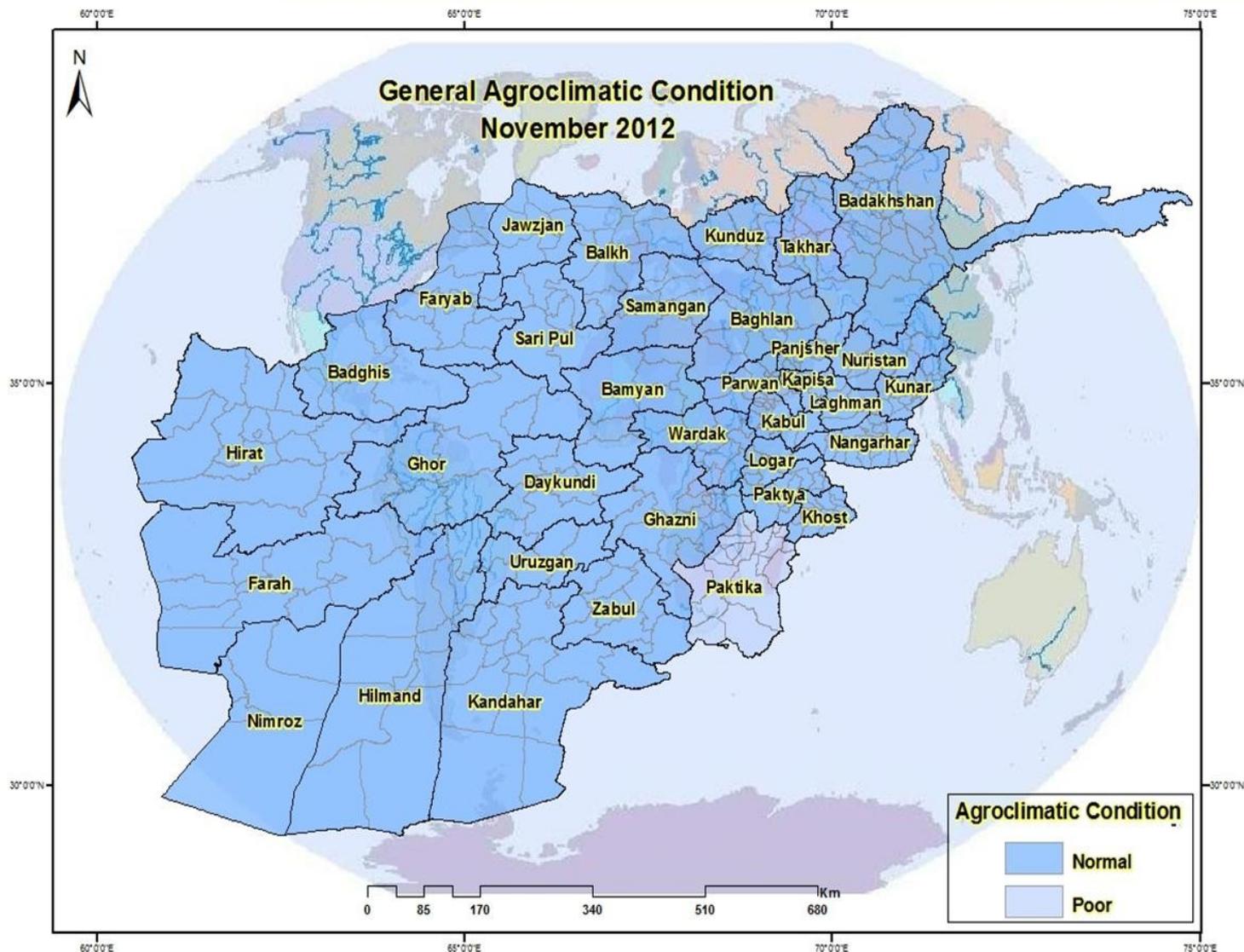




# The Afghanistan Agrometeorological Monthly Bulletin

Issue No: 93  
November: 2012

Topics Crop Information Precipitation Temperature NDVI



Snowfall

1

Crop Condition

2

Crop Stage

3



The Agromet Project of USGS, is working together with the Ministry of Agriculture, Irrigation and Livestock (MAIL) and the Afghan Meteorological Authority (AMA) of Ministry of Transport (MoT)

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Issue No: 93  
November 2012

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### Data Source:

Ministry of Agriculture , Irrigation and Livestock (MAIL), Agromet Project , Afghan Meteorological Authority (AMA), United States Geological Survey (USGS).

## Summary

Most parts of the country received light precipitation during the month of November 2012. However high elevation in the North eastern region and Northern region received good rainfall, rainfall had a significant decrease in the rest parts of the country. Comparison of rainfall data for the month of November 2012 with the same month in 2011 shows significant decrease of rainfall during the month of November 2012 over the same month of last year all over the country.

During the month of Nov 2012, temperature had different situation as in some parts of the country temperature had negative departure while in some other parts temperature was accompanied with positive departure. Temperature dropdown at freezing point during this month while, in most parts of the country particularly the Central Highlands, Western region Northeastern and Southeastern regions lowest temperature.

### Crop Stage, Crop Condition and Adverse Factor

Zone	Province	District	Station	Wheat		
				Crop Stage	Crop Condition	Adverse Factor
Central	Kabul	Shakardara	Karizmir	Emergence	Normal	Not Exist
		Paghman	Paghman	Emergence	Normal	Not Exist
		Kabul	Darulaman	Emergence	Normal	Not Exist
		Surubi	Surubi	<b>Planting</b>		
	Dara	Dara				
	Panjsher	Dashtak	Dashtak	Emergence	Normal	Not Exist
		Syagerd	Gorband	Emergence	Normal	Not Exist
	Parwan	Charikar	Charikar	<b>Planting</b>		
		Mahmoodraqi	Mahmoodraqi			
	Kapisa	Kohistan	Kohistan	<b>Planting</b>		
		Maidan shehr	Maidan shehr			
	Wardak	Pole Alam	Pole Alam	<b>Planting</b>		
	Bamyan	Bamyan	Bamyan	Emergence	Normal	Not Exist
		Yakawlang	Yakawlang	Emergence	Normal	Not Exist
		Panjab	Panjab	Emergence	Normal	Frost
		Shebar	Shebar	Emergence	Normal	Not Exist
		Kohmard	Kohmard	Emergence	Normal	Not Exist
	Ghazni	Andar	Bande Sardi	<b>Planting</b>		
	Dikondy	Nili	Nili	Emergence	Normal	Not Exist
		Khideer	Khideer	<b>Planting</b>		
East	Nangarhar	Agam	<b>Planting</b>			
		Batikot				Ghaziabad
		Jalalabad	Farm jaded	Emergence	Normal	Not Exist

## Crop Stage, Crop Condition and Adverse Factor

Zone	Province	District	Station	Wheat					
				Crop Stage	Crop Condition	Adverse Factor			
East	Kunar	Asmar	Asmar	<b>Planting</b>					
		Asad Abad	Asad Abad						
		Chawkay	Chawkay						
	Laghman	Mihtarlam	Mihtarlam						
		Qarghay	Qarghay						
		Alengar	Alengar				Emergence	Normal	Not Exist
	Noristan	Paroon	Paroon	<b>Harvested</b>					
		Do Ab	Do Ab						
		Norgaram	Norgaram	<b>Planting</b>					
		Waigal	Waigal						
Wama		Wama							
North East	Takhar	Taluqan	Taluqan	<b>Planting</b>					
		Rostaq	Rostaq						
	Kunduz	Imam Sahib	Imam Sahib						
		Qaliazal	Aqtipa						
		Khan Abad	Khan Abad						
		Kunduz	Kunduz						
		Archi	Archi						
		Chardara	Chardara						
	Ali Abad	Ali Abad							
	Baghlan	Pulikhomri	Pozaishan	<b>Ploughing</b>					
		Doshy	Doshy	<b>Planting</b>					
	Badakhshan	Argo	Argo						
		Baharak	Baharak						
		Ashkashm	Ashkashm				<b>Harvested</b>		
		Khash	Khash				<b>Planting</b>		
		Faiz Abad	Faiz Abad						
South East	Khost	Khost	Khost	Emergence	Normal	Not Exist			
		Khost	Shimal	Emergence	Normal	Not Exist			
		Ali Sher	Ali Sher	Emergence	Normal	Not Exist			
	Paktia	Zormat	Rohani Baba	Emergence	Normal	Not Exist			
		Gardiz	Tera	<b>Dormancy</b>					
	Paktika	Urgon	Urgon	Emergence	Poor	Poor Rainfall			
		Sharana	Sharana	Emergence	Poor	Poor Rainfall			
		Khair kot	Khair Kot	Emergence	Poor	Poor Rainfall			

