Monthly Agromet Bulletin
National Agromet Centre
Pakistan Meteorological Department Islamabad

Vol: 10-2014 **OCTOBER, 2014**

Highlights…

- Above normal rains were reported in KP, Potohar region, Sargodha in central Punjab and Multan in southern Punjab and Gilgit in GB region. Whereas below normal rains were reported in most parts of central/southern Punjab, Sindh, Baluchistan and Skardu in GB region.
- Thermal regime in this month remained normal to above normal by 1-2°C in most agricultural plains of the country.
- ETo observed above normal and R.H mostly remained below normal in the agricultural plains of the country.
- Agricultural soils showed mostly normal to cooler trend in the country.
- Spraying of chemicals on cotton and picking/harvesting of early grown verities of cotton, rice and maize were the major field operations in most of the agricultural areas of the country during the month. Farmers have started land preparation and sowing of Rabi crops especially on fallow lands.
- Farmers are advised to cultivate Rabi crops well in time so that soil moisture stored due to monsoon rains up to this month may be fully utilized. The most suitable dead line for sowing wheat crop is 15 November. Sowing after this date causes significant drop in the yield.

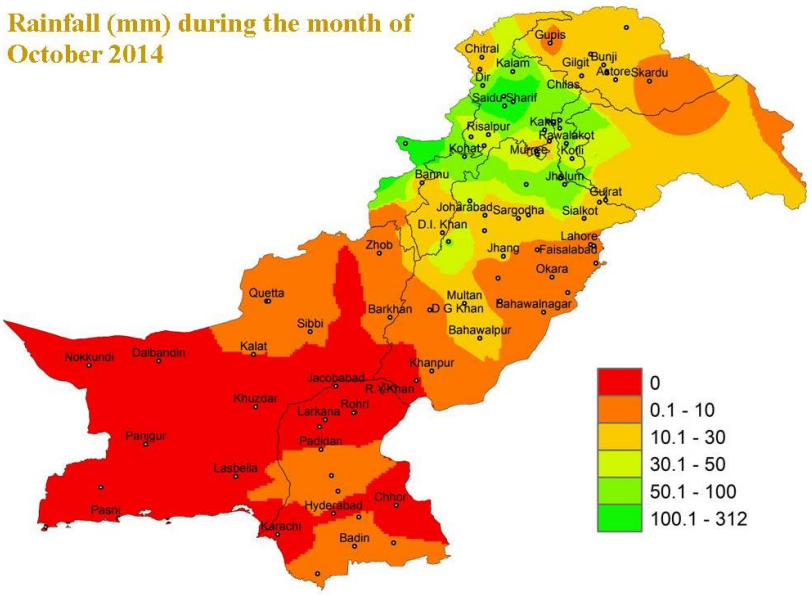
Contents

Pattern-in-Chief: **Hazrat Mir**, Director General,
Editor-in-Chief: **Dr. Khalid M Malik**, Director,
Editor: **Muhammad Ayaz**, Meteorologist
Published by: National AgrometCenter (NAMC)
P.O.Box:1214, Sector: H-8/2, Islamabad, PAKISTAN
Tel: +92-51-9250592, **Fax:** +92-51-9250362Email: dirnamc@yahoo.com Website: www.pmd.gov.pk

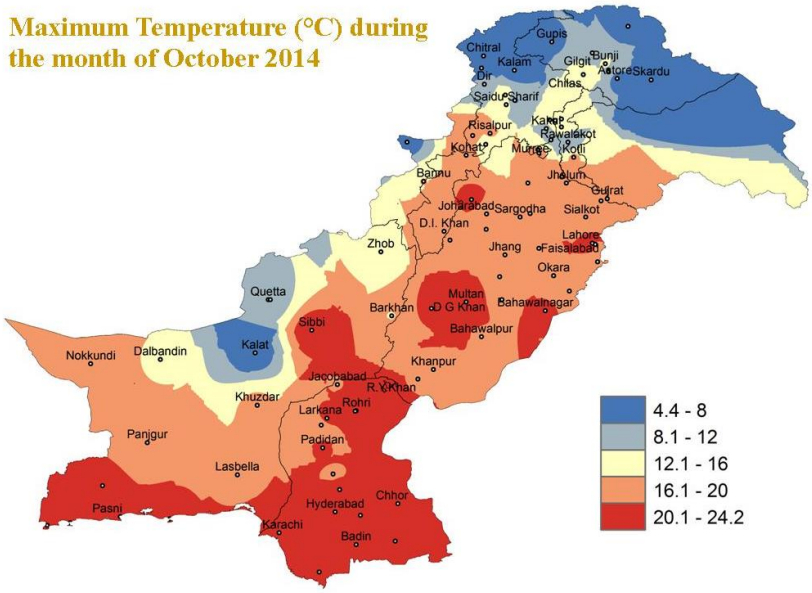
EXPLANATORY NOTE

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 remains from April/May to October/November and Rabi season from November to April. Mean Daily Maximum Temperature images are included in summer and 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. Dotted line **(---)** means missing data. Solar radiation intensities are computed from sunshine duration using co-efficients developed by Pakistan Meteorological Department.

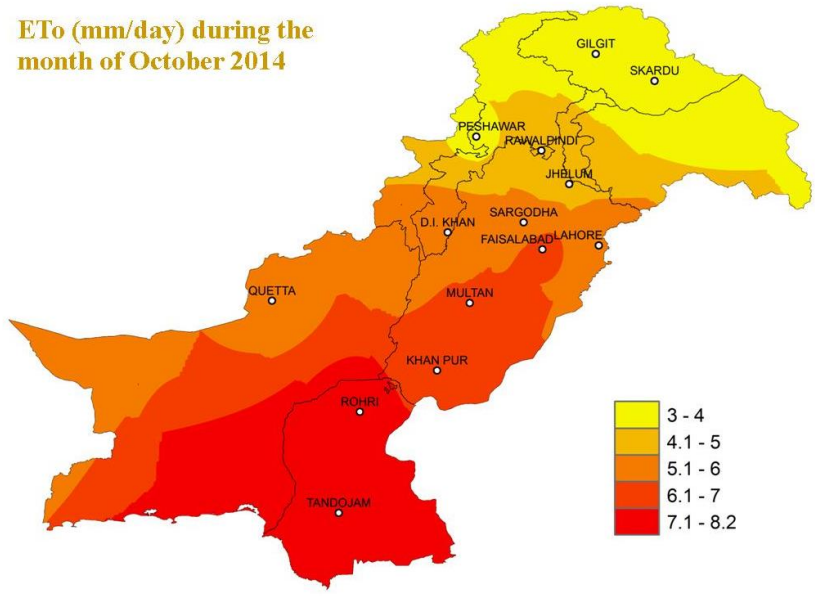
Rainfall (mm) during the month of October 2014



Maximum Temperature (°C) during the month of October 2014



ETo (mm/day) during the month of October 2014



Crop Report during October, 2014

Picking/harvesting of early grown verities of cotton, rice and maize were the major field operations in most of the agricultural areas of the country during the month. Farmers have started land preparation and sowing of Rabi crops especially on fallow lands.

In Punjab:

Major Field crops in Punjab were cotton, rice and sugarcane. Picking of cotton crop is in full swing. Attack of sucking pests like thrips, jassid and white fly was reported in some parts of Bahawalpur, D.G.Khan, Multan, Sahiwal and Faisalabad division. Light attacks of CLCV and Mealy bug has been reported at a few places. Harvesting of rice variety "irri" is in full swing. The basmati crop is heading towards maturity. Crop condition is reported satisfactory and better average yield is expected as compared to last year. The growth and development of sugarcane crop reported satisfactory. Mild attack of leaf roller has been observed at Faisalabad, Lahore and Sahiwal divisions. The crushing of cane for making 'gur' is reported to have been started at places in Bahwalpur and Rahimyar Khan Districts. Mild attack of top borer is reported on Ratoon crop in Rajanpur district. Condition of maize crop is normal and the harvesting at some areas has been started. Land preparation/Sowing of wheat, masoor and gram is in progress especially in rainfed areas of the province.

In Sindh:

Picking/harvesting of cotton crop has been almost completed. Condition of rice crop is observed satisfactory. Harvesting of the crop is in progress. Sugarcane crop is reported in good condition and harvesting of early sown crop is started. Sowing of wheat crop was started during the month in some areas. Condition of oilseed crops like caster and sesame is reported well. Caster is reported to be at maturity stage and harvesting of sesame is in progress. Rape mastered is in germination stage. Sunflower is growing at seed setting stage. Biofuel crop Jtropha is at flowering stage. Seasonal fruits are reported at good condition. Cheeko, bananas and other orchards are reported at flowering stage. Some of the early grown winter vegetables are at mature stage and are now available in the market.

In Khyber Pakhtunkhawa:

Crushing of the early grown sugarcane crop has been started in Charsadda and Mardan districts. Large scale crushing of the crop will take place in the months of January and February.hailstorm/heavy rains have severely damaged/paralyzed standing crops like sugarcane in plain areas of Mardan, Sawabi districts during the month. Cultivation of canola crop has already been completed during the month. Harvesting of rice crop has started in the province. Harvesting and threshing of early growing verities of maize crop has almost completed in plain areas and is in progress in upper hilly areas of the province. However late growing varieties are in the field. Overall condition of orchards is reported satisfactory except parts of District Mardan and Sawabi where hailstorm has damaged orchards. Sowing of gram in rainfed and irrigated areas has completed and land preparation is in progress for sowing of wheat crop is in progress. Sowing of winter vegetables was in progress during the month and germination/emergence of vegetables is reported satisfactory due satisfactory rains during the month. Picking of persimmon is in progress.

