

# Monthly Agromet Bulletin

## National Agromet Centre

### Pakistan Meteorological Department Islamabad



Vol: 7-2013

July 2013

## Highlights...

- Rainfall remained below normal in the agricultural planes of KP, Rawalpindi division in Potohar region, Sargodha and Faisalabad in central Punjab, Quetta region of Baluchistan, agricultural plains of Sindh and GB. Whereas it was observed above normal in some parts of Potohar region central and southern Punjab. This rainfall positively affected crop growth in the country.
- Thermal regime in this month remained normal to below normal in upper parts and observed above normal in most of the agricultural plains of the country, located in central and lower parts.
- ETo remained below normal and R.H exhibits mostly normal in the agricultural plains of the country.
- Agricultural-Soils observed normal to below normal trend in most of the agricultural plains, which indicates satisfactory soil moisture conditions.
- Spraying chemicals on cotton crop and transplantation of paddy nursery by manual and mechanical methods in irrigated planes were the major field activities in this month.
- The present hot and humid atmosphere is very favourable for pest and viral attack/rapid weeds growth in standing crops like cotton, sugarcane and maize. Farmers should be very careful in this regard to take in time precautionary measures for their control.

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Pattern-in-Chief: Arif Mahmood, Director General,

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

Editor: Muhammad Ayaz, Meteorologist

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P.O.Box:1214, Sector: H-8/2, Islamabad, PAKISTAN

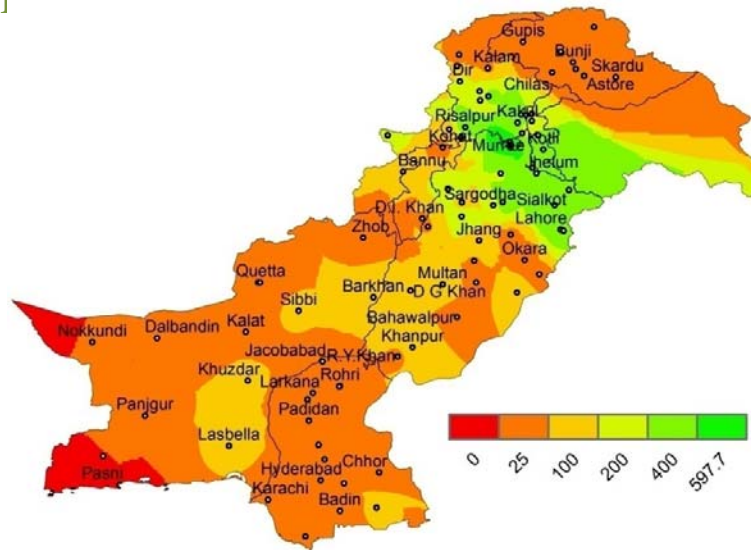
Tel: +92-51-9250592, Fax: +92-51-9250362 Email: dirnamc@yahoo.com Website:

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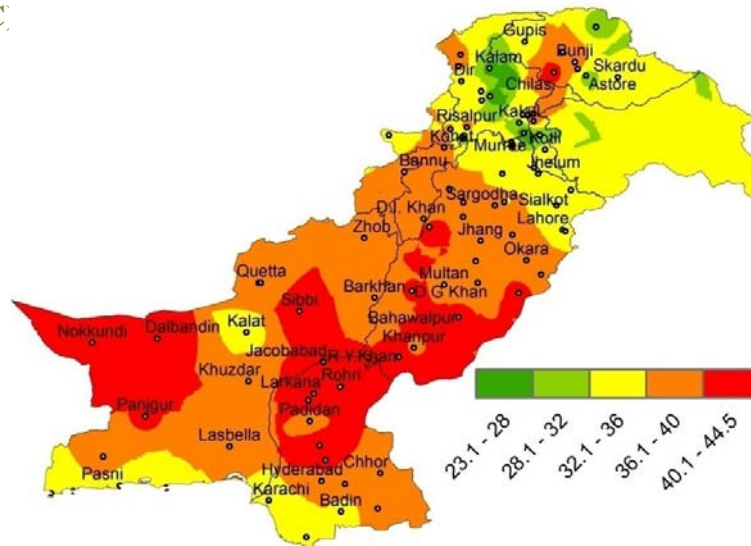
### **EXPLANATORY NOTE**

1. This Agrometeorological bulletin is prepared on the basis of data from 15 stations of Pakistan Meteorological Department (PMD). These stations, selected in consultation with the agricultural authorities, represent major agricultural areas of the country. There are still important agricultural areas which are not represented by the stations included in the bulletin. This may be (a) because there are no PMD stations in these areas and /or (b) the fact that we had to limit the number of stations due to the requirement of speedy data communication and processing (both of which are important for producing and dispatching timely agrometeorological bulletins).
2. Due to the above, all inferences and conclusions hold true primarily for the above areas and not for Pakistan territory which include areas that may not be very important from the agricultural point of view and the climate of which may not bear directly on agriculture in the major producing areas.
3. The normally expected weather of next month is prepared on the basis of premise of normal or near normal weather prevailing during the coming month. As such it should not be confused with synoptic weather of the next month.
4. Summer Season/ Kharif season is considered from April/May to October/November and winter from November to April. Mean Daily Maximum Temperature images are included in Summer and Daily Mean Minimum Temperature images are included in Winter in the Bulletin.
5. In the tables, the values in the parentheses are based on 1981 to 2010 normal. Normal values (in parenthesis) of Soil Temperatures are based upon 10 years data. Doted line (---) means missing data. Solar radiation intensities are computed from sunshine duration using co-efficients developed by **Dr. Qamar-uz-Zaman Chaudhry** of Pakistan Meteorological Department.

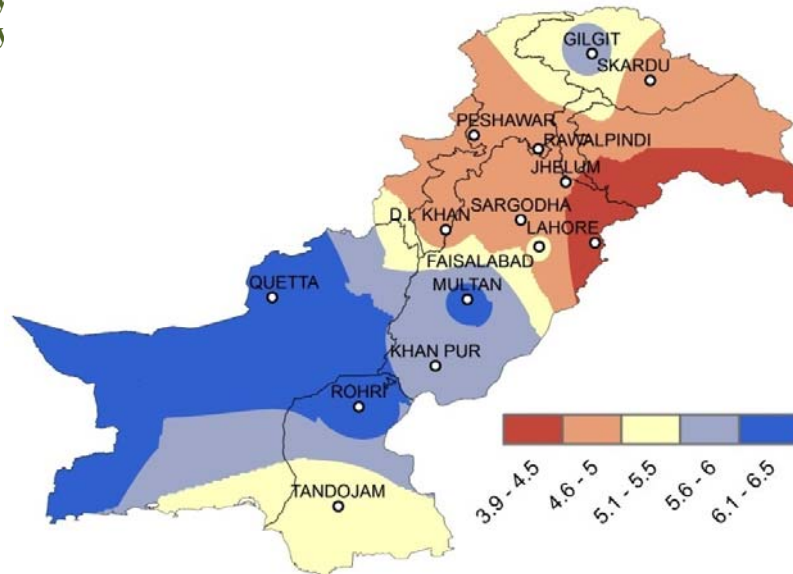
### Rainfall distribution (mm) during the month of July, 2013



### Maximum Temperature (°C) month of July, 2013



### ETo (mm/day) month of July



**CROP REPORT DURING July, 2013**

Spraying chemicals on cotton crop and transplantation of paddy nursery by manual and mechanical methods in irrigated planes were the major field activities in this month. Weeds removing and hoeing practices were also in progress. Satisfactory monsoon rains have positively affected the crop growth and development in most of the agricultural plains of the country.

**In Punjab:** The stand and growth of cotton crop is reported satisfactory. Early sown varieties are at squaring/boll formation stage and picking has reported at certain places. Attack of sucking pests on early grown varieties has been reported at some places, which are being controlled by applying recommended pesticides. Transplantation of rice Irri and Course varieties was completed and of Basmati varieties were in progress till the end of this month. Sowing of autumn maize was reported in progress. Growth of sugarcane was reported satisfactory except some reports of attack of top borer, being observed at some places. The growth of the crop has reported much better in the central and northern parts due to good rains received there.

**In Sindh:** Cotton is at boll formation stage and is growing satisfactory. Sugarcane crop is also growing satisfactory and is growing at vegetative stage. Transplantation of rice crop is completed and general conditions of the crop are reported satisfactory. Growth of Sesame is reported normal and is growing at flowering stage. Threshing of linseed, castor oil and safflower is completed and ground nut is growing at vegetative stage. Overall production of Banana, mango and other fruits is reported well.

**In Khyber Pakhtunkhwa:** Sowing of Hybrid/open pollinated varieties of maize has completed in the province. Hoeing, weeding and application of second dose of fertilizer are in progress. Harvesting of sunflower is in progress and normal yield is expected. Curing of Virginia tobacco is reported in progress. The growth of sugarcane was going normal. No disease or pest attack is reported. Transplantation and fertilization of rice has been completed. Condition of fruit orchards is reported satisfactory. Harvesting of garlic was in progress. Sowing of mung/mash has completed in hilly areas and is in progress in plane areas of the province.

