

Decadal Agromet Bulletin of Pakistan



Highlights....

- ❖ Light rainfall reported from few agricultural plains of the country during the last decade.
- ❖ Lowest minimum temperature recorded -16.0°C at Kalat during the last decade.
- ❖ Highest amount of rainfall recorded as 25.0mm at Malam Jabba during the last decade.
- ❖ Lower values of relative humidity reported from Quetta & Sindh and higher values reported from Skardu and Kashmir during the last decade.
- ❖ Higher values of ETo reported from Sindh & Balochistan region 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.

**NATIONAL AGROMET CENTRE (NAMC)
PAKISTAN METEOROLOGICAL DEPARTMENT
SECTOR H-8/2, ISLAMABAD**

Patron-in-Chief: *Arif Mahmood, Director General*

Editor-in-Chief: *Dr. Khalid M. Malik, Director*

Editor: *Khalida Noureen, Meteorologist*

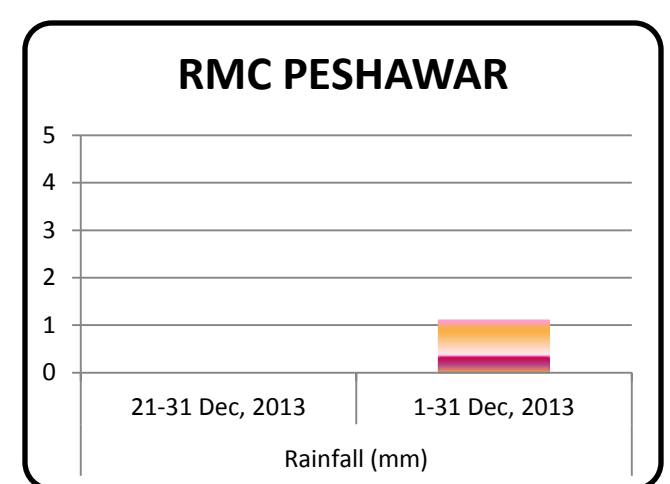
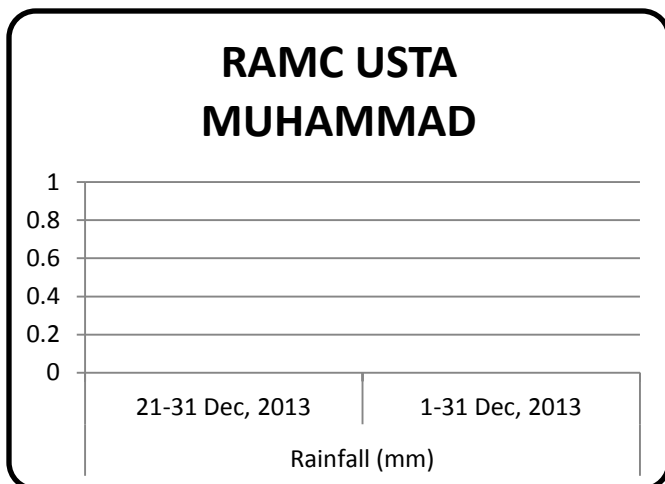
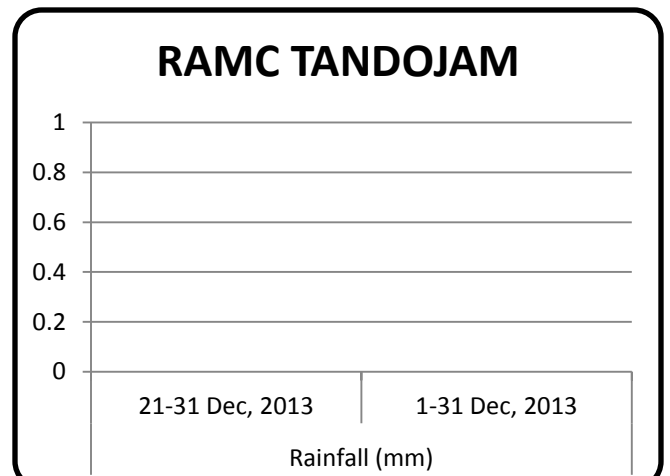
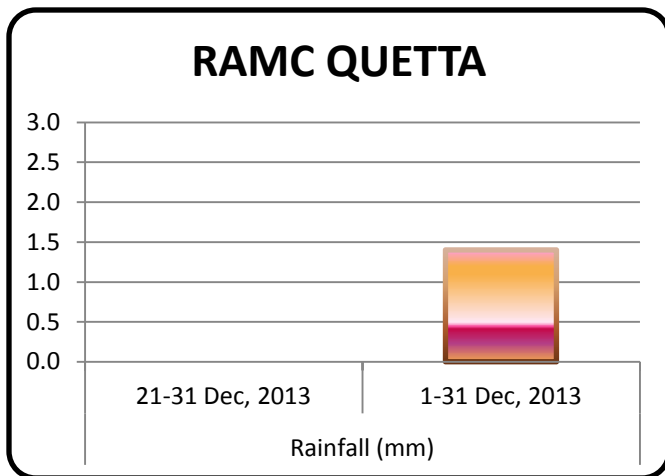
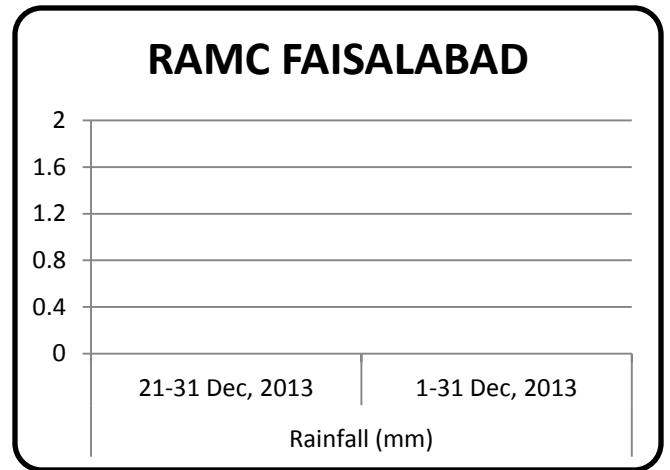
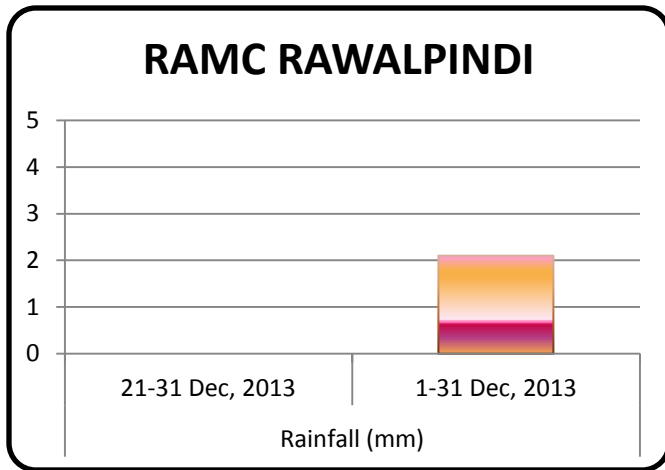
Phone: [+92-51-9250592](tel:+92-51-9250592) Email: dirnamc@yahoo.com

