

Monthly Agromet Bulletin

National Agromet Centre

Pakistan Meteorological Department Islamabad

**Vol: 12-2013****DECEMBER, 2013**

Highlights...

- Dry weather/below normal precipitation was reported in the country. Dry continental air/foggy atmosphere prevailed over most of the agricultural plains of the country during the month.
- Thermal regime in this month remained mostly normal/slightly warmer in the agricultural plains of the country.
- ETo 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.
- Picking/harvesting/crushing of sugarcane, seasonal vegetables and fruit orchids especially citrus and apple were the major field activities in most of the agricultural plains of the country during the month.
- Farmers are advised to protect nurseries and orchard trees from expected frost in this month if night time temperature starts to drop below 0.5°C during clear skies.
- Sunflower crop may be planted in areas where wheat crop is not cultivated still now.

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Published by: National Agromet Center (NAMC)

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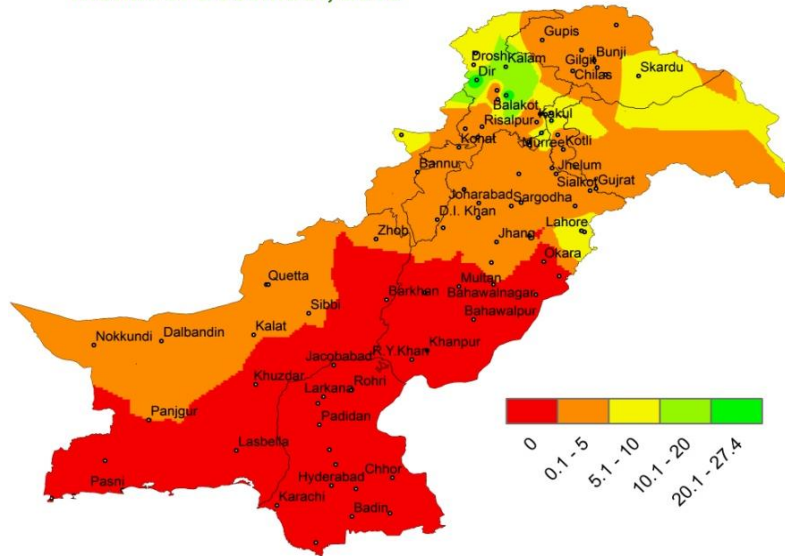
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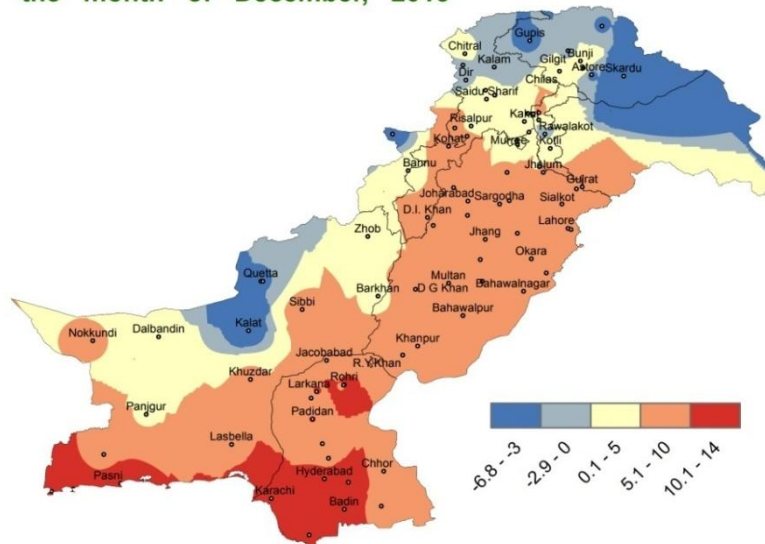
EXPLANATORY NOTE

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 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.

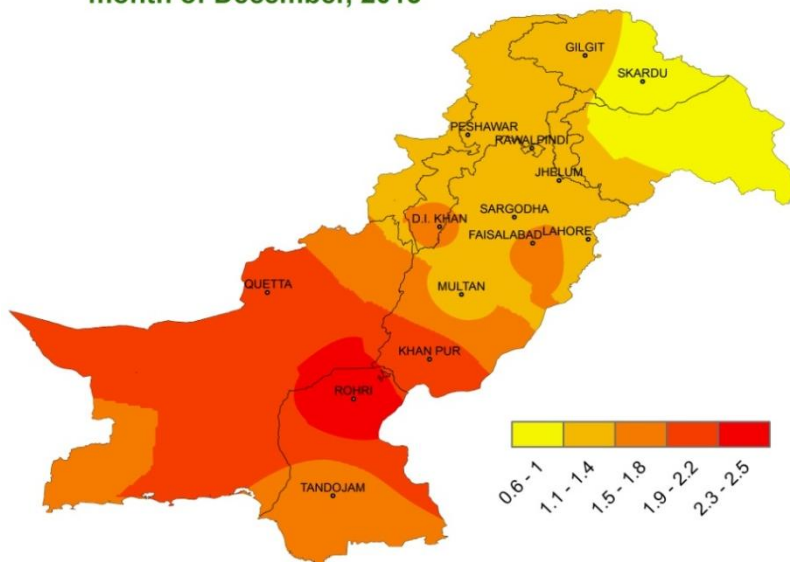
Rainfall (mm) during the month of December, 2013



Minimum Temperature (°C) during the month of December, 2013



ETo (mm/day) during the month of December, 2013



Crop Report during December, 2013

Picking/harvesting/crushing of sugarcane, seasonal vegetables and fruit orchards especially citrus and apple were the major field activities in most of the agricultural plains of the country during the month. Irrigation as per requirement and availability was provided. Pace of growth and developments of the crops both in irrigated and rainfed areas affected to some extent due to dry weather/below normal rainfall in the agricultural plains of the country during the month.

In **Punjab**: The sowing of wheat crop has almost been completed. The growth is satisfactory in irrigated areas but growth is affected negatively due to mostly dry weather in rainfed areas during the month. Sowing of Lentil crop has completed and satisfactory growth is reported. The growth of oilseed crop is reported satisfactory and the crop is at flowering/pod stage. No serious pest/insect attack has been reported so far. The sowing of gram crop has completed. Satisfactory growth of the crop is reported but rain water is immediately needed for better growth and development. Harvesting/crushing of sugarcane crop is in full swing and very good yield is expected. Frost has affected citrus in some areas of Punjab.

In **Sindh**: Sowing of Rabi crops and harvesting of rice has been completed. Wheat crop is at tillering stage and its growth is reported satisfactory. Castor oil crop is growing satisfactory and its first picking has been started. Crushing of sugarcane is in full swing and very good yield is expected. Safflower and Linseed crops have been reported at good condition and are growing at early vegetative stages.

Seasonal fruits like Guava, banana, Cheeko are in good condition. Cheeko and apple stone (Bare) are at fruit formation stage. Picking/harvesting of winter vegetables is in progress and good yield is being obtained.

In **Khyber Pakhtoonkhawa**: Sowing of wheat crop has completed and its normal growth has reported in irrigated areas. But rain water is required to reduce present soil moisture stress in rainfed areas. Harvesting/crushing of sugarcane crop is in progress and very good yield is expected. Harvesting of rice has completed. Harvesting of winter vegetables is in progress and these are available in the market. Growth of orchid is satisfactory and good yield of citrus has reported.

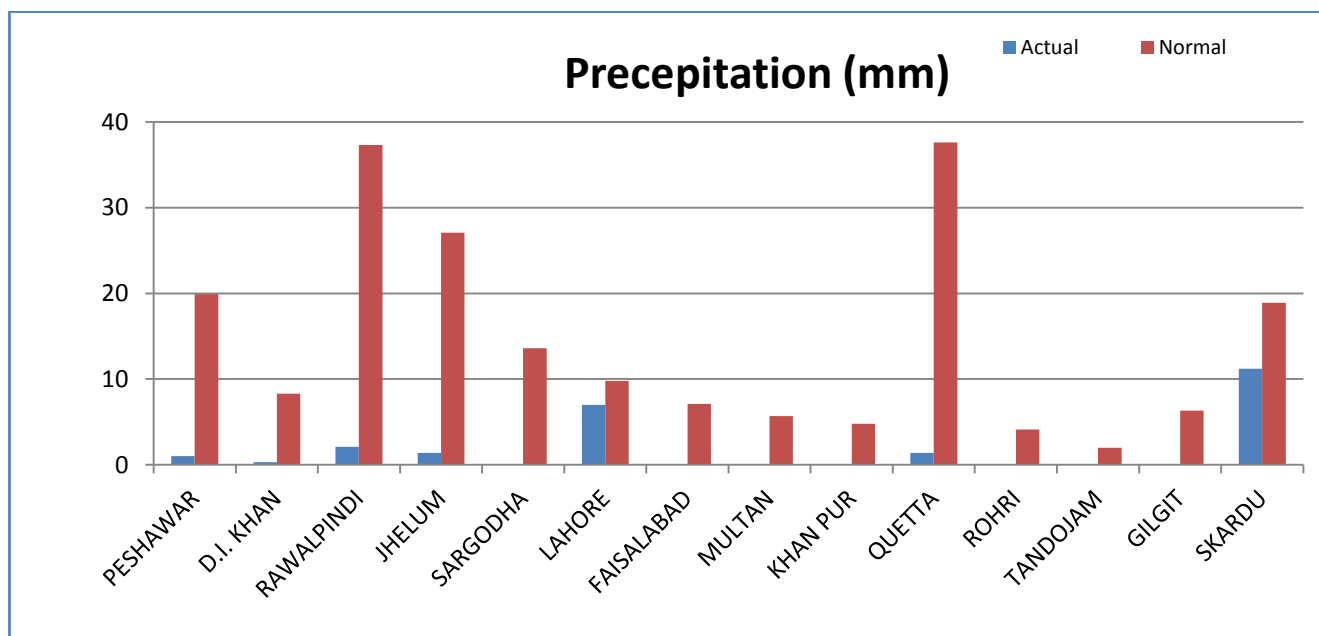
In **Balochistan**: Condition of standing crops and orchards is reported satisfactory. Wheat crop is growing at third leaf stage. All varieties of apples have developed colour and picking of the fruit is in progress. Sowing of Rabi crops has completed and wheat crop is in early growing stage. Condition of winter vegetables is good and is now available in the market.