In Balochistan:

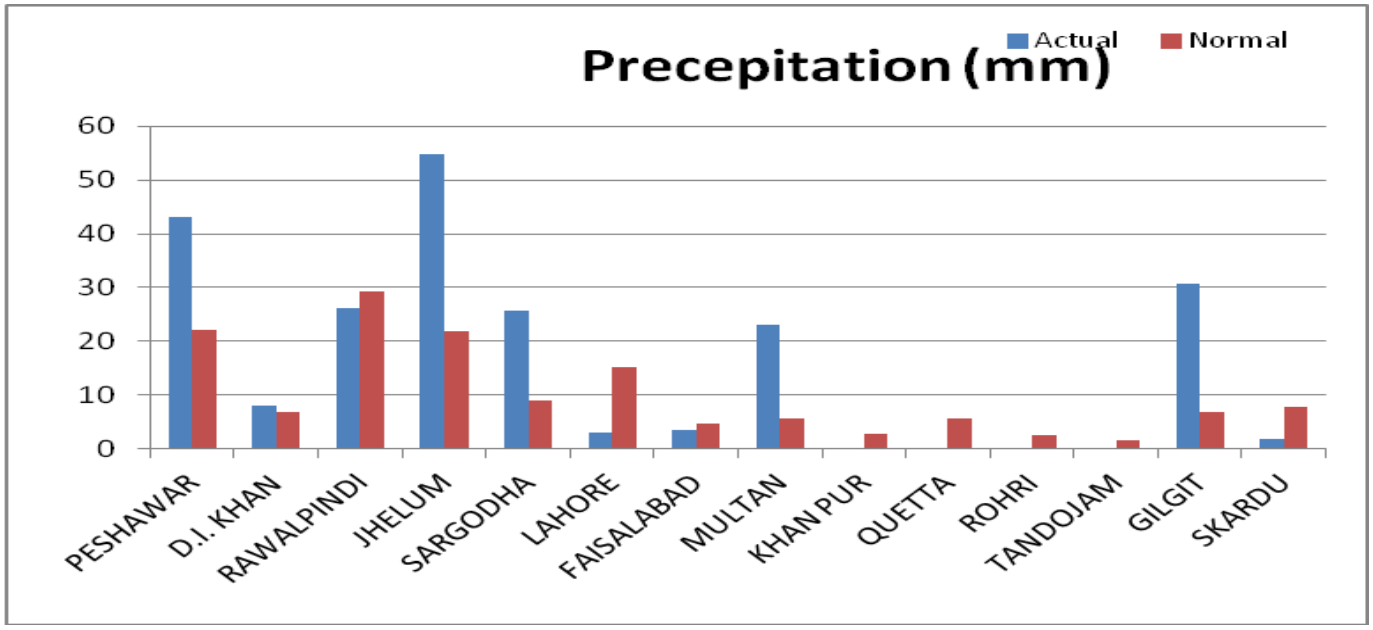
Condition of standing crops and orchards is reported satisfactory. All varieties of apples have developed color. Sowing of Rabi crops has been started. Winter vegetables reported in normal condition and are now available in the market.

In Gilgit Baltistan:

Harvesting of maize and red beans has almost been completed.

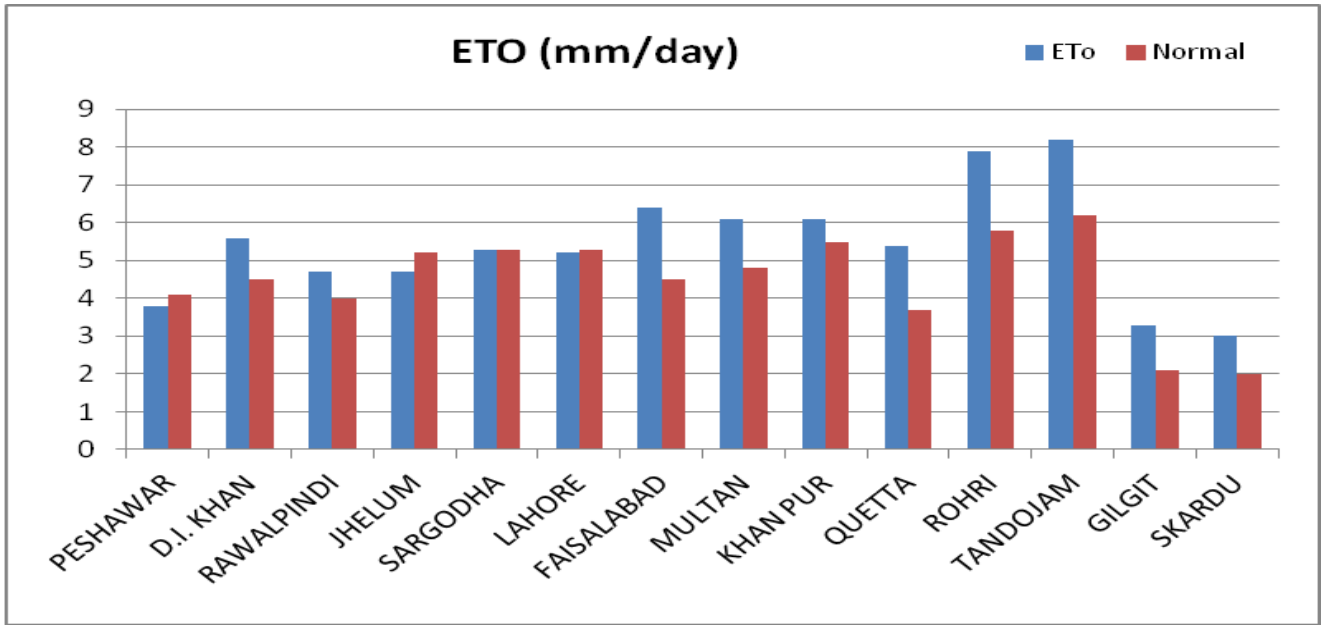
Moisture Regime during October, 2014

October is one of the driest months in the country. Monsoon weather systems completely retreat till the end of September and dry continental winds prevail in October over most of the agricultural plains. However during this October above normal rains were reported in KP, Potohar region, Sargodha in central Punjab and Multan in southern Punjab and Gilgit in GB region. Whereas below normal rains were reported in most parts of central/southern Punjab, Sindh, Balochistan and Skardu in GB region.

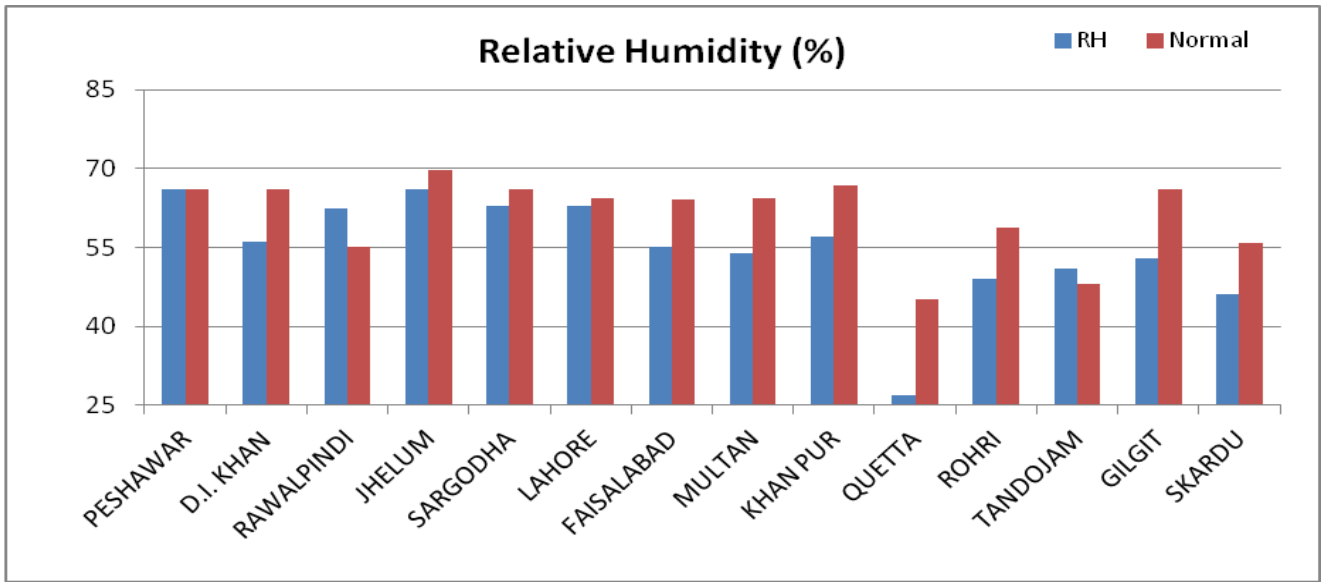


Highest rainfall recorded in the country was 313mm in Parachinar followed by 163mm in Lower Dir, 115mm in Malam Jabba and 101mm in Pattan.

The evaporative demand of the atmosphere represented by reference crop evapotranspiration (ETo) remained normal to above normal in most of the agricultural plains of the country. The highest value of ETo was estimated in Tandojam followed by Rohri in Sindh.