Meteorological conditions during 3rd 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	Tmax	Mean	5cm	10cm	20cm	30cm	50cm	100cm				
1	TANDOJAM	0.4	0.0	-0.4	-2.8	-3.2	13.7	19.5	19.6	18.3	18.9	20.8	***	91.2	1.5	52	1.7
2	SAKRAND ☆	0.0	0.0	0.0	-4.2	-2.3	11.6	20.0	18.4	***	***	20.7	24.7	91.6	2.4	56	1.8
3	ROHRI	0.0	0.0	0.0	-2.9	-3.4	13.0	20.4	18.9	18.1	20.3	20.3	25.8	85.9	1.6	49	1.5
4	USTA MUHAMMAD	0.0	0.0	0.0	-3.5	-1.8	12.3	16.2	16.1	17.3	17.9	***	23.7	***	***	68	2.2
5	QUETTA	0.4	0.0	-0.4	-4.2	-7.4	-0.5	6.6	5.9	4.2	3.9	5.2	11.1	93.3	5.4	47	1.4
6	KHANPUR	0.1	0.0	-0.1	-3.3	-2.3	11.4	***	14.1	15.1	16.1	18.0	21.3	71.2	2.0	59	1.5
7	MULTAN	0.1	0.0	-0.1	-0.9	-3.1	11.6	***	***	***	***	***	***	70.6	1.3	59	1.2
8	LAHORE	0.3	7.0	6.7	-3.8	-2.5	10.9	13.1	13.1	13.0	13.6	***	18.6	63.1	1.8	71	1.2
9	FAISALABAD	0.2	0.0	-0.2	-1.2	-1.6	11.3	13.9	13.1	12.1	12.5	14.2	18.1	62.2	3.2	60	1.5
10	SARGODHA	0.4	0.0	-0.4	-1.1	-2.4	11.6	15.2	14.3	14.6	15.6	17.6	20.0	63.9	0.7	63	1.0
11	JHELMUM	0.4	1.2	0.8	-2.8	-2.7	10.6	12.6	12.0	11.7	12.4	14.2	***	71.9	1.2	60	1.0
12	RAWALPINDI	0.5	0.0	-0.5	-1.9	-2.5	9.1	12.1	11.6	10.4	10.8	12.6	16.0	59.4	1.2	59	0.9
13	DI KHAN	0.4	0.0	-0.4	-3.6	-3.2	10.3	***	***	***	***	***	***	75.0	***	52	2.2
14	PESHAWAR	0.6	0.0	-0.6	-3.0	-2.3	9.6	13.0	11.4	10.8	13.5	***	17.0	58.8	3.1	57	1.3
15	SKARDU	0.5	10.1	9.6	-1.6	-3.1	-2.7	***	***	***	***	***	***	19.7	0.0	73	0.5
16	GILGIT	0.4	0.1	-0.3	-0.9	-1.5	3.2	***	***	***	***	***	***	27.2	1.0	55	0.8

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



Past Weather (21st to 31st December, 2013)

Light to moderate rainfall reported from a few agricultural plains of Punjab and KP. Whereas dry whether reported elsewhere in the country.

1.1 Punjab

Light rainfall reported in the agricultural plains of Punjab. Chief amount of rainfall received in Lahore, Murree & Noorpur Thal. Decadal minimum & maximum temperature both dropped below normal by 2.1°C & 2.4°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 66.0hrs, 1.6km/hr, 62% and 1.2mm/day respectively.

1.2 Sindh

No rainfall reported in the agricultural plains of Sindh. Decadal minimum & maximum temperature both dropped below normal by 3.3°C & 3.0°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 89.6hrs, 1.8km/hr, 52% and 1.7mm/day respectively.

1.3 Khyber Pakhtunkhwa (KP)

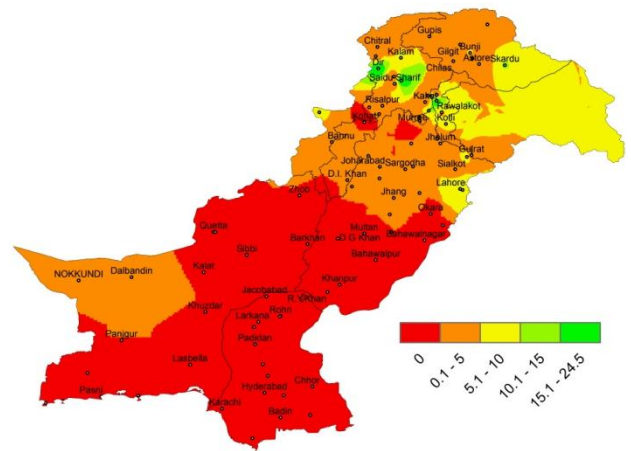
Light to moderate rainfall reported at few agricultural plains of KP. Chief amount of rainfall reported in Malam Jabba, Dir & Kalam. Decadal minimum & maximum temperature both dropped below normal by 3.3°C & 2.8°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded as 66.9hrs, 3.1km/hr, 55% and 1.8mm/day respectively.