**In Baluchistan:** Wheat crop at northern hilly areas is at maturity stage and barley at milk maturity stage. Sowing season of paddy crops was near to end. Harvesting and marketing of seasonal fruits and vegetables was in progress. Growth of sunflower was at flowering stage. Condition of the crop was reported normal.

**In Gilgit Baltistan:** The main standing crops in the area are maize and lobiya. Their normal growth is reported and they are in shooting stage. Condition and yield of orchards and summer vegetables is reported satisfactory.

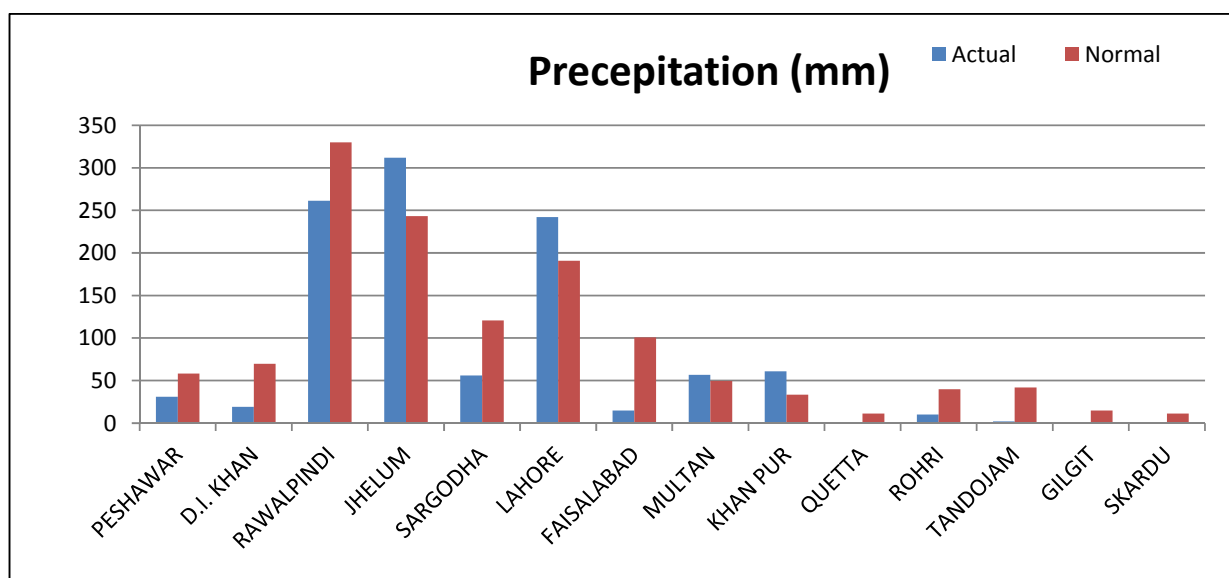
### Moisture Regime during July, 2013

July remains generally hot and wet in Pakistan. During this July, in general, the moisture condition of soil and atmosphere remained satisfactory in most of the agricultural planes of the country due to near to normal/ normal/ above normal rainfall received in different parts of the country, which has produced good atmospheric conditions for the growth of standing crops.

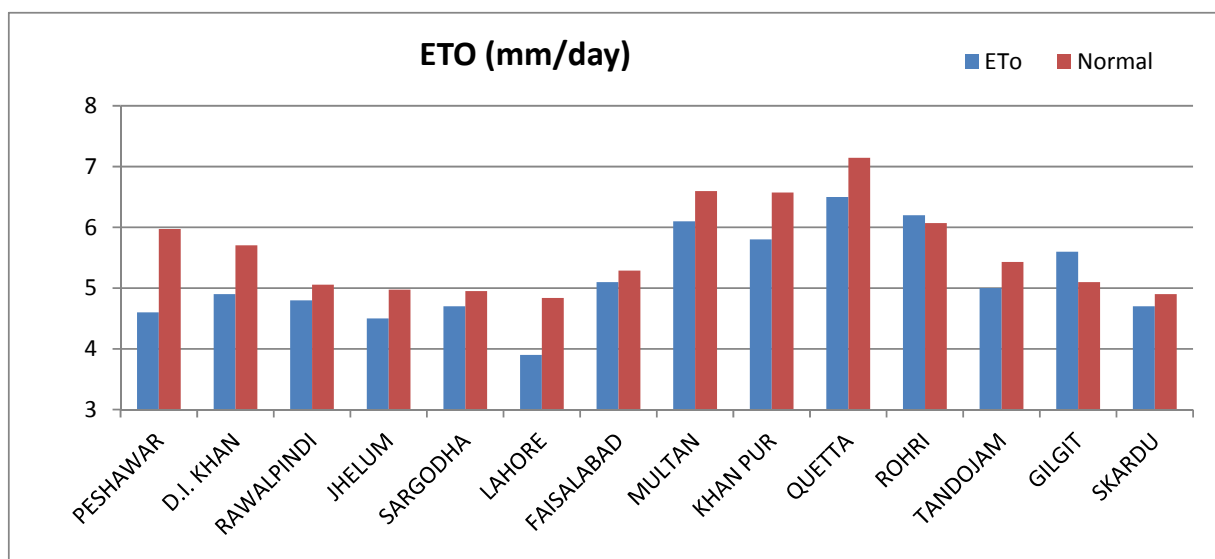
Rainfall remained below normal in the agricultural planes of KP, Rawalpindi division in Potohar region, Sargodha and Faisalabad in central Punjab, Quetta region of Baluchistan, agricultural plains of Sindh and GB. Whereas it was observed above normal in some parts of Potohar region central and southern Punjab.

The highest amount of rainfall reported in the month was 415 mm in Risalpur Kotli followed by 370mm in Kotli, 318mm in Islamabad and 314mm in Sialkot cantt.

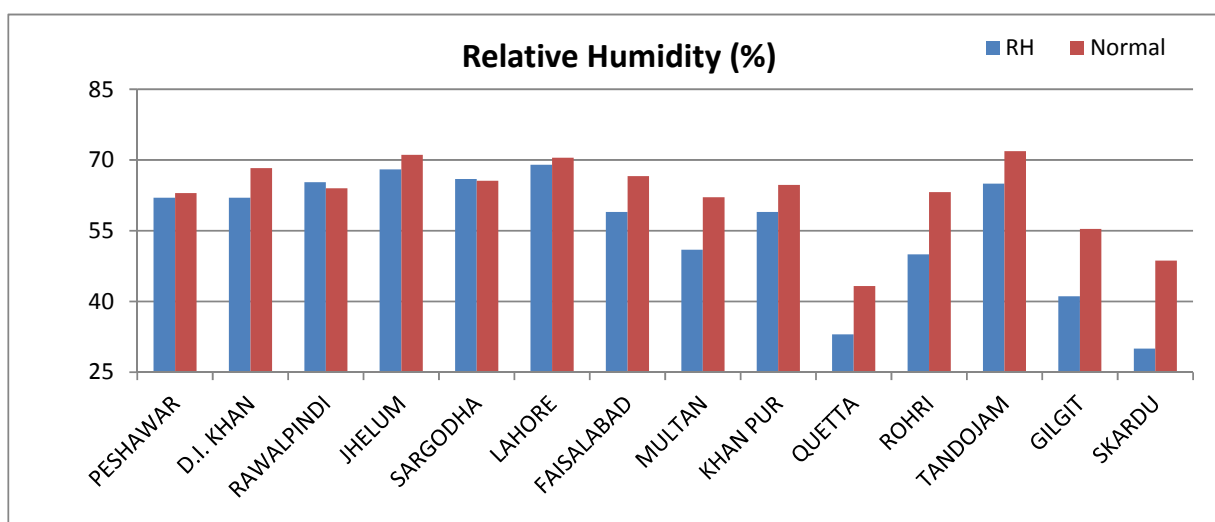
Number of rainy days recorded in agricultural plains of the country ranged from 1 to 15. Maximum number of rainy days was recorded (15 days) in Jhelum followed by 14 days in Lahore and so on.



The evaporative demand of the atmosphere represented by reference crop evapotranspiration (ET<sub>o</sub>) remained below normal in most of the agricultural planes of the country. The highest value of ET<sub>o</sub> was estimated in high elevated agricultural planes of Baluchistan represented by Quetta due to dry weather for most of the days during the month.



The mean daily Relative Humidity (R.H) remained normal to below normal in most of the agricultural planes of the country. Maximum value of mean Relative humidity was observed 69% at Lahore, followed by 68% at Jhelum and 65% at Jhelum and Tandojam each. Maximum number of days with mean R.H greater or equal to 80% was observed for 6 days at Lahore.