In **GilgitBaltistan**: Most of the agricultural activities stop during the winter season in the area. Soil has been prepared for wheat crop to be sown in the coming months.

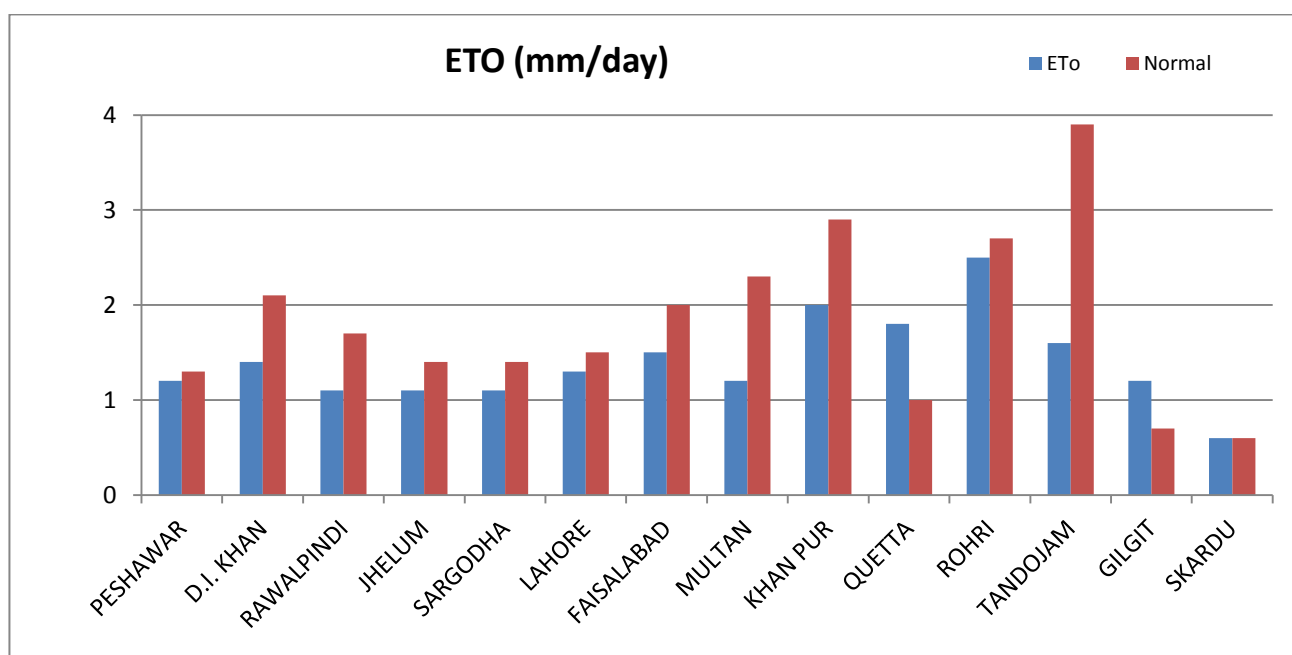
Moisture Regime during December, 2013

In Pakistan, winter rains generally start in the month of December. During this December, dry weather/below normal precipitation was reported in the country. Dry continental air/foggy atmosphere prevailed over most of the agricultural plains of the country during the month.

Highest rainfall recorded in the country was 28mm in Malamjaba followed by 25mm in Dirand17mm in Kalam.

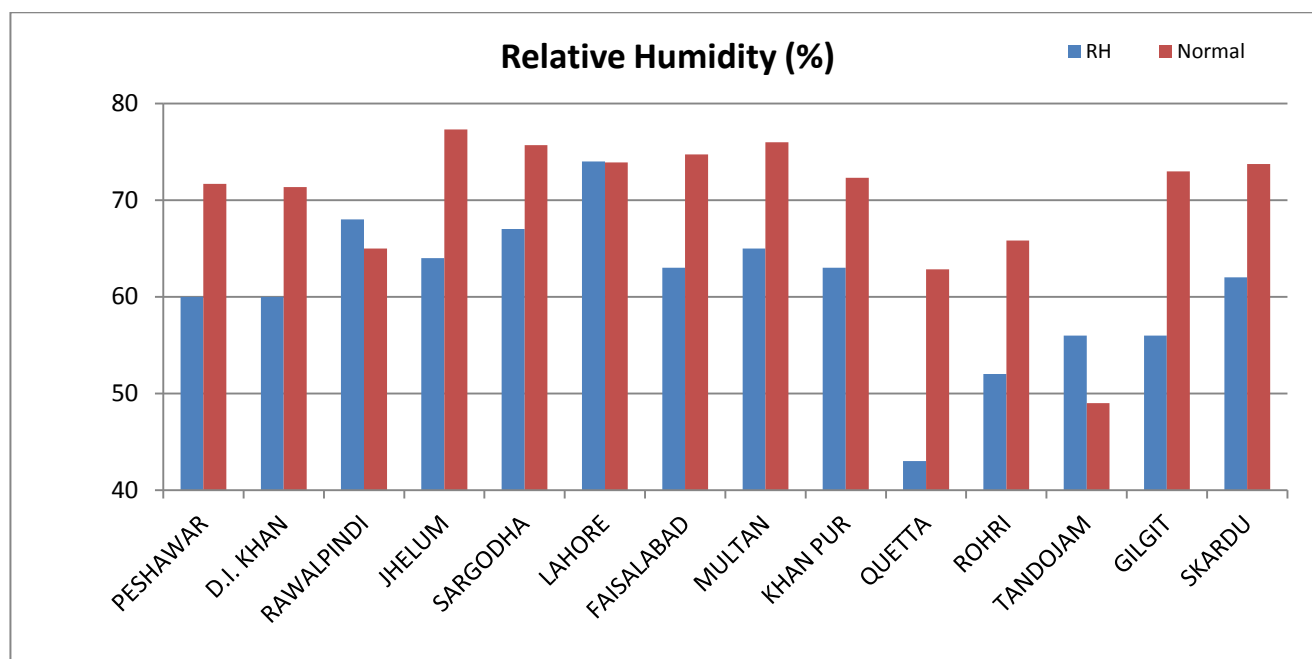


The evaporative demand of the atmosphere represented by reference crop evapotranspiration (ET_o) remained below normal in most of the agricultural plains of the country except Quetta valley and Gilgit where it remained slightly above normal due to mostly dry weather observed during the month in these areas. The highest value of ET_o was estimated in Rohri followed by Khanpur and Quetta valley.



The mean daily Relative Humidity (R.H) also remained normal to below normal in most of the agricultural plains of the country. Significant drop in R.H was observed in areas of KP, southern Punjab, Quetta valley and GilgitBaltistan.

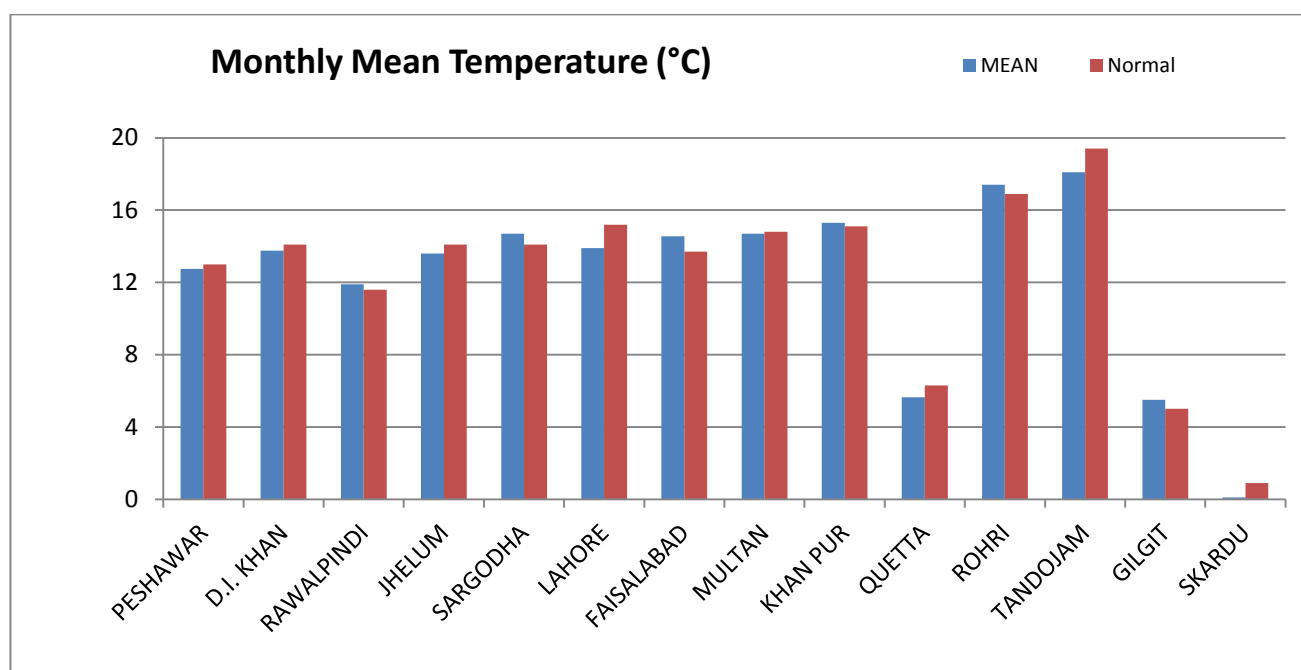
Maximum value of mean Relative humidity was observed 74% at Lahore followed by 68% at Rawalpindi, while the minimum value was observed at Quetta due to dry weather observed and its dry climate in this month.