1.4 Balochistan

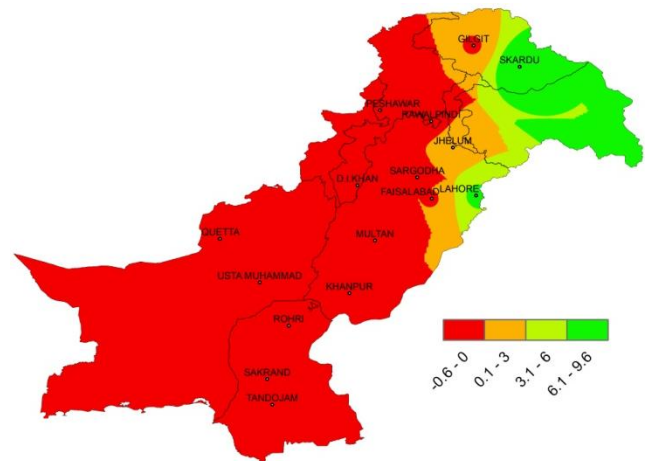
Rainfall reported as 1.0mm at one place of Balochistan i.e Dalbandin. Decadal minimum & maximum temperature both dropped below normal by 3.9°C & 4.6°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were 93.3hrs, 5.4km/hr, 58% and 1.8mm/day respectively.

1.5 Gilgit-Baltistan and Azad Jammu & Kashmir

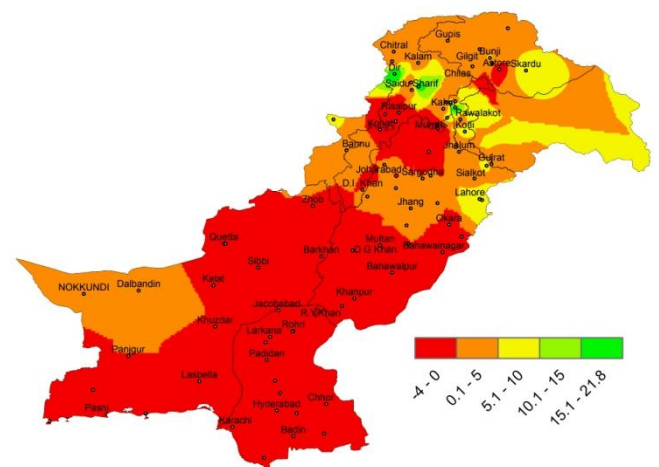
Light rainfall reported in the agricultural plains of GB & Kashmir. Chief amount of rainfall reported in Garhi Duppatta, Muzaffarabad & Skardu. Decadal minimum & maximum temperature both dropped below normal by 1.3°C & 2.3°C respectively, in the province. Whereas mean values of sunshine hour, wind speed, relative humidity and ETo were recorded 23.5hrs, 0.5km/hr, 64% and 0.7mm/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 (21st to 31st December, 2013)**

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

Dry weather reported during the decade however weather remained cloudy for 03days. Average relative humidity recorded as 59%. Mean night temperature was 1.4°C while day temperature recorded as 16.7°C with 59.4hours bright sunshine duration. Wind speed recorded as 1.2km/h with mean wind direction *westerly*.

Wheat (Chakwal 97): Good condition, 3rd Leaf stage.

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

Dry weather reported during the decade however weather remained cloudy for 02days. Average relative humidity recorded as 60%. Mean night temperature was 3.7°C while day temperature recorded as 18.9°C with 62.2hours bright sunshine duration. Wind speed recorded as 3.2km/hr with mean wind direction *variable*.

