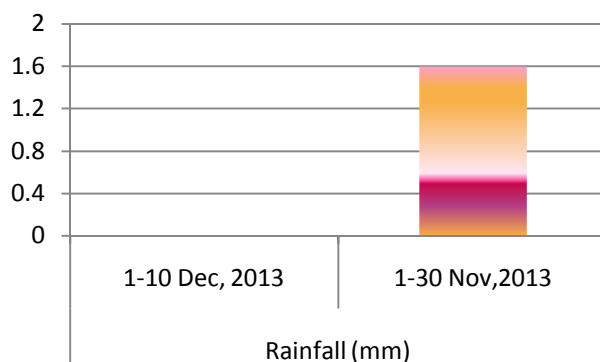
Table-1: Meteorological parameters for selected station of Pakistan. "Dep" in the table stands for difference from climatic normal, i.e. actual value minus normal. And "% Dep" is calculated by the formula; **Dep divided by Normal multiplied by 100**. Tmin & Tmax stands for minimum and maximum temperatures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

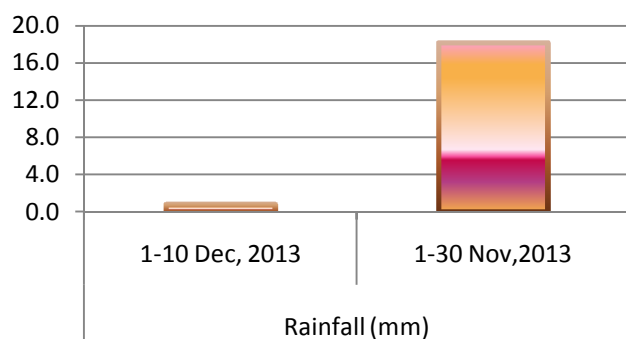
RAMC RAWALPINDI



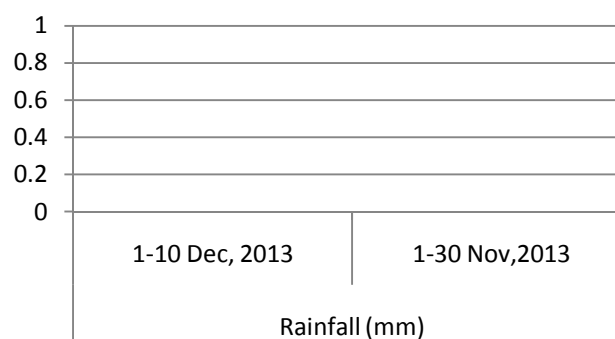
RAMC FAISALABAD



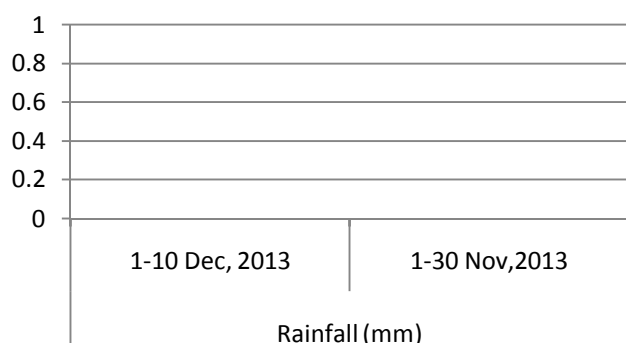
RAMC QUETTA



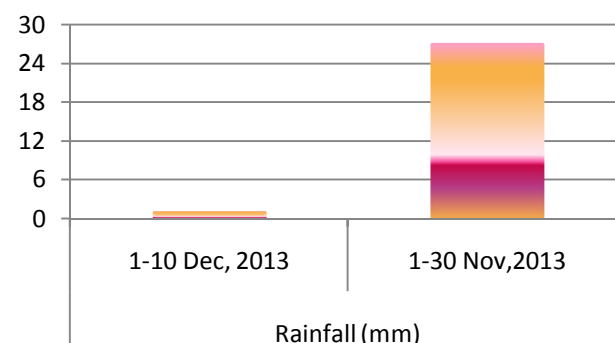
RAMC TANDOJAM



RAMC USTA MUHAMMAD



RMC PESHAWAR



Past Weather (1st to 10th December, 2013)

Light rainfall reported from few agricultural plains of Punjab, Khyber Pakhtunkhwa and Gilgit-Baltistan, while dry/cold weather reported from the rest part of the country during the period.