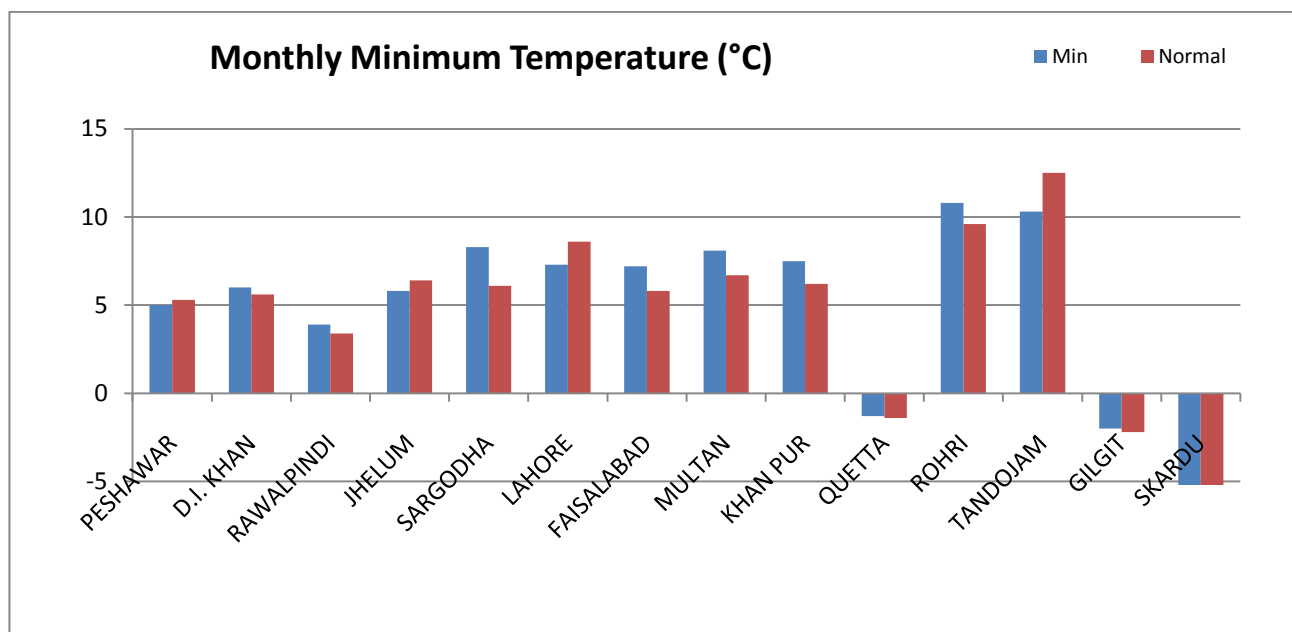
From overall analysis of this month it is evident that moisture stress exists in upper as well as lower parts of the country due to dry weather observed in these areas during the month.

Temperature Regime during December, 2013

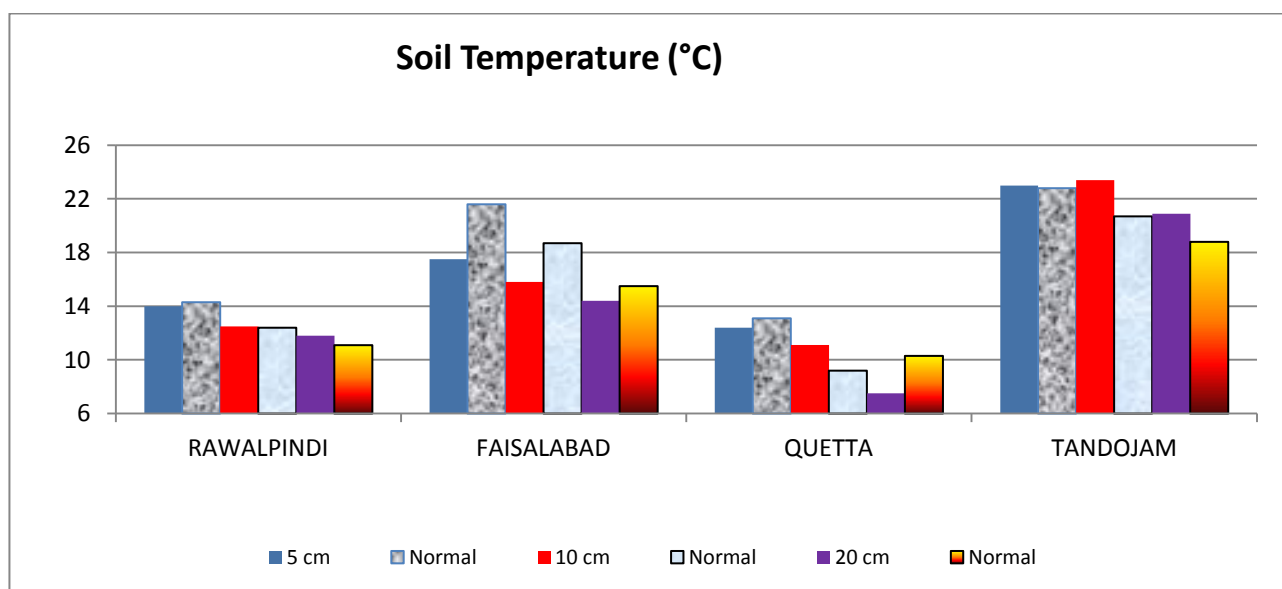
Temperature plays vital role in the growth and development of crops. Thermal regime in this month remained mostly normal/slightly warmer in most agricultural plains of the country. Mean daily temperature remained normal in agricultural plains KP, Potohar region and other parts of Punjab except Lahore where it remained below normal by 1°C and observed normal to slightly below normal by the same extent in GB region. In lower parts of the country, it remained slightly below normal by 1°C in the agricultural plains of Baluchistan represented by Quetta, lower Sindh represented by Tandojam and observed almost normal in upper Sindh represented by Rohri. and Skardu in GB Quetta valley and upper Sindh. Whereas it observed slightly above normal in central and southern Punjab and Gilgit (by 1°C), in lower Sindh represented by Tandojam it remained slightly below normal (by 1°C). Mean daily temperature ranged 12 to 14°C in Khyber Pakhtunkhwa and Potohar region, 14 to 15°C in remaining parts of Punjab, 17-18°C in agricultural plains of Sindh, 0 to 6°C in Gilgit-Baltistan region and it was observed 6°C in the high elevated agricultural plains of Baluchistan represented by Quetta valley.



The night time temperature represented by mean minimum remained normal to slightly above normal by 1-2 °C in most of the agricultural plains of the country except Jhelum in Potohar region, Lahore in central Punjab and Tandojam in lower Sindh where it remained below normal by 1°C. The lowest minimum temperature was recorded -16°C at Kalat.



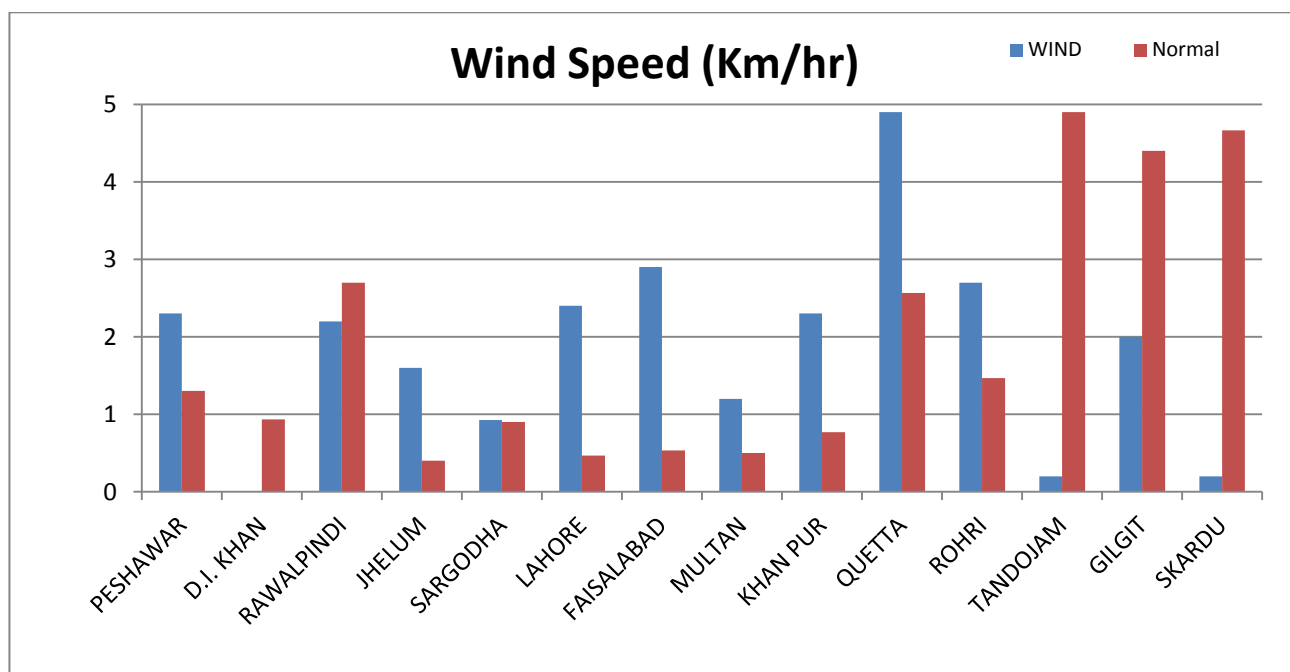
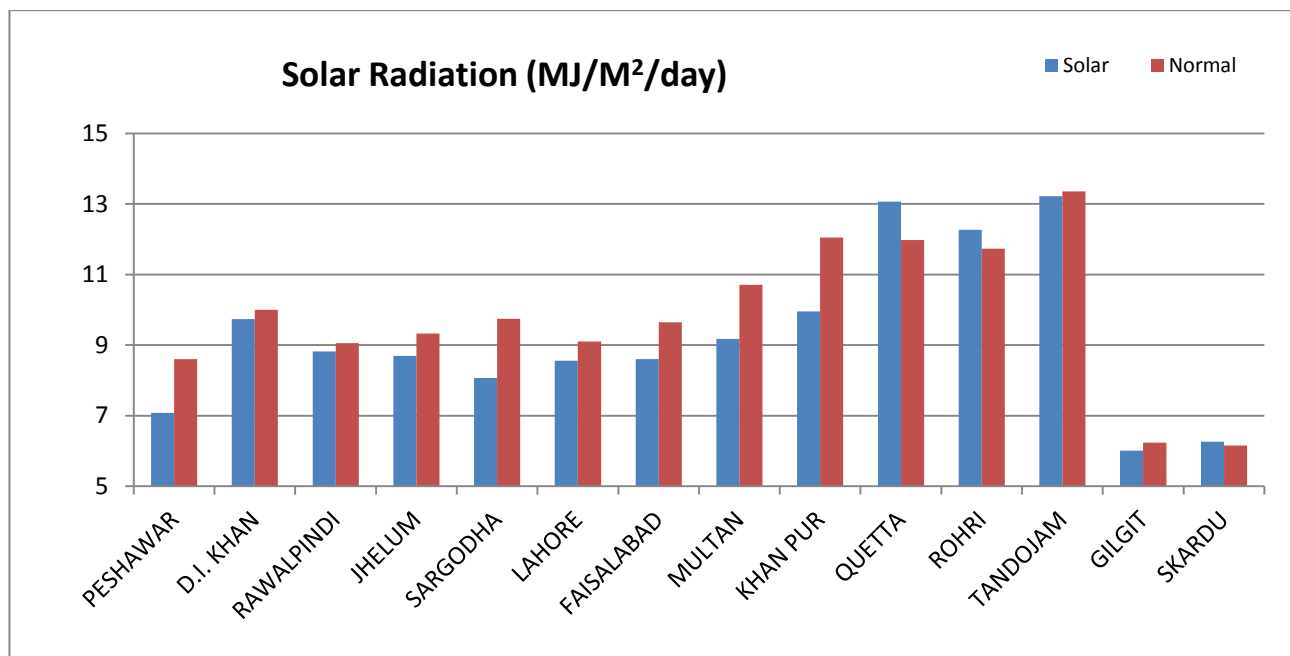
Agricultural soils showed normal to cooler trend in the agricultural areas of the country. In Rawalpindi division of Potohar region and Tandojam in lower Sindh, soil temperature remained mostly normal at major root zone. In Faisalabad and Quetta valley, soil temperature at root zone remained normal to below normal during the month.