## Crop Stage, Crop Condition and Adverse Factor

Zone	Province	District	Station	Wheat					
				Crop Stage	Crop Condition	Adverse Factor			
South	Nimroz	Zaranj	Zaranj	<b>Ploughing</b>					
	Kandahar	Kandahar	Kandahar						
		Kohkaran	Kohkaran	<b>Harvested</b>					
	Zabul	Qalat	Qalat	Emergence	Normal	Poor Rainfall			
	Urozgan	Tirin Kot	Tirin Kot	<b>Planting</b>					
	Hilmand	Nad Ali	Nad Ali	<b>Planting</b>					
		Greshk	Greshk						
		Nawa	Nawa						
Lashkargah		Bolan							
North	Balkh	Takhta pol	Dihdadi	<b>Planting</b>					
		Mazar shareef	Mazare shareef						
		Nahrishahi	Nahrishahi						
		Dawlat Abad	Dawlat Abad						
	Jawzjan	Sheberghan	Sheberghan						
		Darzab	Darzab						
		Aqcha	Aqcha						
	Saripul	Saripul	Saripul						
		Sancharak	Sancharak						
		Sozmaqala	Sozmaqala						
	Faryab	Maimana	Maimana				<b>Ploughing</b>		
		Andkhoy	Andkhoy				<b>Harvested</b>		
		Garzeewan	Garzeewan				<b>Planting</b>		
	Samangan	Aibak	Aibak				<b>Harvested</b>		
		Dara Souf	Dara Souf				<b>Planting</b>		
		Sar bagh	Sarbagh				<b>Harvested</b>		
North West	Badghis	Maqur	Maqur	<b>Planting</b>					
		Qalainow	Qalainow						
	Ghor	Chaghcharan	Chaghcharan	Emergence	Normal	Not Exist			
		Dawlat yar	Dawlat yar	Emergence	Normal	Not Exist			
	Hirat	Shindand	Shindand	<b>Planting</b>					
		Hirat	Hirat						
		Zindajan	Zindajan						
		Gwazara	Falahat						
		Hirat	Farm Urdokhan						
	Farah	Farah	Farah	<b>Planting</b>					

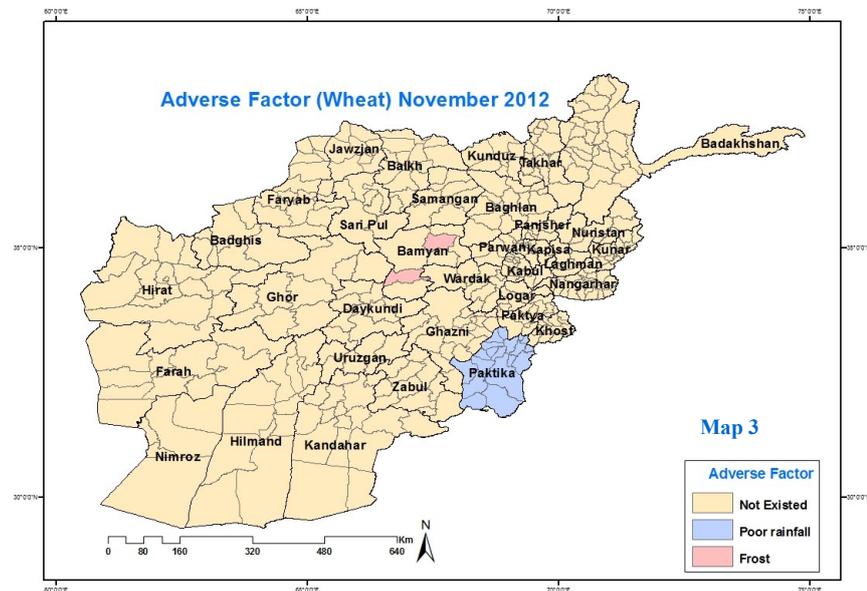
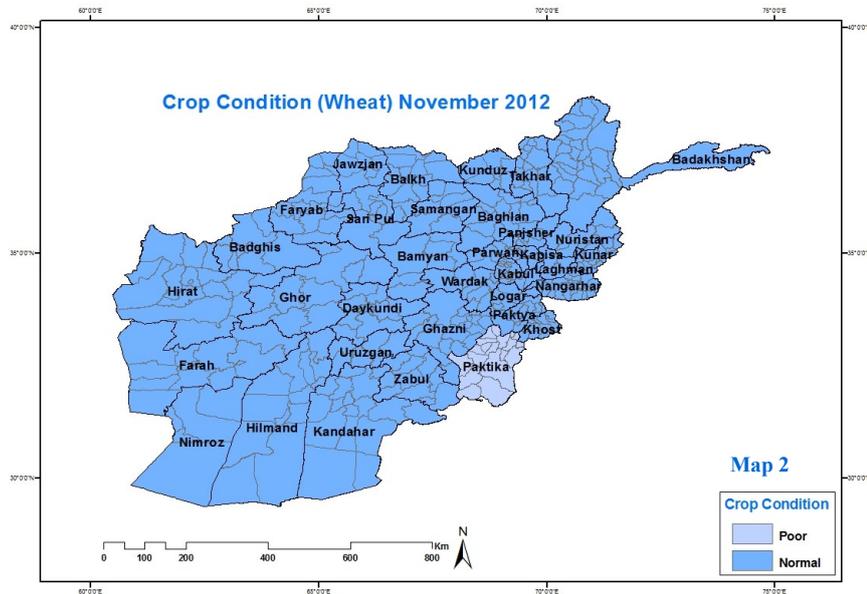
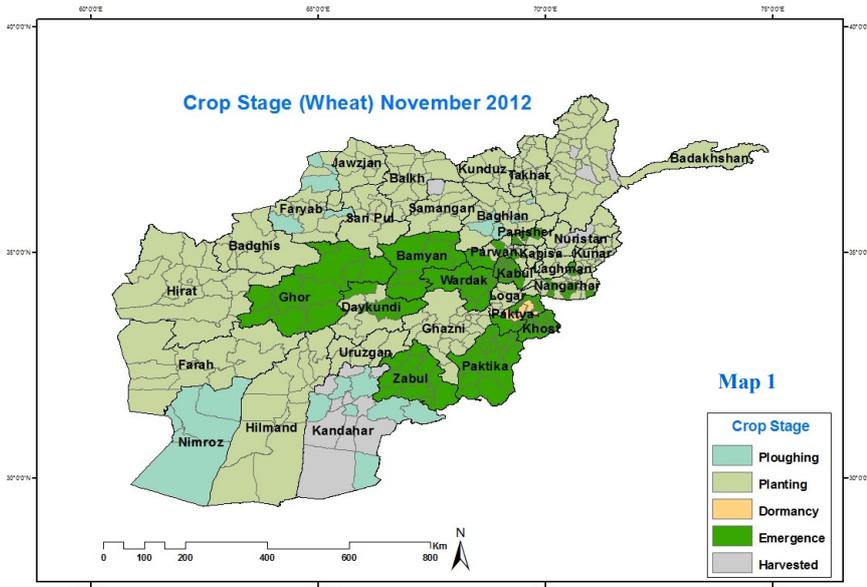
## Crop Stage, Crop Condition and Adverse Factor