1.1 Punjab

Light rainfall reported in the agricultural plains of Punjab. Chief amount of rainfall received in Sargodha. Decadal minimum & maximum temperature both raised above normal by 1.3°C & 1.6°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 68.8hrs, 1.9km/hr, 62% and 1.7mm/day respectively.

1.2 Sindh

No rainfall reported in the agricultural plains of Sindh. Decadal minimum & maximum temperature both raised above normal by 1.4°C & 3.5°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 89.6hrs, 2.2km/hr, 54% and 2.2mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

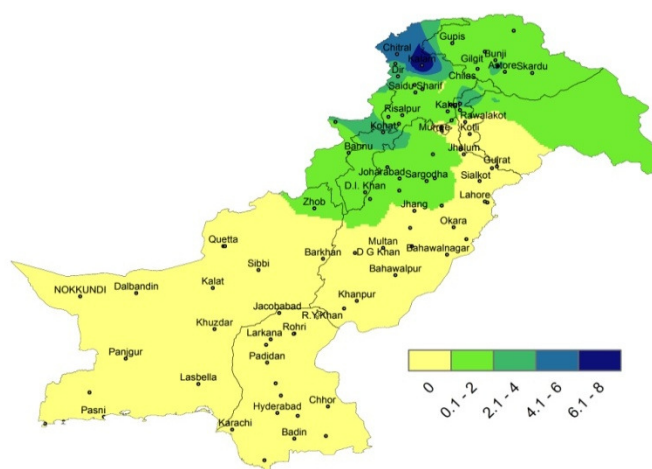
Light rainfall reported at few agricultural plains of KP. Chief amount of rainfall reported in Kalam, Chitral and Mir Khani. Decadal minimum & maximum temperature both raised above normal by 1.4°C & 1.9°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 58.1hrs, 0.4km/hr, 62% and 1.2mm/day respectively.

1.4 Balochistan

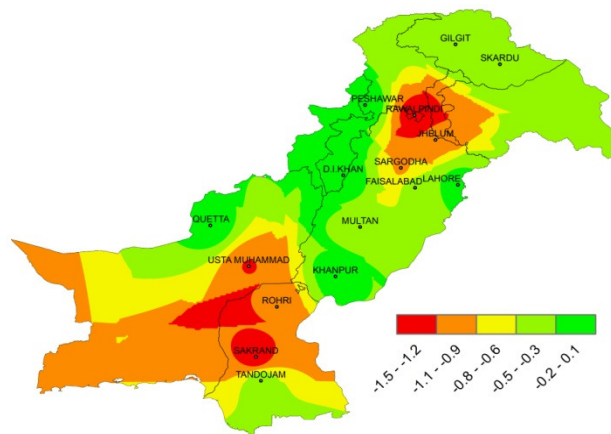
No rainfall reported in the agricultural plains of Balochistan. Decadal minimum & maximum temperature both raised above normal by 3.2°C & 3.0°C respectively in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 89.7hrs, 5.0km/hr, 55% and 2.5mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

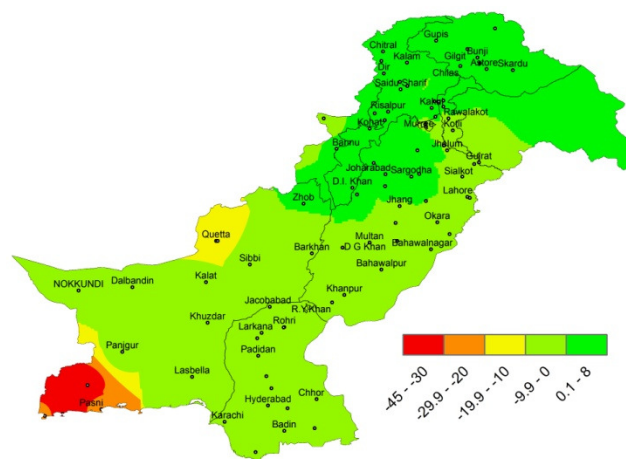
Light rainfall reported in the agricultural plains of GB & Kashmir. Chief amount of rainfall reported in Pattan. Decadal minimum & maximum temperature both raised above normal by 0.2°C & 0.9°C, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 26.0hrs, 0.6km/hr, 59% and 0.8mm/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** **(1st to 10th December, 2013)**

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

No rainfall reported during the decade, weather remained cloudy for 03days, average relative humidity recorded as 62%. Mean night temperature was 5.8°C while day temperature recorded as 22.8°C with 69.5hours bright sunshine duration. Wind speed recorded as 0.7km/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 05days, average relative humidity recorded as 56%. Mean night temperature was 9.0°C while day temperature recorded as 26.0°C with 72.1hours bright sunshine duration. Wind speed recorded as 2.9km/hr with mean wind direction *variable*.