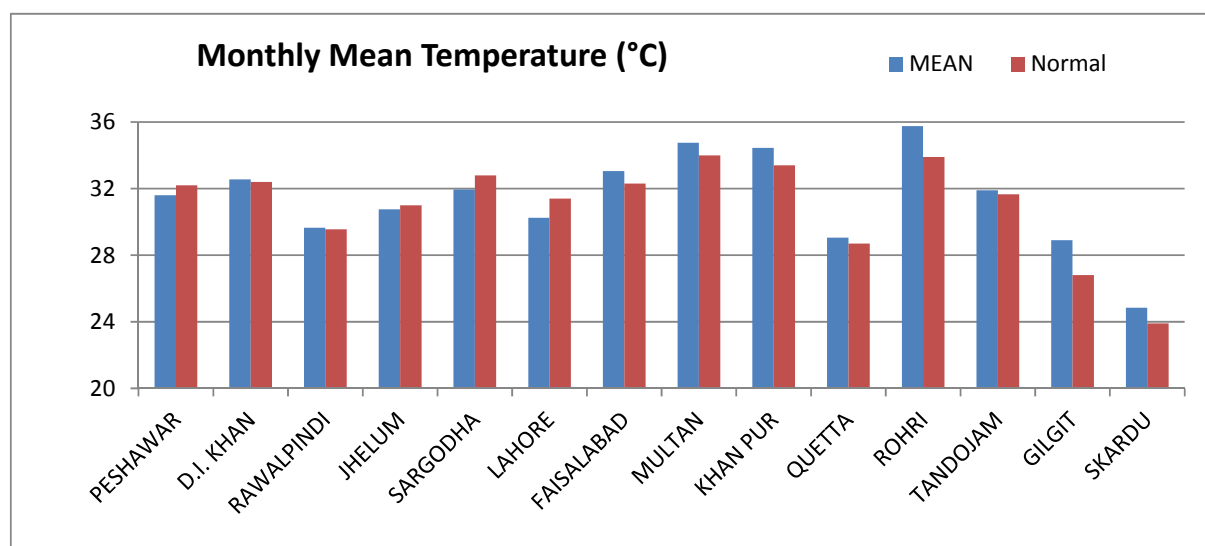
The combined impact of almost normal relative humidity along with mostly below normal ET<sub>o</sub> along with satisfactory rains during the month has produced satisfactory/normal growing conditions for standing crops. However coming monsoon rains may help to bring normal moisture condition for standing crops in the coming monsoon season. Hot and wet conditions sometime favor pests attack on standing crops, especially in sugarcane and cotton growing areas. Reports of pest's attacks have already been reported on cotton in certain areas. Therefore farmers must be careful about timely and proper use of pesticides to avoid/minimize such losses during monsoon season.

Farmers of the cotton growing areas should also be careful about the bad effects of stagnant water in the fields during monsoon season, which ultimately reduces/stops the normal growth of cotton plant.

### Temperature Regime during July, 2013

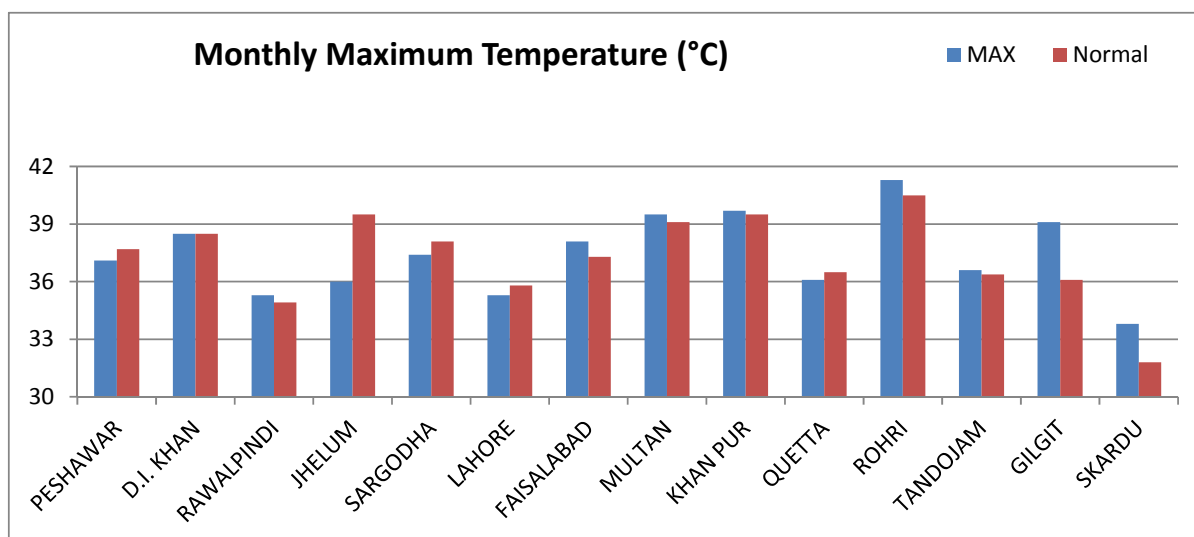
Temperature plays vital role in the growth and development of crops. Thermal regime in this month remained normal to slightly below normal in upper parts and observed above normal in most of the agricultural planes of the country, located in central and lower parts.

Mean daily temperature remained normal in KP and Potohar region of Punjab and Quetta valley of Baluchistan. Whereas it remained below normal by 1°C in Sargodha and Lahore of central Punjab and observed above normal by 1-2°C in Faisalabad situated in central parts and southern parts of Punjab, upper Sindh and GB. Mean daily temperature was ranged 32- 33°C in Khyber Pakhtunkhwa, ranged 29- 31°C in Potohar plateau, in remaining parts of Punjab it ranged 30 to 35°C, in Sindh it ranged 32 to 36°C, in Gilgit Baltistan region it ranged 25 to 29°C and it was rounded to 29°C in the high elevated agricultural plains of Baluchistan represented by Quetta valley.



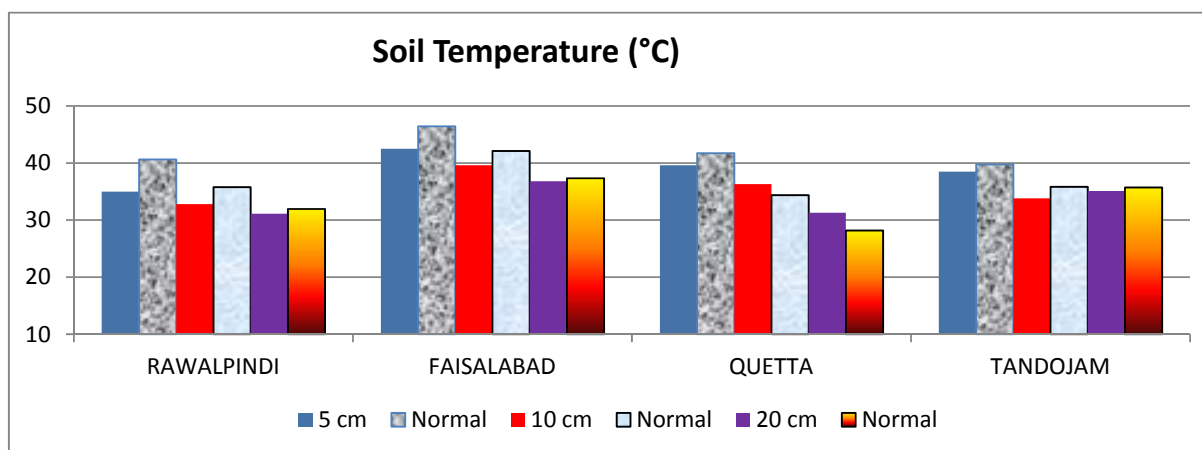
The day time temperature represented by mean maximum also remained normal to below normal by 1-4°C in most of the agricultural plains of KP and Punjab, lower Sindh and Quetta valley and observed above normal by 1-3°C in upper Sindh and GB region. The highest maximum temperature in the agricultural planes of the country was recorded 47.5°C at Nokkundi.

Maximum number of stress days with maximum temperature greater or equal to 40°C and R.H. less than or equal to 30% was observed nil in the country.



Agricultural soils showed normal to cooler trend in most of the agricultural plains of the country. Agricultural soils showed more significant drop in soil temperature in Potohar region and central Punjab. Significant drop in soil temperature at each station was observed at shallow layers than deep soils.