From the general analysis of soil behavior in this month, it is concluded that moisture has satisfactory status in the irrigated as well as rainfed areas. But moisture deficiency still exists in rainfed Potohar region and lowers Sindh. Whereas in major agricultural areas, the situation of soil moisture is satisfactory to some extent. Further rains in coming months are needed and may improve soil moisture condition during coming months in rainfed as well as irrigated areas.

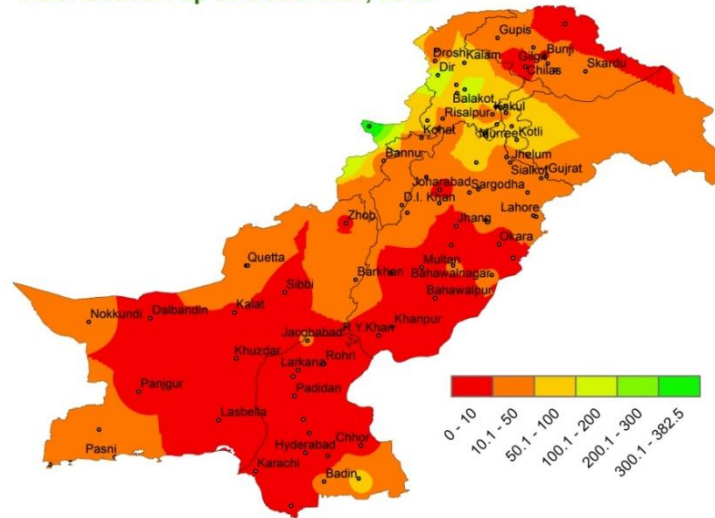
Solar Radiation and Wind Regime during December, 2013

Total bright sunshine hours and solar radiation intensity remained normal to below normal in most of the agricultural plains of the country except Quetta valley and Sindh where these values observed normal to slightly above normal. 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 5 km/h in Quetta.

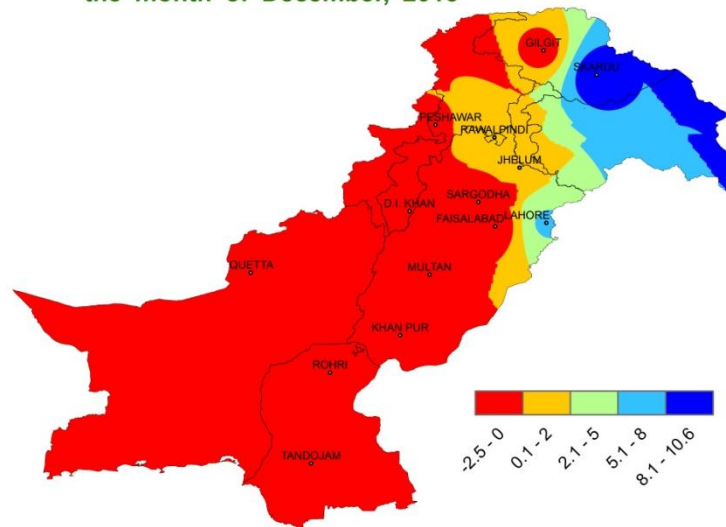


Cumulative Rainfall, ETo and water stress for Rabi Season (October to April)

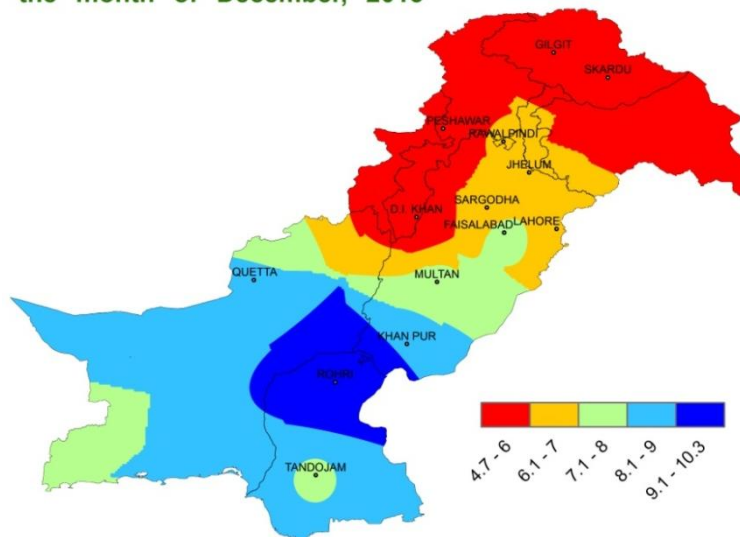
**Cumulative Rainfall (°C) during
Rabi Season up to December, 2013**



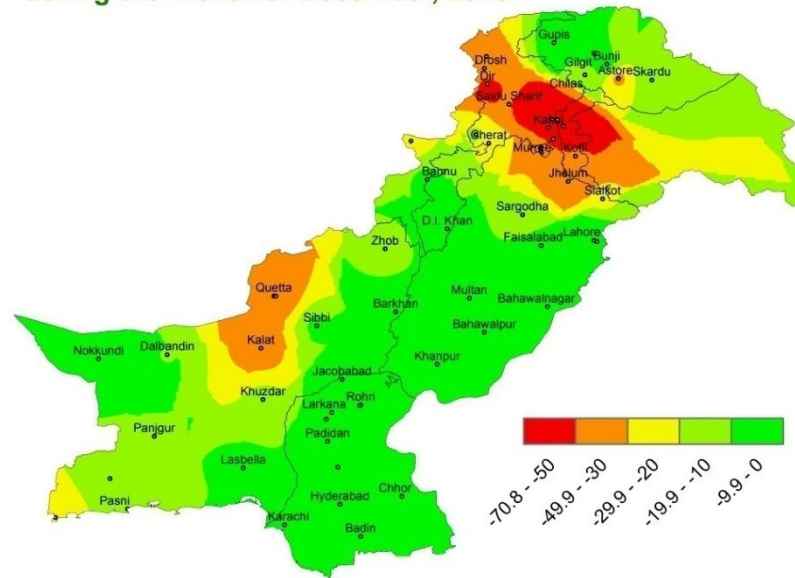
**Water Stress (Rain-ETo) during
the month of December, 2013**



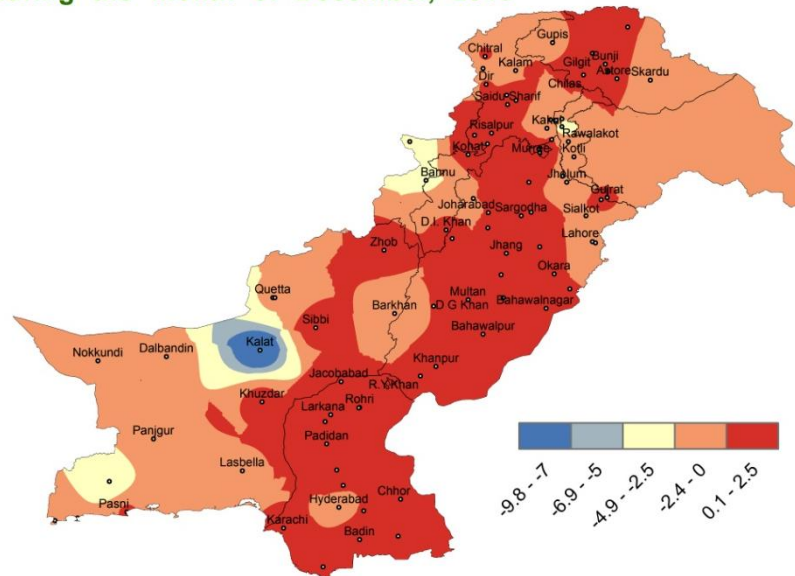
**Cumulative ETo (mm/day) during
the month of December, 2013**