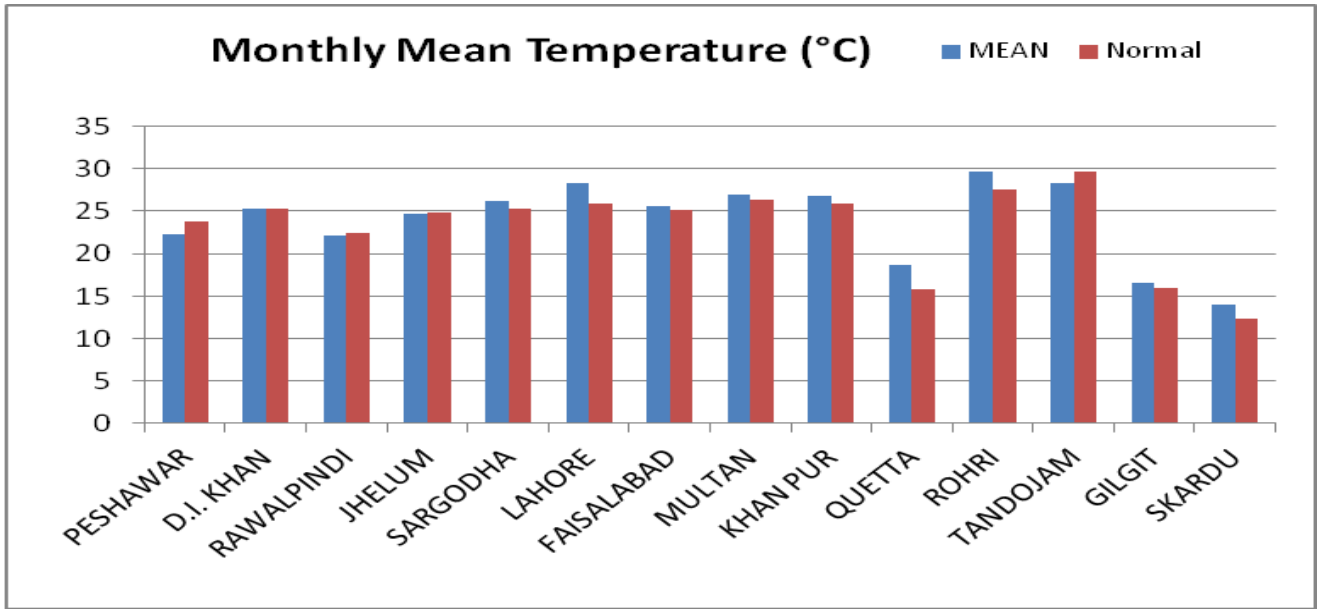
The mean daily Relative Humidity (R.H) remained normal to below normal in most of the agricultural plains of the country due to below normal rains/dry weather reported in most parts of the country. Maximum value of mean Relative humidity was observed 66% at Peshawar and Jhelum due to above normal rains in the area, while the minimum value was observed at Quetta due to its dry weather and its dry climate in this month. R.H>80% was observed for 2 days in Peshawar and Jhelum and for a single day in Sargodha, Tandojam and Gilgit. R.H<30% and Temperature > 35°was observed for a single day only at Multan.



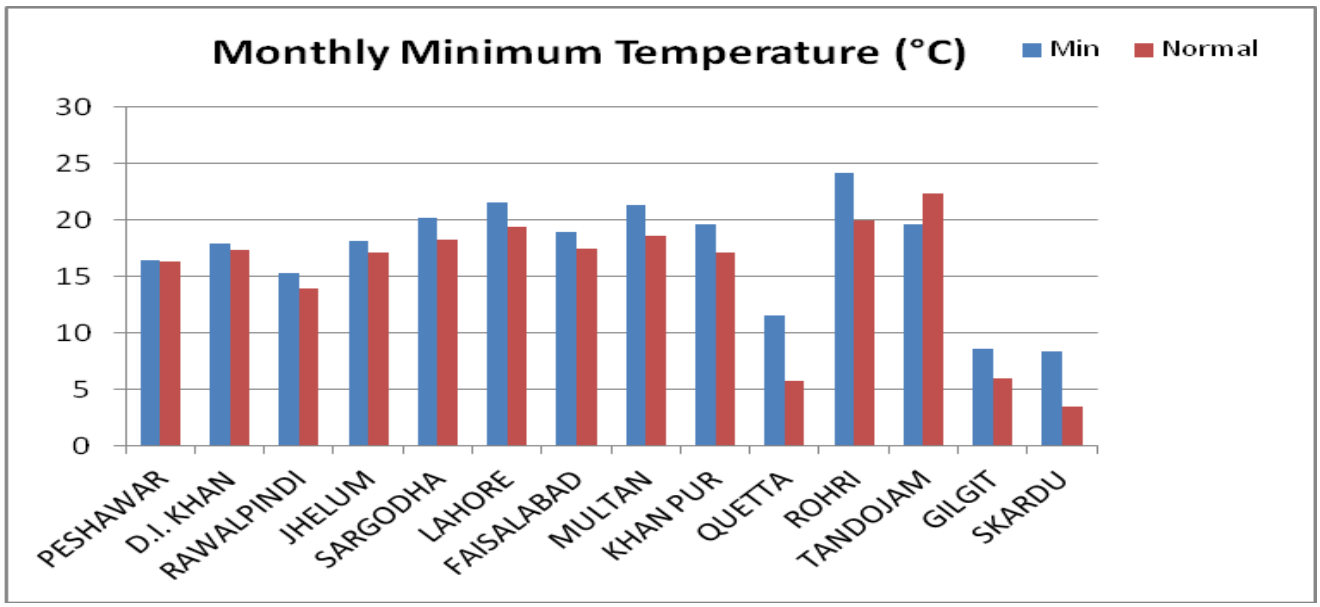
From overall analysis of this month it is evident that dry weather/clear skies were observed in different parts of the country during the month. However from overall analysis of monsoon season and current month, satisfactory rains have received during this season. Due to which moisture condition is mostly observed satisfactory for sowing and early growth for rabi crops in rainfed areas as well as irrigated agricultural plains of the country and no sever moisture stress persists in the agricultural plains.

Temperature Regime during October, 2014

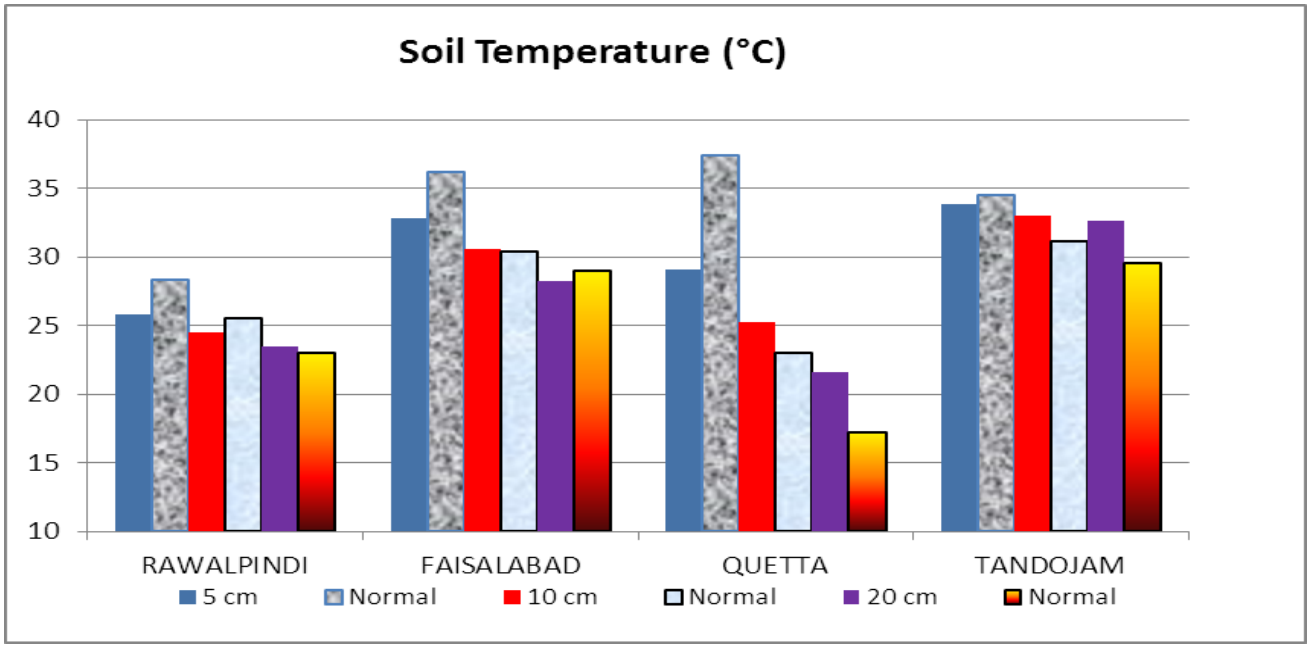
Temperature plays vital role in the growth and development of crops. Thermal regime in this month remained normal to above normal by 1-2°C in most agricultural plains of the country. The main reason for this trend is clear skies observed for most of the days over the agricultural plains. Mean daily temperature ranged 24 to 25°C in Khyber Pakhtunkhawa and Potohar plateau, 26 to 29°C in remaining parts of Punjab, 28 to 29°C in agricultural planes of Sindh, 14 to 16°C in Gilgit Baltistan region and it was observed 17°C in the high elevated agricultural plains of Balochistan represented by Quetta valley.



The night time temperature represented by mean minimum remained normal to above normal by 1- 4°C in most of the agricultural plains. The lowest minimum temperature was recorded -0.4°C at Kalam. Whereas highest maximum temperature was recorded 44.2°C at Chhor.