Wheat: Very Good condition, 3rd leaf stage.

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

No rainfall reported during the decade, weather remained clear during the decade, average relative humidity recorded as 54%. Mean night temperature was 13.0°C while day temperature recorded as 29.4°C with 89.0hours bright sunshine duration. Wind speed recorded as 1.2km/hr with mean wind direction *northerly*.

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

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

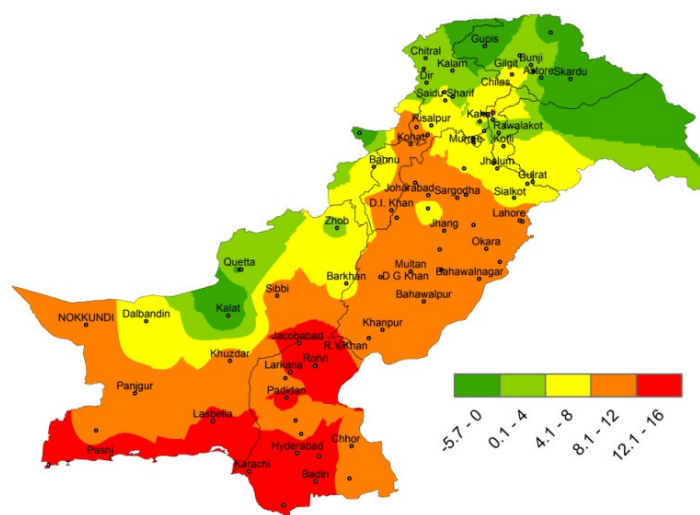
Rainfall reported as 0.8mm during the decade, weather remained cloudy for 10days, average relative humidity recorded as 41%. Mean night temperature was 2.0°C while day temperature recorded as 17.0°C with 89.7hours bright sunshine duration and wind speed recorded as 5.0km/hr with mean wind direction *southerly*.

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

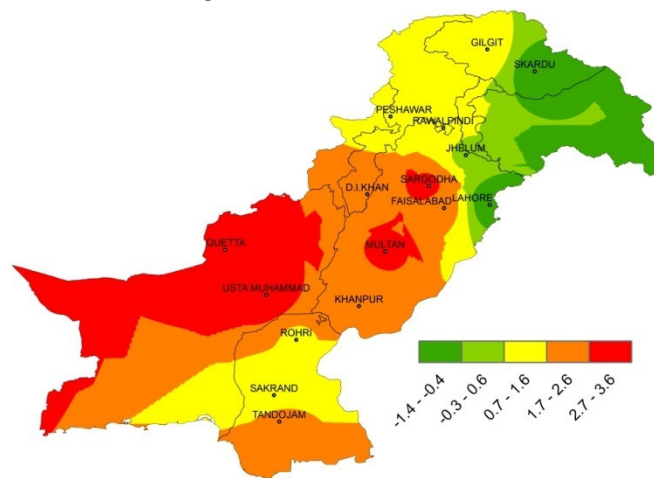
2.5 **RAMC, Usta Muhammad (Eastern Balochistan)**

No rainfall reported during the decade, weather remained cloudy for 01day, average relative humidity recorded as 68%. Mean night temperature was 11.6°C, while day temperature recorded as 27.6°C. The data of bright sunshine hour and wind speed was not available, while mean wind direction was *northerly*.