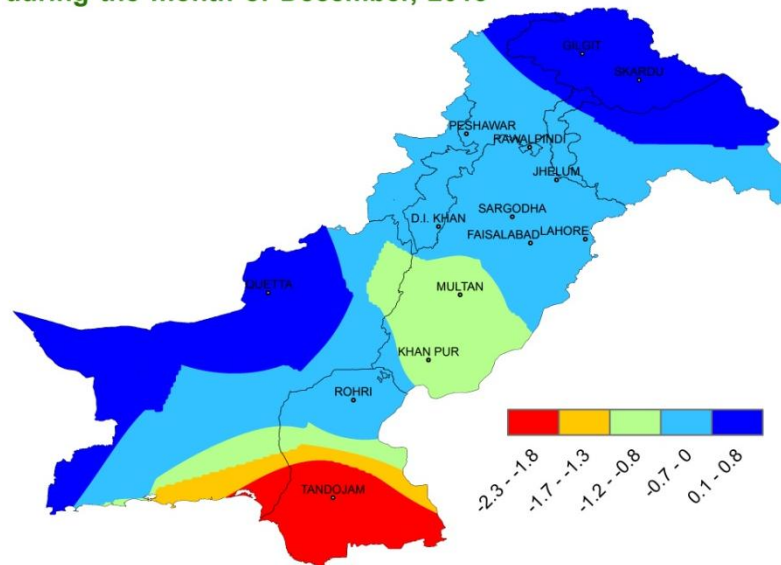
**Rainfall Departure from Normal (mm)
during the month of December, 2013**



**Minimum Temperature from Normal (°C)
during the month of December, 2013**



**ETo Departure from Normal (mm/day)
during the month of December, 2013**



Normally Expected Weather during January, 2013

Winter rains with Pakistan region are associated with Westerly Waves and frontogenises processes taking place at middle latitudes. Westerly waves are always present around the globe. As soon as, perturbation takes place in these waves due to contrasting meteorological factors, they get amplified extending their trough down to lower latitudes in subtropical regions. Formation of fronts due to encounter of two air masses of different characteristics, is another significant source of winter weather systems. Winter rain bearing systems attain their maturity in December under normal meteorological behavior around the globe.

Rainfed plains of Balochistan and Potohar plateau are expected to receive 20mm to 40mm precipitation, which recharge the soil moisture upto some extent. However, the distribution over time and space would be much more important than the amount of the precipitation. The farmers of these areas have to show an efficient rain water harvest skill by completely rooting out the weeds, competing their crops for food and water. In other parts of the country, the rainfall may amount less than 20mm during January. The strict weeding practice is also recommended in irrigated areas.

The evaporative demand of the atmosphere will be lower than December due to cooler and upto certain extent the cloudy atmosphere. It is likely to range from 1 to 3 mm/day throughout the country. The mean daily relative humidity may vary between 50% and 65%. The crop growth may be retarded due to low temperatures; however, they would be beneficial in tillering process in cereal crop. The day time temperatures may range between 16°C to 20°C in Northern Punjab and upper Khyber Pakhtoonkhawa while in the low elevation plains are likely to experience them from 20°C to 24°C. The night temperatures possess a special significance; when they drop below freezing level and keep watch on the growth of animals and plants. If protection measures are not taken. Care of the frost kills the crop plants and even sometime badly affects their yield.

The minimum temperatures generally occurring at night may drop more frequently below freezing (0°C) in high elevation agricultural plains as compared to those located at low elevation. As days are smaller than nights during January; therefore the photo synthesis period may remain around 7 and 8 hours following still an increasing trend towards south. The intensity of solar radiations is likely to vary from 9.5 MJ/M²/day over Northern plains to 14 MJ/M²/day in the Southern parts of the country. Winds are expected to blow at a speed of 7 Km/hours or less, prevailing from northerly to westerly direction. Rabi crops will be around in their early stages of development, therefore their water requirements are not as high as mature crops. The estimates of monthly water requirement according to an average phonological phase of Rabi crops, in respective regions are given as under:

S. No	Region	Water Requirement	
		mm	Cubic meter per Hectare
1	Khyber Pakhtunkhwa, Northern and central Punjab	30 – 40	300 – 400
2	High agricultural plains of Balochistan, Khyber Pakhtunkhwa and Kashmir.	20 – 30	200 – 300
3	Southern Punjab and upper Sindh	40 – 50	400 – 500
4	Lower Sindh and Balochistan	45 – 55	450 – 550

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 Jan 01, 2014. 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 higher intensity with bigger convergence areas of high winds towards the west. Intensity of jet stream will be slightly above normal during predicted period

Probability outlook: Above normal intensity is associated with above normal precipitation in the region and vice versa.

- A ridge at 500 hPa is expected to be at same position as normal with less intensity. As a result, track of the western disturbances may be changed and tilted towards northward.

Probability outlook: Precipitation is likely to occur over upper half of the country causing less rain over southern parts of the country.

- Surface temperatures are expected to be on lower side than normal over central parts of the country as compared with normal (1981-2010). However, southern and northern parts with higher than normal temperature will be expected during January.
- North Atlantic Oscillation (NAO) is in positive phase (0.95) and may cause to shift western disturbances towards north during coming months. Data source: <http://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/nao.shtml>

Probability outlook: Normal precipitation over northern parts and below normal over southern parts of the country. The focus of weather tracks may be towards Northern parts of the country.

- Most of the set of dynamical and statistical model predictions issued during late November and early December 2013 predict neutral ENSO conditions into early 2014, with a warming tendency during northern spring and summer 2014. Development of weak El Nino conditions appears possible by the middle of 2014. In the most recent week, the SST anomaly in the Nino3.4 region was 0.0C. Data source: http://iri.columbia.edu/climate/ENSO/currentinfo/SST_table.html

Probability outlook: La Nina (2%), Neutral (96%) and El Nino (2 %) during Dec-Jan-Feb, 2014 season

- Arabian Sea Surface Temperatures are expected to be slightly above normal near the coast of Pakistan.
- Caspian Sea surface temperatures expected to be slightly 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 leading to normal/below normal rainfall over the region.

Seasonal Weather Outlook Summary (Jan, 2014)

Synthesis of the latest model forecasts for Jan-Mar, 2014 (JFM), current synoptic situation and regional weather expert's judgment indicates that average precipitation is expected all over the country with slightly above normal during January and normal during February and March. Below Normal temperature is likely to occur during predicted season all over the country with least during March. In January central parts of the country will be marked below average while during February and March, temperature will be below normal all over the country. Neutral-ENSO condition is expected to persist throughout the predicted period.

Weather outlook

“Average precipitation is expected during the season all over the country with more snowfall over the northern region during January.”

- I. Average ($\pm 15\%$) precipitation is expected during predicted season.
- II. In January slightly above normal precipitation over northern parts of the country is expected with less than average night temperature over central parts of the country.
- III. In February average precipitation with less than average night temperature is expected all over the country.
- IV. In March normal to slightly below normal precipitation is likely to prevail over the country. However, below average night temperature will persist all over the country.
- V. Density of fog will be less during upcoming winter months
- VI. Two to three rainy spells are expected during January. The focus of rainy spell will be towards north and southern Khyber Pakhtunkhwa (KP).
- VII. Very limited chances of well rainy spell over southern Punjab and Sindh during month of January.
- VIII. In February one to two rainy spell are expected in third decade and focus may be towards southern and central parts of the country.
- IX. March may be dry month in most of agriculture plain however; light precipitation is expected over northern parts of the country.
- X. The focus of monsoonal weather systems during whole predicted months will be towards Northern parts of the country where as in February one to two spells are expected towards southern parts of the country.
- XI. Well intense snowfall spells over northern glaciers are expected during January.
- XII. Expected Minimum temperature will be below normal all over the country during whole predicted months whereas March will be expected colder month than normal over the country.