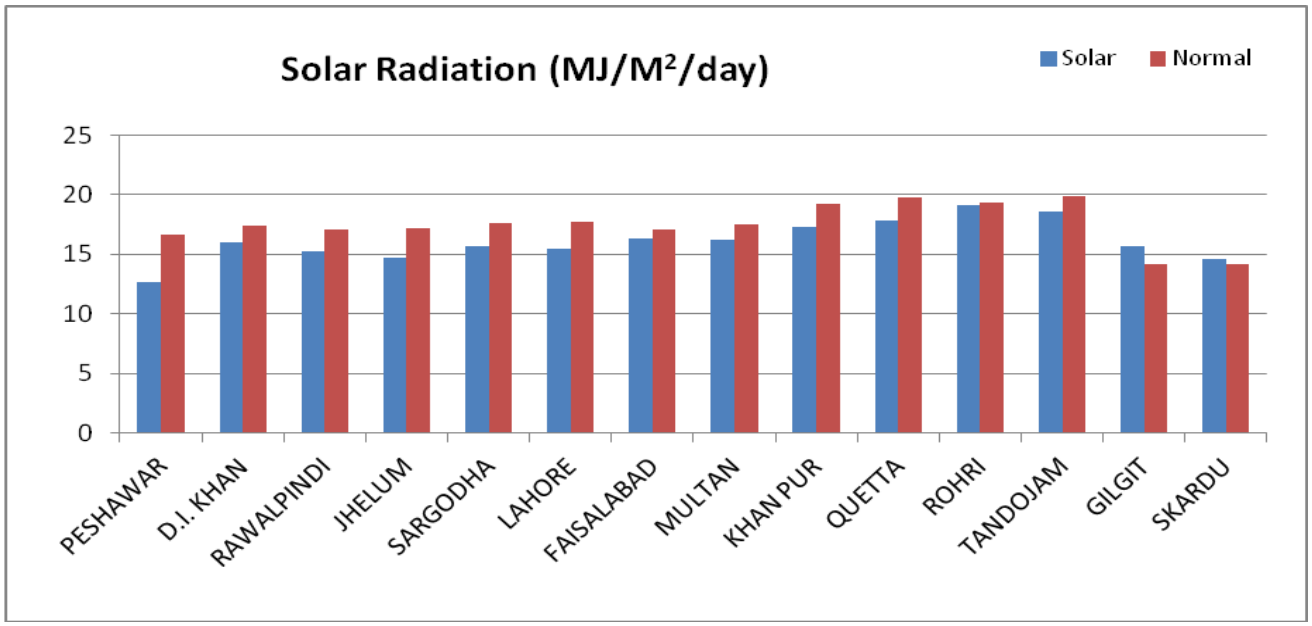
Agricultural soils showed normal to below normal trend in most of the agricultural plains of the country. In Quetta valley and Tandoma in lower Sindh, soil temperature observed below normal at shallow layers and observed slightly above normal in deep soils.

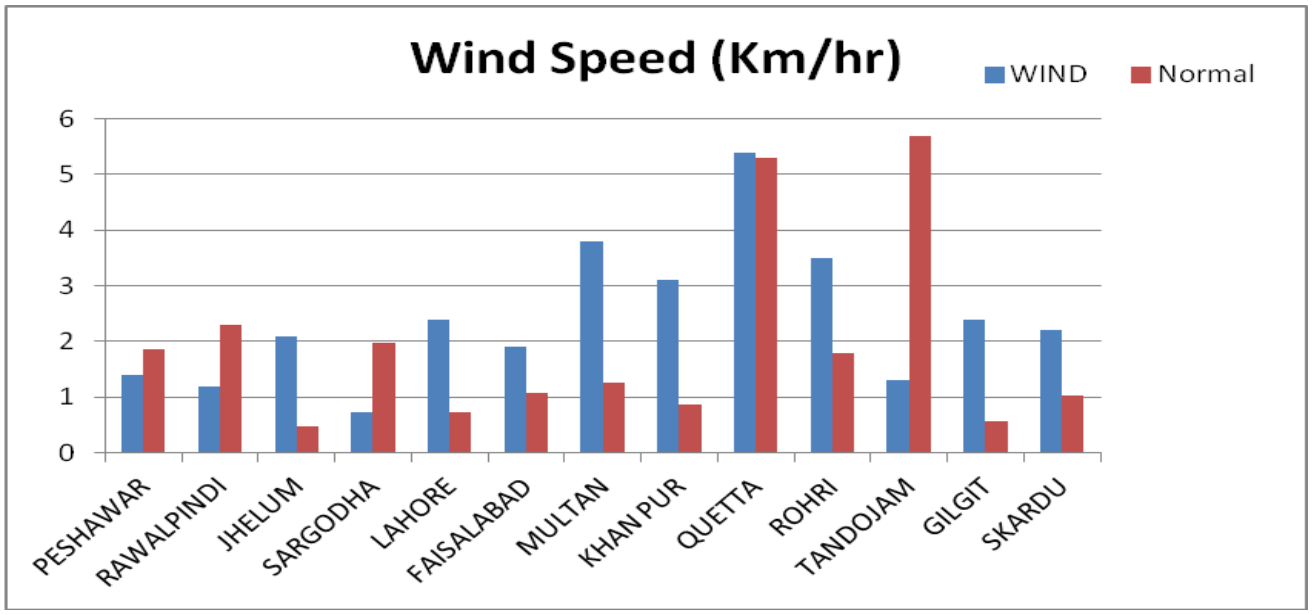


From the general analysis of atmosphere and soil behavior in this month, it is concluded that air temperature observed normal to above normal during the month. But due to good monsoon rains and satisfactory rainfall during October, moisture status is observed satisfactory in most of the agricultural plains of the the country. Therefore due to satisfactory monsoon rains, still satisfactory soil and atmospheric conditions exists for cultivation and early growth of Rabi crops especially in rainfed areas.

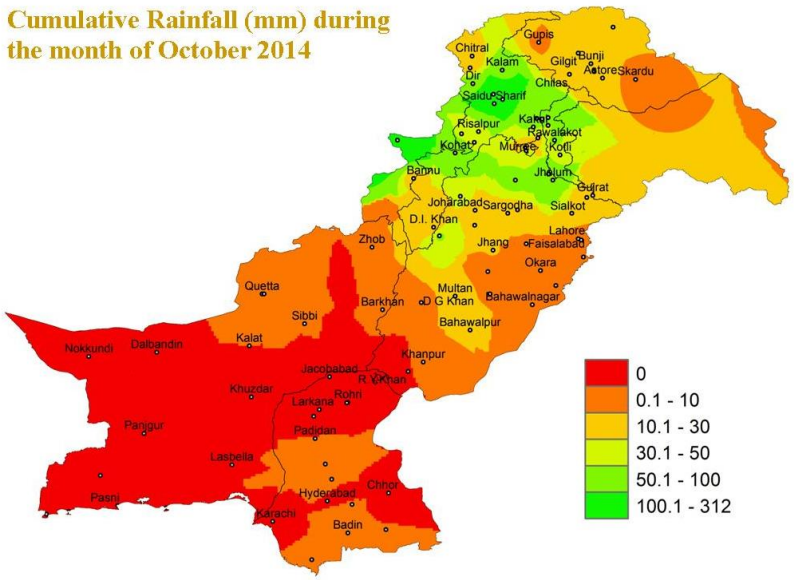
Solar Radiation and Wind Regime during October, 2014

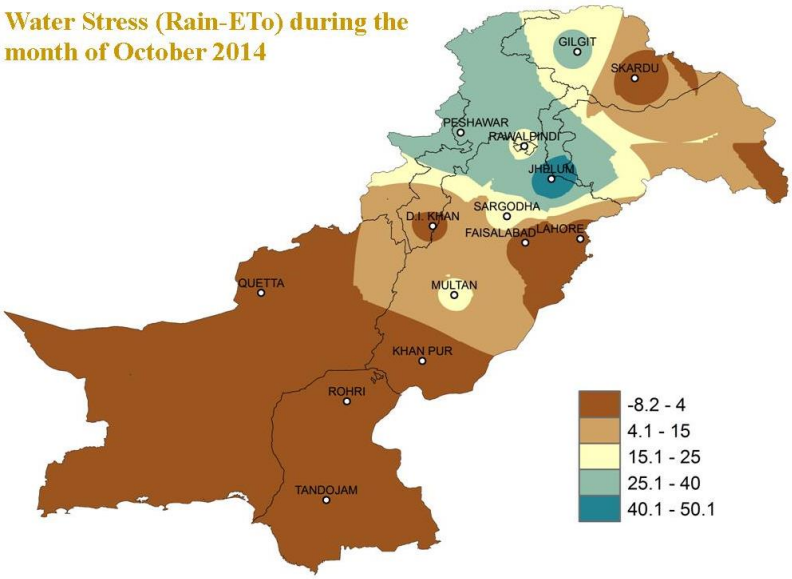
Total bright sunshine hours and solar radiation intensity remained mostly normal to below normal in most parts of the country. Mean wind speed throughout agricultural plains of the country ranged between 1 to 5 km/h with North-east to North-west and South trend. Maximum wind speed was observed 6 km/h in Quetta.