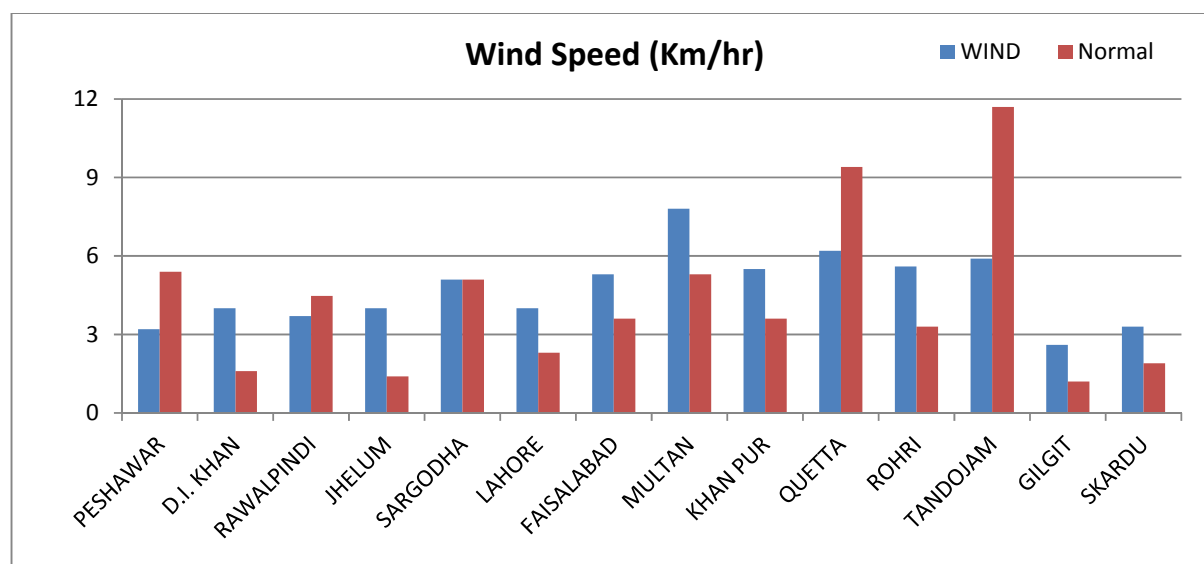
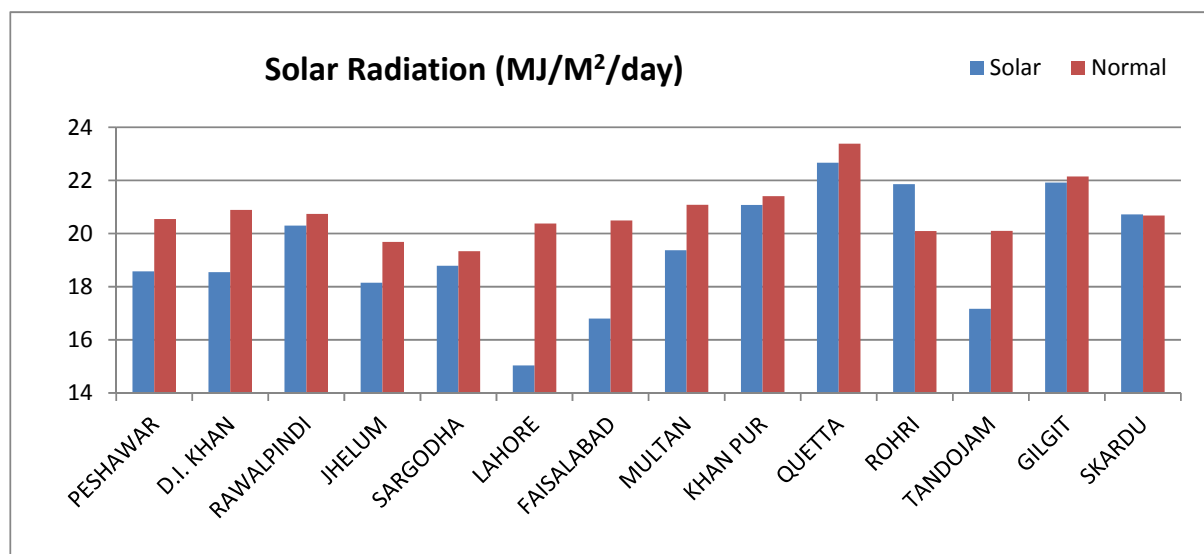
From the general analysis of soil behavior it is concluded that soil moisture has condition is better all over the country due to satisfactory rains received during the month. Coming monsoon rains may further improve soil moisture condition in the coming month.





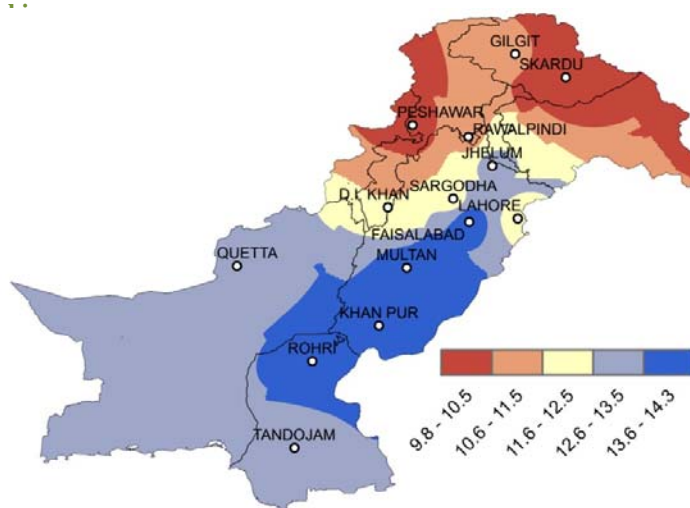
### Solar Radiation and Wind Regime during July, 2013

Total bright sunshine hours and solar radiation intensity remained below normal in most of the agricultural plains of the country except agricultural plains of upper Sindh where these values remained below normal. Mean wind speed throughout agricultural plains of the country ranged between 3 to 8km/h with Northeast and South to Southwest trend.

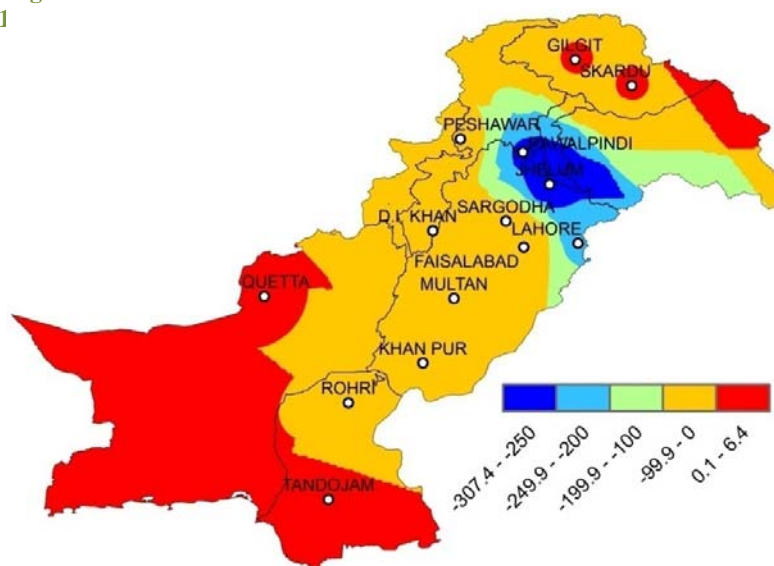


## Cumulative Rainfall, ETo and water stress for Kharif Season (May to September)

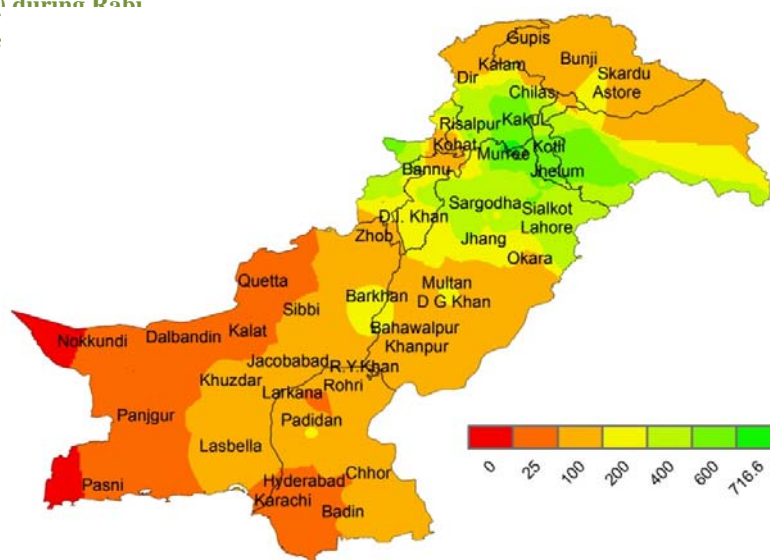
Cumulative ETo (mm) during Rabi  
Season up to July, 2013