Zone	Province	District	Station	Maize		
				Crop Stage	Crop Condition	Adverse Factor
Central	Kabul	Surubi	Surubi	Harvested		
	Panjsher	Dashtak	Dashtak			
	Parwan	Syagerd	Gorband			
		Charikar	Charikar			
	Kapisa	Mahmoodraqi	Mahmoodraqi			
		Kohistan	Kohistan			
	Logar	Pole Alam	Pole Alam			
Bamyan	Kohmard	Kohmard				
Dikondy	Khideer	Khideer				
East	Nangarhar	Agam	Agam			
		Batikot	Ghaziabad			
		Jalalabad	Farm jaded			
	Kunar	Asmar	Asmar			
		Asad Abad	Asad Abad			
		Chawkay	Chawkay			
	Laghman	Qarghay	Qarghay			
		Alengar	Alengar			
	Noristan	Paroon	Paroon			
		Do Ab	Do Ab			
Norgaram		Norgaram				
Waigal		Waigal				
North East	Kunduz	Kunduz	Kunduz			
		Archi	Archi			
		Ali Abad	Ali Abad			
	Baghlan	Pulikhomri	Pozaishan			
South East	Khost	Khost	Shimal			
		Ali Sher	Ali Sher			
	Paktia	Zormat	Rohani Baba			
		Gardiz	Tera			
Paktika	Urgon	Urgon				
South	Kandahar	Kohkaran	Kohkaran			
	Urozgan	Tirin Kot	Tirin Kot			
	Hilmand	Nad Ali	Nad Ali			
		Greshk	Greshk			
		Nawa	Nawa			
		Lashkargah	Bolan			
North	Balkh	Takhta pol	Dihdadi			
		Mazar shareef	Mazare shareef			
		Nahrishahi	Nahrishahi			
	Saripul	Saripul	Saripul			
	Faryab	Maimana	Maimana			
	Samangan	Dara Souf	Dara Souf			
North West	Hirat	Shindand	Shindand			
		Hirat	Hirat			
	Farah	Farah	Farah			

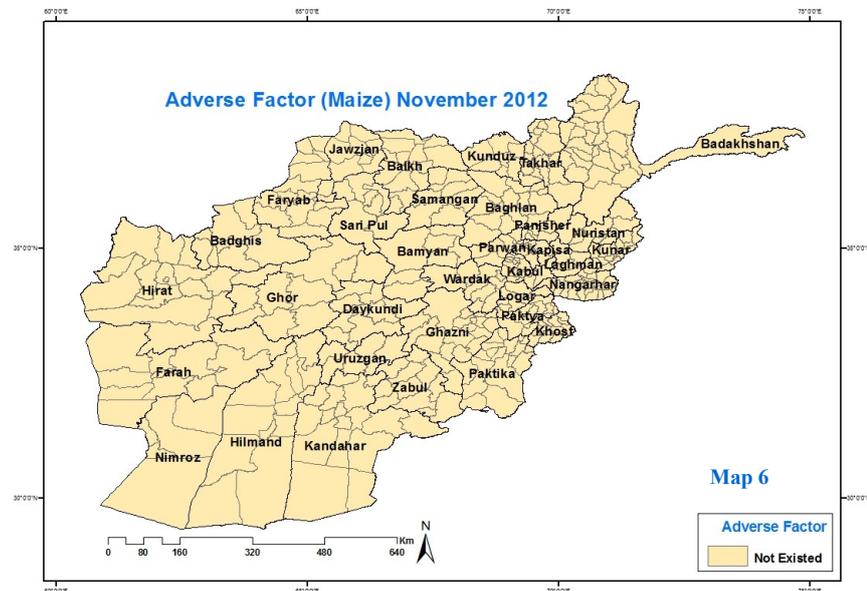
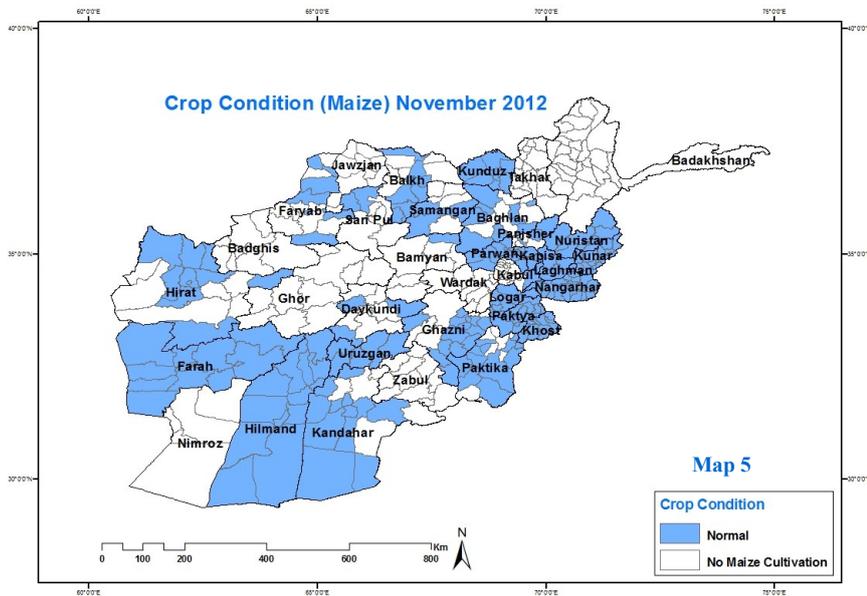
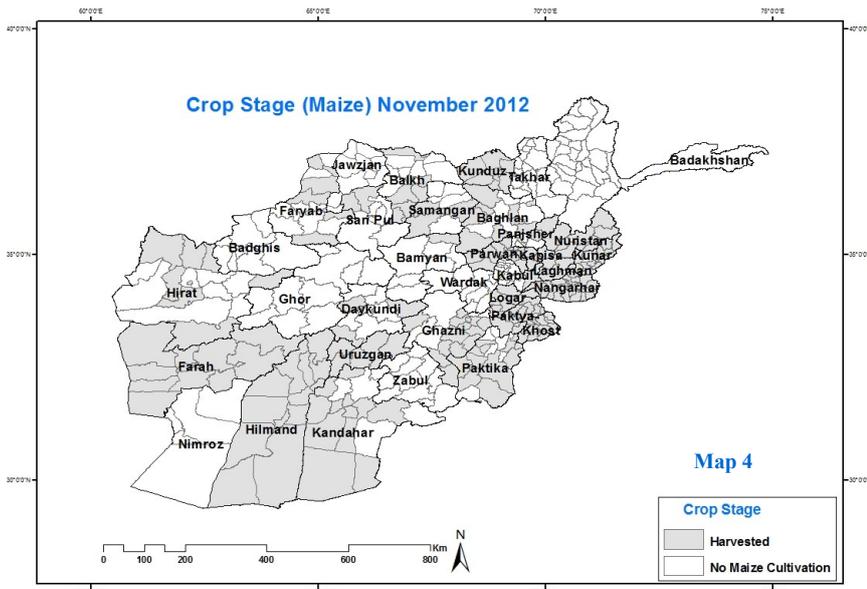
## Crop Stage, Crop Condition and Adverse Factor

Zone	Province	District	Station	Rice		
				Crop Stage	Crop Condition	Adverse Factor
<b>Central</b>	<b>Kabul</b>	Surubi	Surubi	<b>Harvested</b>		
<b>East</b>	<b>Nangarhar</b>	Agam	Agam			
		Batikot	Ghaziabad			
		Jalalabad	Farm jaded			
		Behsood	Behsood			
	<b>Kunar</b>	Asmar	Asmar			
		Asad Abad	Asad Abad			
<b>Laghman</b>	Mihtarlam	Mihtarlam	<b>Harvesting</b>			
	Qarghay	Qarghay				
<b>North East</b>	<b>Takhar</b>	Taluqan	Taluqan			
	<b>Kunduz</b>	Imam Sahib	Imam Sahib			
		Qaliazal	Aqtipa			
		Khan Abad	Khan Abad			
		Kunduz	Kunduz			
		Archi	Archi			
		Ali Abad	Ali Abad			
	<b>Baghlan</b>	Pulikhomri	Pozaishan			
Doshy		Doshy				
<b>South East</b>	<b>Khost</b>	Khost	Khost			
		Khost	Shimal			
		Ali Sher	Ali Sher			
	<b>Paktia</b>	Zormat	Rohani Baba			
<b>South</b>	<b>Urozgan</b>	Tirin Kot	Tirin Kot			