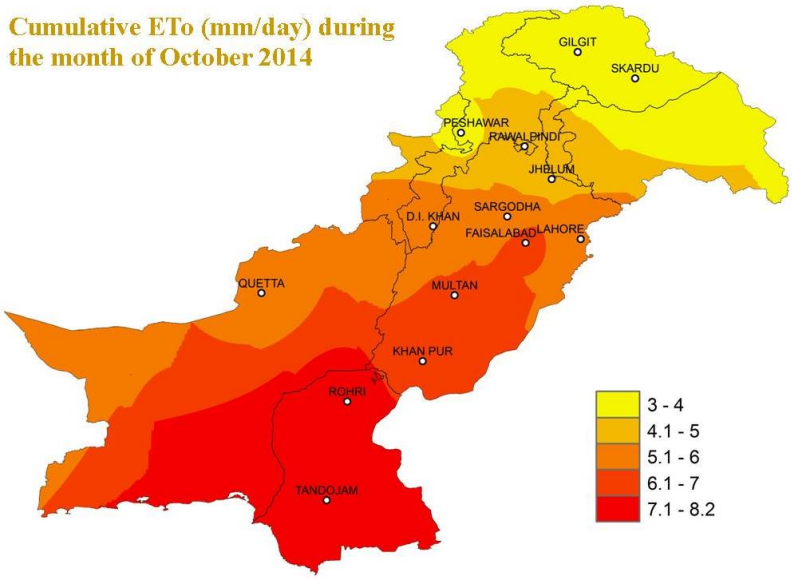




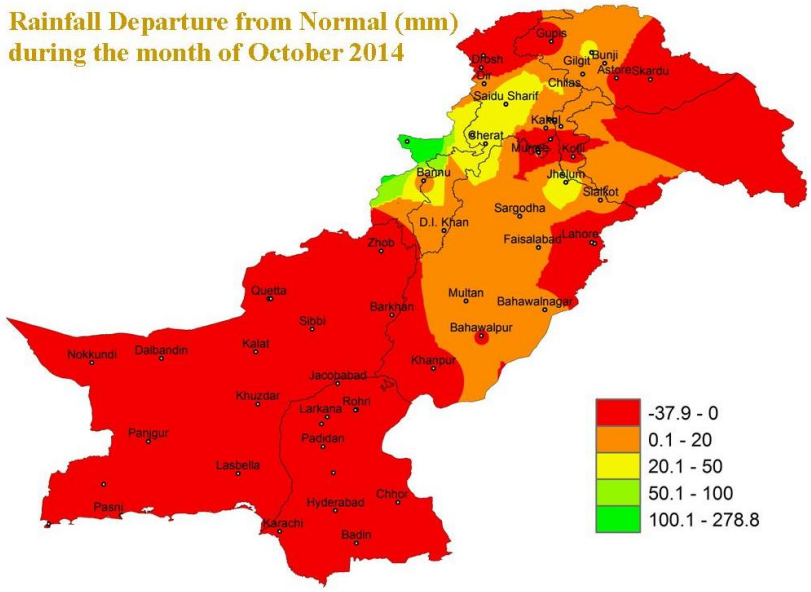
Comulative Rainfall, ETo and water stress for Rabi Season (October to April)



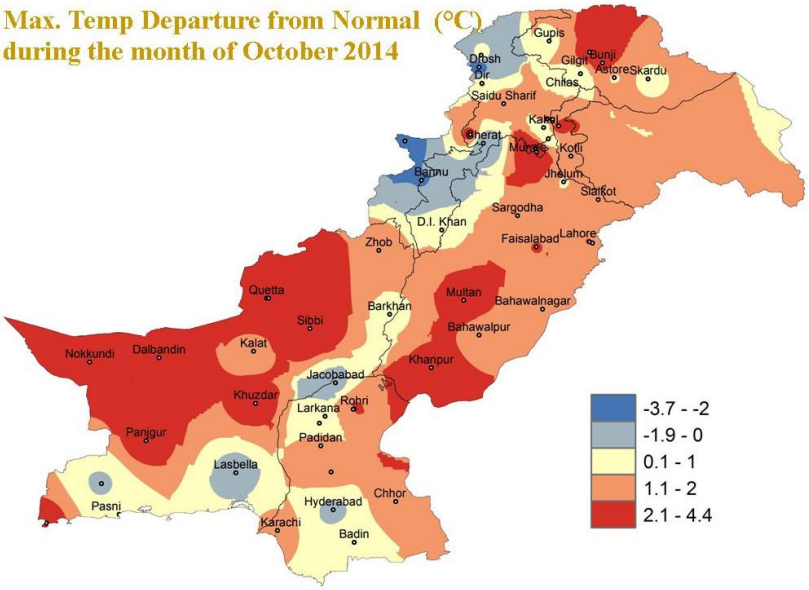




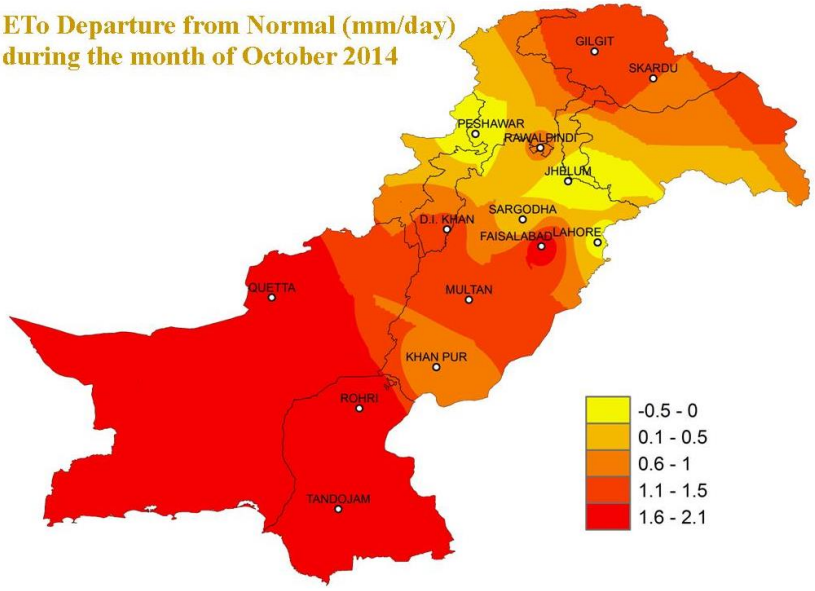
Rainfall Departure from Normal (mm) during the month of October 2014



Max. Temp Departure from Normal (°C) during the month of October 2014



ETo Departure from Normal (mm/day) during the month of October 2014



Normally Expected Weather during November, 2014

Normally, November is a dry month like October over Pakistan, northern parts of Punjab and Khyberpakhtoon Khawa may receive some precipitation due to westerly troughs passing across the area. Northern parts of Khyberpakhtoon Khawa, Punjab and North Western parts of Balochistan generally receive rain from 10mm to 25 mm during November. Decreasing trend may be observed from North to Southward. Over rest of the agricultural plains of the country, generally, weather would remain dry during November.

Mean daily relative humidity may increase by 3 to 10% as compared to October. The increase of relative humidity in Sindh and Khyberpakhtoon Khawa would be less, whereas it is likely to be prominent in Punjab. Mean daily relative humidity may vary in the range of 45 to 60%. For the convenience of farming community of Potohar zone. The probability of occurrence of rainfall is given below:

Amount / Dates	Percentage probability of occurrence of different amounts of rainfall in November					
	1-5	6-10	11-16	17-20	21-25	26-30
10mm	16	8	2	12	4	10
15mm	6	7	2	12	4	8
25mm	0	3	0	6	0	2

Due to shorter days, lower solar intensities and light winds are expected as compared to October, the evaporative demand of atmosphere is expected to fall by 1 mm / day to 2 mm / day. They may range from 2.5 to 3.8 mm / day in northern Punjab and Khyberpakhtoon Khawa and 3.9 to 4.8 mm / day in southern Punjab and Sindh. The canopies of Rabi crops would be less dense during the period as it will be in early stage of its life cycle, therefore variations in ETo values will not be much as compared with the preceding month's ETo values. Chances of water stress are expected during November 2010 due to less precipitation in October.

The mean daily temperature may fall by 6 to 8°C except high agricultural plains of Balochistan and lower Sindh where these may fall by 4 to 5°C respectively. These will range from 16 to 20°C Punjab, Khyberpakhtoon Khawa and about 10 °C at high agricultural plains of Balochistan. Mean maximum and mean minimum temperatures may fall by 5 to 8°C all over the country. Mean maximum temperature may range 25 to 28°C in Punjab and Khyberpakhtoon Khawa, 30 to 33°C in Sindh and about 18°C in high agricultural plains of Balochistan. Mean minimum may range from 7 to 10°C in Punjab and Khyberpakhtoon Khawa, 14 to 17°C in Sindh and about – 2° at Quetta representing the high agricultural plains of Balochistan. Highest temperature may not exceed from 40°C and minimum temperature may not fall beyond – 10°C. No heat stress day is expected anywhere in the county but some freezing nights in the later parts of the month are expected over high agricultural plains of Balochistan.

Due to seasonal shifting of the sun's position towards southern latitudes, the total numbers of bright sunshine hours are likely to fall by 20 to 35 hours as compared to October. These may range from 230 to 260 hours in Khyberpakhtoon Khawa and northern Punjab and from 260 to 290 hours in Southern Punjab and Sindh. The solar intensities may fall by 4 MJ/M2/day as compared to October and may remain close to 13 MJ/M2/day all over the country. Mean wind speeds are expected to remain less than 3 km/hr except high agricultural plains of Balochistan, lower Sindh and Islamabad where it may range from 4 to 7 km/hr.

Water requirement of full canopied, healthy and stress free crops is given in the following table:

S. No	Region	Water Requirement	
		(mm)	Cubic Meter/Hectare
1	Northern Punjab, Northern Khyberpakhtoon Khawa and high agricultural plains of Balochistan	110-160	1100-1200
2	Southern Khyberpakhtoon Khawa, and Southern Punjab	140-160	1400-1600
3	Sindh and Southern Balochistan	180-190	1800-1900

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 Oct 01, 2013. Model's output then tuned by applying Regional Correction Factor (RCF). RCF has computed by comparison of Long Range Averages (LRA) with model's simulation for the period (2004-2012) on monthly basis. 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.

Acknowledgement: *NAMC is gratefully acknowledges the International Research Institute (IRI) for climate and Society for providing access of dynamical prediction of Global Climate Model ECHAM4P5, developed and operated by European Center for Medium-Range Weather Forecasts model's simulations and hindcast data to support the formulation of seasonal weather outlook of Pakistan. Output maps have been prepared by using IRI climate software.*

Synoptic situation

- Location of jet stream (U wind at 200 hPa) is at normal position with normal intensity. The area of jet stream may be squeezed during Oct over northern of Afghanistan. The strong winds showed tilting towards south trend when enter over Pakistan. Below than normal strength of higher winds trend over the region.

  Probability outlook: Normal to below intensity of jet stream is associated with normal to below normal precipitation in the region. In addition weather system enters in the country from north rather than from west during first two predicted months.
- A trough at 500 hPa is expected to be over northern parts of the country. Slightly above normal trend is expected over northern and eastern parts of the region.