Wheat: Very Good condition, Tillering stage.

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

Dry weather reported during the decade however weather remained cloudy for 01day. Average relative humidity recorded as 52%. Mean night temperature was 6.3°C while day temperature recorded as 21.1°C with 91.2hours bright sunshine duration. Wind speed recorded as 1.5km/hr with mean wind direction *north easterly*.

Wheat (TD-1): Good condition, Tillering stage.

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

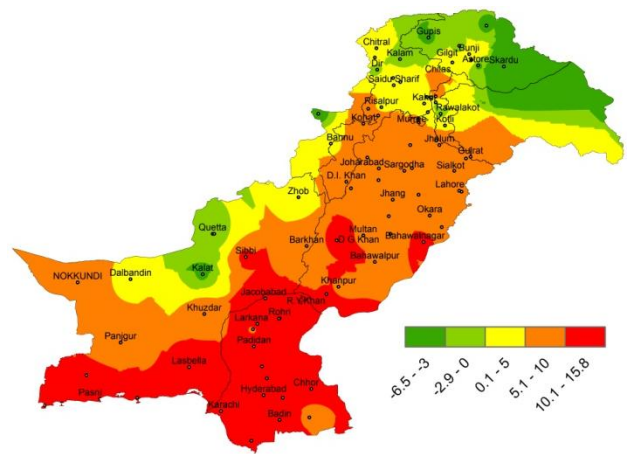
Dry weather reported during the decade however weather remained cloudy for 04days. Average relative humidity recorded as 47%. Mean night temperature was -6.3°C while day temperature recorded as 5.4°C with 93.3hours bright sunshine duration and wind speed recorded as 5.4km/hr with mean wind direction *northerly*.

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

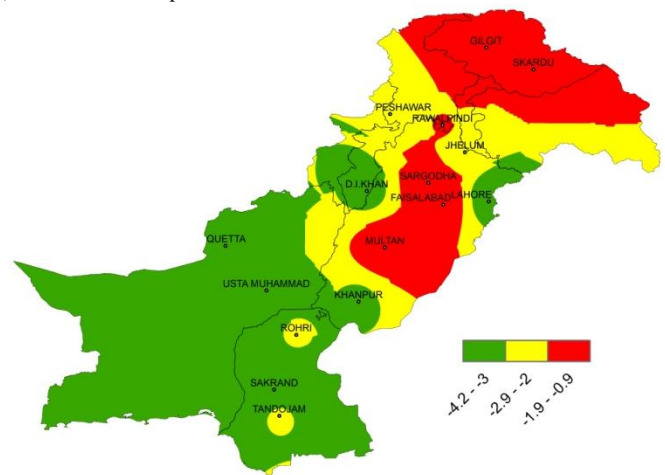
2.5 **RAMC, Usta Muhammad (Eastern Balochistan)**

Dry weather reported during the decade however weather remained cloudy for 01day. Average relative humidity recorded as 68%. Mean night temperature was 4.4°C, while day temperature recorded as 20.1°C.

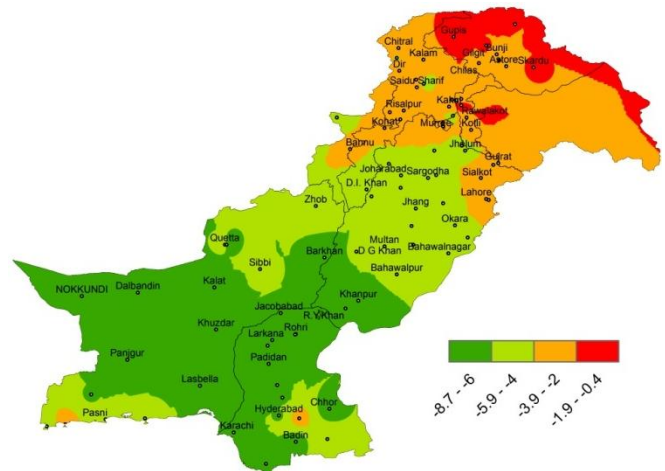
Wheat (Zardana): Good condition, Emergence Stage.