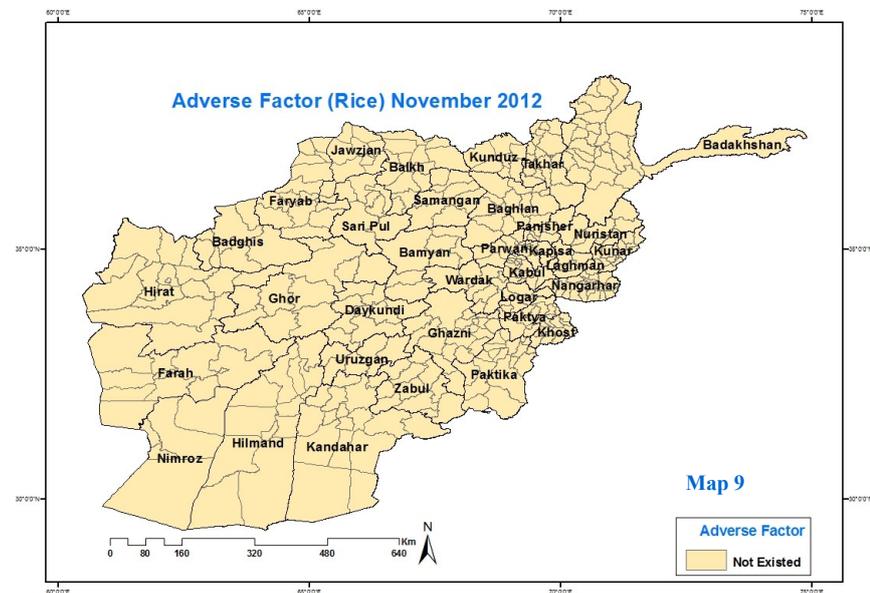
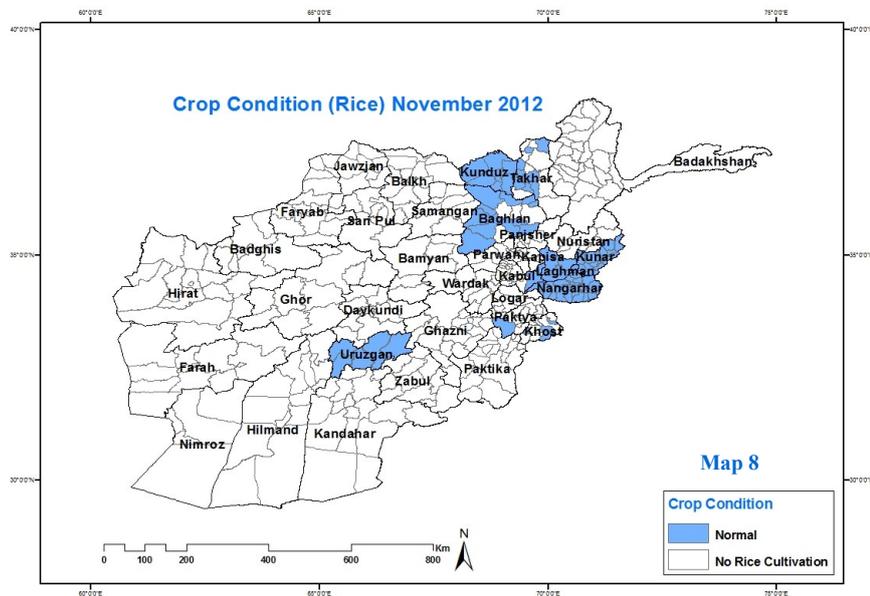
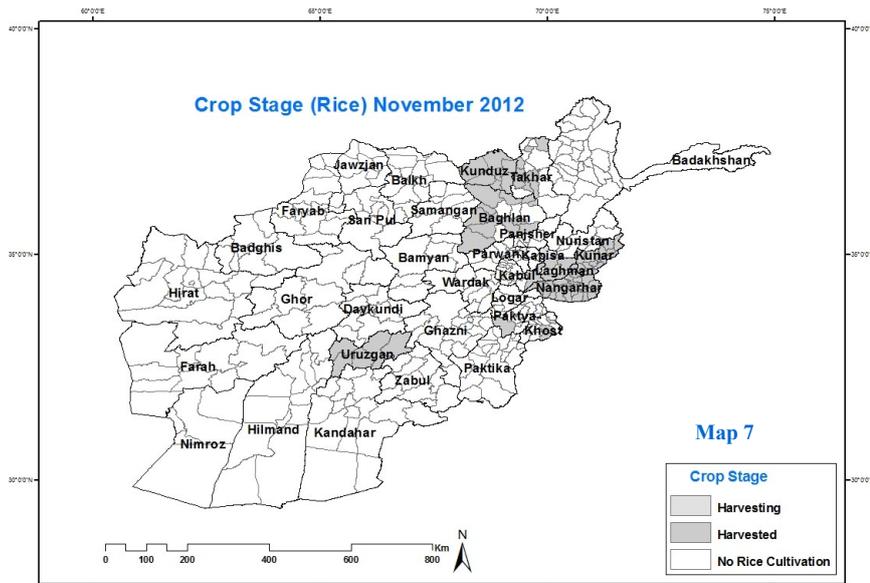
# Wheat Crop Stage, Condition and Adverse Factor Maps



# Wheat Crop Stage, Condition and Adverse Factor Maps



# Wheat Crop Stage, Condition and Adverse Factor Maps



Analysis of rainfall process and its measuring circumstances, in all over the country. In Afghanistan food grains and the whole food security situations largely depends on regional weather conditions.

Since atmospheric moisture or water vapor is the most essential factor in the development of insects, pests and plant diseases, also it can act as a beneficial or restrictive agent when it is at the extremes. A certain amount of humidity in co-operation with the appropriate temperature is necessary for the development of natural insects, fungus, and bacteria. Some of these organisms attack plants resulting in diseases, others kill insects, Hatching, mauling, and emergence of insects are likewise dependent on the right amount of humidity, in particular relative humidity, on the other hand heavy rainfall causing flooding and may destroy the underground hibernating quarters of many insect species, killing them in the process of time, rain accompanied by strong wind can wash off plants, killing them. Apart from killing the various types of worms and insects, can be utilized to accumulate surface water as well, at finally it can be said that most of the problems that affect food production in Afghanistan are related to weather condition like drought, frost, hail, snow, warm and dry wind, and floods specially flash floods which destroy crops in villages and often the whole country is affected.

Continuously watching the weather on the other hand observation of the weather parameters in accordance with the WMO agro met section is in fact looking at the causes of food shortage. For this reason Agro meteorology can provide the earliest indications of impending problems for the food supply situation. So in this way the agro meteorology observers (field monitor) have a vital role in an Early Warning System for several reasons.

The data collected at the meteorological stations will give indications about the major climatic risks in Afghanistan, for example the rainfall data

allows assessing the risk of drought and flooding, and also Temperature data allows assessing about the occurrence of frost and thermal waves and in this way added to the wind data causes evaporation increasing, in this regard allowing assessing the occurrence of high water requirements of crops. There are three important issues in the rainfall process to be mentioned as the following.

### **Rainfall Extremes:**

**Extreme high:** these are the points which are indicating the higher value of the rainfall amount, as in the following regions in the table.

**Extreme low:** are those regions with having the least amount of rainfall, analytically can be assessed that, there are some factors for reducing the amount of rainfall in this regions.

Latitude, longitude, elevation, closeness to sea and so on. Which all the mentioned points have been considered in to the below table.