  Probability outlook: Precipitation is likely to occur over upper parts of the country. Lower and central parts of the country may be dry during October.
- Surface temperatures are expected to be on higher side than normal over eastern parts of Pakistan and western states of India.
- North Atlantic Oscillation (NAO) is in negative phase (-1.27) and in increasing trend. As a result normal track of western disturbances will persist. http://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/norm.nao.monthly.b5001.current.ascii.table

  Probability outlook: Above Normal precipitation over all parts of the country will be expected. The focus of weather tracks may be towards central of the country.

- During October 2014, above-average sea surface temperatures (SST) increased slightly across the eastern half of the equatorial Pacific. The weekly Niño indices were between +0.6°C (Niño-3.4 and Niño-1+2) and +0.9°C (Niño-3) at the end of the month. Subsurface heat content anomalies (averaged between 180º-100ºW) were largely unchanged even as a new downwelling Kelvin wave increased temperatures at depth in the central Pacific. The monthly equatorial low-level winds were near average, although anomalous westerlies continued to emerge on occasion. Upper-level winds were also mostly average across the Pacific. The Southern Oscillation Index continued to be negative, accompanied by mostly average rainfall near the Date Line and suppressed rainfall over Indonesia. Overall, several features across the tropical Pacific are characteristic of borderline El Niño conditions, but collectively, the combined atmosphere and oceanic state remains ENSO-neutral. Similar to last month, most models predict El Niño to develop during October-December 2014 and to continue into early 2015. However, the ongoing lack of clear atmosphere-ocean coupling and the latest NCEP CFSv2 model forecast have reduced confidence that El Niño will fully materialize (at least five overlapping consecutive 3-month values of the Niño-3.4 index at or greater than 0.5°C). If El Niño does emerge, the forecaster consensus favors a weak event. In summary, there is a 58% chance of El Niño during the Northern Hemisphere winter, which is favored to last into the Northern Hemisphere spring 2015. (http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/?enso_tab=enso-cpc_update)

  Probability outlook: La Nina (0%), Neutral (42%) and El Nino (58 %) during Nov-Dec-Jan, 2015 season
- Arabian Sea Surface Temperatures are expected to be slightly below normal near western coastal belt of Pakistan.
- Caspian Sea surface temperatures expected to be slightly above normal over southern half and below normal over upper half.
- Mediterranean Sea surface temperatures are normal to slightly above normal.
- Bay of Bengal Sea Surface Temperatures are close to normal.

  Probability outlook: Sea Surface Temperature trend is going towards normal leads to below normal precipitation over the region.

Seasonal Weather Outlook Summary (Nov- Jan-2014)

Synthesis of the latest model forecasts for Nov-Jan, 2015 (NDJ), current synoptic situation and regional weather expert's judgment indicates that slightly above normal precipitation is expected all over the country with above average during December and slightly above normal during January. Slightly above average night temperature is likely to occur during whole predicted period with higher values over eastern parts of the country.

"Slightly average precipitation is expected during the season all over the country with slightly above normal temperature."

I. Average precipitation is expected over the country during November with below normal over Punjab, Sindh and Kashmir.

II. Average precipitation is expected over Punjab, Sindh, GB, KP and Baluchistan, Above average over FATA and below average over Kashmir during November.

III. A light to moderate spell of precipitation is expected over the country during least decade of November.

IV. Above normal precipitation with snow fall over the hills is expected during December.

V. Above normal precipitation will be occurred all over the country during December.

VI. Winter precipitation will be started from first week of December. Good precipitation is expected during first week of December.

VII. Heavy snowfall is expected over northern hilly region during December.

VIII. Average to slightly above average precipitation is expected all over the country during January. Above normal precipitation is expected over northern western parts of the country.

IX. Heavy spell of precipitation is expected over 1st week of January over the country.

X. Night temperature will be on higher side all over the country with higher values over central eastern parts of the country during November.

XI. Average night temperature is expected during December and January.

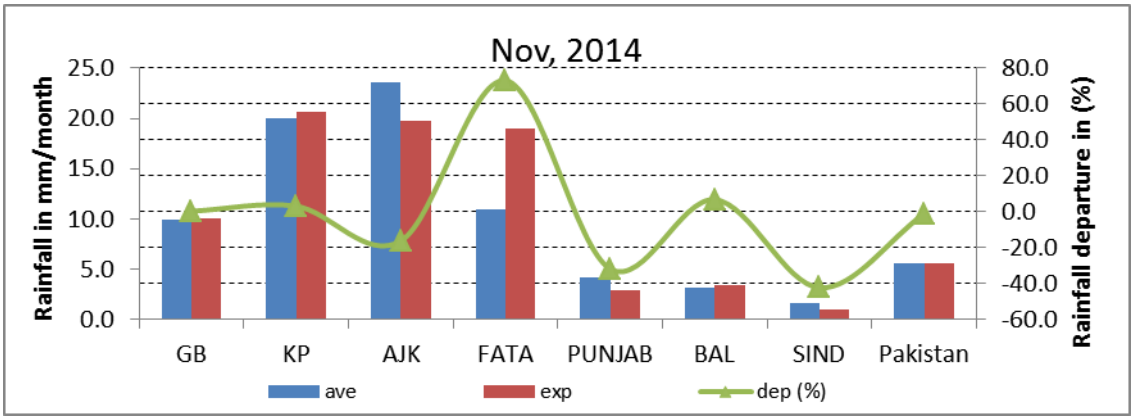
Monthly Quantitative Weather Forecast

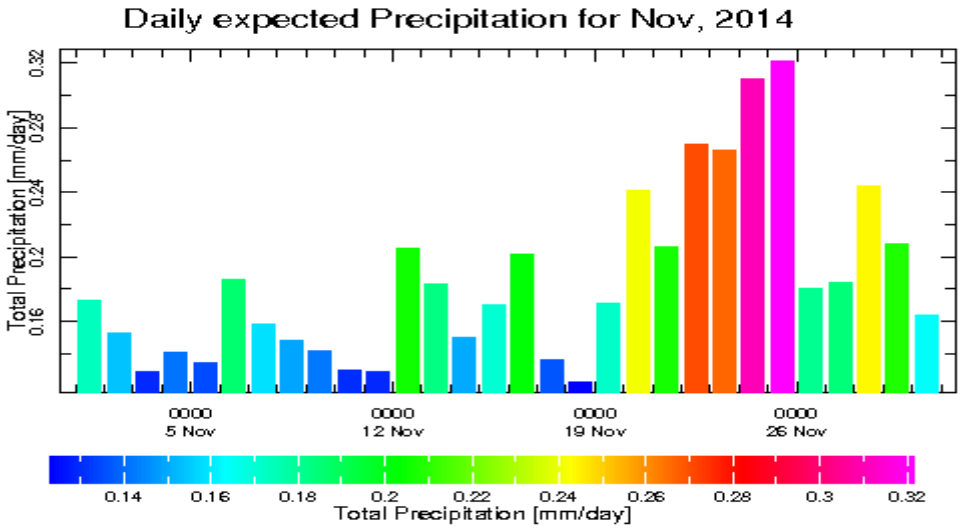
	Nov, 2014		Dec, 2014		Jan, 2015		Nov14-Jan, 2015	
	ave	exp	ave	exp	ave	exp	ave	exp
GB	10.0	Ave	16.3	Ave	27.2	Abv. Ave	53.4	Abv. Ave
KP	20.0	Ave	32.9	Abv. Ave	49.0	Abv. Ave	101.9	Abv. Ave
AJK	23.6	Blw. Ave	50.9	Abv. Ave	91.1	Abv. Ave	165.6	Abv. Ave
FATA	10.9	Abv. Ave	20.6	Abv. Ave	30.2	Abv. Ave	61.7	Abv. Ave
PUNJAB	4.2	Blw. Ave	12.0	Abv. Ave	17.2	Abv. Ave	33.4	Abv. Ave
BALUCHISTAN	3.2	Ave	14.8	Abv. Ave	19.5	Ave	37.5	Abv. Ave
SIND	1.6	Blw. Ave	5.0	Abv. Ave	3.0	Ave	9.7	Abv. Ave
Pakistan	5.7	Ave	14.9	Abv. Ave	20.8	Abv. Ave	41.3	Abv. Ave

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

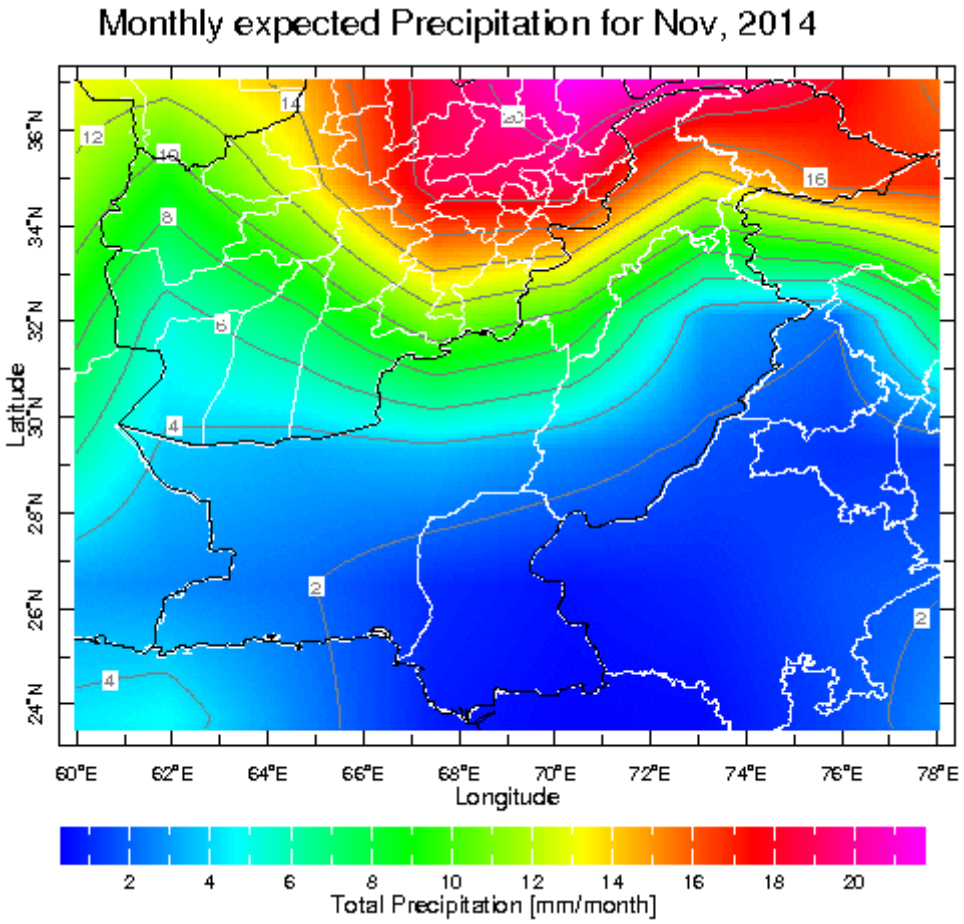
Note: Average precipitation is computed by using Global Precipitation Climatology Centre (GPCC) gridded data by resolution (0.5x0.5^{o}) latitude by longitude. Ensembles of different climate models are used for computation of expected precipitation over the region.