(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 (21st to 31st December, 2013)**

2.6 **Jhelum**

Rainfall reported as 1.2mm during the decade however weather remained cloudy for 03days. Average relative humidity recorded as 60%. Mean night temperature was 2.8°C while day temperature recorded as 18.3°C with 71.9hours bright sunshine duration. Wind speed recorded 1.2km/hr with mean wind direction *variable*.

2.7 **Lahore**

Rainfall reported as 7.0mm during the decade however weather remained cloudy for 04days. Average relative humidity recorded as 71%. Mean night temperature was 4.6°C while day temperature recorded as 17.2°C with 63.1hours bright sunshine duration. Wind speed recorded as 1.8km/hr with mean direction *north westerly*.

2.8 **Sargodha**

Dry weather reported during the decade however weather remained cloudy for 02days. Average relative humidity recorded as 63%. Mean night temperature was 4.8°C while day temperature recorded as 18.3°C with 63.9hours bright sunshine duration. Wind speed recorded as 0.7km/hr with mean direction *variable*.

2.9 **Multan**

Dry weather reported during the decade however weather remained cloudy for 04days. Average relative humidity recorded as 59%. Mean night temperature was 4.8°C while day temperature recorded as 18.3°C with 70.6hours bright sunshine duration. Wind speed recorded as 1.3km/hr with mean wind direction *northerly*.

2.10 **Khanpur**

Dry weather reported during the decade however weather remained cloudy for 01day. Average relative humidity recorded as 59%. Mean night temperature was 3.0°C while day temperature recorded as 19.8°C with 71.2hours bright sunshine duration. Wind speed recorded as 2.0km/hr with mean wind direction *south westerly*.

2.11 **Rohri**

Dry weather reported during the decade however weather remained cloudy for 03days. Average relative humidity recorded as 49%. Mean night temperature was 6.5°C while day temperature recorded as 19.5°C with 85.9hours bright sunshine duration. Wind speed recorded 1.6km/hr with mean wind direction *north easterly*.

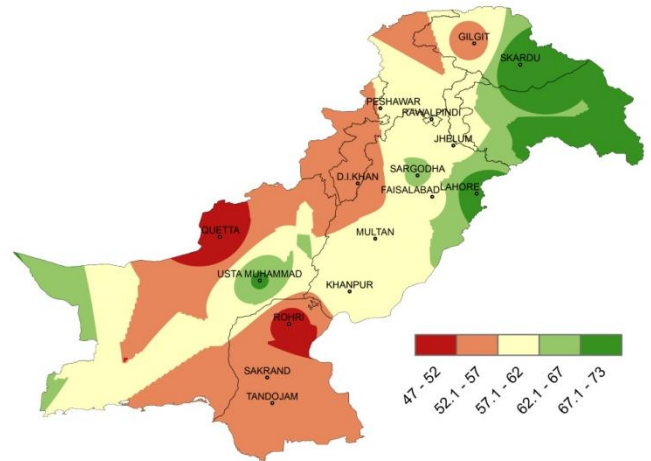


Figure.3: Relative Humidity in percentage (%)