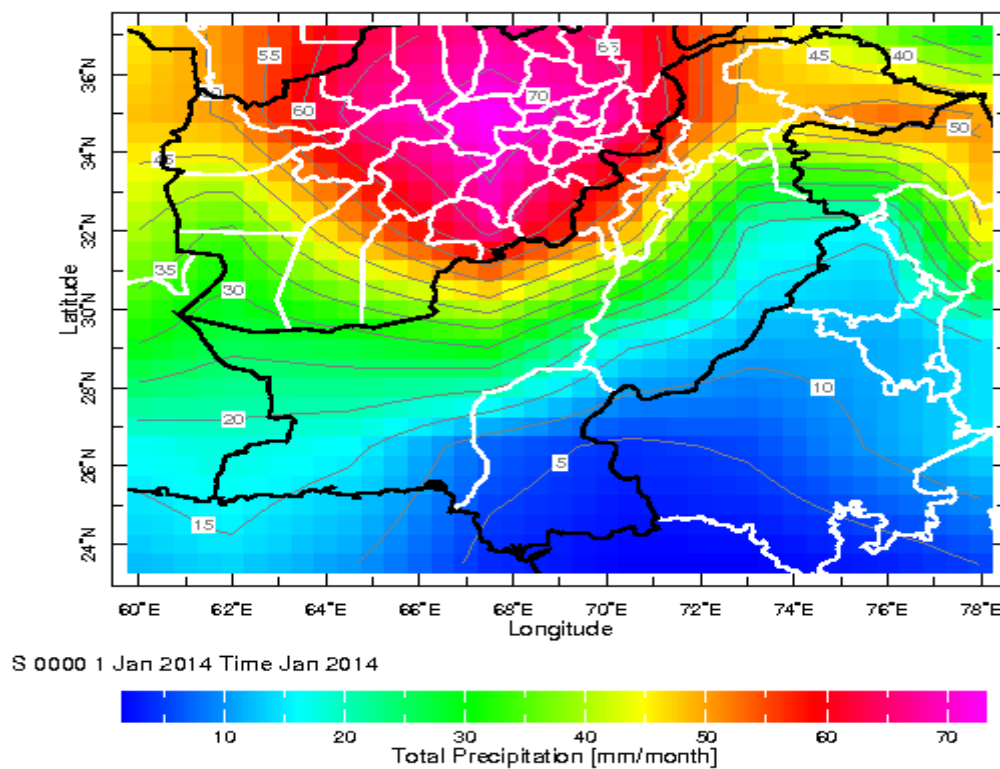
Monthly Quantitative Weather Forecast

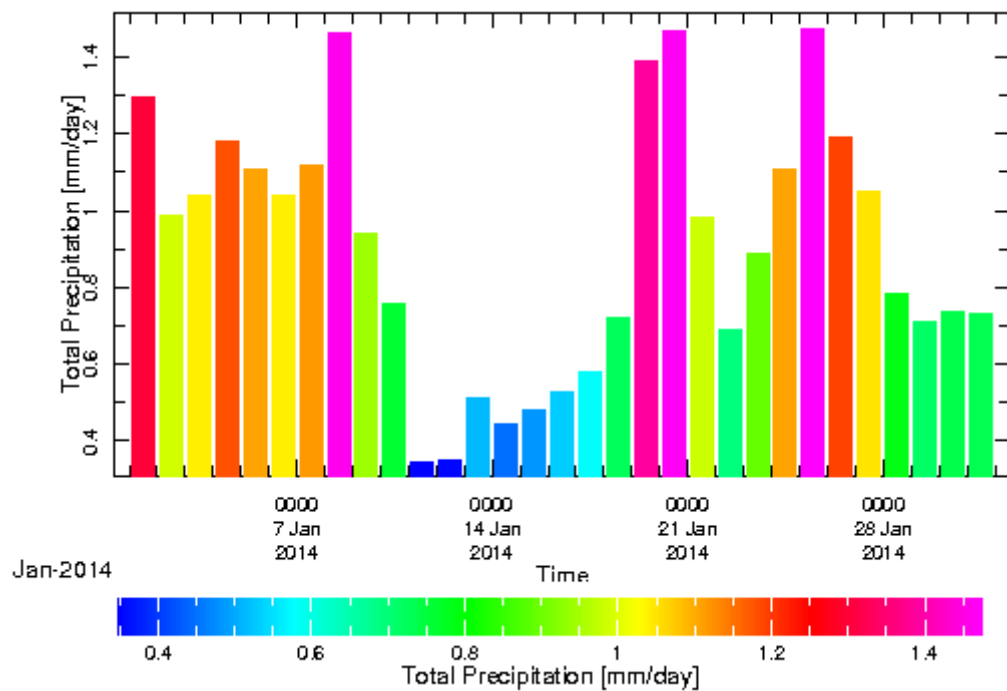
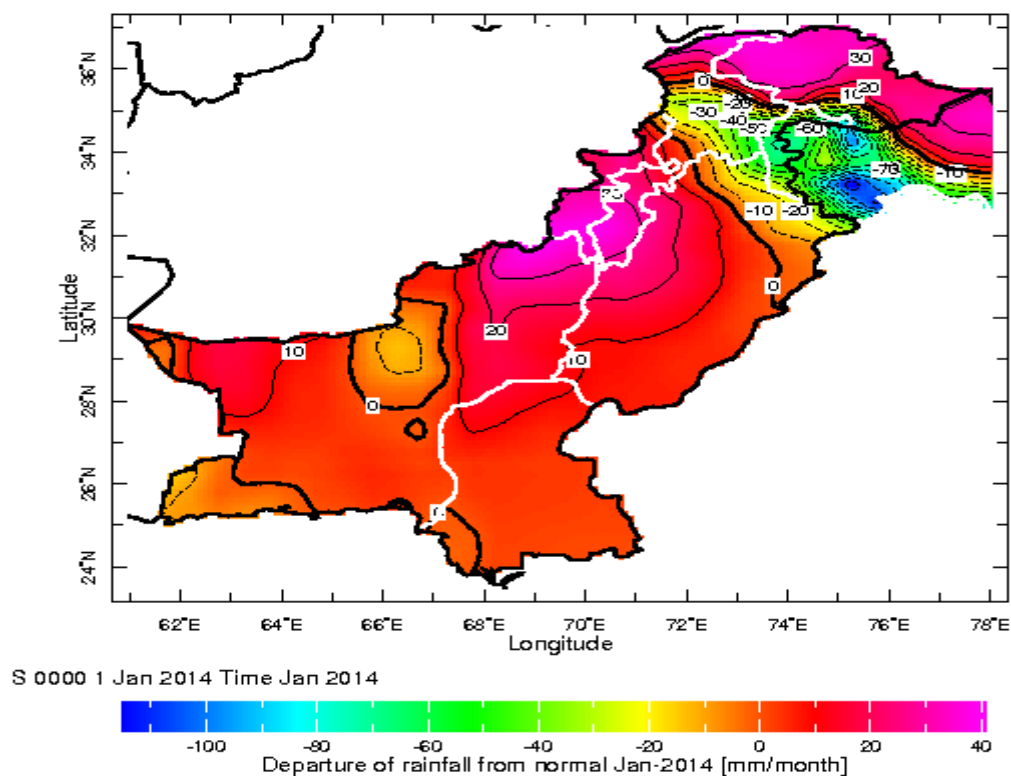
	Jan, 2014		Feb, 2014		Mar, 2014		Dec-Mar, 2014	
	Ave	Exp	Ave	Exp	Ave	Exp	Ave	Exp
GB	27.2	Abv. Ave	29.7	Abv. Ave	34.6	Abv. Ave	91.5	Abv. Ave
KP	49.0	Ave	71.9	Abv. Ave	92.5	Blw. Ave	213.4	Blw. Ave
AJK	91.1	Blw. Ave	110.5	Blw. Ave	127.5	Blw. Ave	329.0	Blw. Ave
FATA	30.2	Abv. Ave	54.0	Abv. Ave	67.4	Blw. Ave	151.6	Abv. Ave
PUNJAB	17.2	Abv. Ave	27.2	Abv. Ave	30.9	Blw. Ave	75.2	Ave
BALUCHISTAN	19.5	Abv. Ave	20.9	Abv. Ave	23.3	Ave	63.7	Abv. Ave
SIND	3.0	Abv. Ave	5.4	Abv. Ave	4.7	Abv. Ave	13.1	Abv. Ave
Pakistan	20.8	Abv. Ave	27.2	Ave	31.7	Ave	79.6	Abv

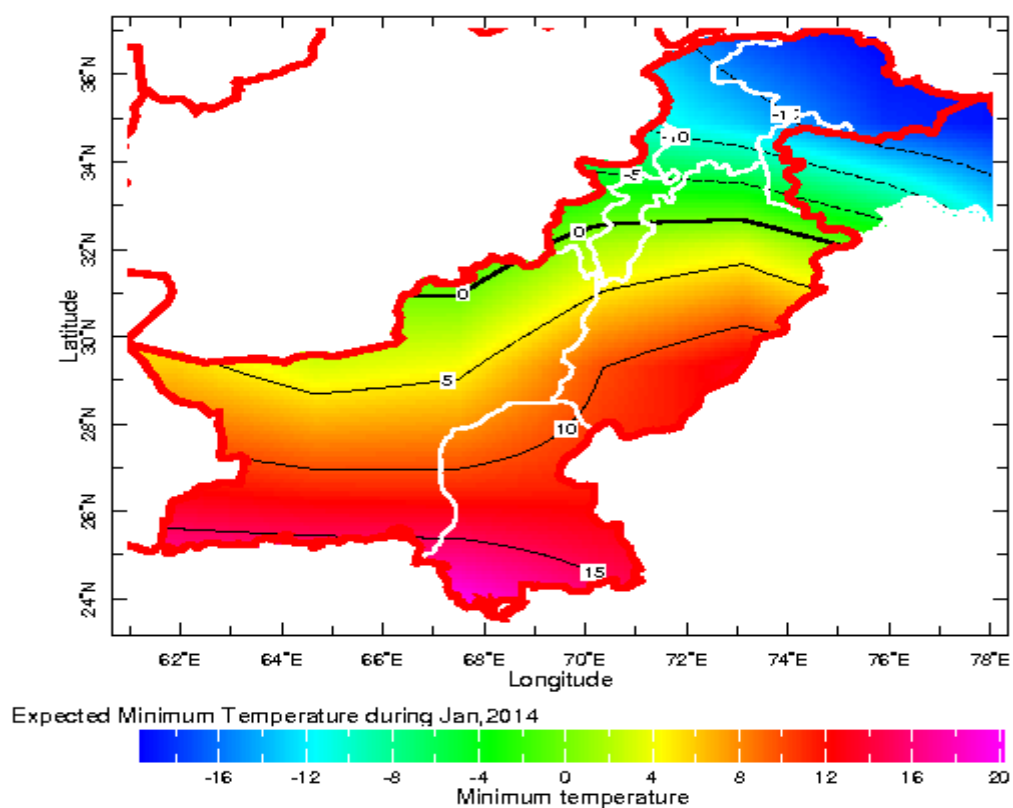
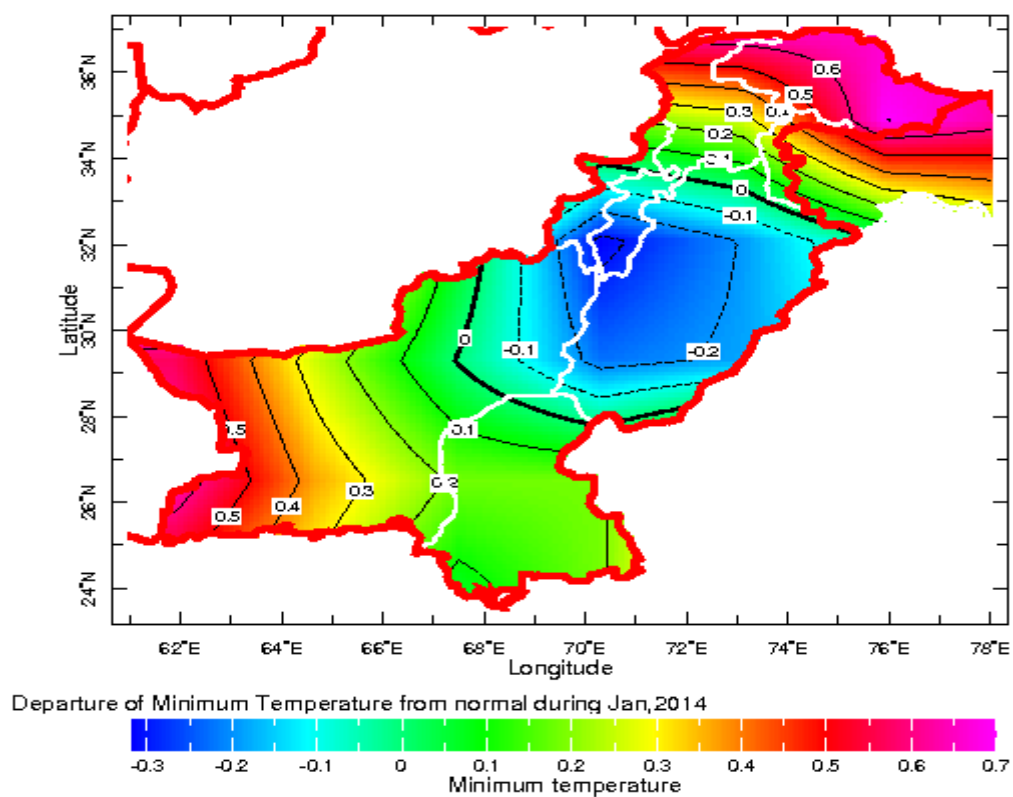
- **Ave. : average (1981-2010)**
- **Exp. : Expected rainfall**
- **Below Average (Blw. Ave) < -15 %**,
- **Average precipitation range (Ave) = -15 to +15 %**,
- **Above Average (Abv.Ave) > +15 %**