Spatial distribution of expected Rainfall during Nov, 2014 (GCM-ECHAM)

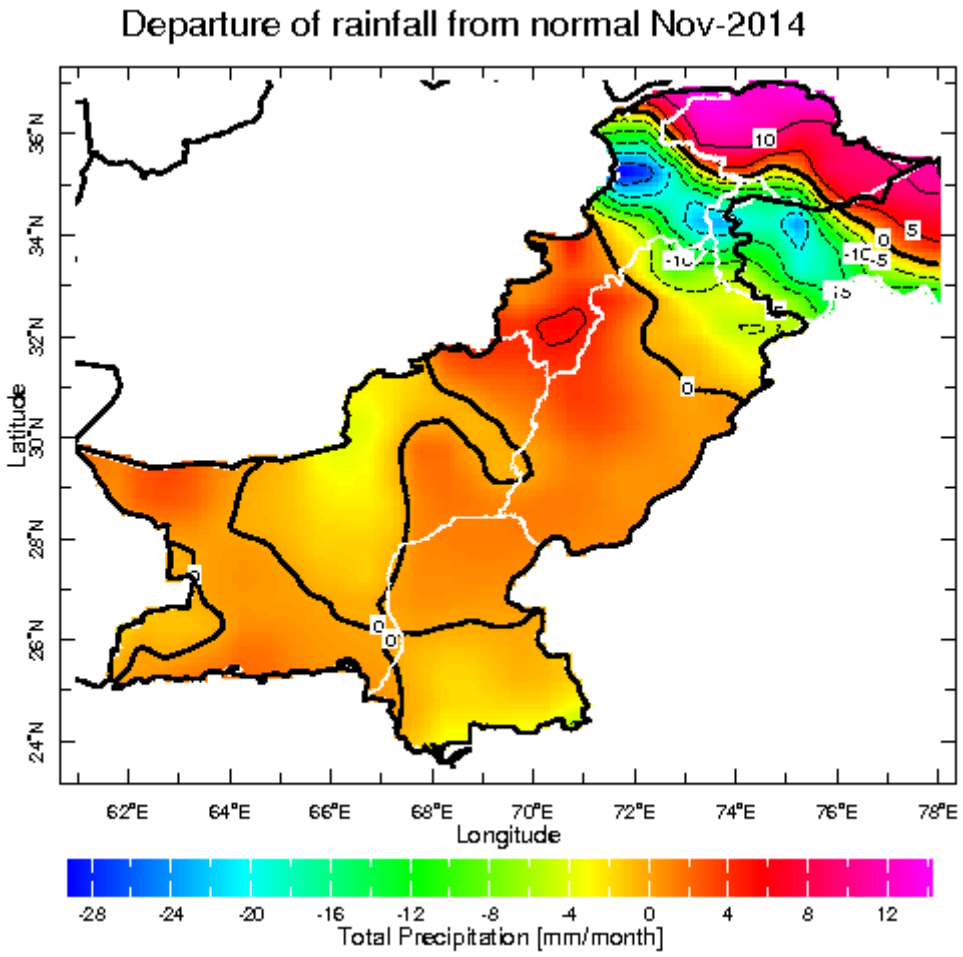

Nov, 2014
Rainfall in mm/month
Rainfall departure in (%)
25.0
20.0
15.0
10.0
5.0
0.0
80.0
60.0
40.0
20.0
0.0
-20.0
-40.0
-60.0
GB
KP
AJK
FATA
PUNJAB
BAL
SIND
Pakistan
ave
exp
dep (%)


Daily expected Precipitation for Nov, 2014
Total Precipitation [mm/day]
0.16
0.2
0.24
0.28
0.32
0000
5 Nov
0000
12 Nov
0000
19 Nov
0000
26 Nov
0.14
0.16
0.18
0.2
0.22
0.24
0.26
0.28
0.3
0.32
Total Precipitation [mm/day]

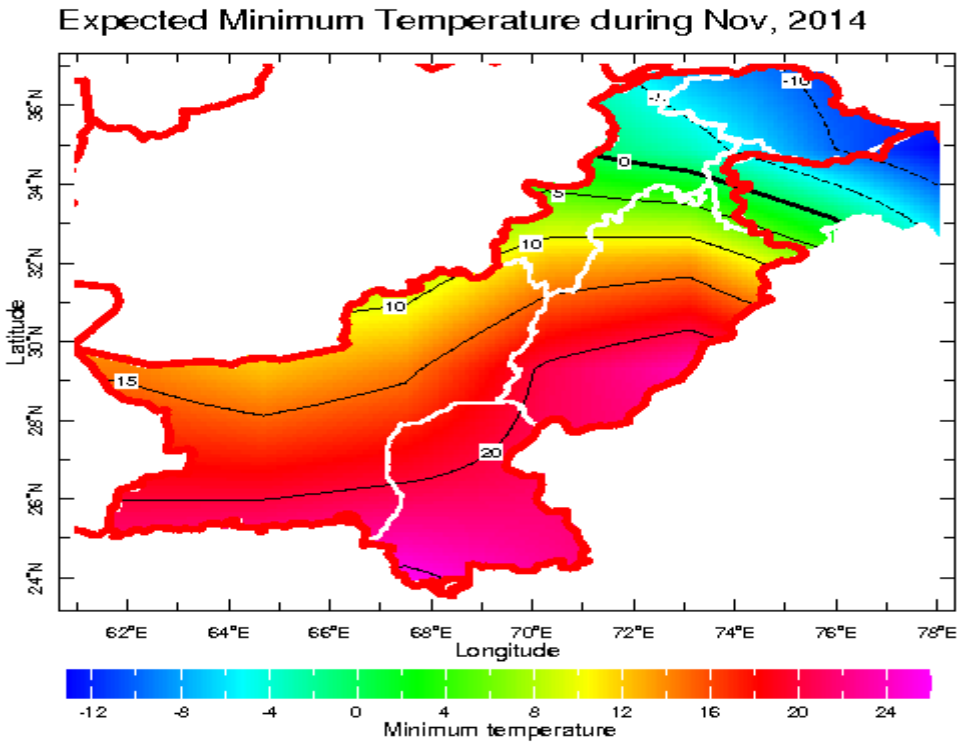
Spatial distribution of expected Rainfall during Nov, 2014 (GCM-ECHAM)