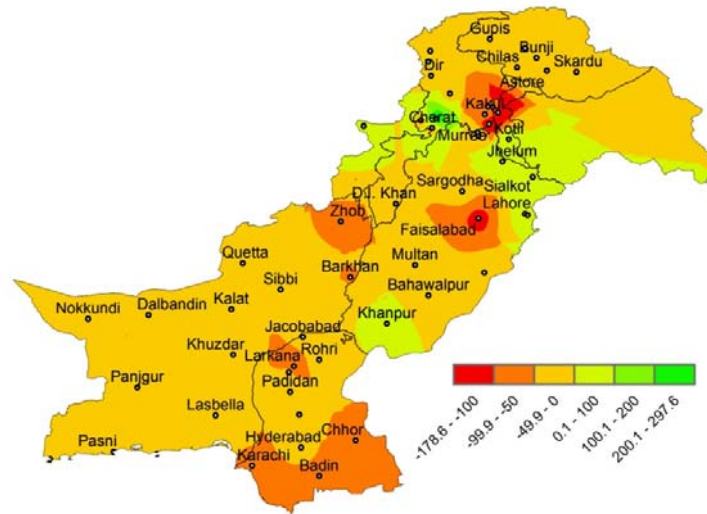
Water Stress (Rain-ETo) during Rabi  
Season up to July, 2013



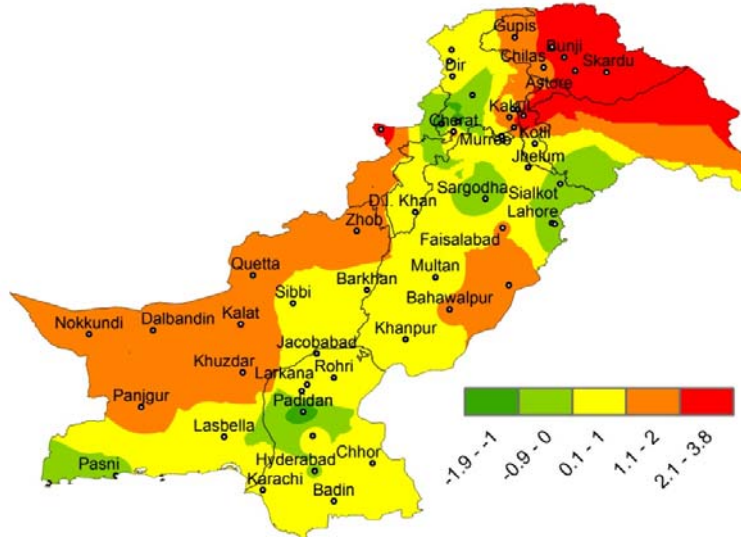
Cumulative rainfall (mm) during Rabi  
Season up to July, 2013



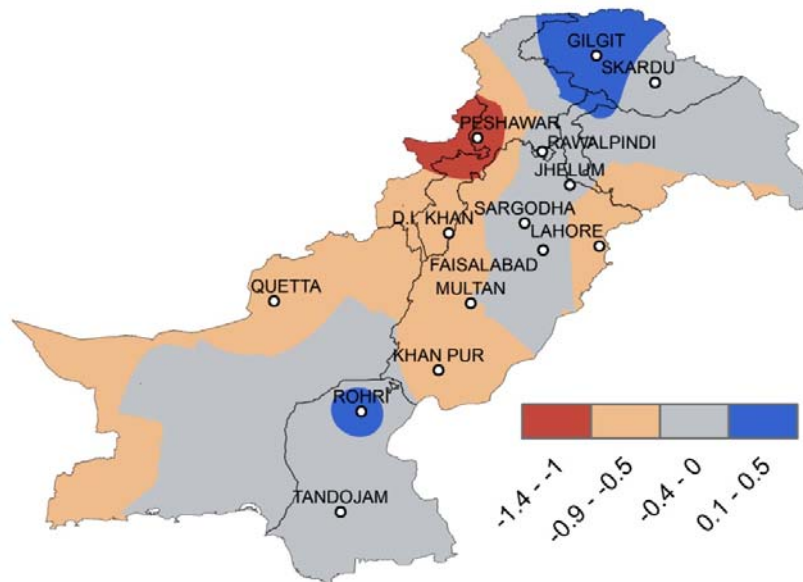
### Rainfall Departure from Normal (mm) during the month of July, 2013



### Maximum Temperature Departure from Normal (°C) during the month of July, 2013



## ETo Departure for the month of July



### Normally Expected Weather during August, 2013

During August monsoon rain bearing systems will produce precipitation. These rains are of immense importance for the farmers in relation to present and future crop requirements. In the absence of proper land management, the intense rains may erode the upper soil layers and fertility of the soil would be badly affected. If soil and moisture conservation measures are exercised, the farmers of the area could be benefited through available moisture for sowing and early growth of Rabi crops. Due to weaker pace of monsoon this year, the rain are expected to remain 30% below normal in most of the agricultural plains of Pakistan with occasionally heavy rains in some parts.

**The probability of occurrence of rainfall over Potohar plains is given below:-**

Amount Dates	PERCENTAGE PROBABILITY OF OCCURRENCE OF DIFFERENT AMOUNT OFF RAINFALL IN AUGUST					
	1-5	6-10	11-16	17-20	21-25	26-31
10 mm	71	81	78	69	75	64
15 mm	68	74	73	66	70	52
25 mm	56	68	58	56	49	40

The evaporative demand of the atmosphere would decrease as compared to July due to increased cloudiness, less solar radiation intensity and increase level of humidity. ETo values would range from 4 to 7 mm/day. The maximum ETo values would take place over agricultural areas along 30° latitude of the country. The mean daily relative humidity is expected to range from 60 to 75% except high agricultural plains of Baluchistan where it may be around 40%.

The mean daily temperatures may range between 31 and 33 °C over Sindh, Khyber Pakhtunkhwa, central and southern Punjab, Northern Punjab and high agricultural plains of Baluchistan may experience it from 26 to 29 °C. The mean maximum would be in upper 30°C and mean minimum in upper 20°C except high agricultural plains of Baluchistan where it would be around 18 °C. The occurrence of hygrothermal stress is not expected because of higher humidity level. The upper soil layers would be slightly cooler than July due to relatively cooler crop environment.

The daily bright sunshine duration during August is expected to range between 8 and 10 hrs throughout the country. The solar intensity will vary from 20 to 24 MJ/M<sup>2</sup>/day. Mean daily wind speeds will range between 3 and 12 Km/hr. The prevailing wind direction may vary from East to South.

Among the Kharif crops, most important crops are rice, cotton and sugarcane. All of them may be approaching their reproductive stage of development, i.e., the period of maximum water demand. Due to rains in northern parts of the country, soil moisture will be surplus in northern Punjab and adjoining KPK.

**The water requirement of a full canopied, healthy growing crop is given below:**

S.No	Region	Water Requirement	
		(mm)	Cubic Meter/Hectare
1	Central Punjab & adjoining KPK	130-160	1300-1600
2	Southern Punjab Upper Sindh & adjoining Baluchistan	170-200	1700-2000
3	Lower Sindh & high plains of Baluchistan	120-135	1200-1350

## Seasonal Weather Update

### Introduction

A variety of methods including dynamical models, statistical methods, regional expert judgments and combination of them have been used to generate long-range weather forecast by the different climate prediction centers around the world. National Agromet Center (NAMC), Pakistan Meteorological Department adopts an ensemble approach to formulate its seasonal weather outlook for Pakistan (on experimental basis), taking into consideration available products from major climate prediction centres and different Global Climate Models (GCMs).

Regional weather (precipitation and temperature) outlook is predicted from different global climate models by using persisted sea surface temperature on 0000 May 01, 2013. That might be somewhat different from actual weather because of time to time variation in Sea Surface Temperature (SST) during the season. Accuracy of Outlook seasonal weather mainly depend upon SST used in global climate models. Even with use of accurate SST, still is uncertainty in the climate forecast due to chaotic internal variability of the atmosphere.

### Synoptic Situation

- Jet stream (U wind at 200 hPa) is shifted slightly towards north with above normal strength. Increasing trend in intensity over the region is expected during August and remaining predicted season. The movement is slightly towards north from the normal movement during August, 2013.

Probability outlook: Track of the expected monsoonal current likely towards central/upper Punjab and Kashmir with normal intensity. The weather system from west probably will be more active during predicted period

- Geo-potential height at 500 hPa over the region follows normal patterns with some pockets of low pressure areas in central eastern parts of the country during start of the season and gradually weakens with time.

Probability outlook: Most likely the monsoonal weather system will give rain over central and northern parts of the country. A normal rain is expected.

- No significantly change is expected in Surface temperature pattern from normal (1982-2010) during Aug, 2013 over the country. However, east west expansion of small area focused on lower Punjab and Upper Sind will be under influence of slightly higher surface temperature.
- North Atlantic Oscillation (NAO) is in slightly positive phase (0.67) and may cause to shift western disturbances towards north during coming months.. (Data source: CPU, monthly mean index)

Probability outlook: Normal rainfall over the country. The focus of weather tracks may be towards northern side.