The paragraph colored yellow does not convey any clear message, please revise it. As it is clear from table there are some regions like kunduz and Dara-e-soof with extreme high rainfall. And there are some another regions like Mehterlam – Ghaziabad – jalalabad and lashkergah with extreme low rainfall and also there are some another regions with no rainfall like Sardi – Ghazni – Khost and Kandahar.

In this way there is only one station in which observation had not been don, that is( Jaghatoo).

## Precipitation

Station Name	November of ( 2012 )			Deviation	Comparison	Table 3 Prediction
	2011	2012	LTA			
Bamyan	24	29.2	7	-22.2	Above normal	No dry
Kabul	91.7	32.2	8.3	-23.9	Above normal	No dry
Logar	14.6	28	11.6	-16.4	Above normal	No dry
Paghman	38	19	26.8	7.8	Below normal	Dry
Sarobi	5.3	22	6.1	-15.9	Above normal	No dry
No significant change is seen.						
Asmar	27	12	20.5	8.5	Below normal	Dry
Ghazi abad	13	5	3.4	-1.6	Below normal	Dry
Jalalabad	3	7	10.8	3.8	Above normal	No dry
Mehterlam	6	4	7	3	Below normal	Dry
Paroon	105	29	38.7	9.7	Below normal	Dry
Baghlan	26.2	26.2	18.2	-8.4	Above normal	No dry
Faizabad	66	40	27.7	-12.3	Below normal	Dry
According to the below table analysis there is predicted a Dry in weather conditions.						
Kunduz	34.3	64	23.4	-40.6	Above normal	No dry
Talughan	35	15	30.5	15.5	Below normal	Dry
Aibak	21	30.5	17.4	-30.1	Above normal	No dry
Dara-e-soof	46.5	41.5	19.8	-21.7	Below normal	Dry
Jawzjan	69.4	21.9	9.7	-12.2	Below normal	Dry
Mazar	51.5	14	16.7	2.7	Below normal	Dry
Saripul	115.5	40.5	14.6	-25.9	Below normal	Dry
Kandahar	9	0	5.9	5.9	Below normal	Dry
Lashkergah	0	7	3.4	-3.6	Above normal	No dry
Uruzgan	15.2	16.6	11.1	-5.5	Above normal	No dry
Zaranj	0	15.5	1.3	-14.2	Above normal	No dry
Gardiz	42.8	9	11.6	2.6	Below normal	Dry
Ghazni	3	0	16.3	16.3	Below normal	Dry
Khost	2	0	6.8	6.8	Below normal	Dry
Sardi	10	0	11.2	11.2	Below normal	Dry
Urgun	35	11	9.3	-1.7	Above normal	Dry
Farah	3	3.5	3.2	-0.3	Above normal	No dry
Hirat	143	31	9.4	-21.6	Below normal	Dry
Qalaw-e-naw	71	25.4	15.3	-10.1	Below normal	Dry
Shindand	25	24	20.9	-3.1	Below normal	Dry

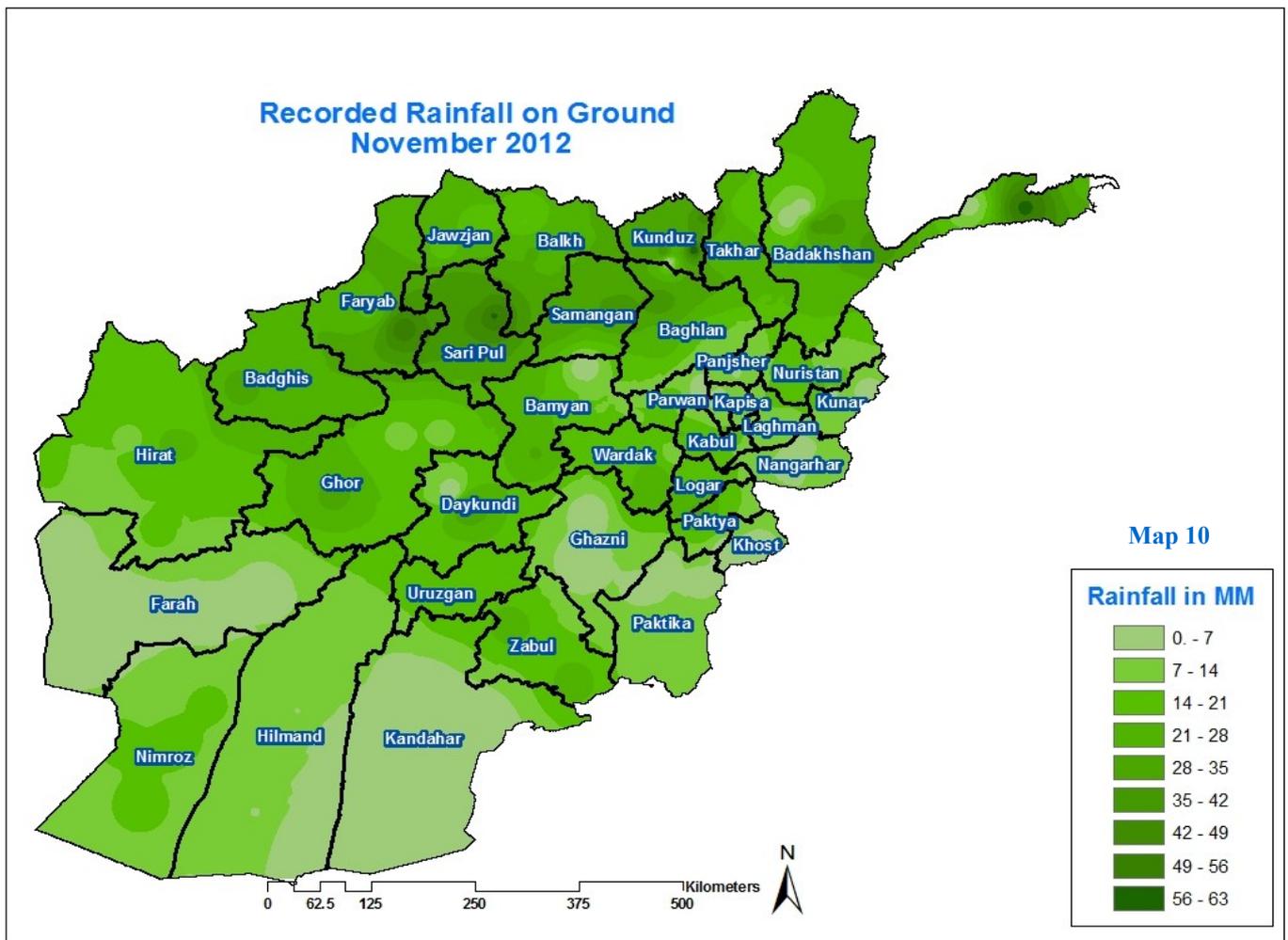
## Precipitation

Most parts of the country received light precipitation during the month of November 2012. However high elevation in the Northeastern region and Northern region received good rainfall, rainfall had a significant decrease in the rest parts of the country.