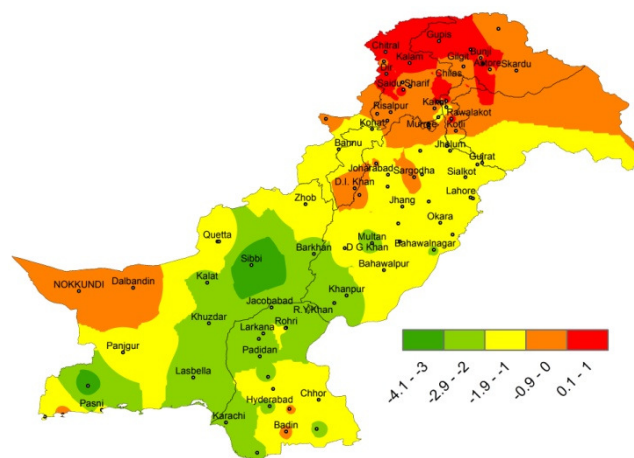
Wheat (Zardana): Good condition, Germination stage.



(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 (1st to 10th December, 2013)

2.6 Jhelum

No rainfall reported during the decade, weather remained cloudy for 06days, average relative humidity recorded as 64%. Mean night temperature was 7.7°C while day temperature recorded as 24.8°C with 69.9hours bright sunshine duration. Wind speed recorded 2.0km/hr with mean wind direction *variable*.

2.7 Lahore

No rainfall reported during the decade, weather remained cloudy for 07days, average relative humidity recorded as 71%. Mean night temperature was 9.2°C while day temperature recorded as 24.4°C with 64.8hours bright sunshine duration. Wind speed recorded as 3.1km/hr with mean direction *westerly*.

2.8 Sargodha

No rainfall reported during the decade, weather remained cloudy for 07days, average relative humidity recorded as 64%. Mean night temperature was 10.8°C while day temperature recorded as 25.1°C with 59.4hours bright sunshine duration. Wind speed recorded as 0.9km/hr with mean direction *south westerly*.

2.9 Multan

No rainfall reported during the decade, weather remained cloudy for 06days, average relative humidity recorded as 59%. Mean night temperature was 10.3°C while day temperature recorded as 25.4°C with 71.2hours bright sunshine duration. Wind speed recorded as 1.2km/hr with mean wind direction *southerly*.

2.10 Khanpur

No rainfall reported during the decade, weather remained cloudy for 05days, average relative humidity recorded as 60%. Mean night temperature was 10.1°C while day temperature recorded as 27.1°C with 74.6hours bright sunshine duration. Wind speed recorded as 2.3km/hr with mean wind direction *north easterly*.

2.11 Rohri

No rainfall reported during the decade, weather remained cloudy for 02days, average relative humidity recorded as 53%. Mean night temperature was 13.5°C while day temperature recorded as 27.4°C with 89.0hours bright sunshine duration. Wind speed recorded 2.5km/hr with mean wind direction *north easterly*.

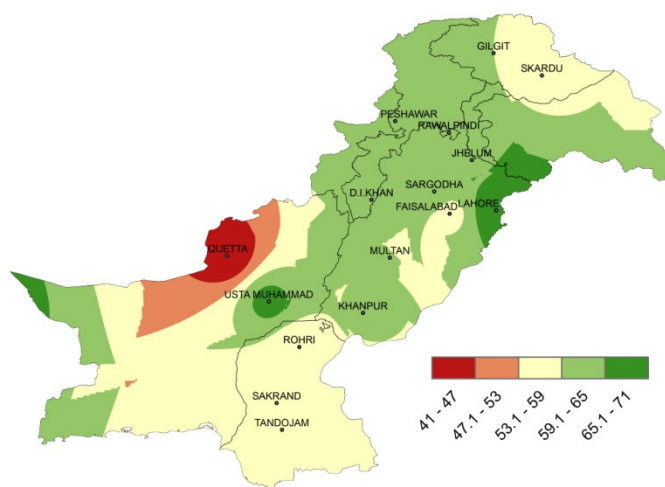


Figure.3: Relative Humidity in percentage (%)