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 Jan, 2013 (GCM-ECHAM)



Expected daily rainfall, Jan 2014**Monthly departure from normal (Rainfall) during Jan, 2014**

Spatial distribution of expected Minimum Temperature during Jan, 2014**Monthly departure from normal (Minimum Temperature) during Jan, 2014**

National Weather Data of Selected Cities (December, 2013)

STATIONS	Temperature (°C)		Rainfall (mm)	Number of Rainy Days	Relative Humidity (%)	Wind Speed (Km/Hrs)	Wind Direction
	Min	Max					
PESHAWAR	5.0	20.5	1.0	02	60	2.3	NW
D.I. KHAN	6.0	21.5	0.3	01	60	***	NW
RAWALPIND I	3.9	19.9	2.1	01	68	2.2	W
JHELUM	5.8	21.4	1.4	03	64	1.6	NW
SARGODHA	8.3	21.1	Trace	01	67	0.9	variable
LAHORE	7.3	20.5	7.0	01	74	2.4	NW
FAISALABA D	7.2	21.9	0.0	00	63	2.9	variable
MULTAN	8.1	21.3	0.0	00	65	1.2	N
KHAN PUR	7.5	23.1	0.0	00	63	2.3	NE
QUETTA	-1.3	12.6	1.4	02	43	4.9	N
ROHRI	10.8	24.0	0.0	00	52	2.7	NE
TANDOJAM	10.3	25.9	0.0	00	56	0.2	NE
GILGIT	-2.0	13.0	Trace	01	56	2.0	variable
SKARDU	-6.7	6.9	11.2	07	62	0.2	NNW

National Weather Data of Selected Cities (December, 2013)

STATIONS	Number of Stress Days With		ET _o (mm/day)	Solar Radiation MJ/M ² /Day	Pan Evaporation (mm)	Sunshine Hours
	Mean Relative Humidity ≥ 80%	Minimum Temperature ≤ 0°C				
PESHAWAR	Nil	01	1.2	7.08	27.7	126.5
D.I. KHAN	03	03	1.4	9.74	69.4	212.2
RAWALPINDI	00	02	1.1	8.82	38.6	187.6
JHELUM	03	Nil	1.1	8.69	27.8	193.7
SARGODHA	06	Nil	1.1	8.07	39.2	162.6
LAHORE	08	Nil	1.3	8.56	42.8	171.5
FAISALABAD	04	Nil	1.5	8.60	50.0	171.35
MULTAN	06	Nil	1.2	9.17	46	180.9
KHAN PUR	02	01	2.0	9.95	64.1	193.8
QUETTA	Nil	16	1.8	13.07	67.1	274.5
ROHRI	00	Nil	2.5	12.27	54.2	257.6
TANDOJAM	01	Nil	1.6	13.22	65.1	267.4
GILGIT	01	22	1.2	6.01	Ice Covered	86.8
SKARDU	03	31	0.6	6.26	***	96.3

SOIL TEMPERATURE (°C)

STATION	TIME (PST)	DEPTHS (cm)					
		5	10	20	30	50	100
RAWALPINDI	8 AM	8.8	11.4	11.3	12.6	14	17.2
	2 PM	14	12.5	11.8	12.9	14.1	17.2
	5 PM	13.6	13.2	12.4	12.6	14	17.2
FAISALABAD	8 AM	10.1	11.1	13.5	15.0	16.7	19.9
	2 PM	17.5	15.8	14.4	14.9	16.4	19.9
	5 PM	16.4	16.2	15.3	15.1	16.4	19.9
TANDOJAM	8 AM	14.5	17.7	20.0	21.4	22.9	***
	2 PM	23.0	23.4	20.9	21.3	22.8	***
	5 PM	23.0	23.5	20.9	21.2	24.7	***
QUETTA	8 AM	0.9	2.5	6.3	6.8	8.1	12.9
	2 PM	12.4	11.1	7.5	7.2	8.0	12.9
	5 PM	11.8	11.2	8.4	7.4	7.9	13.0

جنوری 2014ء میں کاشتکاروں کیلئے زرعی موسمیاتی مشورے

ماہ کبیر میں ملک بھر میں معمول سے کم بارشیں ہوئیں اور موسم زیادہ خشک اور سرد رہا۔ جنوری کے مہینے میں ہونے والی متوقع بارشوں سے بہتری آجائے گی۔ جنوری موسم سرما کا سرد ترین مہینہ ہوتا ہے جس کے دوران زرعی میدانوں میں عموماً دیہہ حرارت نقطہ انجماد سے نیچے چلے جاتے ہیں اور اکثر پہاڑوں پر برفباری ہوتی رہتی ہے۔ سطح مرتفع پونٹھار میں دیہہ حرارت نقطہ انجماد تک پہنچ جائیں گے۔ ایسے دیہہ حرارت جہاں فصلوں کیلئے نقصان کا باعث بنتے ہیں وہاں انکے لئے مفید بھی ثابت ہوتے ہیں خاص کر سب کیلئے برف باری فائدہ مند ہوتی ہے۔ نقصان یا فائدے کا تعین فصل کی قوت برداشت سے کیا جاسکتا ہے۔ ہیزیوں کے پودے عام طور پر بہت مازک ہوتے ہیں اور وہ حفاظتی اقدامات کی عدم موجودگی میں بالکل فنا ہو جاتے ہیں۔ گندم اور جو کی فصل کی نشوونما انتہائی کم دیہہ حرارت کی صورت میں رک جاتی ہے ایسی صورت حال اس وقت پیدا ہوتی ہے جب پورے دن کا اوسط دیہہ حرارت ۵ ڈگری سینٹی گریڈ سے بھی کم رہے۔ دوسری صورت میں اگر رات کو دیہہ حرارت نقطہ انجماد یا اس سے بھی نیچے چلا جائے اور دن کو دیہہ حرارت زیادہ ہونے کی وجہ سے روزانہ کا اوسط ۵ ڈگری سینٹی گریڈ سے زیادہ ہو جائے تو اس پودے کے قدرتی افزائش رک جاتی ہے اور پودا دن کی روشنی میں اپنے لیے بنائی گئی خوراک کو یوں کرنے میں صرف کر دیتا ہے۔ فصل زیادہ جھاڑ دینے کیلئے پہلی منزل کامیابی سے طے کر جاتی ہے۔

ماہ جنوری کے دوران کسانوں سے مندرجہ ذیل گزارشات ملحوظ خاطر رکھنے کی گزارش ہے۔

- ۱۔ کورے سے بچاؤ کیلئے حفاظتی تدابیر پر عمل جاری رکھیں مگر دن کے وقت پودوں پر تنگیوں سے بنائی گئی جھونپڑی کو سورج کی سمت سے کھول دینا چاہیے تاکہ پودا سورج کی روشنی سے اپنی خوراک بناتا رہے۔ اس طرح انکی قوت مدافعت بھی برقرار رہے گی۔
- ۲۔ جڑی بوئیاں فصل کے پودوں کے حصے کا پانی اور خوراک زمین سے استعمال کر لیتی ہیں اور پودے نپوٹ کر دیتے ہیں اور نہ ہی صحت مند رہ سکتے ہیں۔ ابھی فصل زیادہ بڑی نہیں ہوئی اس لیے فصل میں داخل ہو کر جڑی بوئیوں کی تلفی کریں۔ تلف شدہ جڑی بوئیاں جانوروں کے چارے کے طور پر بھی استعمال کی جاسکتی ہیں اور دوسری طرف آپ کا گلے سال کیلئے خالص سبزی بھی گھر پر دستیاب ہوگا۔
- ۳۔ دودھ دینے والے جانوروں اور انکے نکلنے والے پودوں کیلئے شدید سردی حفاظتی اقدامات کی عدم موجودگی کے باعث نقصان دہ ثابت ہوتی ہے۔ سردی سے متاثر ہونے والے جانوروں کی دودھ کی پیداوار بہت کم ہو جاتی ہے جبکہ انکے بچے بعض اوقات زندگی سے تھک جھوٹے ہیں۔ اس لیے ضروری ہے کہ انہیں رات کی سردی اور خشک ہواؤں سے محفوظ رکھا جائے۔ مرغیوں کے کاندوں اور گوشت کی پیداوار بھی سردی کی شدت کی وجہ سے بری طرح متاثر ہوتی ہے۔ اس نقصان سے بچنے کیلئے ضروری ہے کہ جانوروں کے شدید مناسب دیہہ حرارت تک گرم رکھے جائیں۔
- ۴۔ زراعت کی کامیابی میں موسمی حالات کا بہت عمل دخل ہے اور بہتر حکمت عملی سے غیر موسمی حالات سے استفادہ کیا جاسکتا ہے۔ محکمہ موسمیات کی پیش گوئی کو ملحوظ خاطر رکھ کر 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 جاسکتا ہے۔ جن کا پتہ درج ذیل ہے۔