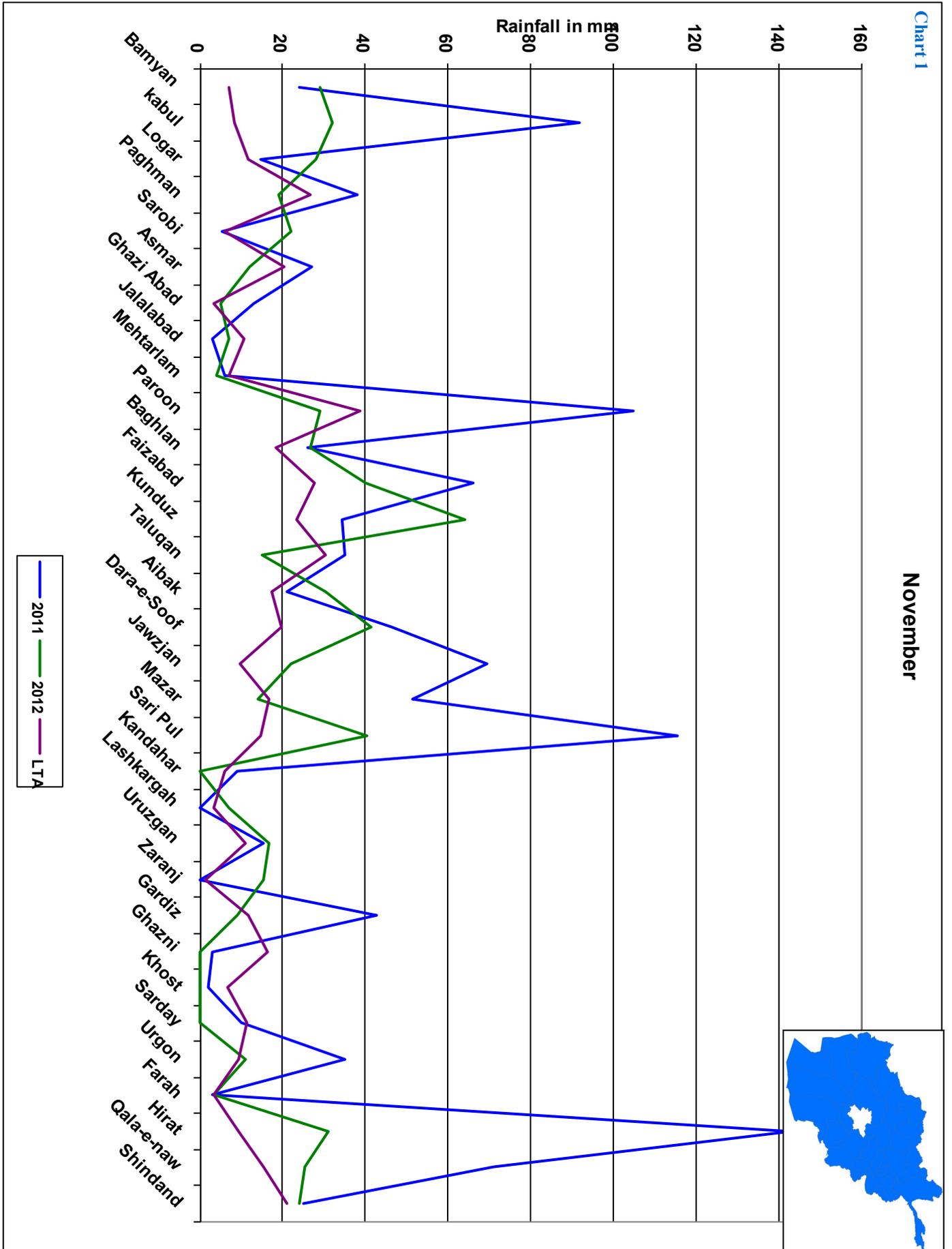
Comparison of rainfall data for the month of November 2012 with the same month in 2011 (Chart 1) shows significant decrease of rainfall during the month of November 2012 over the same month of last year all over the country.

Comparison of rainfall data for the month of November 2012 with the same month of long term average (Chart 1) shows an increase of rainfall during the month of Nov 2012 over the same month of long term average.

During the month of November 2012, most amount of rainfall has been occurred in the Northeastern region and some parts of the Northern region during November, and most parts of the country has received light precipitation. Low amount of rainfall has been recorded in South and Western regions .



# Rainfall Graphs for the Month of November 2012



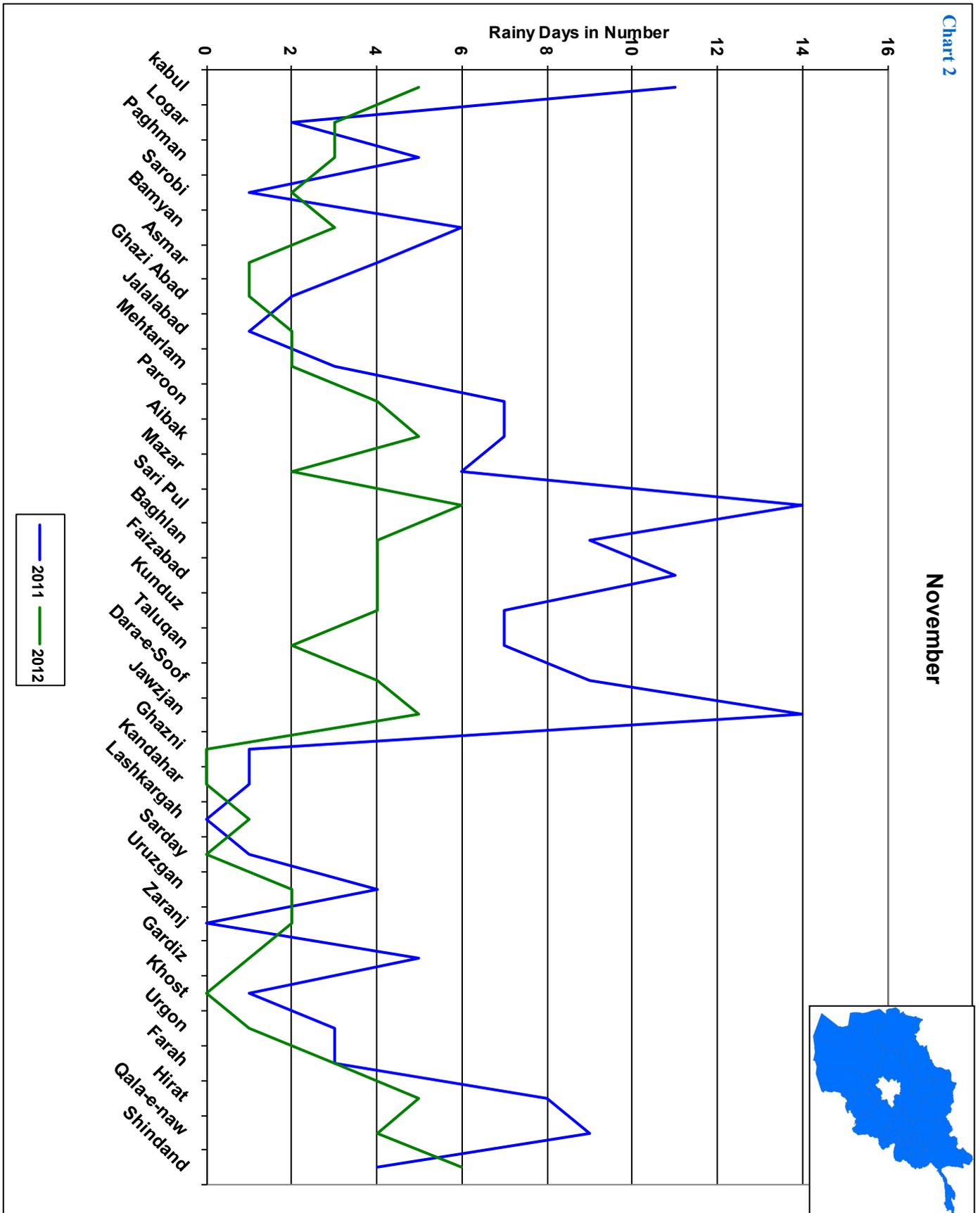
## Rainy Days

Rainy days is an important factor in agro climatic section, that is because rainy days play important role in crop's water requirement and keeping the root zone moist, so according to the below table considerable analysis has been taken place on the rainy day due to its importance in the field of seeding and agricultures affairs.

So analytically can be said that there are few days of precipitations in 2012 at the same month in comparison with November of 2011, so obviously that dryness increasingly going up. So it is a warning to formers and those who are enterprise with water resource and irrigations.