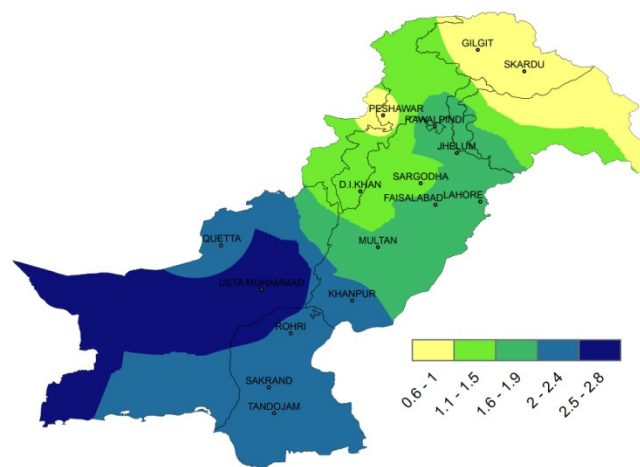


Figure.4: Reference Crop Evapotranspiration "ETo" in mm/day

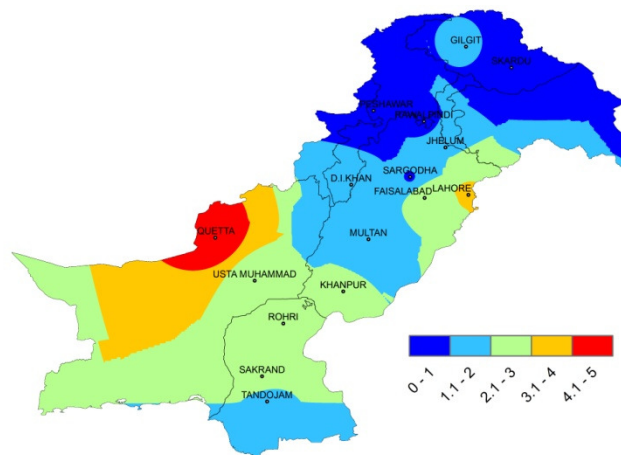


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Sakrand

No rainfall & cloudy days reported during the decade, average relative humidity recorded as 56%. Mean night temperature was 9.6°C while day temperature recorded as 27.7°C with 90.8hours bright sunshine duration. Wind speed recorded as 1.7km/hr with mean wind direction *northerly*.

2.13 Peshawar

Rainfall reported as 1.0mm during the decade, weather remained cloudy for 09days, average relative humidity recorded as 65%. Mean night temperature was 7.4°C while day temperature recorded as 23.1°C with 40.6hours bright sunshine duration. Wind speed recorded as 0.4km/hr with mean wind direction *south westerly*.

2.14 D.I. Khan

Rainfall reported as 0.3mm during the decade, weather remained cloudy for 05days, average relative humidity recorded as 59%. Mean night temperature was 8.8°C while day temperature recorded as 25.5°C with 75.5hours bright sunshine duration. Wind speed was not available with mean wind direction *north westerly*.

2.15 Skardu

Rainfall reported as Trace (non measureable) during the decade, weather remained cloudy for 07days, average relative humidity recorded as 58%. Mean night temperature was -5.4°C while day temperature recorded as 9.5°C with 30.9hours bright sunshine duration. Wind remained calm during the decade.

2.16 Gilgit

No rainfall reported during the decade, weather remained cloudy for 10days, average relative humidity recorded as 59%. Mean night temperature was 0.1°C while day temperature recorded as 15.0°C with 21.1bright sunshine duration. Wind speed recorded as 1.2km/hr with mean wind direction *variable*.

3. Ten Days Weather Advisory for Farmers (11th to 20th 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:** Light to moderate rainfall is expected from 18th to 20th December in isolated upper parts of the province during the decade.
- ❖ **Khyber Pakhtunkhwa:** Light to moderate rainfall is expected from 18th to 20th December in isolated upper hills of KP during the decade.
- ❖ **Sindh:** Mainly cold and dry weather is expected in most parts of the province during the decade.
- ❖ **Balochistan:** Light to moderate rainfall is expected from 17th to 18th December in isolated Northeast parts of the province during the decade.
- ❖ **Gilgit-Baltistan:** Light to moderate rainfall is expected from 18th to 20th December in isolated upper parts of the province during the decade.
- ❖ **Kashmir:** Light to moderate rainfall is expected from 18th to 20th December in isolated upper parts of the province during the 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 irrigated plains of Punjab, Sindh & KP are advised to complete sowing of wheat crop before 15th December to get maximum yield. In case of late sowing in December, the recommended varieties should be cultivated to minimize the expected loss in yield. Otherwise sunflower is also very beneficial to be cultivated in place of late sown wheat crop. Sunflower is cultivated from January to March throughout Pakistan.
- ❖ 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.