- Most of the set of dynamical and statistical model predictions neutral conditions for the Aug-Sep-Oct (ASO). During late June and early July, 2013 predicted neutral ENSO conditions, although a few (mainly statistical) models indicate borderline or weak La Nina conditions for northern summer and later, and a few dynamical models call for borderline El Nino conditions developing during the second half of 2013. In the most recent week, the SST anomaly in the Nino3.4 region was -0.4C. Data source:  
[http://iri.columbia.edu/climate/ENSO/currentinfo/SST\\_table.html](http://iri.columbia.edu/climate/ENSO/currentinfo/SST_table.html)

Probability outlook: La Nina (29%), Neutral (67%) and El Nino (04 %) during Aug-Sep-Oct season

- Arabian Sea Surface Temperatures are normal.
- Caspian Sea surface temperatures are above normal.
- Mediterranean Sea surface temperatures are normal to slightly above normal.
- Bay of Bengal Sea Surface Temperatures are normal.

Probability outlook: Sea Surface Temperature trend is going towards normal leads to normal rainfall over the region and below than normal over Bangladesh and eastern coast of India

**Seasonal Weather Outlook Summary ( Aug- Oct 2013)**

Synthesis of the latest model forecasts for Aug-Oct, 2013 (ASO), current synoptic situation and regional weather expert's judgment indicates that normal rainfall is expected all over the country with normal during August. However, slightly normal rainfall is expected during September and normal during October. The slightly above normal temperature is likely to occur in the all over the country during predicted period. Temperature will be higher over central parts of the country including south Punjab, North Eastern Baluchistan, upper Sindh and southern KP from surroundings. Neutral-ENSO condition is expected to persist throughout the predicted period.

**Weather outlook**

***“Normal during August, above Normal during September and Slightly below normal during October”***

- I. Average ( $\pm 10\%$ ) rainfall is expected during predicted season 2013.
- II. Intensity and frequency of monsoon will be normal during August. It will increase gradually during September over central parts of the country. However, during last phase (October) slightly below normal rainfall will be occurred over plan areas of Punjab and Sind.
- III. The focus of monsoonal weather systems during August will be towards central and Upper Punjab, KP and Kashmir. However, more monsoonal rains are expected over Sind and lower Punjab during September.
- V. Influence of western disturbances over Baluchistan will dominate during whole predicted season.
- VI. Expected Maximum day temperature will be slightly above normal all over the country during the season. In August, above normal temperature is likely to prevail all over the country with highest over central parts of the country including North east Baluchistan, south Punjab and upper Sind. Day temperature will drop below than normal over extreme northern parts of the country during September, while still become above normal over southern parts of the country.
- VII. Flash flooding over foot hills of the Sulaiman ranges can not be ignored during last phase (September) of monsoon
- VIII. No thread of meteorological drought over Baluchistan during current season
- IX. Maximum day temperature will be on higher side during last phase of summer season (Aug-Sep) from the normal throughout the country.

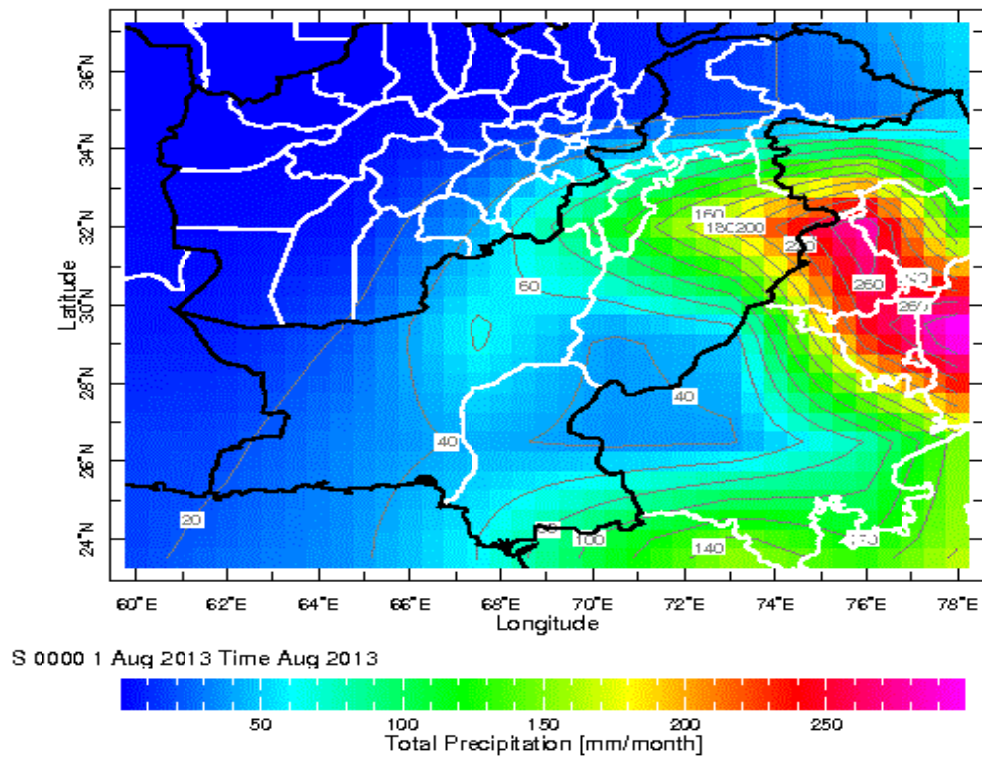
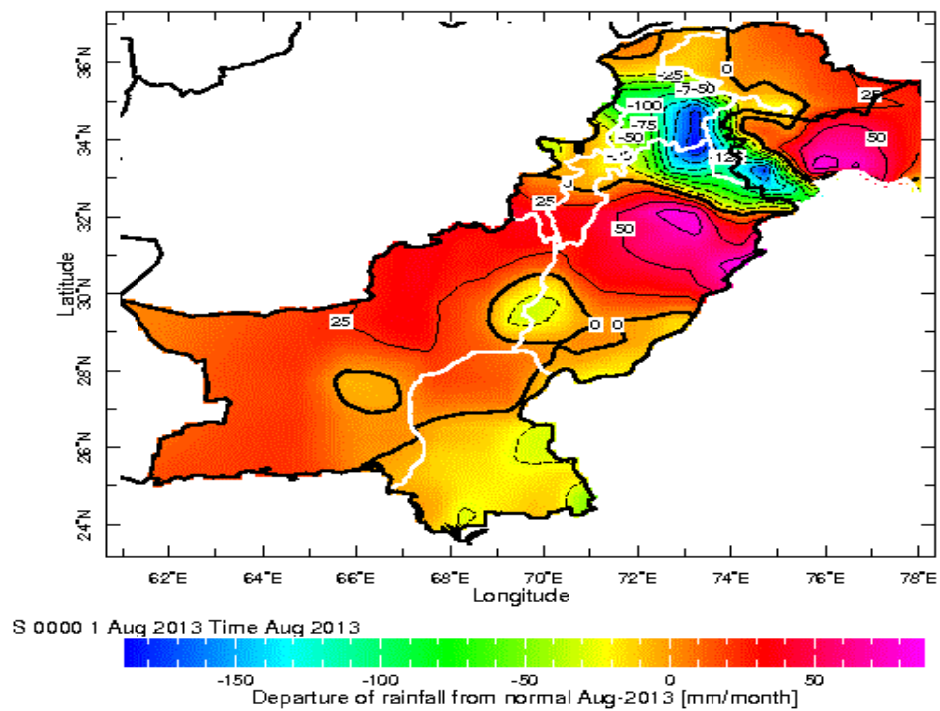
**Monthly Quantitative Weather Forecast**

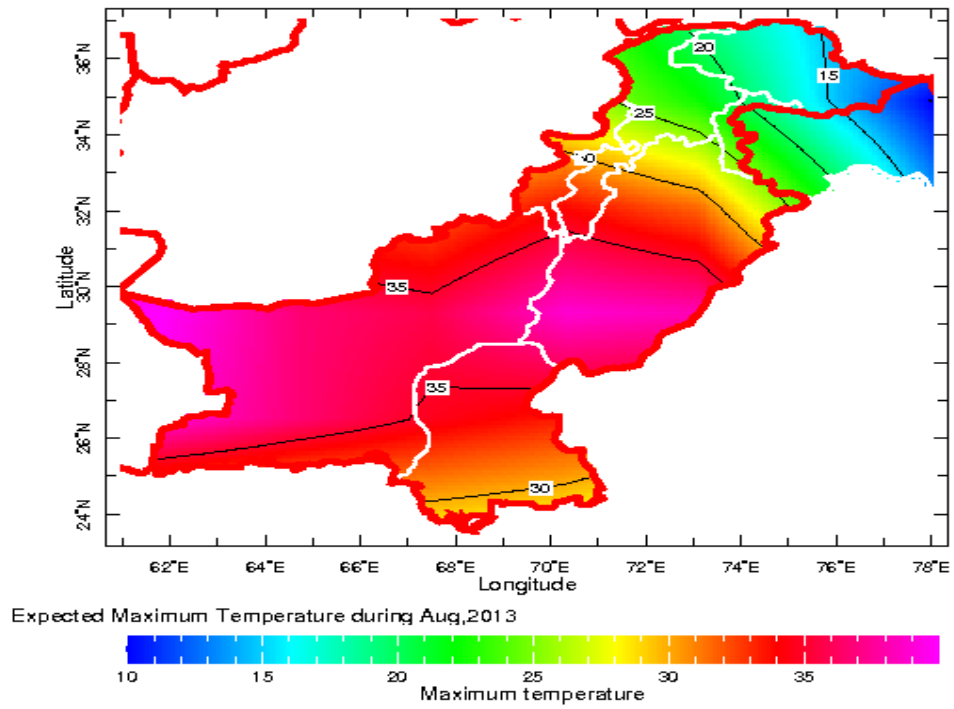
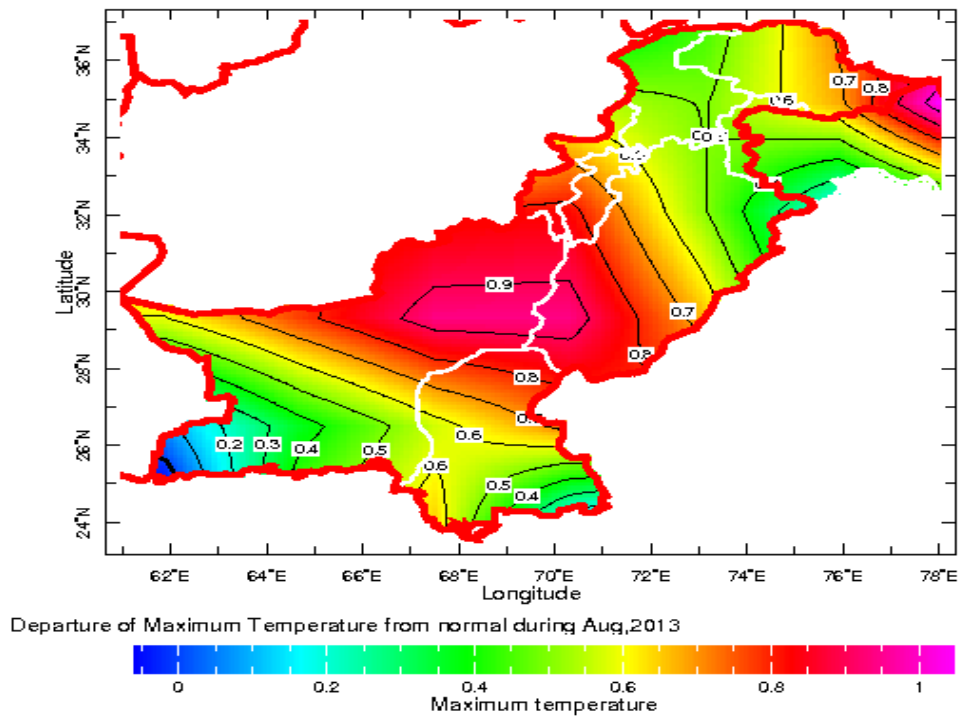
	Aug, 2013		Sep, 2013		Oct, 2013		Aug-Oct, 2013	
	ave	exp	ave	exp	ave	exp	ave	exp
<b>GB</b>	16.8	Abv. Ave	12.4	Abv. Ave	9.6	Abv. Ave	38.8	Abv. Ave
<b>KP</b>	92.5	Blw. Ave	42.7	Blw. Ave	23.9	Blw. Ave	159.1	Blw. Ave
<b>AJK</b>	160.7	Blw. Ave	70.9	Blw. Ave	31.7	Blw. Ave	263.3	Blw. Ave
<b>FATA</b>	67.0	Ave	29.7	Abv. Ave	13.2	Blw. Ave	109.9	Ave
<b>PUNJAB</b>	96.1	Ave	36.8	Abv. Ave	8.4	Blw. Ave	141.3	Ave
<b>BALUCHISTAN</b>	22.2	Abv. Ave	4.8	Abv. Ave	3.7	Blw. Ave	30.7	Abv. Ave
<b>SIND</b>	60.2	Ave	20.2	Abv. Ave	4.5	Ave	84.9	Ave
<b>Precipitation is in mm/month</b>								
<b>Pakistan</b>	<b>54.5</b>	Ave	<b>20.3</b>	Abv. Ave	<b>7.8</b>	Blw. Ave	<b>82.6</b>	Ave

- *Below Average (Blw. Ave) < -10 %*,
- *Average precipitation range (Ave) = -10 to +10 %*,
- *Above Average (Abv.Ave) > +10 %*

*Note: Average precipitation is computed by using Global Precipitation Climatology Centre (GPCC) gridded data by resolution (0.5x0.5°) latitude by longitude. Ensembles of different climate models are used for computation of expected precipitation over the region.*



**Spatial distribution of expected rainfall during Aug, 2013 (GCM-ECHAM)****Monthly departure from normal (Rainfall) during Aug, 2013**

**Spatial distribution of expected maximum temperature during Aug, 2013****Monthly departure from normal (Maximum Temperature) during Aug, 2013**

## محکمہ موسمیات، اسلام آباد

### اگست 2013ء میں کاشتکاروں کے لئے زرعی موسمیاتی مشورے

ماہ جولائی پاکستان میں مون سون بارشوں کے آغاز کا مہینہ ہوتا ہے۔ اس ماہ میں بارشیں زیادہ ہوتی ہیں جو زمینی کٹاؤ کا باعث بنتی ہیں اس سال ماہ جولائی میں اچھی بارشیں ریکارڈ کی گئی۔ جولائی کے مہینے میں ہوائیں ٹی کی مقدار زیادہ ہونے سے جس کی صورت حال رہتی ہے۔ اس لئے یہ مہینہ دشوار ترین مہینہ ہوتا ہے۔ ملک کے زیادہ تر حصوں میں اس مہینے وقفہ وقفہ سے مون سون کی بارشوں کا سلسلہ جاری رہنے کا امکان ہے۔ جس سے پانی کے ذخائر بہتر ہو سکتے ہیں۔ اس صورت حال کو مد نظر رکھتے ہوئے مندرجہ ذیل تجاویز کاشتکار بھائیوں کیلئے پیش خدمت ہیں۔

- ۱۔ فصل کی پوائی سے پہلے زمین کو زیادہ سے زیادہ ہموار کرنے کی کوشش کریں کیونکہ ڈھلوان سطحوں سے پانی زیادہ تیزی سے بہتا ہے۔
- ۲۔ موسم برسات میں زمینوں میں ممکنہ حد تک ٹل نہ چلائیں اور کاشت شدہ کھیتوں میں گوڑی کرنے سے اجتناب کریں کیونکہ چلی زمین کی مٹی پانی سے با آسانی بہہ جاتی ہے۔ جس کی وجہ سے اوپر زرخیز مٹی کی تہ بہہ جاتی ہے جس سے پودے اپنی خوراک حاصل کرتے ہیں۔ اس کا یہ ہرگز مطلب نہیں کہ فصلوں سے جڑی بوٹیوں کو تلف نہ کیا جائے بلکہ زمین کی سطح کی کم سے کم چھدائی کی جائے۔
- ۳۔ اپنے کھیتوں کی وٹ بندی پر آگئی ہوئی گھاس کو اس موسم میں ہرگز نہ کاٹیں کیونکہ یہ پانی کے بہاؤ کے ساتھ مٹی کے بہاؤ کو روکنے میں مدد دیتی ہے۔
- ۴۔ مون سون کے مہینوں میں بارانی علاقوں کے کسان اپنی زمینوں کے بند کو مضبوط بنائیں تاکہ زیادہ سے زیادہ پانی زمین میں جذب ہو کر آئندہ فصل کے لئے استعمال میں لایا جاسکے اور اگر ممکن ہو سکے تو پانی کیلئے تالاب بنائے جائے تاکہ پانی کو موشیوں کیلئے استعمال کر سکیں۔
- ۵۔ کپاس کی کاشت والے علاقوں میں زمینوں سے بارش کے دوران اضافی پانی نکال لیں جو کہ فصل کیلئے نقصان دہ ثابت ہو سکتا ہے۔
- ۶۔ یہ مہینہ زیادہ درجہ حرارت اور نمی کی وجہ سے کپاس، کماد اور مکئی وغیرہ کی فصلوں پر نقصان دہ کیڑوں کے حملوں کیلئے بہت معاون ہے۔ اسلئے کسان حضرات مسلسل اپنی فصلوں پر نظر رکھیں اور کسی بھی حملے کی صورت میں بروقت مناسب زہر پاشی کریں۔
- ۷۔ اپنی تمام تر کھیتی باڑی موکی پیٹنگویوں کے مطابق کریں۔ موکی پیٹنگویوں کے سلسلے میں اخبار، ریڈیو، ٹیلی ویژن سے مربوط رہیں اور اگر کوئی زرعی موسمیاتی مسئلہ درپیش ہو تو ہمارے مندرجہ ذیل دفاتر سے آپ بخوبی مدد حاصل کر سکتے ہیں۔

۱۔ محکمہ موسمیات، نیشنل ایگرو میٹ سنٹر، پی۔ او۔ کس نمبر 1214، بیکراچ ایٹ ٹو، اسلام آباد۔ فون نمبر: 051-9250299