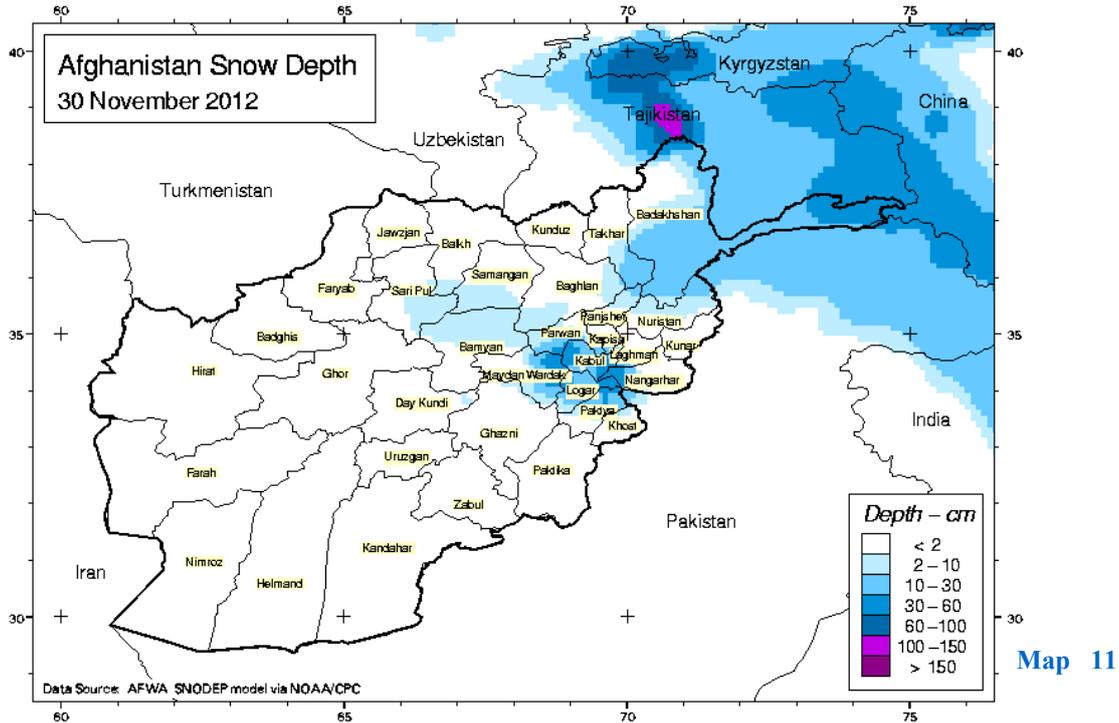
No	Station Name	November of 2012		Table 2 Comparison Prediction
		Rainy Days		
		2011	2012	
2	Kabul	11	5	Dry
3	Logar	2	3	No dry
4	Paghman	5	3	Dry
5	Sarobi	1	2	No dry
6	Bamyan	6	3	Dry
7	Asmar	4	1	Dry
8	Ghaziabad	2	1	Dry
9	Jalalabad	1	2	No dry
10	Mehterlam	3	2	Dry
11	Paroon	7	4	Dry
12	Aibak	7	5	Dry
13	Mazar	6	2	Dry
14	Saripul	14	6	Dry
15	Baghlan	9	4	Dry
16	Faizabad	11	4	Dry
17	Kunduz	7	4	Dry
18	Taluqan	7	2	Dry
19	Dara-e-soof	9	4	Dry
20	Jawzjan	14	5	Dry
21	Ghazni	1	0	Dry
22	Kandahar	1	0	Dry
23	Lashkergah	0	1	No dry
24	Sardi	1	0	Dry
25	Uruzgan	4	2	Dry
26	Zaranj	0	2	No dry
27	Gardiz	5	1	Dry
28	Khost	1	0	Dry
29	Urgone	3	1	Dry
30	Farah	3	3	No change and dry
31	Hirat	8	5	Dry
32	Qala-e-naw	9	4	Dry
33	shindand	4	6	No dry.

## Rainy Days for the Month of November 2012



Comparison of rainy days for the month of November 2012 with the same month of last year (Chart 2) shows rainy days had significant decrease during the month of November 2012 over the same month of last year.

## Afghanistan Snow Depth for month of November 2012



The snow was light during the month November than expected, the high elevations of the Northwest, Central Highlands, Southeastern regions and the Capital region experienced unusually light snow, and snow extend and depth had not significant increase.

Map (11) shows snow depth for the end of November 2012. As map (11) shows the snow depth has been recorded from 30 to 60cm in Northeastern and some parts in the Southeastern region and 2 – 10 cm for the some parts of Central Highlands.



## Average Temperature for the Month of November 2012

Temperature is also an important and vital element of crop's phenological growth, it is obviously that crop from the beginning up to harvesting needs to 420 centigrade degrees of temperature, distributing to each stage of growing, which is different for crops species of course, on the other hand depending to the sort or types of crop. If we consider to the below table, some regions having very high temperature, and there are some another regions with high and moderate temperature, in this way some regions with low and very low temperature and finally some regions with negative.

It is worth mentioning that, two limits of temperature such as very high temperature and very low temperature are not so proper for some crops because crop's tolerance does not accept that temperature, the most of crops tolerance can have a variation between the limits of high and low temperatures, for example between the degrees of 48 centigrade and -12 degree of centigrade, this tolerance line called (the range of crop's temperature tolerance), if we analysis the crop's tolerance range with reference to our table and our observed data, then we would find some regions with high and very high temperature.

From the view point of meteorology, very high temperature called Maximum temperature and very

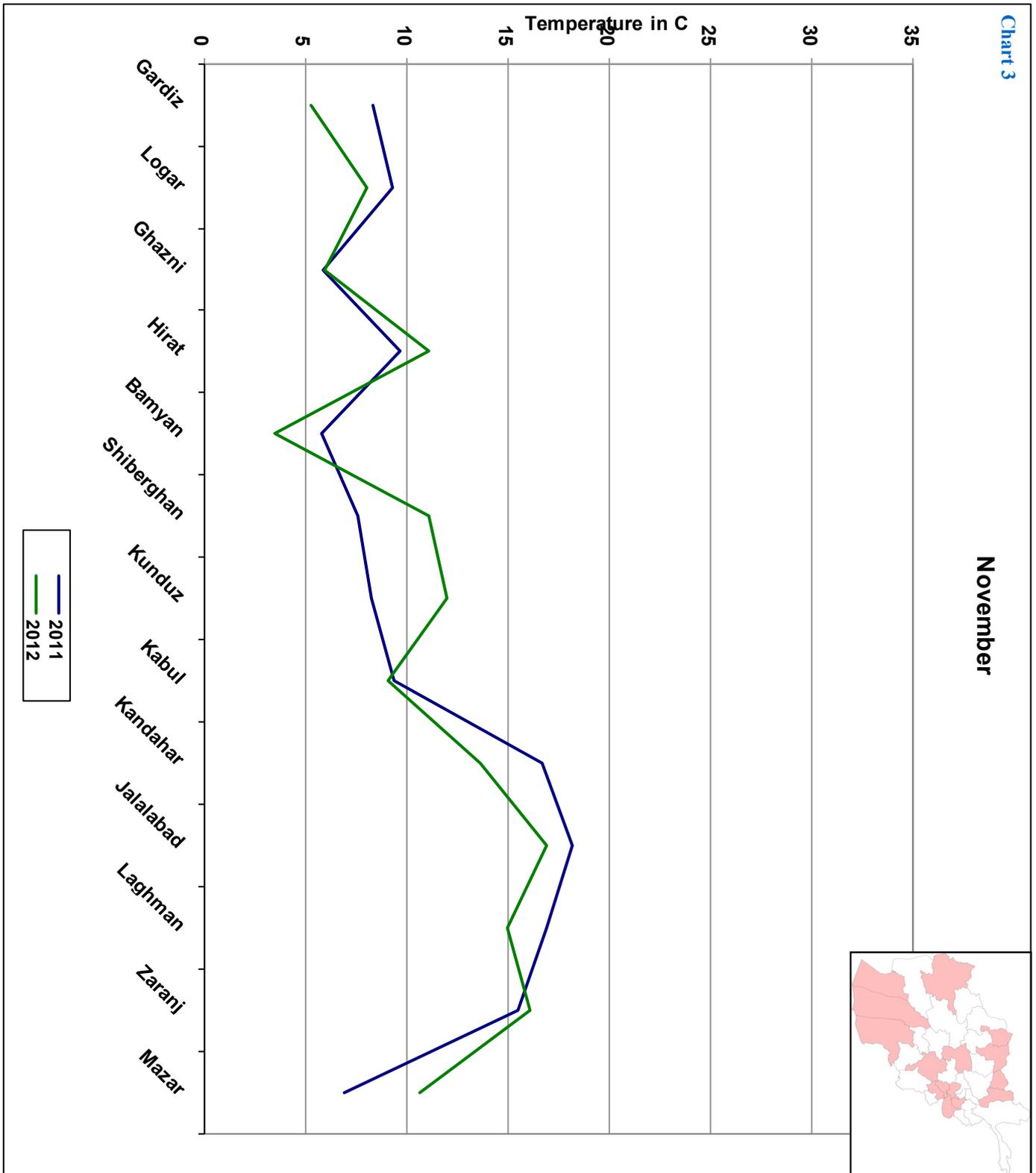
low temperature called Minimum temperature, and the temperature of crop's tolerance called Optimum temperature, but there is another temperature in the name of mean temperature or average temperature which all actual temperature comparing to it in order to predict the future variations of the temperature. Now we go through the table and analysis all the observed data.