Monthly departure from normal (Rainfall) during Nov, 2014

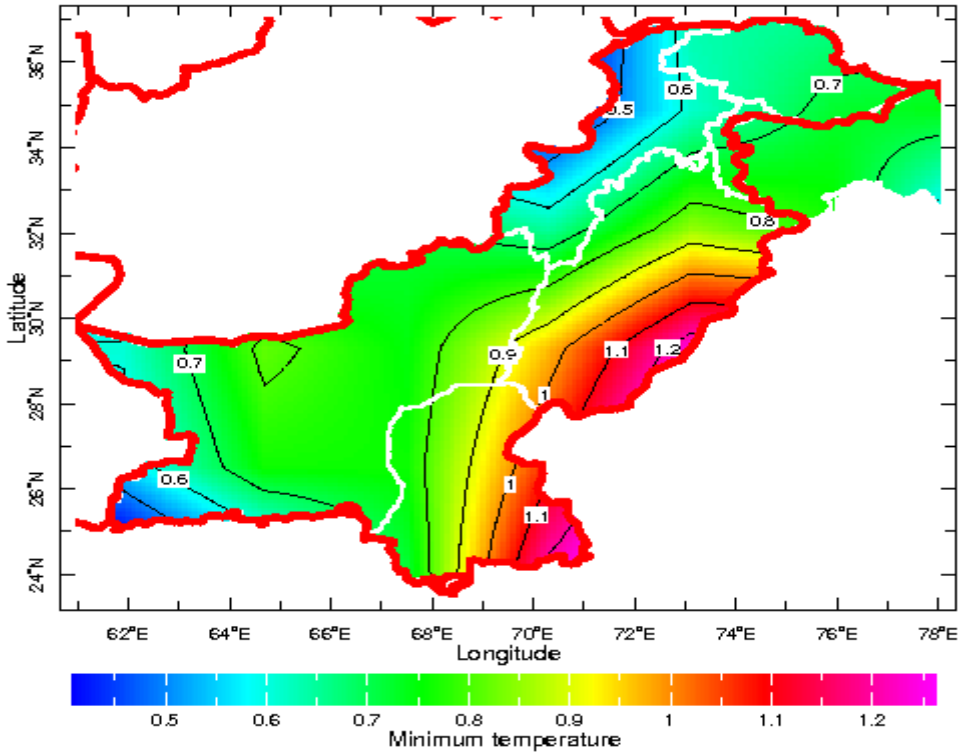


Spatial distribution of expected Minimum Temperature during Nov, 2014



Monthly departure from normal (Minimum Temperature) during Nov, 2014

Expected Dep. of Min. Temp. from normal during Nov,2014



نومبر 2014ء میں کاشتکاروں کے لئے زرعی موسمیاتی مشورے

اس سال اکتوبر میں ملک کے بالائی زرعی میدانی علاقوں بشمول پنجاب، گلگت بلتستان اور خیبر پختونخواہ میں اچھی بارشیں ہوئیں۔ جبکہ جنوبی زرعی میدانی علاقوں بشمول سندھ بلوچستان اور جنوبی پنجاب میں معمول سے کم بارشیں ہوئی۔ نومبر کے مہینے میں ملک کے زرعی میدانی علاقوں میں بارش کی توقع ہے۔ اس لیے نومبر کے موسمی حالات کو مدِنظر رکھتے ہوئے ربیع کی فصل کی اچھی پیداوار حاصل کرنے کیلئے موزوں منصوبہ بندی کرنا وقت کی اہم ضرورت ہے۔ کسانوں کیلئے ماہ نومبر میں مندرجہ ذیل زرعی موسمیاتی مشورے بہت اہم ہیں۔

۱۔ ربیع کی فصلوں کی بوائی کا آغاز اکتوبر کے وسط سے شروع ہو چکا ہے۔ گندم اس موسم کی اہم ترین فصل ہے۔ بہترین پیداوار حاصل کرنے کیلئے ضروری ہے کہ گندم کی کاشت نومبر کے وسط تک بہرصورت مکمل کر لی جائے۔

۲۔ ایسے بارانی علاقوں میں جہاں زمین میں مناسب حد تک نمی نہیں اور بارش کا بھی امکان نہ ہو ضروری ہے کہ گندم کے بیج کو ایک رات پہلے پانی میں بھگو دیا جائے اور صبح سویرے کاشت کر دیا جائے۔ گندم کے بیج کو بوائی سے پہلے دوائی لگانا ہرگز نہ بھولیں۔ بارش کے امکان کی صورت میں وتر سے استفادہ کیا جائے۔

۳۔ محکمہ زراعت مختلف فصلوں کے ساتھ گندم کی مخلوط کاشت کا مشورہ دیتا ہے۔ بیک وقت کھیت میں ایک سے زیادہ فصلوں کا ہونا مخلوط کہلاتا ہے۔ نہری یا زیادہ بارش کے علاقوں میں یہ طریقہ مفید ہے کیونکہ پودوں کیلئے پانی وافر مقدار میں موجود ہوتا ہے۔

۴۔ موجودہ موسمی صورت حال کو مدنظر رکھتے ہوئے نہری علاقوں کے کاشتکار چاول اور گنے سے خالی ہوئی زمینوں پر جلد از جلد گندم کی کاشت مکمل کریں۔ کیونکہ گندم کو دیر سے کاشت کرنے سے پیداوار میں کمی واقع ہو جاتی ہے۔

۵۔ نومبر کے آخری ہفتے میں میدانی علاقوں میں دھند رہنے کا امکان ہوتا ہے۔ جس کی وجہ سے چنے اور سبزیات میں جراثیمی بیماری (fungus) کا خطرہ ہوتا ہے۔ کسان حضرات محکمہ زراعت کی منظور شدہ ادویات کا سپرے کر کے فصل کو بیماریوں سے بچا سکتے ہیں۔

۶۔ زراعت کی کامیابی میں موسمی حالات کا بہت عمل دخل ہے اور بہتر حکمت عملی سے غیر موزوں موسمی حالات سے بھی استفادہ کیا جا سکتا ہے۔ محکمہ موسمیات کی پیشگوئی کو ملحوظ خاطر رکھ کر محکمہ زراعت کے ماہرین کی مشاورت سے اپنے معمولات طے کریں تو پیداوار میں خاطر خواہ اضافہ ممکن ہے۔ موسمی حالات سے متعلق مزید معلومات کیلئے محکمہ موسمیات کے قریبی دفتر سے رابطہ کیا جا سکتا ہے جن کا پتہ درج ذیل ہے۔

۱۔ نیشنل اگرومیٹ سینٹر پی۔او۔بکس نمبر 1214 سیکٹر ایچ ایٹ ٹو، اسلام آباد فون نمبر:-051-9250299

۲۔ نیشنل فورکاسٹنگ سینٹر برائے زراعت، پی۔او۔بکس، 1214 سیکٹر ایچ ایٹ ٹو، اسلآباد فون نمبر:-051-9250363-4

۳۔ ریجنل اگرومیٹ سینٹر، نزد بارانی یونیورسٹی، مری روڈ، راولپنڈی فون نمبر:-051-9290635

۴۔ ریجنل اگرومیٹ سینٹر، ایوب ریسرچ انسٹیٹیوٹ، جھنگ روڈ، فیصل آباد فون نمبر:-041-2657047

۵۔ ریجنل اگرومیٹ سینٹر، اگریکلچر ریسرچ انسٹیٹیوٹ، ٹنڈو جام فون نمبر:-0222-766583

۶۔ ریجنل اگرومیٹ سینٹر، اگریکلچر ریسرچ انسٹیٹیوٹ، سریاب روڈ، کوئٹہ فون نمبر:-081-9211211

تفصیلی موسمی معلومات کیلئے محکمہ موسمیات کی ویب سائٹ www.pmd.gov.pk ملاحظہ فرمائیں۔

کماد (گنے) کی فصل پر موسم سے متعلق اثر انداز ہونیوالے اہم عوامل

کماد پاکستان کی اہم ترین فصل ہے۔پاکستان زیر کاشت رقبہ کے لحاظ سے دُنیا میں پانچویں نمبر پر کُل پیداوار کے لحاظ سے گیارویں نمبر پر اور فی ایکڑ پیداوار کے لحاظ سے 60ویں نمبر پر ہے۔کماد سفید چینی اور گُڑ بنانے کا اہم زریعہ ہے۔اس کے علاوہ تقریباً 100 کے قریب دوسری کارآمد اشیاء بھی اس سے بنتے ہیں۔پاکستان میں کماد پنجاب، سندھ اور خیبر پختونخواہ میں خریف کے فصل کے طور پر کاشت ہوتا ہے۔کماد 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 بیشی کے بنیادی وجوہات میں مناسب زمین کا انتخاب اور تیاری، مناسب بیج اور شرح بیج، 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 کیمطابق 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 وہوا گرم مرطوب ہے اسلئے یہ دُنیا کے اُن علاقوں میں کاشت ہوتا ہے جہاں بیشتر نشوونما کے دوران آب وہوا 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۔ کماد کے پودے میں 73-75 فیصد پانی ہوتا ہے۔اس لئے پودے کو پانی کی ضرورت بہت زیادہ ہے۔کماد کو کاشت کرنے کے لئے ایسے زمین کا انتخاب کرنا چاہئے جس میں پانی جذب کرنے کی صلاحیت زیادہ ہو۔کلر اور تھور زدہ زمین پر گنے کی کاشت نہ کرے۔اسلئے پنجاب، سندھ اور خیبر پختونخواہ کے وہ زرعی علاقے جہاں آبپاشی کیلئے پانی دستیاب ہے وہ کماد 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-تک مکمل کرنی چاہئے اس لئے کہ ستمبر اور اکتوبر کے کاشت والی فصل کو موزوں آب وہوا میسر آجاتی ہیں۔دیر سے کاشت کرنے پر کُل پیداوار 30 فیصد تک کم ہوسکتی ہے۔اسلئے کہ دیر سے کاشت کرنے والی فصل کو مناسب آب وہوا دستیاب نہیں ہوتی۔

3۔ دوسرے فصلوں کیطرح کماد کے پیداوار میں بھی 25 فیصد تک کمی زائد جڑی بوٹیوں کیوجہ سے واقع ہوتی ہے۔اس لئے کمیائی یا غیر کمیائی 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 کماد 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 کیمطابق احتیاطی تدابیر کرنی چاہئے۔اسلئے کہ Lodgng کماد کی پیداوار کم کرنے میں سب سے زیادہ کردار ادا کرتا ہے خصوصاً وہ علاقہ جہاں مون سون کی بارشیں زیادہ ہوں

4۔ کماد 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 کیوجہ سے کماد کے پودے کا سائز کم رہ جاتا ہے اور پودا وقت سے پہلے پختگی (mature stage) کے مراحل طے کرلیتا ہے تاہم 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 9/8 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 چاہئے، فصل کے کٹائی سے تقریباً ایک مہینہ پہلے پانی دینا بند کرنا چاہئے لیکن فصل کے جس حصے کو آئندہ بیج کیلئے رکھنا ہو انھیں پانی دینا چاہئے 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) گر جانے سے محفوظ رہے۔مون سون سے پہلے ہی فصل کی Lodgng سے بچانے کیلئے بروقت روایتی اور محکمہ زراعت کے مشوروں کیمطابق احتیاطی تدابیر کرنی چاہئے۔اسلئے کہ Lodging کماد 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 چاہئے۔اگیتی فصل (Early Sown) اور موڈی فصل کی کٹائی نومبر، درمیانی فصل کی کٹائی دسمبر اور پچھیتی فصل کی کٹائی جنوری میں شروع کردیں۔فروری/مارچ میں کاٹی گئی فصل موڈی فصل (Ratoon Crop) کیلئے سب سے زیادہ موزوں ہے۔