۲۔ محکمہ موسمیات، نیشنل فورکا سٹنگ سنٹر برائے زراعت، پی۔ او۔ کس، 1214، بیکراچ ایٹ ٹو، اسلام آباد۔ فون نمبر: 051-9250364

۳۔ محکمہ موسمیات، رینجیل ایگرو میٹ سنٹر، نزد دارانی یونیورسٹی، مری روڈ، راولپنڈی۔ فون نمبر: 051-9290635

۴۔ محکمہ موسمیات، رینجیل ایگرو میٹ سنٹر، ایوب ریسرچ انشٹیٹیوٹ، جھنگ روڈ، فیصل آباد۔ فون نمبر: 041-2657047

۵۔ محکمہ موسمیات، رینجیل ایگرو میٹ سنٹر، ایگرنیکلچر ریسرچ انشٹیٹیوٹ، شندو جام۔ فون نمبر: 0222-766583

۶۔ محکمہ موسمیات، رینجیل ایگرو میٹ سنٹر، ایگرنیکلچر ریسرچ انشٹیٹیوٹ، سریاب روڈ، کوئٹہ۔ فون نمبر: 081-9211211

## کما د (گنے) کی فصل پر موسم سے متعلق اثر انداز ہونے والے اہم عوامل

کما د پاکستان کی اہم ترین فصل ہے۔ پاکستان زیر کاشت رقبہ کے لحاظ سے دنیا میں پانچویں نمبر پر کھل پیداوار کے لحاظ سے گیارہویں نمبر پر اور فی ایکڑ پیداوار کے لحاظ سے 60 ویں نمبر پر ہے۔ کما د سفید چینی اور گوبیٹا کا اہم زریعہ ہے۔ اس کے علاوہ تقریباً 100 کے قریب دوسری کارآمد اشیاء بھی اس سے بنتے ہیں۔ پاکستان میں کما د پنجاب، سندھ اور خیبر پختونخواہ میں خریفہ کے فصل کے طور پر کاشت ہوتا ہے۔ کما د کی فی ایکڑ پیداوار ملک میں 480 من کے لگ بھگ ہے۔ جبکہ ہمارے ملک کے ترقی پسند کاشتکار گنے کی فی ایکڑ 1000 من سے زیادہ حاصل کر رہے ہیں۔ گنے کی پیداوار میں کمی کئی بے بسی کے بنیادی وجوہات میں مناسب زمین کا انتخاب اور تیاری، مناسب بیج اور شیخ، مناسب اور بروقت طریقہ کاشت، بروقت اور مناسب کھاد کا استعمال، مناسب مقدار اور گنے کے اوپر حملہ آور ہونے والے کیڑوں اور دوسرے بیماریوں کا بروقت تدارک، نئی فصل اور موڈی فصل (ratoun crop) کے مختلف ضروریات کی مطابق نگہداشت بروقت کٹائی اور مل تک ترسیل، نہری پانی کیساتھ مناسب وقفوں کیساتھ بارشیں، طوفانی ہوائیں، خشک سالی وغیرہ شامل ہیں۔ گنے کی بہترین نشوونما کیلئے سب سے موزوں آب و ہوا گرم مرطوب ہے اسلئے یہ دنیا کے ان علاقوں میں کاشت ہوتا ہے جہاں بیشتر نشوونما کے دوران آب و ہوا گرم مرطوب ہو اور زمین میں نمی کی اچھی مقدار موجود ہو۔ جبکہ کٹائی کے دوران خشک اور نسبتاً کم درجہ حرارت درکار ہوتی ہے تاکہ گنے میں مٹھاس (Sugar) زیادہ سے زیادہ موجود ہو۔

1۔ کما د کے پودے میں 73-75 فیصد پانی ہوتا ہے۔ اس لئے پودے کو پانی کی ضرورت بہت زیادہ ہے۔ کما د کو کاشت کرنے کے لئے ایسے زمین کا انتخاب کرنا چاہئے جس میں پانی جذب کرنے کی صلاحیت زیادہ ہو۔ کلراور تھورزہ زمین پر گنے کی کاشت نہ کرے۔ اسلئے پنجاب، سندھ اور خیبر پختونخواہ کے وہ زرعی علاقے جہاں آبپاشی کیلئے پانی دستیاب ہے وہ کما د کی کاشت کیلئے موزوں ہیں۔

2۔ پاکستان میں گنے کی کاشت زیادہ تر ستمبر-اکتوبر (موسم خزاں) اور فروری-مارچ (موسم بہار) میں ہوتی ہے۔ پیداوار کے لحاظ سے موسم خزاں کی کاشت موسم بہار کے مقابلے میں بہتر ہے۔ جبکہ خیبر پختونخواہ میں کاشت اکتوبر-نیک مکمل کرنی چاہیے اس لئے کہ ستمبر اور اکتوبر کے کاشت والی فصل کم موزوں آب و ہوا میسر آ جاتی ہیں۔ دیر سے کاشت کرنے پر کھل پیداوار 30 فیصد تک کم ہو سکتی ہے۔ اسلئے دیر سے کاشت کرنے والی فصل کو مناسب آب و ہوا دستیاب نہیں ہوتی۔

3۔ دوسرے فصلوں کی طرح کما د کے پیداوار میں بھی 25 فیصد تک کی زائد جڑی بوٹیوں کی وجہ سے واقع ہوتی ہے۔ اس لئے کیمیائی یا غیر کیمیائی طریقوں سے جڑی بوٹیوں کو بروقت تلف کیا جائے تاکہ فصل سے پانی اور دوسرے غذائی اجزاء کا زیاں ختم ہو۔ مون سون کے بارشوں کے دوران خصوصاً کما د کے کھیتوں میں جڑی بوٹیوں کی بہتات ہو جاتی ہے جس کی بروقت روک تھام ضروری ہے تاکہ فصل کی نشوونما متاثر نہ ہو۔ مون سون سے پہلے ہی فصل کو Lodging سے بچانے کیلئے بروقت روایتی مواد محکمہ زراعت کے مشوروں کی مطابق احتیاطی تدابیر کرنی چاہیے۔ اسلئے کہ Lodging کما د کی پیداوار کم کرنے میں سب سے زیادہ کردار ادا کرتا ہے خصوصاً وہ علاقہ جہاں مون سون کی بارشیں زیادہ ہوں

4۔ کما د کے فصل کو 1500 سے 2000 mm پانی کی ضرورت ہوتی ہے۔ جو کہ 15 سے 20 دفعہ پانی دینے سے پورا ہوتا ہے۔ فصل کو پانی کی سب سے زیادہ ضرورت مون سون سے پہلے مئی اور جون کے مہینے میں ہوتی ہے۔ پانی کے کمی کی وجہ سے کما د کے پودے کا سائز کم رہ جاتا ہے اور پورا وقت سے پہلے پختگی (mature stage) کے مراحل طے کر لیتا ہے تاکہ ہم زائد پانی کیساتھ ساتھ لگ مون سون کی بارشیں ہو جائیں تو فصل میں زائد جڑی بوٹیوں کی بہتات ہو جاتی ہے اور نقصان دہ کیڑوں کے حملوں کا خدشہ بھی رہتا ہے۔ عام طور پر مارچ اپریل میں 10-12 دن کے بعد، مئی جون میں 8/9 دن کے بعد جولائی اگست میں (اگر بارشیں ہوں) 12-14 دن کے بعد، ستمبر اکتوبر میں 13-20 دن کے بعد اور نومبر دسمبر میں 25-30 دن کے بعد پانی دینا چاہیے، فصل کے کٹائی سے تقریباً ایک مہینہ پہلے پانی دینا بند کرنا چاہیے لیکن فصل کے جس حصے کو آئندہ بیج کیلئے رکھنا ہو انھیں پانی دینا چاہیے تاکہ دسمبر میں (Frost) کھورے سے نقصان نہ پہنچے۔ مون سون کے درمیان بہت صحت مند فصل کو پانی دینے میں احتیاط سے کام لیں تاکہ فصل (Lodging) گرجانے سے محفوظ رہے۔ مون سون سے پہلے ہی فصل کی Lodging سے بچانے کیلئے بروقت روایتی اور محکمہ زراعت کے مشوروں کی مطابق احتیاطی تدابیر کرنی چاہیے۔ اسلئے کہ Lodging کما د کی پیداوار کم کرنے میں سب سے زیادہ کردار ادا کرتا ہے خصوصاً وہ علاقہ جہاں مون سون کی بارشیں زیادہ ہوں۔

5۔ فصل کی کٹائی کاشت کے حساب سے ہونی چاہیے۔ کھیتی فصل (Early Sown) اور موڈی فصل کی کٹائی نومبر، درمیانی فصل کی کٹائی دسمبر اور پختہ فصل کی کٹائی جنوری میں شروع کر دیں۔ فروری مارچ میں کٹائی گئی فصل موڈی فصل (Ratoon Crop) کیلئے سب سے زیادہ موزوں ہے۔