Kabul is the province with having (46) degree centigrade, is the very high limit of temperature, and after that Jalalabad is the second province with having (31) degree of centigrade, the other degrees are to be said the ordinary degrees of temperature.

And if we look through minimum degree of temperatures, there would be some regions like Gardiz with having (-10), and Bamyan with having (-7.4) and another regions varying between this range of variations. And it can be said that Gardiz planting suffering a frost with the temperature of (-10), and if there is any wind with the speed of 5m/sec, no cereal crop can be growth at that time of frost in Gardiz.

Stations	Max-tem-Celsius degree 2012	Average 2011	Deviation	Min-Tem-Celsius degree. 2012	Average 2011	Deviation	Actual 2012	Average 2011	Table 3 Deviation
Gardiz	17	8.35	8.65	-10	8.35	-18.35	5.3	8.35	3.05
Logar	24	9.3	14.7	-7	9.3	-16.3	8.03	9.3	1.27
Ghazni		5.88	-		5.88	-		5.88	-
Kandahar	26.5	9.69	16.81	1.3	9.69	10.99	11.1	9.69	1.41
Hirat	25.5	5.8	19.7	-2	5.8	-7.8	3.5	5.8	-2.3
Jalalabad	31	7.6	23.4	6	7.6	-1.6	11.1	7.6	-3.5
Laghman	27.6	8.23	19.37	2.4	8.23	5.83	12	8.23	-3.77
Bamyan	17.8	9.4	8.4	-7.4	9.4	-16.8	9.06	9.4	0.66
Shiberghan	26	16.7	9.3	1.5	16.7	-15.2	13.6	16.7	-3.1
Kunduz	24.6	18.2	6.4	0.8	18.2	-17.4	16.9	18.2	-1.3
Lashkergha	29	16.9	12.1	1.8	16.9	-15.1	15	16.9	-1.9
Zaranj	30	15.5	14.5	4	15.5	-11.5	16.1	15.5	0.6
Mazar	25.4	6.89	18.51	-2	6.89	-8.89	10.6	6.89	3.71
Kabul	26.0	-	-	-4.6					

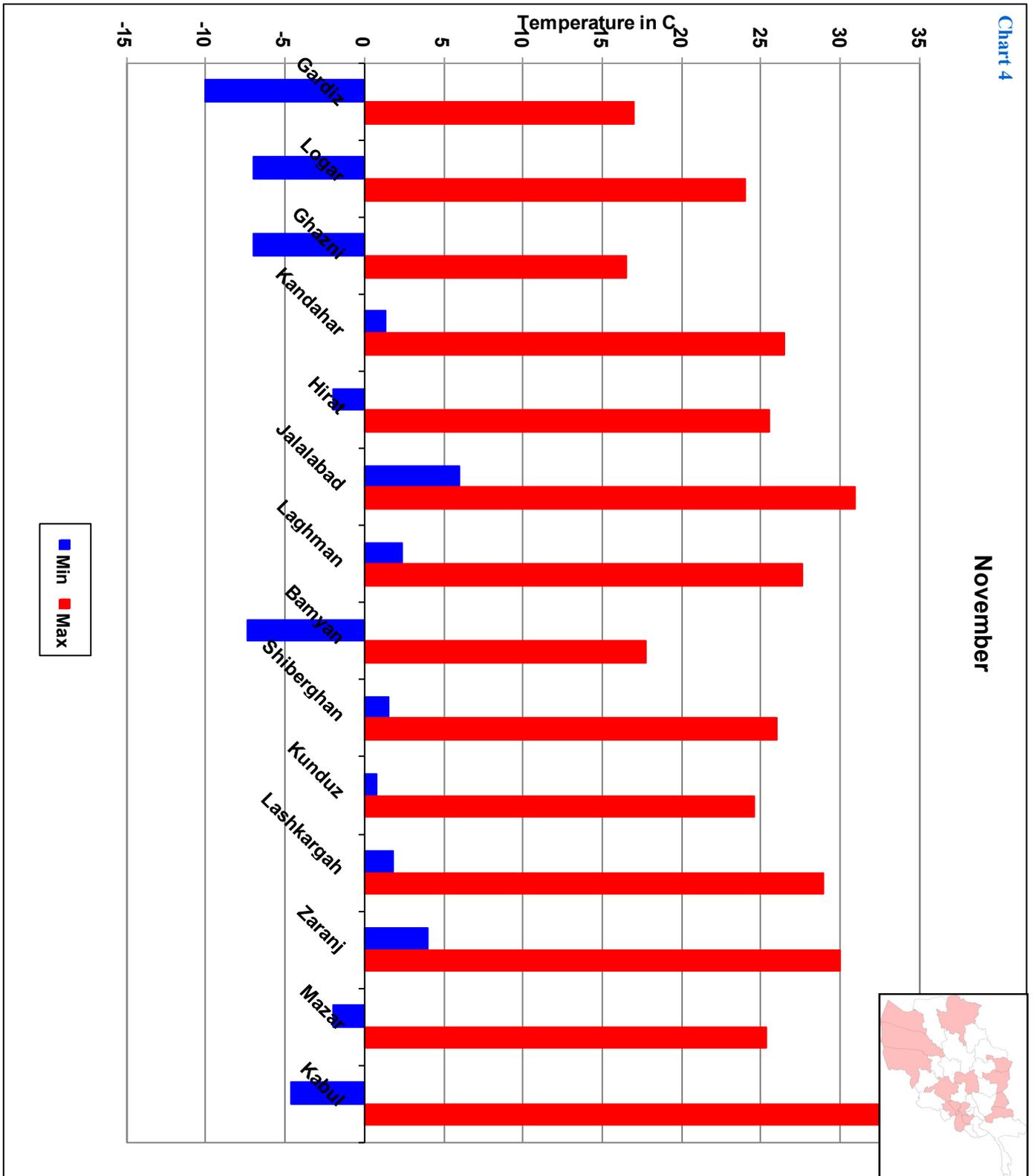
## Average Temperature for the Month of November 2012



During the month of November 2012, temperature had different situation as in some parts of the country temperature had negative departure while in some other parts temperature was accompanied with positive departure. ,Temperature dropdown at freezing point during this month while, in most parts of the country particularly the Central Highlands, Western region Northeastern and Southeastern regions lowest temperature.

Comparison of monthly average of temperature for the month of November 2012 with the same month in 2011 (Chart 3 ) shows different situation of temperature around the country as in some parts temperature had an increase during the month of November 2012 over the same month of last year, in some part temperature was accompanied with small decrease.

## Temperature for the Month of November 2012



**Jalalabad with 31 C° was the warmest spot of the country during the month of November 2012**

Chart (4) shows maximum and minimum temperature for the month of November 2012 as chart (4) shows Jalalabad with 31 C° was the warmest spot of the country, and Bamyan with - 7.4 ° C experienced lower temperature.

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