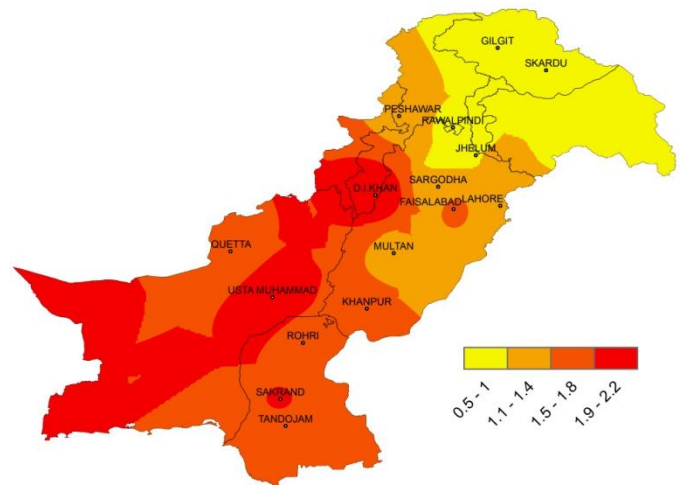


Figure.4: Reference Crop Evapotranspiration “ETo” in mm/day

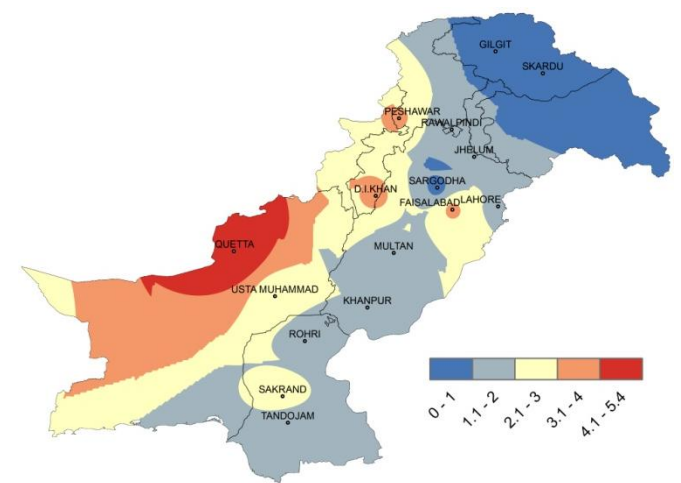


Figure 5: Wind Speed in kilometer per hour (km/h)

2.12 Sakrand

Dry weather reported during the decade however weather remained cloudy for 02days. Average relative humidity recorded as 56%. Mean night temperature was 3.0°C while day temperature recorded as 20.1°C with 91.6hours bright sunshine duration. Wind speed recorded as 2.4km/hr with mean wind direction *northerly*.

2.13 D.I Khan

Dry weather reported during the decade however weather remained cloudy for 02days. Average relative humidity recorded as 52%. Mean night temperature was 2.5°C while day temperature recorded as 18.1°C with 75.0hours bright sunshine duration.

2.14 Peshawar

Dry weather reported during the decade however weather remained cloudy for 09days. Average relative humidity recorded as 57%. Mean night temperature was 2.0°C while day temperature recorded as 17.2°C with 58.8hours bright sunshine duration. Wind speed recorded as 3.1km/hr with mean wind direction *north westerly*.

2.15 Skardu

Rainfall reported as 10.1mm during the decade however weather remained cloudy for 08days. Average relative humidity recorded as 73%. Mean night temperature was -8.1°C while day temperature recorded as 2.7°C with 19.7hours bright sunshine duration. Wind remained *calm*.

2.16 Gilgit

Rainfall reported as Trace (not measurable) during the decade however weather remained cloudy for 11days. Average relative humidity recorded as 55%. Mean night temperature was -3.5°C while day temperature recorded as 9.8°C with 27.2bright sunshine duration. Wind speed recorded as 1.0km/hr with mean wind direction *variable*.

3. Ten Days Weather Advisory for Farmers

(1st to 10th January, 2014)

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 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 Murree during the end of decade.

- ❖ **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. However light rainfall (with light snowfall over the hills) is expected at Quetta region during the end of 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 parts 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 has completed 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 and third irrigation is given at milk maturity stage.
- ❖ Farmers of barani and irrigated areas are advised to remove weeds from the fields wheat so that the present soil moisture may fully be utilized.
- ❖ Falling leaves from the trees negatively affect standing Rabi crops like wheat & other Rabi crops. Farmers should collect leaves from the crops as early as possible so that crop normal growth may not be disturbed.
- ❖ Due to further drop of temperatures, especially farmers of upper areas are advised to protect their crops from the frost.