۱۔ نیشنل ایگرو میٹ سنٹر پی۔ او۔ بکس نمبر 1214، بیکلراج ایٹ ٹو، اسلام آباد، فون نمبر: 051-9250299

۲۔ نیشنل فورکاسٹنگ سنٹر برائے زراعت، پی۔ او۔ بکس، 1214، بیکلراج ایٹ ٹو، اسلام آباد، فون نمبر: 051-9250363-4

۳۔ ریجنل ایگرو میٹ سنٹر نزد رانی یونیورسٹی، مری روڈ، راولپنڈی۔ فون نمبر: 051-9290635

۴۔ ریجنل ایگرو میٹ سنٹر، ایوب ریسرچ انسٹیٹیوٹ، جھنگ روڈ، فیصل آباد۔ فون نمبر: 041-2657047

۵۔ ریجنل ایگرو میٹ سنٹر، ایگرو پکچر ریسرچ انسٹیٹیوٹ، ٹنڈو جام۔ فون نمبر: 0222-766583

۶۔ ریجنل ایگرو میٹ سنٹر، ایگرو پکچر ریسرچ انسٹیٹیوٹ، سریاب روڈ، کوئٹہ۔ فون نمبر: 081-9211211

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پھلدار پودوں اور زراعت کی کورے سے حفاظت

پھلدار پودوں کو موسمی اثرات سے بچانے کے لیے احتیاطی تدابیر کا جانا بہت لازمی ہے۔ جب رات کو کور پڑتا ہے تو ٹھنڈک کی وجہ سے پانی جم جاتا ہے تو وہ لمبا طعم پھیلنے کے عمل سے پتوں کے خلیے ٹوٹ جاتے ہیں اور بعد میں پتے خشک ہو جاتے ہیں۔ اگر کورے کی شدت بہت زیادہ ہو تو اس سے پودوں کی ٹہنیاں بھی خشک ہو جاتی ہیں اور پودوں کی ناقابل تلفی نقصان ہوتا ہے جس سے پیداوار بری طرح متاثر ہوتی ہے۔ سدا بہار پودوں میں آم، لچھی، مہینچا، کیلا اور لیسن وغیرہ کورے سے بے حد متاثر ہوتے ہیں۔ کور زیادہ تر دسمبر، جنوری اور فروری کے مہینوں میں پڑتا ہے۔ کور پڑنے کا عمل اس وقت شروع ہوتا ہے جب دن کے وقت دھوپ پڑنے سے زمین اور پودے گرم ہو جاتے ہیں اور گر دوش کی ہوا گرم ہو جاتی ہے۔ اس طرح باغات کے اوپر ایک گرم ہوا کی تہ بن جاتی ہے۔ اور رات کو یہ سلسلہ الٹ ہو جاتا ہے۔ زمین اپنی حرارت بیرونی شعاع کے ذریعے صاف اور ٹھنڈے آسمان کی طرف خارج کرتی ہے جس سے زمین کے قریب کی ہوا ٹھنڈی ہو جاتی ہے۔ یہ ٹھنڈی ہوا گرم ہوا کی نسبت بھاری ہوتی ہے۔ اس لئے وہ زمین کی سطح کے قریب رہتی ہے اور رات کو یہ ہوا کورے یا کہہ کر فصل اختیار کر لیتی ہے۔ باغبان حضرات کو دسمبر، جنوری اور فروری کے مہینوں میں بڑا محتاط رہنا چاہیے۔ کم سے کم درجہ حرارت معلوم کرنے کیلئے مخصوص جگہ جو پانچ فٹ بلند ہو تھرمامیٹر لگا کر چاہئے۔ ایک تھرمامیٹر چار سینکڑے رقبہ کے لئے کافی ہے۔ اگر درجہ حرارت 0.5 ڈگری سینٹی گریڈ سے نیچے گر جائے تو کور پڑنے کی توقع کی جاسکتی ہے۔ اگر تھرمامیٹر موجود نہیں ہے تو سادہ طریقے سے بھی کور پڑنے کے بارے میں معلوم کیا جاسکتا ہے۔ اس طریقے میں ایک چوڑے برتن میں آدھا گلیسر لٹائی تک پانی ڈال کر اسے کھلے کھیت یا باغ میں رکھیں اگر شام تک پانی جمنے لگے تو کور پڑنے کا امکان ہوتا ہے۔ ترشادہ پھلوں اور آم کے چھوٹے درختوں کو سردی اور کھڑے سے بچانے کے لئے جنرل جیسے پودے کی چھریوں کا پودے کی قامت تک ڈھانچہ بنا کر اس کے اوپر پرالی یا پوٹی تھیں سے ڈھانچہ دینا چاہئے۔ بعض باغبان یہ غلطی کرتے ہیں کہ ڈھانچہ بنائے بغیر کھوری یا پرالی سے ڈھانچہ دیتے ہیں۔ یہ طریقہ ٹھیک نہیں ہے۔ کچھ باغبان حضرات آم کے باغ کے گرد کیلا کاشت کر دیتے ہیں ایسا کرنے سے پودا کورے کے نقصان سے محفوظ رہتا ہے۔ لیکن پودے کی خوراک کا بیشتر حصہ کیلا حاصل کر لیتا ہے اور آم کے پودے کمزور ہو جاتے ہیں۔ بعض باغبان حضرات اکتوبر، نومبر میں چارے کی فصل یعنی باجرا وغیرہ کاشت کر دیتے ہیں اس طرح پودے کورے سے بچ جاتے ہیں لیکن بہت سارے اجزاء خوراک چارے کی فصلات کی زمرہ میں جاتے ہیں اور پھلدار درختوں کو فائدہ کی بجائے نقصان پہنچاتا ہے۔ پودوں کے نچلے حصوں پر مٹی چڑھا کر رکھیں تاکہ پانی تنے کو نہ لگ سکے اور رات کے وقت اخراج کے لئے پودے زیادہ سے زیادہ حرارت جذب کر سکیں۔ اگر میانی (inter cropping) فصل کی کاشت ضروری ہو تو جوان پودوں کے پھیلاؤ کیلئے معقول جگہ چھوڑ دی جائے اور اس میں اچھی طرح عمل چلایا جائے۔ اگر برسم کی کاشت کی گئی ہو تو اسے ان مہینوں میں زمین کے بالکل قریب سے کاٹا جائے۔ پودوں کے تنوں کو سفیدی کی جائے۔ ایسے پودے جن پر پتوں کی چھتری ندنی ہو اور کم عمر ہوں ان کے گرد دیوڑیوں، بھوریوں، پرالی یا پھر پوٹی تھیں لپیٹ دی جائے۔ کورے یا کہہ کر کی توقع راتوں کو کھیتوں میں پانی دیا جائے اس سے امروہ، آم اور ترشاد پھلوں کو کورے کے اثرات سے باآسانی بچایا جاسکتا ہے۔ باغبان حضرات گندم کے بھوسے گھاس پھوس یا کسی ایسی چیز پر بھٹی میں استعمال شدہ فرنس آئل کو بڑا کر مختلف جگہوں پر دھواں پیدا کریں لیکن دھواں معمولی طور پر کم کرتا ہے۔ ہوا توڑ ہاڑوں کا استعمال نہ صرف سرد ہواؤں سے بچاتا ہے بلکہ گرم اور خشک ہواؤں سے بھی محفوظ رکھتا ہے۔ آم کے کاشتکار آم کے باغات کو کورے سے بچانے کے لئے فاسٹورس والی کھادوں سنگل سپر فاسفیٹ بحساب 6 تا 4 کلوگرام یا ٹریبل سپر فاسفیٹ 1 تا 2 کلوگرام لمبا طعمی پودا ڈالیں اور پودا ش والی کھاد بحساب 2 کلوگرام فی پودا ڈالیں۔ شیشم، آم، شہتوت اور زیتون کے لمبے چلے درختوں کی باڑیں بہت ضروری ہیں۔ انہیں باغ لگانے سے دو تین سال پہلے لگائیں۔ زیادہ ٹھنڈک والے علاقوں یعنی پوٹھواریا راولپنڈی ڈیرن میں ترشاد پھلوں کے پودوں کو پہلے ایک دو سال کورے سے بچانے کیلئے ڈھانچا ضروری ہے۔ باغبانوں کو چاہئے کہ ریڈیو ایٹی وی نشر ہونے والی موسمیاتی رپورٹ سے آگاہ رہیں تاکہ قبل از وقت کورے سے بچاؤ کیلئے حفاظتی اقدامات کئے جائیں۔ شہر اور باغات میں میانی فصل (inter cropping) بالکل کاشت نہیں کرنی چاہئے۔ کیونکہ دن کے وقت وہ زمین کو حرارت جذب کرنے نہیں دیتیں اور دوسرے کہہ کر راتوں کو فضا کی رطوبت میں اضافہ کرتی ہیں۔ کہہ کر کی توقع راتوں میں آبیاشی ضرور کریں۔ پھول ٹھنڈے سے پہلے موسم بہار میں پودوں پر سردی سے متاثر ہوا شاخوں کو کاٹ دیا جائے اور زخموں پر بورڈوپیسٹ لگائی جائے۔

مضمون کے ماخذ: