



Issue No: 7

2009 - 2010

# The Afghanistan Agrometeorological Seasonal Bulletin

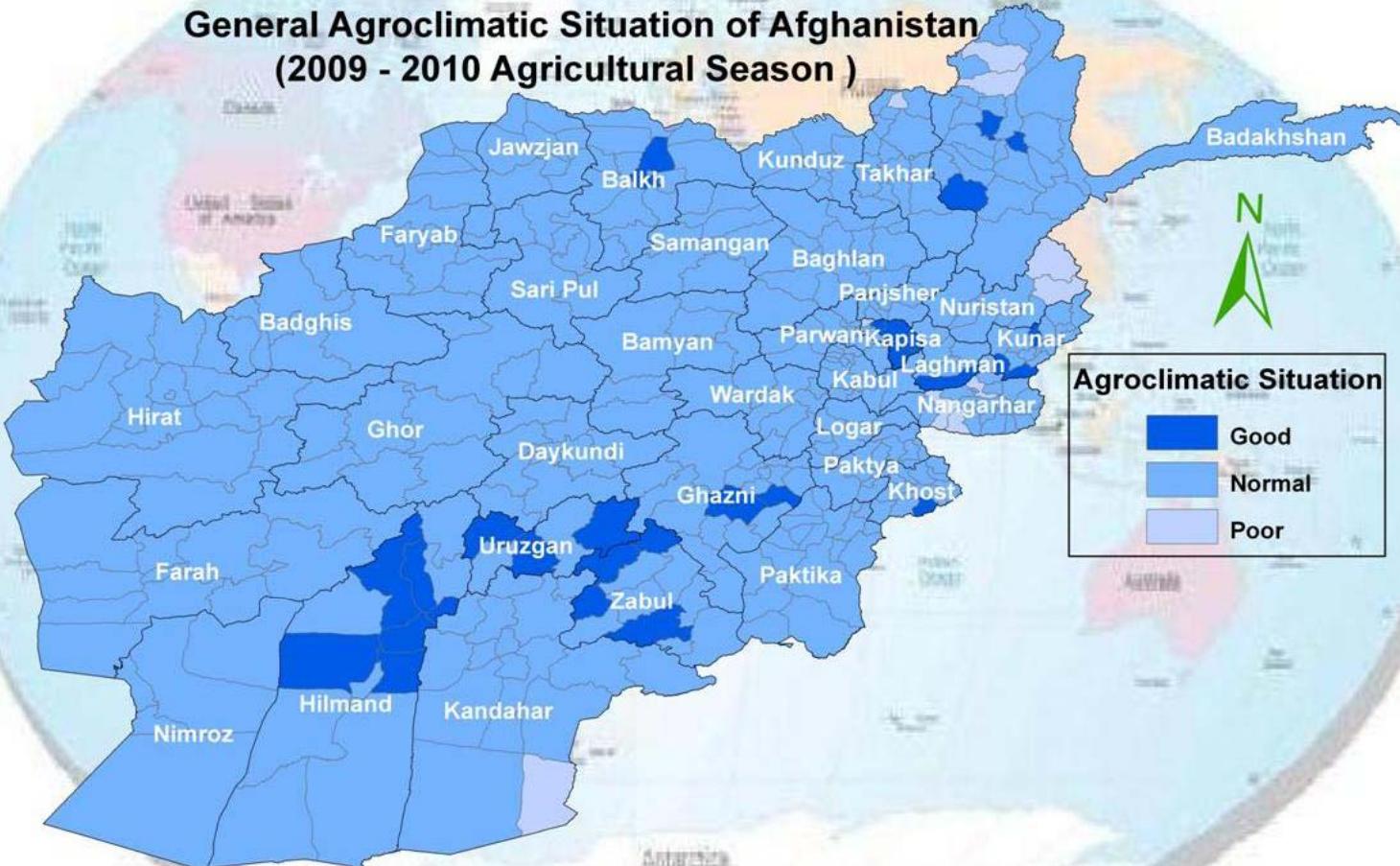
Topics

Crop Information

Precipitation

Temperature NDVI

## General Agroclimatic Situation of Afghanistan (2009 - 2010 Agricultural Season )



Crop Stage

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## Summary

- Most of the country experienced less precipitation during the early season of (2009-2010) than that of (2008-2009) season over the same period between December and January had small decrease during
- The highest amount of precipitation was recorded in the Eastern region with the month of February 2010 being the wettest month in the season.
- Precipitation for (2009-2010) started first dekad of September 2009 in the Eastern, Southeastern and Capital regions and ended the in the Eastern region, Southeastern regions , Capital region and Southern region in 3<sup>rd</sup> dekad of August 2010.
- Number of rainy days for the (2009-2010) season was not significantly different from that for the 2008-2009 season. Seasonal heavy rainfall during monsoon accompanied with flash flood particularly in the Southeastern region, Eastern and Capital region.
- The snowfall started October 2009 and continued up to March 2010 in the Central Highlands, some parts in the Capital region, and some parts in the Northeast.
- In general, the country experienced less snow precipitation during the (2009-2010) season compared to that of (2008-2009) season.
- No significant changes in Greenness Index between (2009-2010) growing season and that of (2008-2009) growing season.



## General Agricultural Information

Afghanistan has a arid, semi arid to sub-humid climate with high inter-annual variation of precipitation. The average precipitation in some parts of the country is only sufficient to sustain a rainfed winter crop. Even here crop failure is likely during drier years. Therefore irrigation is essential for production of all summer crops. Irrigation has a long tradition in Afghanistan, and utilizes a number of sophisticated methods, such as karez irrigation. However, many systems function sub-optimally or have even ceased to function at all.

About 12% of the land in Afghanistan is arable and less than 6% currently is cultivated. Normally, Afghanistan grew about 95% of its needs in wheat and rye, and more than met its needs in rice, potatoes, pulses, nuts, and seeds; it depended on imports only for some wheat, sugar, and edible fats and oils. Fruit, both fresh and preserved (with bread), is a staple food for many Afghans. Agricultural production, however, is a fraction of its potential. Agricultural production is constrained by an almost total dependence on erratic winter snows and spring rains for water; irrigation is primitive.

The variety of the country's crops corresponds to its topography. The areas around Kandahar, Herat, and the broad Kabul plain yield fruits of many kinds. The northern regions from Takhar to Badghis and Herat and Helmand provinces produce cotton. Corn is grown extensively in Paktia and Nangarhar provinces, and rice mainly in Kunduz, Baghlan, Nangarhar and Laghman provinces. Wheat is common to several regions, and makes up 80% of all grain production. Nuts and fruit, including pistachios, almonds, grapes, melons, apricots, cherries, figs, mulberries, and pomegranates are among Afghanistan's most important exports.

Agricultural products accounted for about 53% of Afghanistan's exports in 2001, of which fruits and nuts were a large portion. In some regions, agricultural production had all but ceased due to destruction caused by the war and the migration of Afghans out of those areas.

The total irrigated area in the 60s and 70s amounted to 3.8 million ha's. As a result of decades of conflict, systematic destruction of productive rural infrastructures, migration, governmental changes and disruptions and despite the rehabilitation efforts in the past years, only 1.8 million hectares are being irrigated at present.

Wheat is the most important crop, followed by barley, corn, and rice. Cotton is another important and widely cultivated crop. Fruit and nuts are among Afghanistan's most important exports. Afghanistan is noted for its unusually sweet grapes and melons, grown mostly in the southwest, north of the Hindu Kush, and in the fertile regions around Herat. Raisins are also an important export. Other important fruits are apricots, cherries, figs, mulberries, and pomegranates.

Livestock is nearly as important as crops to Afghanistan's economy. Karakul sheep are raised in large numbers in the north. The tight curly fleece of Karakul lambs is used to make Persian lamb coats. Other breeds of sheep, such as the fat-tailed sheep, and goats are also raised.



## Crop condition

Zone	Province	District	Station	Wheat	
				Crop Condition	Adverse Factor
Central	Kabul	Shakardara	Karizmir	Good (better than normal)	Not Existed
		Paghman	Paghman	Good (better than normal)	Not Existed
		Kabul	Darulaman	Good (better than normal)	Shortage of Inputs
		Sarubi	Sarubi	Normal	Not Existed
	Panjsher	Dara	Dara	Normal	Not Existed
		Dashtak	Dashtak	Normal	Not Existed
	Parwan	Syagerd	Syagerd	Normal	Shortage of Inputs and Rust of Wheat
		Charikar	Charikar	Good (better than normal)	Shortage of Inputs
	Kapisa	Mahmoodraqi	Mahmoodraqi	Normal	Excessive Weeds
		Kohistan	Kohistan	Normal	Excessive Weeds
East Central	Bamyan	Chak	Chak	Good (better than normal)	Not Existed
		Jaghatoo	Jaghatoo	Good (better than normal)	Not Existed
		Bamyan	Bamyan	Normal	Shortage of Inputs (Fertilizer, Pesticides , Herbicide)
	Wardak	Yakawlang	Yakawlang	Good (better than normal)	Not Existed
		Panjab	Panjab	Good (better than normal)	Not Existed
Eastern	Noristan	Paroon	Paroon	Normal	Shortage of Inputs and Weeds
	Nangarhar	Agam	Agam	Normal	Excessive Weeds and Low Precipitation
		Batikot	Ghazabad	Normal	Excessive Weeds and Low Precipitation
		Jalalabad	Sheshembagh	Normal	Excessive Weeds and Low Precipitation
		Jalalabad	Farm Jadeed	Normal	Excessive Weeds and Low Precipitation
	Kunar	Asmar	Asmar	Normal	Not Existed
		Asadabad	Asadabad	Normal	Not Existed
	Laghman	Mihtarlam	Mihtarlam	Normal	Excessive Deeds and Pest and Disease
Northeast	Takhar	Bangi	Bangi	Normal	Rust , Aphids, Locust , Excessive Weeds and Wheat Appending
		Taluqan	Taluqan	Normal	Rust , Aphids, Locust , Excessive Weeds
	Kunduz	Imam Sahib	Imam Sahib	Good (better than normal)	Excessive Weeds and Storm
		Qalizazal	Aqtipa	Good (better than normal)	Excessive Weeds and Storm
		Chardara	Chardara	Good (better than normal)	Excessive Weeds and Storm
		Kunduz	Kunduz	Good (better than normal)	Excessive Weeds and Storm
	Baghlan	Pulikhomri	Pozaishan	Normal	Rust, and Excessive Weeds
	Badakhshan	Faizabad	Faizabad	Good (better than normal)	Not Existed
		Baharak	Baharak	Normal	Not Existed

## Crop condition

Zone	Province	District	Station	Wheat	
				Crop Condition	Adverse Factor
South Eastern	Khost	Khost	Khost	Normal	Not Existed
		Khost	Shimal	Normal	Not Existed
		Ali Sher	Ali Sher	Normal	Not Existed
	Paktiya	Zormat	Rohani Baba	Good (better than normal)	Not Existed
		Gardiz	Tera	Good (better than normal)	Not Existed
	Paktika	Urgon	Urgon	Normal	Not Existed
		Sharana	Sharana	Normal	Not Existed
		Khairkot	Khairkot	Normal	Not Existed
	Ghazni	Muqur	Muqur	Normal	Not Existed
		Andar	Bande Sardi	Normal	Not Existed
Southern	Nimroz	Zaranj	Zaranj	Normal	Not Existed
	Kandahar	Kandahar	Kandahar	Normal	Shortage of Inputs
	Zabul	Qalat	Qalat	Normal	Not Existed
	Urozgan	Tarinkot	Tarinkot	Normal	Pest and Disease
	Hilmand	Nad Ali	Nad Ali	Good (better than normal)	Not Existed
		Greshk	Greshk	Good (better than normal)	Not Existed
		Nawa	Nawa	Good (better than normal)	Not Existed
		Lashkargah	Bolan	Good (better than normal)	Aphids
North	Balkh	Dihdadi	Dihdadi	Normal	Not Existed
		Nahrishahi	Nahrishahi	Good (better than normal)	Not Existed
	Jawzjan	Sheberghan	Sheberghan	Normal	Excessive Weeds , Pest and Disease
		Darzab	Darzab	Normal	Excessive Weeds , Pest and Disease
	Saripul	Saripul	Saripul	Normal	Wheat Rust
		Sozmaqala	Sozmaqala	Normal	Wheat Smut
	Faryab	Maimana	Maimana	Normal	Late Planting and Excessive Weeds
	Samangan	Aibak	Aibak	Good (better than normal)	Not Existed
		Dara Souf Bala	Dara Souf Bala	Normal	Not Existed
Western	Badghis	Qalainow	Qalainow	Good (better than normal)	Not Existed
		Muqur	Muqur	Normal	Not Existed
	Ghor	Chaghcharan	Chaghcharan	Normal	Weeds , High Precipitation
	Hirat	Shindand	Shindand	Good (better than normal)	Locust , Excessive Weeds
		Zindajan	Zindajan	Good (better than normal)	Not Existed
		Gwazara	Falahat	Good (better than normal)	Not Existed
		Hirat	Farm Urdokhan	Good (better than normal)	Not Existed
	Farah	Farah	Farah	Good (better than normal)	Not Existed

## Crop Condition

Zone	Province	District	Station	Maize	
				Crop Condition	Adverse Factor
Central	<b>Kabul</b>	Sarubi	Sarubi	Normal	Not Existed
		Shaker dara	Karezmmir	Normal	Frost
	<b>Panjsher</b>	Dashtak	Dashtak	Normal	Not Existed
	<b>Parwan</b>	Charikar	Charikar	Good (better than normal)	Shortage of Inputs
Eastern	<b>Kapisa</b>	Mahmoodraqi	Mahmoodraqi	Normal	Storm
	<b>Noristan</b>	Paroon	Paroon	Normal	Late Planting and Frost
		Waigal	Waigal	Normal	Not Existed
	<b>Nangarhar</b>	Agam	Agam	Normal	Not Existed
		Batikot	Ghaziabad	Normal	Not Existed
		Jalalabad	Sheshembagh	Good (better than normal)	Not Existed
	<b>Kunar</b>	Jalalabad	Farm Jadeed	Good (better than normal)	Not Existed
		Asmar	Asmar	Normal	Not Existed
Northeast	Asadabad	Asadabad	Normal	Not Existed	
	<b>Laghman</b>	Mihtarlam	Mihtarlam	Normal	Not Existed
	<b>Takhar</b>	Bangi	Bangi	Good (better than normal)	Weeds
		Taluqan	Taluqan	Good (better than normal)	Weeds
	<b>Kunduz</b>	Imam Sahib	Imam Sahib	Normal	Pest and Disease
		Qaliazal	Aqtipa	Normal	Not Existed
		Chardara	Chardara	Normal	Not Existed
South Eastern	Kunduz	Kunduz	Normal	Pest and Disease	
	<b>Baghlan</b>	Pulikhomri	Pozaishan	Normal	Not Existed
	<b>Badakhshan</b>	Faizabad	Faizabad	Normal	Not Existed
	<b>Khost</b>	Khost	Khost	Good (better than normal)	Not Existed
		Khost	Shimal	Good (better than normal)	Not Existed
		Ali Sher	Ali Sher	Good (better than normal)	Not Existed
South Western	<b>Paktya</b>	Zormat	Rohani Baba	Normal	Not Existed
		Gardiz	Tera	Normal	Not Existed
	<b>Paktika</b>	Urgon	Urgon	Normal	Not Existed
		Sharana	Sharana	Normal	Not Existed
		Khairkot	Khairkot	Normal	Not Existed
	<b>Ghzni</b>	Muqur	Muqur	Normal	Not Existed
South Western	<b>Kandahar</b>	Kandahar	Kandahar	Good (better than normal)	Not Existed
	<b>Zabul</b>	Qalat	Qalat	Normal	Not Existed
	<b>Urozgan</b>	Tarinkot	Tarinkot	Normal	Not Existed
	<b>Hilmand</b>	Nad Ali	Nad Ali	Normal	Not Existed
		Greshk	Greshk	Normal	Not Existed
		Nawa	Nawa	Normal	Not Existed
		Lashkargah	Bolan	Good (better than normal)	Not Existed
North	<b>Balkh</b>	Dihdadi	Dihdadi	Good (better than normal)	Not Existed
		Nahrishahi	Nahrishahi	Good (better than normal)	Not Existed
	<b>Jawzjan</b>	Sheberghan	Sheberghan	Normal	Not Existed
		Darzab	Darzab	Normal	Not Existed
	<b>Saripul</b>	Saripul	Saripul	Normal	Not Existed
		Sozmaqala	Sozmaqala	Normal	Not Existed
	<b>Faryab</b>	Maimana	Maimana	Normal	Not Existed
	<b>Samangan</b>	Aibak	Aibak	Normal	Not Existed
		Dara Souf Bala	Dara Souf Bala	Good (better than normal)	Frost
Western	<b>Badghis</b>	Qalainow	Qalainow	Normal	Not Existed
		Muqur	Muqur	Normal	Not Existed
	<b>Hirat</b>	Shindand	Shindand	Normal	Not Existed
		Hirat	Zindajan	Normal	Not Existed
	<b>Farah</b>	Farah	Farah	Normal	Poor Rainfall

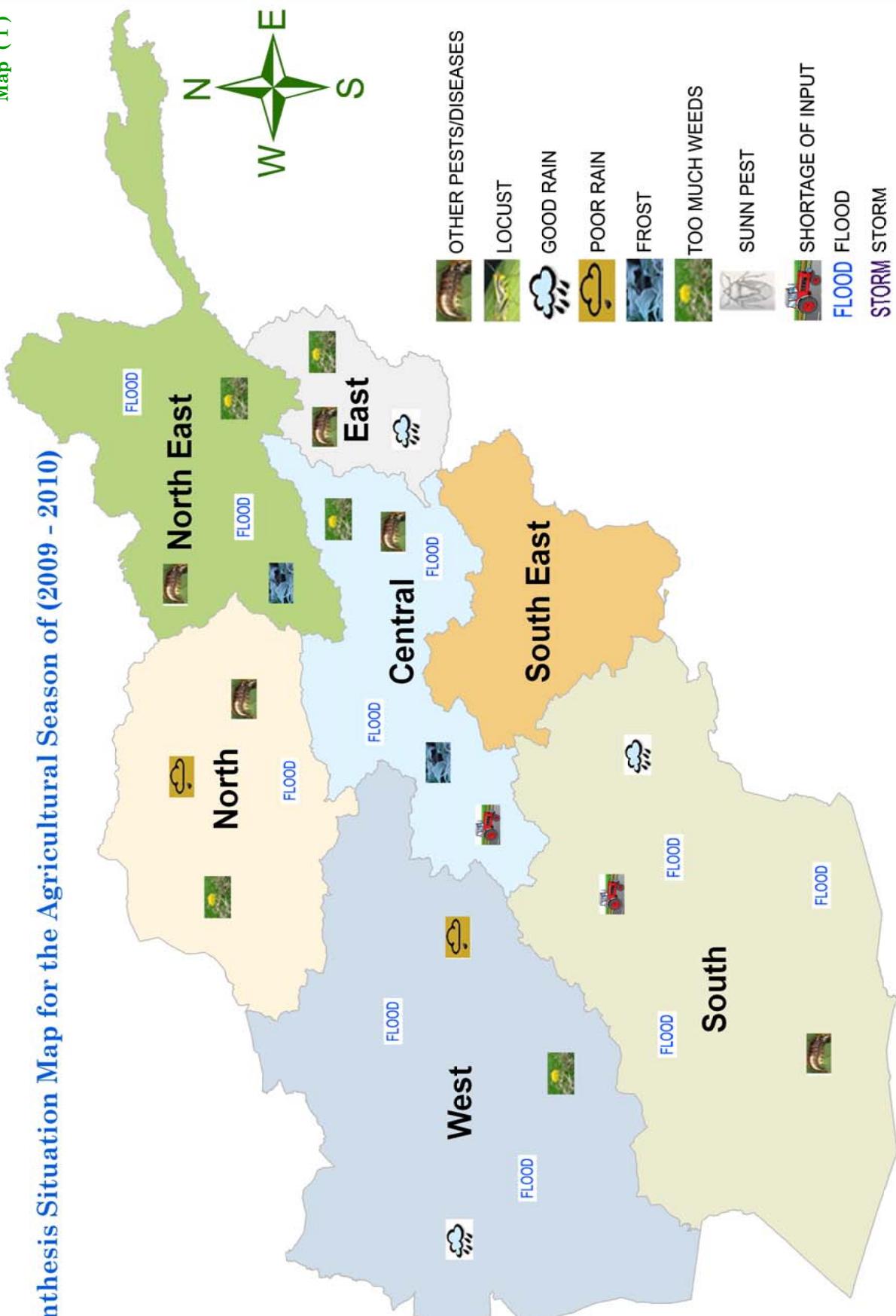
## Crop Condition

Zone	Province	District	Station	Rice	
				Crop Condition	Adverse Factor
Central	Kabul	Sarubi	Sarubi	Normal	Not Existed
Eastern	Nangarhar	Agam	Agam	Normal	Not Existed
		Batikot	Ghaziabad	Good (better than normal)	Weeds
		Jalalabad	Sheshembagh	Good (better than normal)	Not Existed
		Jalalabad	Farm Jadeed	Good (better than normal)	Not Existed
	Kunar	Asmar	Asmar	Good (better than normal)	Not Existed
		Asadabad	Asadabad	Good (better than normal)	Not Existed
Northeast	Laghman	Mihtarlam	Mihtarlam	Normal	Not Existed
	Takhar	Bangi	Bangi	Normal	Weeds
		Taluqan	Taluqan	Normal	Weeds
	Kunduz	Imam Sahib	Imam Sahib	Normal	Weeds ,Shortage of Inputs
		Qaliazal	Aqtipa	Good (better than normal)	Weeds ,Shortage of Inputs
		Chardara	Chardara	Normal	Not Existed
		Ali abad	Ali abad	Normal	Not Existed
		Kunduz	Kunduz	Normal	Weeds
	Baghlan	Pulikhomri	Pozaishan	Normal	Not Existed
	Badakhshan	Faizabad	Faizabad	Normal	Not Existed
South Eastern	Khost	Khost	Khost	Good (better than normal)	Not Existed
		Khost	Shimal	Good (better than normal)	Not Existed
		Ali Sher	Ali Sher	Good (better than normal)	Shortage of Inputs
	Paktya	Zormat	Rohani Baba	Normal	Not Existed
		Gardiz	Tera	Normal	Not Existed
	Paktika	Urgon	Urgon	Good (better than normal)	Not Existed
		Sharana	Sharana	Normal	Not Existed
		Khairkot	Khairkot	Normal	Not Existed
North	Balkh	Dihdadi	Dihdadi	Normal	Not Existed
		Nahrishahi	Nahrishahi	Normal	Not Existed
	Jawzjan	Sheberghan	Sheberghan	Normal	Not Existed
		Darzab	Darzab	Normal	Not Existed
	Saripul	Saripul	Saripul	Normal	Not Existed
		Sozmaqala	Sozmaqala	Normal	Not Existed
	Faryab	Maimana	Maimana	Normal	Not Existed
	Samangan	Aibak	Aibak	Normal	Not Existed
		Dara Souf Bala	Dara Souf Bala	Normal	Not Existed
Western	Badghis	Qalainow	Qalainow	Normal	Not Existed
	Hirat	Shindand	Shindand	Normal	Not Existed
		Hirat	Zindajan	Normal	Not Existed

## Synthesis Situation Map

Map (1)

Synthesis Situation Map for the Agricultural Season of (2009 - 2010)



## Rainfall Season (2009 – 2010)

Chart 1 shows, over all, total amount of precipitation for the (2009-2010) season lagged behind ( 2008-2009 ) season.

Spatial distribution of rainfall was variable in different regions of the country during the rainfall season of (2009-2010), Map (2) shows most amount of rainfall occurred in the Eastern region during the rainfall season of (2009-2010), and the Northeastern, Northern, Northwestern, Capital and Eastern parts of Central Highlands experienced moderate rainfall. The Southern, Southwestern and Western regions received low amount of rainfall during the rainfall season of (2009 - 2010).

Dry season has given way relatively to light wet season in October 2009, as is typical in this time. Although precipitations was relativity light early November, after mid of November the country received much rainfall. Rainfall for the month of January 2010 had significant decrease compared to the same month in 2009 all over the country.

The country experienced unusually short – term dryness from early December (2009) up to early January (2010). rainfall had but an increase during the month of February (2010) compared to the same month in (2009) around the country.

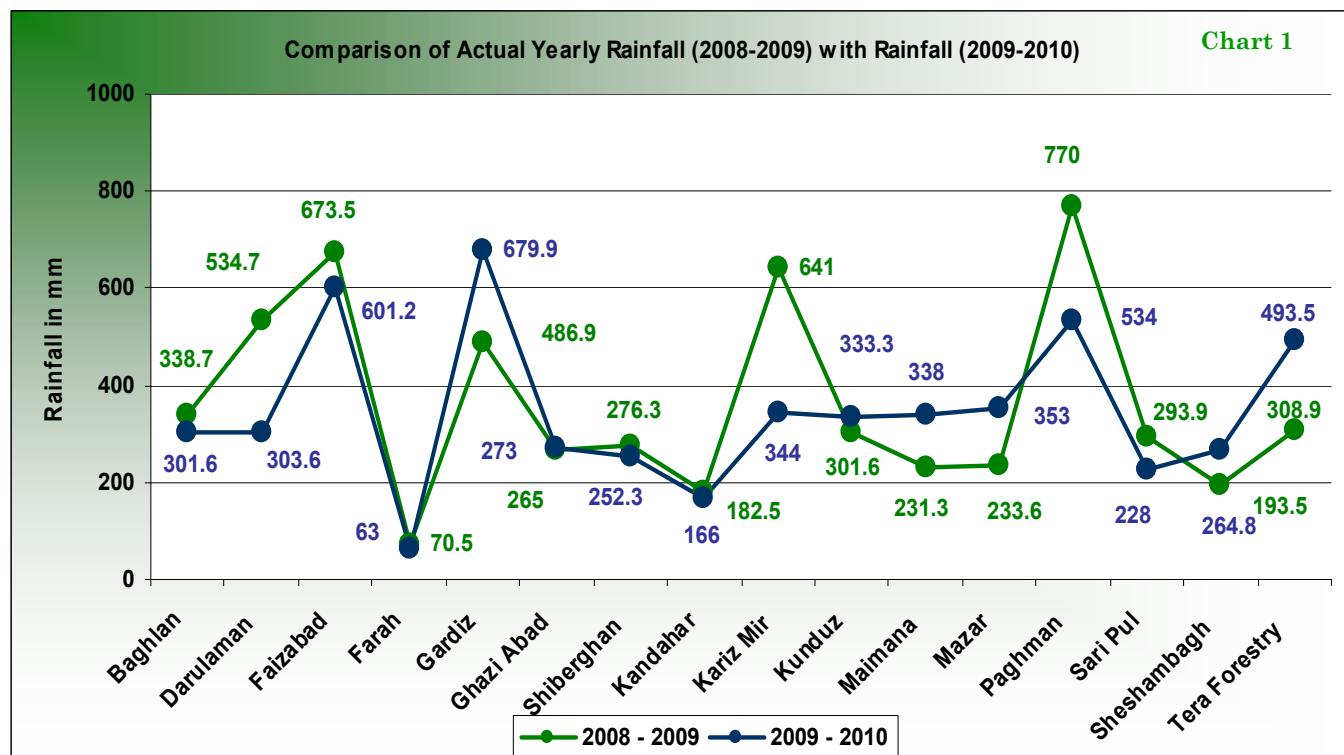
During February (2009) low pressures systems with adequate moisture tracked in to the country and brought precipitations to most parts, which resulted

heavy snow and rain, and snow pack increased in snow coverage areas particularly in the Northeastern region, Northwestern, Central Highlands and the Capital region, which would eased short – term dryness of the past period, and reduced precipitation deficit, and water resources increased. Typically the month of April 2010 was very wet month, and low pressure system tracked their way into the country and brought sufficient precipitations and resulted most parts of the country received much rainfall.

Throughout most of May (2010) the country experienced good precipitations and low pressures system brought adequate moisture in to the region which resulted most of parts of the country received sufficient precipitations, which increased water resources. Indian monsoon was very active during July 2010 and pushed adequate moisture into the country and resulted unusual heavy seasonal precipitations.

Seasonal monsoon heavy rain continued into the country during August and the Eastern region, Southeastern, and some parts of the Capital regions received above average precipitation. Heavy rainfall during August 2009 cased flash flood in above mentioned regions too.

However no drought conditions observed across in the Northeastern, but dry conditions seasonally dominated in the southwestern region.



## Rainfall pattern

The rainfall season (2009 – 2010) started in the Eastern region first dekad of September 2009 and rainfall ended in the Eastern , Southeastern and Capital regions 3<sup>rd</sup> dekad of August 2010. The starting and ending rainfall season in different regions is as follows:

In the Capital region, rainfall started 1st dekad of September 2009 and ended 3rd dekad of August 2010, for the Central Highlands rainfall started in the 3rd dekad of November 2009 and ended the 1st dekad of August 2010, for the Eastern region rainfall started the 3<sup>rd</sup> dekad of November 2009 and ended the 2<sup>nd</sup> dekad of August 2010.

For the Northeastern region rainfall started at the First dekad of November 2009 and ended at the 1st dekad of July 2010, for the Northern region rainfall started at the 1<sup>st</sup> dekad of November 2009 and ended at the 3rd dekad of June 2010, for Southern region, rainfall started at the 3rd dekad of November 2009 and ended at the 3<sup>rd</sup> dekad of August 2010, for Southeastern region rainfall started at the 1st dekad of September 2009 and ended at the 3<sup>rd</sup> dekad of August 2010, and for the Western region rainfall started in the 1st dekad of October 2009 and ended at the 1st dekad of May 2010.

### Length of Rainfall Season by dekad

The length of rainfall season in different parts of the country is as follows: 20 dekads for the Capital,19 dekads for Central Highlands,22 dekads for the Eastern region, 24 dekads for the

Northeastern region, 20 dekads for the Northern regions, 21 dekads for Southern region, 22 dekads for the Southeastern region; and 15 dekads for the Western region.

<b>Agricultural (Season 2009 - 2010)</b>				
No	Station	Starting Dekad	Ending Dekad	Length of the Rainfall Season in Dekad
<b>Capital Region</b>				
1	Badam bagh	2ne dekad of Oct	3rd dekad of July	<b>21</b>
2	Chack	3rd dekad of Nov	1st dekad of Aug	<b>11</b>
3	Charikar	3rd dekad of Nov	3rd dekad of Aug	<b>18</b>
4	Darulaman	3rd dekad of Nov	3rd dekad of Aug	<b>17</b>
5	Panjshir	3rd dekad of Sep	3rd dekad of Aug	<b>23</b>
6	Gul Khana	3rd dekad of Nov	1st dekad of May	<b>17</b>
8	Jaghatoor	3rd dekad of Nov	3rd dekad of Aug	<b>20</b>
9	kabul	3rd dekad of Nov	3rd dekad of Aug	<b>21</b>
10	Kapisa	1st dekad of Nov	3rd dekad of July	<b>17</b>
11	Kariz Mir	3rd dekad of Nov	1st dekad of Aug	<b>21</b>
13	Paghman	1st dekad of Nov	3rd dekad of Aug	<b>20</b>
14	Qargha	3rd dekad of Nov	1st dekad of Aug	<b>18</b>
15	Sarobi	1st dekad of Sep	3rd dekad of July	<b>19</b>
16	Seya Gerd	2nd dekad of Nov	1st dekad of Aug	<b>15</b>

## Length of Rainfall Season by dekad

### Agricultural (Season 2009 - 2010)

No	Station	Starting Dekad	Ending Dekad	Length of the Rainfall Season in Dekad
<b>Central Highlands</b>				
18	Bamyan	1st dekad of Dec	1st dekad of Aug	<b>15</b>
19	Panjab	3rd of dekad of Oct	1st dekad of Aug	<b>16</b>
20	Yakawlang	3rd dekad of Nov	2nd dekad of June	<b>19</b>
<b>East</b>				
21	Agam	3rd dekad of Sep	1st dekad of Aug	<b>19</b>
22	Asmar	1st dekad of Sep	2nd dekad of Aug	<b>20</b>
23	Farm Jadeed	3rd dekad of Sep	3rd dekad of July	<b>14</b>
24	Ghazi Abad	1st dekad of Oct	1st dekad of Aug	<b>15</b>
25	Jalalabad	3rd dekad of Sep	1st dekad of Aug	<b>20</b>
26	Laghman	3rd dekad of Nov	1st dekad of Aug	<b>5</b>
27	Mehtarlam	3rd dekad of Jan	1st dekad of Aug	<b>17</b>
28	Sheshambagh	3rd dekad of Sep	3rd dekad of July	<b>13</b>
<b>Northeast</b>				
29	Chardara	1st dekad of Nov	1st dekad of July	<b>24</b>
30	Aqtepa	3rd dekad of Nov	3rd dekad of June	<b>15</b>
31	Baghlan	1st dekad of Nov	3rd dekad of May	<b>20</b>
32	Baharak	1st dekad of Nov	2nd dekad of June	<b>22</b>
33	Faizabad	1st dekad of Nov	2nd dekad of June	<b>21</b>
34	Imam Sahib	3rd dekad of Nov	2nd dekad of June	<b>20</b>
35	Kunduz	1st dekad of Nov	2nd dekad of June	<b>20</b>
36	Taluqan	1st dekad of Nov	2nd dekad of June	<b>21</b>
37	Aibak	3rd decks of Nov	1st dekad of June	<b>13</b>

## Length of Rainfall Season by dekad

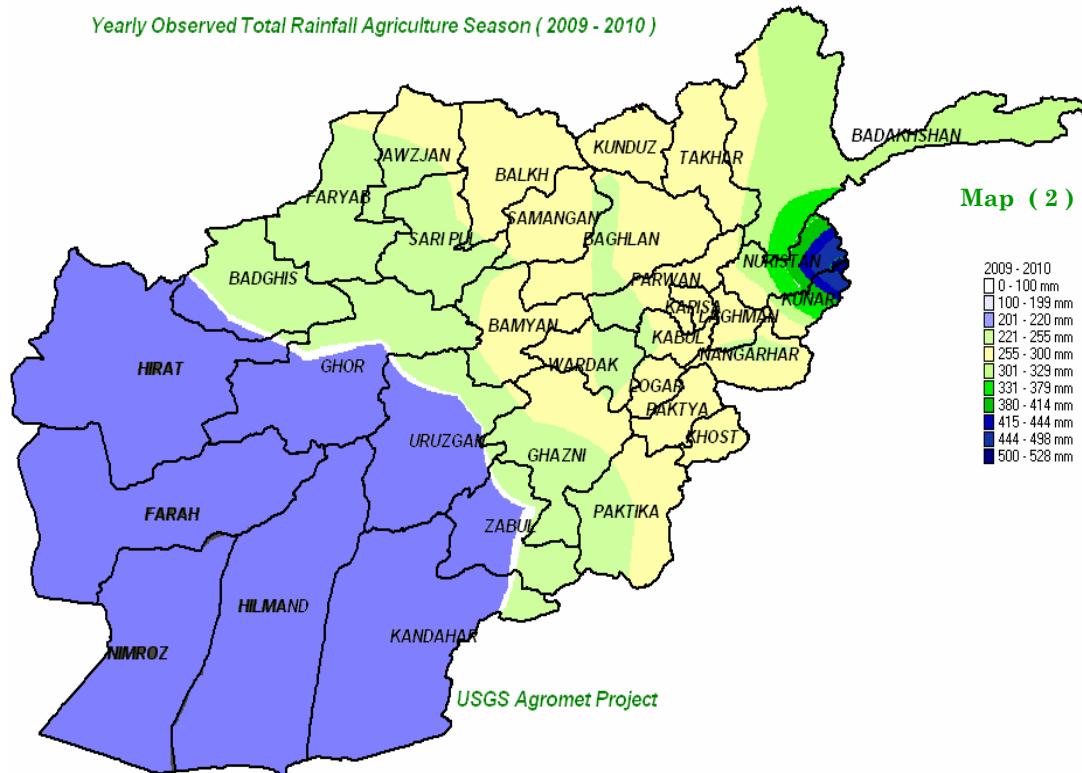
### Agricultural (Season 2009 - 2010)

No	Station	Starting Dekad	Ending Dekad	Length of the Rainfall Season in Dekad
<b>North</b>				
38	Darzab	3rd dekad of Nov	2nd dekad of May	<b>17</b>
39	Jawzjan	3rd dekad of Nov	1st dekad of May	<b>18</b>
41	Maimana	1st dekad of Nov	2nd dekad of May	<b>14</b>
42	Mazar	3rd dekad of Nov	2nd dekad of May	<b>15</b>
43	Mazarisharif	1st dekad of Nov	1st dekad of June	<b>20</b>
44	Sarbagh	1st dekad of Nov	3rd dekad of June	<b>19</b>
45	Sari Pul	3rd dekad of Nov	1st dekad of May	<b>15</b>
47	Takhta Pul	3rd dekad of Nov	1st dekad of May	<b>16</b>
<b>South</b>				
48	Greshk	1st dekad of Dec	3rd dekad of April	<b>6</b>
49	Kandahar	1st dekad of Dec	1st dekad of May	<b>10</b>
50	Lashkargah	1st dekad of Dec	3rd dekad of April	<b>7</b>
51	Nad Ali	1st dekad of Dec	3rd dekad of April	<b>7</b>
52	Nawa Gorgin	1st dekad of Dec	3rd dekad of April	<b>6</b>
53	Uruzgan	1st dekad of Dec	1st dekad of May	<b>10</b>
54	Zabul	3rd dekad of Jan	1st dekad of May	<b>6</b>
55	Zaranj	1st dekad of Dec		<b>5</b>
56	Gardiz	3rd dekad of Nov	3rd dekad of Aug	<b>21</b>
57	Ghazni Met	1st dekad of Dec	1st dekad of Aug	<b>14</b>
58	Sarday	1st dekad of Dec	1st dekad of Aug	<b>10</b>
<b>Southeast</b>				
59	Khost	1st dekad of Sep	3rd dekad of Aug	<b>22</b>
60	Moqur	3rd dekad of Nov	1st dekad of Aug	<b>10</b>
61	Rohani Baba	3rd dekad of Nov	1st dekad of Aug	<b>4</b>
62	Sharana	1st dekad of Nov	3rd dekad of Aug	<b>12</b>
63	Tera Forestry	3rd dekad of Nov	1st dekad of Aug	<b>16</b>
<b>West</b>				
64	Cheghcharan	1st dekad of Oct	1st dekad of May	<b>15</b>
65	Farah	1st dekad of Dec	1st dekad of May	<b>7</b>
66	Hirat	3rd dekad of Nov	1st dekad of May	<b>11</b>
67	Moqur Badghis	3rd dekad of Nov	1st dekad of May	<b>12</b>
68	Qala-e-naw	3rd dekad of Nov	1st dekad of May	<b>11</b>
69	Shindand	1st dekad of Dec	3rd dekad of April	<b>13</b>
70	Zenda jan	3rd dekad of Nov	2nd dekad of April	<b>11</b>

## Recorded Distribution of Rainfall (2009 – 2010)

Rainfall distribution was variable in different provinces of the country for rainfall season (2009 - 2010).

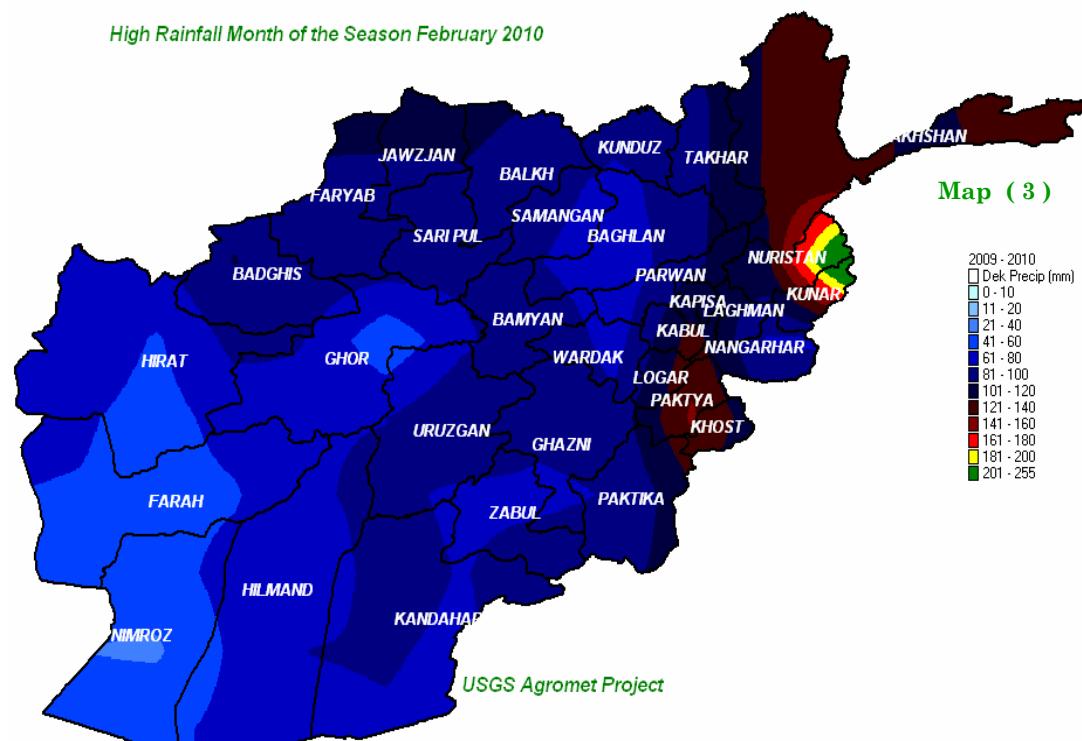
Map (2) shows most amount of rainfall occurred in the Eastern region during the rainfall season (2009 - 2010),



Map 3 shows that the month of February 2010 was very wet month for most of the country, with the Eastern region receiving the highest amount of rain. and the country maximum rainfall recorded in this month,

and the Northeastern, Northern, Northwestern, Capital and Eastern parts of Central Highlands experienced moderate rainfall. The Southern, Southwestern and Western regions received low amount of rainfall during the rainfall season (2009 - 2010).

and most parts of the country experienced significant rainfall. As Map (3) shows the rainfall was very high in the Eastern region.

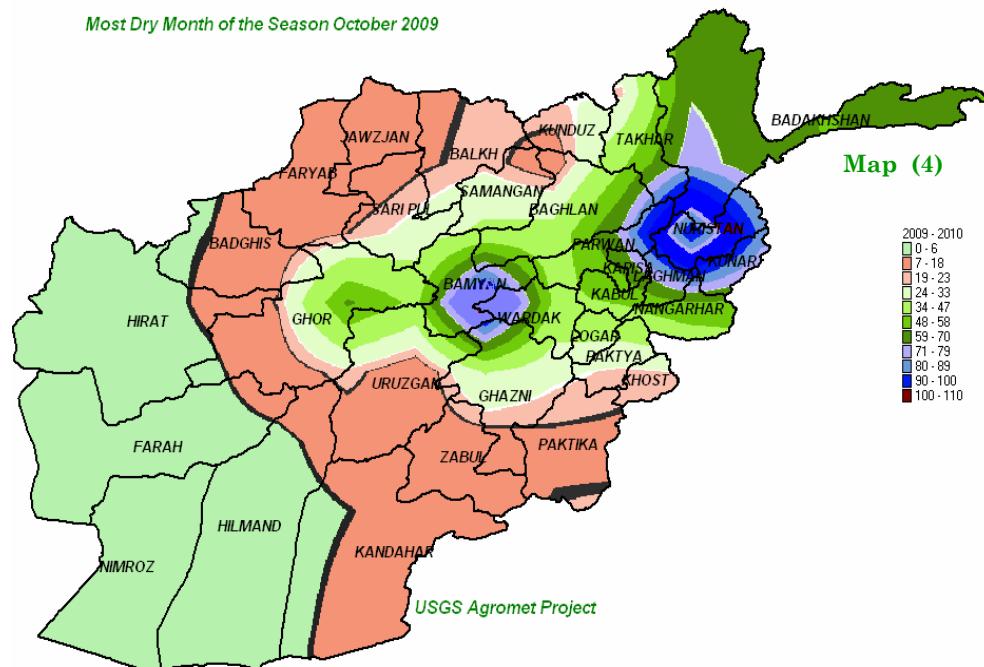


## Recorded Distribution of Rainfall (2009 – 2010)

October 2009 was very dry month during the rainfall season (2009 - 2010) and it is typical in this time of the year. However the Eastern and some

parts in the Capital region experienced moderated rainfall, while in the remaining regions of the country seasonal dryness continued.

*Most Dry Month of the Season October 2009*



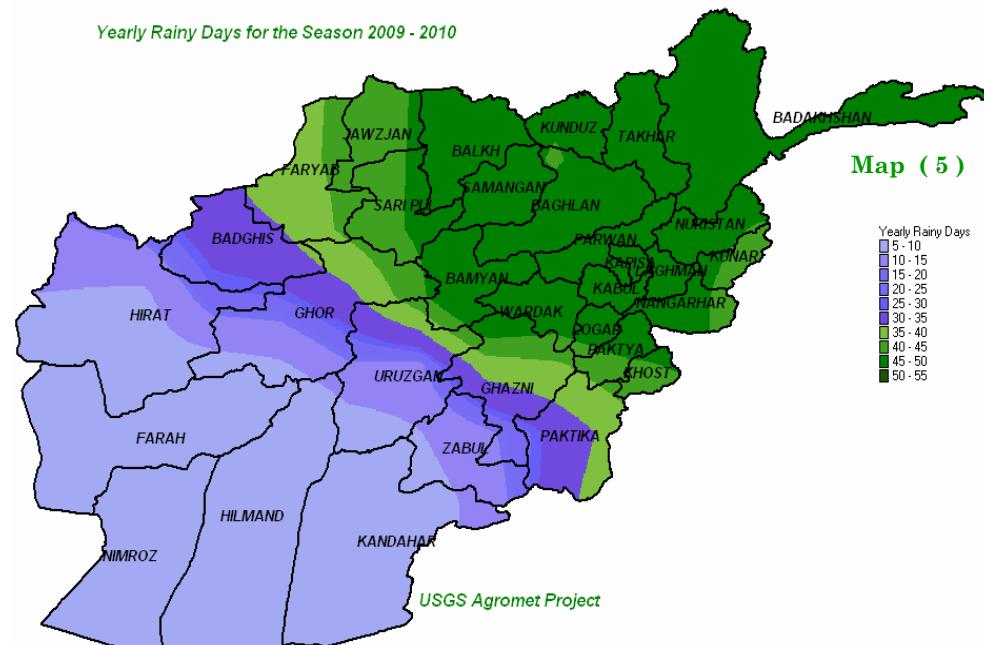
## Rainy Days (2009 – 2010)

Although rain occurrence was variable in different regions of the country during the rainfall season (2009 - 2010), but recorded rainy days data shows no significant change occurred in rainy days during the rainfall season (2009 - 2010) compared to that of (2008 - 2009).

Dara Panjsheer (Capital region) recorded Maximum rainy days at 74 days, while Zaranj Province

(Southwestern region) recorded lowest rainy days of only 6 days. Figure (5) shows Seasonal rainy days for the rainfall season (2009 - 2010) across the country, where the Northeastern region, Capital, East parts of the Central Highlands, some parts of the Northern region, Eastern, and Southeastern regions experienced high rainy days during the rainfall season (2009 - 2010), whereas lowest rainy days recorded in the Southern region.

Yearly Rainy Days for the Season 2009 - 2010



## Analysis of Recorded Rainfall by Region for the Rainfall Season (2009 – 2010)

**Capital Region:** Badam Bagh, Chack, Charikar, Darulaman, Panjshir, Gul Khana, Jabulsaraj, Jaghatoo, Kabul, Kapisa, Kariz Mir, Logar, Paghman, Qargha and Sarobi stations are located in this region. During the (2009 – 2010) season the average rainfall of this region was **408.1 mm**. This region received significant rainfall during the rainfall season (2009– 2010), and most amount of rainfall occurred in the month of December, January, February, March , April and May In this region the Maximum value (more than 15 mm) of rainfall by dekad in mm is as follow:

Stations	2008				2009							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
<b>Badambagh</b>			18 mm 3rd dekad	17.5 mm 1st dekad	31.5 mm 3rd dekad	50 mm 1st dekad	39.2 mm 1st dekad	18.5 mm 3rd dekad	30.4 mm 1st dekad			
<b>Chack</b>				20 mm 1stdekad		19 mm 1st dekad		30 mm 3rd dekad	26 mm 1st dekad			40mm 1st dekad
<b>Chrikar</b>			46 mm 3rd dekad	86 mm 1st dekad	46 mm 3rd dekad	65 mm 1st dekad	52 mm 1st eekad					24 mm 3rd dekad
<b>Darulaman</b>			21.5 mm 3rd dekad		34.4 mm 3rd dekad	52.7 mm 1st dekad	26.6 mm 1st dekad		32.1 mm 1st dekad			15.2 mm 3rd dekad
<b>Panjshir</b>	46 mm 3rd dekad	38 mm 3rd dekad	21 mm 3rd dekad			87 mm 3rd dekad	36 mm 3rd dekad	66 mm 1st dekad	73 mm 3rd dekad	23 mm 1st dekad	55 mm 3rd dekad	45 3rd dekad
<b>Gul Khana</b>			27.2 mm 3rd dekad	12 mm 1st dekad	28.8 mm 3rd dekad	41 mm 1st dekad	27.6 mm 1st dekad	18 mm 3rd dekad	34 mm 1st dekad			
<b>Jabulsaraj</b>			36 mm 3rd dekad									
<b>Jaghatoo</b>			16 mm 3rd dekad		16 mm 3rd dekad	20 mm 1st dekad	56 mm 1st dekad	27 mm 3rd dekad	96 mm 2nd dekad	13 mm 2nd dekad	84 mm 3rd dekad	33 mm3rd dekad
<b>Kabul</b>			20.5 mm 3rd dekad	13.3 mm 1st dekad	18.9 mm 3rd dekad	51.6 mm 1st dekad	18 mm 1st dekad	17.8 mm 1st dekad	30.2 mm 1st dekad			10 mm 3rd dekad
<b>Kapisa</b>				30.2 mm 1st dekad	27 mm 3rd dekad	53 mm 1st dekad	40 mm 1st dekad	34.5 mm 2nd dekad	22.5 mm 1st dekad			
<b>Kariz Mir</b>			16 mm 3rd dekad	24 mm 1st dekad		57 mm dekad	21 mm 1st dekad	53 mm 3rd dekad				
<b>Paghman</b>			41 mm 3rd dekad	17 mm 1st dekad	80 mm 3rd dekad	88 mm 1st dekad	26 mm 1st dekad	36 mm 3rd dekad	37 mm 1st dekad	16 mm 2nd dekad		
<b>Qargha</b>			26 mm 3rd dekad	67.5 mm 1st dekad	29.5 mm 3rd dekad	28 mm 1st dekad	41.5 mm 1st dekad	10.3 mm 3rd dekad	15 mm 1st dekad		15 mm 3rd dekad	19 mm 1st dekad
<b>Sarobi</b>	23 mm 1st dekad					54.3 mm 1st dekad	24.5 mm 1st dekad		31.9 mm 1st dekad			

## Analysis of Recorded Rainfall by Region for the Rainfall Season (2009 – 2010)

**Central Highlands:** Agromet maintain stations in Bamyan, Panjab and Yakawlang. During the (2009 – 2010) season the average rainfall of this region was **290.9 mm** The Central Highlands region experienced moderate rain and rainfall had small increase during the rainfall season (2009 - 2010) over that of the (2009 – 2010) season . The maximum rainfall recorded by dekad in mm is as follows:

Stations	2008				2009							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Bamyan												
Bamyan				18 mm 1st dekad		21 mm 1st dekad	17.5 mm 1st dekad	21 mm 3rd dekad	29.5 mm 1st dekad			13.5 mm 1st dekad
Panjab		20 mm 3rd dekad	16 mm 3rd dekad			38.5 mm 3rd dekad		49 mm 2nd dekad	72 mm 1st dekad			40 mm 1st dekad
Yakawlang				15 mm 1st dekad	17 mm 3rd dekad	47 mm 1st dekad		17 mm 3rd dekad	33 mm 1st dekad			

**East Region:** Agromet maintain stations in Agam, Asmar, Farm Jadeed, Ghazi Abad, Jalalabad, Laghman and Mehtarlam stations are located in this region During the (2009– 2010) season the average rainfall of this region is : **493.6 mm** This region experienced significant rainfall during the rainfall season (2009 – 2010) in this region rainfall continued up to August 2010, the maximum rainfall which has been recorded by dekad in mm is as follow:

Stations	2009				2010							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Agam	18 mm 3rd dekad				29 mm 3rd dekad	19.5 mm 1st dekad		18 mm 2nd dekad			90.5 mm 3rd dekad	29 mm 1st dekad
FormJaded	21 mm 3rd dekad				16 mm 3rd dekad	27 mm 1st dekad	33 mm 1st dekad	18 mm 2nd dekad			89 mm 3rd dekad	
Ghazi Abad					27 mm 3rd dekad	18 mm 1st dekad		23 mm 3rd dekad	35 mm 1st dekad		66 mm 3rd dekad	
Jalabad	18 mm 3rd dekad								22 mm 1st dekad		81 mm 3rd dekad	
Laghman											59 mm 3rd dekad	51 mm 1st dekad
Mehtarlam						41 mm 1st dekad	22 mm 1st dekad		19 mm 2nd dekad		30 mm 3rd dekad	30mm 1st dekad
Asmar	98 mm 1st dekad		45 mm 1st dekad	43 mm 3rd dekad	53 mm 3rd dekad	80 mm 1st dekad	67 mm 3rd dekad	77 mm 2nd dekad	60 mm 2nd dekad	16 mm 3rd dekad	85 mm 3rd dekad	61mm 2nd dekad

## Analysis of Recorded Rainfall by Region for the Rainfall Season (2009 – 2010)

**Northeast Region:** Stations in Chardara, Aqtepa, Baghlan, Baharak, Faizabad, Imam Sahib, Kunduz , Taluqan and Aibak recorded seasonal average rainfall of 411.9 mm. Rainfall had an increase in the Northeastern region during the rainfall season (2009- 2010) compared to last season (2008 - 2009). In this region rainfall started in November 2009 and continued up to July 2010. The maximum value of rainfall recorded in mm in different stations by dekad is listed below:

Stations	2009				2010							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
<b>Chardara</b>			48 mm 3rd dekad	45.9 mm 3rd dekad		61 mm 1st dekad	23 mm 1st dekad	18 mm 2nd dekad	47 mm 1st dekad	33 mm 1st dekad	33 mm 1st dekad	
<b>Aqtepa</b>			47 mm 3rd dekad	75 mm 1s dt ekad		67 mm 1st dekad	30 mm 1st dekad	40 mm 2nd dekad	70 mm 1st dekad	15 mm 3rd dekad		
<b>Baghlan</b>			15.8 mm 1st dekad	29.8 mm 1st dekad		22.4 mm 1st dekad	22.8 mm 1st dekad	25.4 mm 1st dekad	32.2 mm 1st dekad			
<b>Baharak</b>			42 mm 3rd dekad	27.6 mm 1st dekad		55 mm 1st dekad	48 mm 1st dekad	31 mm 2nd dekad	46 mm 1st dekad	47 mm 1st dekad		
<b>Faizabad</b>			42 mm 1st dekad	42 mm 1st dekad	24 mm 2nd dekad	60 mm 3rd dekad	47 mm 3rd dekad	224 mm 2nd dekad	48.5 mm 2nd dekad	31 mm 2nd dekad	16	
<b>Imamsahib</b>			16.6 mm 3rd dekad	44.1 mm 1st dekad		37.8 mm 1st dekad	25 .4 mm 1st dekad	41.9 mm 2nd dekad	36.5 mm 1st dekad			
<b>Kunduz</b>			25.6 mm 1st dekad	47.5 mm 1st dekad		38 mm 1st dekad	24.2 mm 1st dekad	23.8 mm 1st dekad	48 mm 1st dekad	25.8 1st dekad		
<b>Taluqan</b>			32 mm 1st dekad	28 mm 1st dekad		52 mm 1st dekad	40.5 mm 1st dekad	38 mm 2nd dekad	64 mm 3rd dekad	35 mm 1st dekad		
<b>Aibak</b>			35 mm 3rd dekad			26 mm 1st dekad	25 mm 3rd dekad		79 mm 1st dekad			

## Analysis of Recorded Rainfall by Region for the Rainfall Season (2009 – 2010)

**North Region** Darzab, Jawzjan, Kolor or khuram, Maimana, Mazar, Mazarisharif, Sarbagh, Sari Pul, Sheberghan and Takhta Pul stations are located in this region. During the (2009 – 2010) season the average rainfall of this region is **348.8 mm**. In This region rainfall had small increase during the rainfall season (2009 - 2010) over the last season in ( 2008 - 2009 ).The maximum rainfall has been recorded in mm and is shown below:

Stations	2009				2010							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Darzab			35 mm 3rd dekad	30 mm 1st dekad		56.9 mm 1st dekad	16.8 mm 1st dekad	47.8 mm 2nd dekad	33.6 mm 1st dekad			
Jawzjan			27.7 mm 3rd dekad	24 mm 1st dekad	17.2 mm 3rd dekad	39.8 mm 1st dekad	25.1 mm 3rd dekad		19.2 mm 1st dekad			
Maimana			61 mm 3rd dekad	32 mm 1st dekad		34 mm 3rd dekad	71 mm 1st dekad	31 mm 2nd dekad	27 mm 2ns dekad			
Mazar			38 mm 3rd dekad	66 mm 1st dekad		51 mm 3rd dekad	25 mm 3rd dekad	33 mm 2nd dekad	39 mm 1st dekad			
Mazar –e – Sharif			30 mm 3rd dekad	30 mm 1st dekad	10 mm 3rd dekad	56 mm 3rd dekad	16.6 mm 1st dekad	47 mm 2nd dekad	33.8 mm 1st dekad			
Sarbagh			20 mm 1st dekad	32 mm 1st dekad			34 mm 3rd dekad	36 mm 2nd dekad	40 mm 2nd dekad	16 mm 3rd dekad		
Sari Pul			26.5 mm 3rd dekad		15mm 3rd dekad	32.6 mm 3rd dekad	22.5 mm 1st dekad	26.5 mm 2nd dekad	20 mm 1st dekad			
Takhtapul			41 mm 3rd dekad	64 mm 1st dekad		35 mm 3rd dekad	23 mm 3rd dekad	29 mm 2nd dekad	24 mm 1st dekad			

## Analysis of Recorded Rainfall by Region for the Rainfall Season (2009 – 2010)

**South region:** The seasonal average rainfall recorded in Greshk, Kandahar, Lashkargah, Nad Ali, Nawa Gawhargin, Uruzgan, Zabul, Zaranj, Gardiz, Ghazni and Sarday was 177.8 mm. This region experienced less seasonal average rainfall than that of (2008-2009) season.

Stations	2009				2010							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Greshk				72 mm 2nd dekad	16 mm 1st dekad	41 mm 1st dekad		19 mm 2nd dekad				
Kandahar				49 mm 1st dekad			55 mm 1st dekad					
Lashkargah				58 mm 2nd dekad	45 mm 1st dekad	26 mm 1st dekad						
Nad Ali				64 mm 2nd dekad	45 mm 1st dekad	31 mm 1st dekad						
Nawa Gorgin				46 mm 1st dekad				17.5 mm 2nd dekad				
Urazgan					20.5 mm 3rd dekad	36 mm 1st dekad	23 mm 1st dekad					
Zabul					22 mm 3rd dekad	36 mm 1st dekad	23 mm 1st dekad					
Zaranj				25 mm 1st dekad								
Gardiz			21.4 mm 3rd dekad	32.4 mm 1st dekad	36.7 mm 2nd dekad	43.3 mm 3rd dekad	45.7 mm 1st dekad	10.4 mm 3rd dekad	57.4 mm 1st dekad		48.1 mm 3rd dekad	
Ghazni					28 mm 3rd dekad	43.6 mm 1st dekad	23.4 mm 1st dekad		15.2 mm 1st dekad			22.8 mm 1st dekad
Sardy									23 mm 1st dekad		25 mm 1st dekad	28 mm 1st dekad

## Analysis of Recorded Rainfall by Region for the Rainfall Season (2009 – 2010)

**Southeast region:** Average seasonal rainfall in Khost, Moqur, Rohani Baba, Tera Forestry and Sharana was 410.5 mm. The Southeastern region experienced heavy rainfall during the (2009-2010) rainfall season especially during the monsoon season. Rainfall had significant increase during the rainfall season (2009 - 2010) over that of last season (2008 - 2009). The maximum rainfall recorded in this region in mm by dekad is as follow:

Stations	2009				2010							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Khost					37 mm 3rd dekad	38 mm 1st dekad	32 mm 1st dekad	17 mm 1st dekad	42 mm 1st dekad	23mm 3rd d ekad	55 mm 3rd dekad	48 mm 3rd dekad
Muqur					32 mm 1st dekad	35 mm 1st dekad	20 mm 1st dekad		16 mm 1st dekad			33 mm 1st dekad
Rohani Baba			24 mm 3rd dekad		16 mm 3rd dekad	39 mm 1st dekad	61 mm 1st dekad	12 mm 3rd dekad	30 mm 1st dekad			35 mm 1st dekad
Sharana					25 mm 3rd dekad	64 mm 1st dekad	31 mm 1st dekad		47 mm 1st dekad	17 mm 3rd dekad	41 mm 3rd dekad	77 mm 1st dekad
Tera			16 mm 3rd dekad	15 mm 1st dekad	26 mm 3rd dekad	110 mm 1st dekad	51 mm 1st dekad	15.5 mm 1st dekad	36 mm 1st dekad		68 mm 3rd dekad	75 mm 1st dekad

**Western Region:** Agromet maintain stations in Cheghcharan, Farah, Hirat, Moqur Badghis, Qala-e-naw, Shindand and Zenda jan stations are located in this region, yearly rainfall of this regions was 249.5 mm.Lowest amount of rainfall recorded in this region during the rainfall season (2009 - 2010), and no significant change osuured in this region during the rainfall season (2009– 2010) compared to last season .The maximum rainfall recorded in this region in mm by dekad is as follow:

Stations	2009				2010							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Cheghcheran								20 mm 1st dekad	44.7 mm 3rd dekad	31.2 mm 1st dekad		
Farah						23 mm 1st dekad	37.8 1st dekad					
Herat			27 mm 3rd dekad		15 mm 3rd dekad	41 mm 1st dekad	37.8 mm 1st dekad					
Muqur Badghis			45 mm 3rd dekad	41 mm 1st dekad		46 mm 1st dekad	39 mm 1st dekad	19 mm 1st dekad	15 mm 1st dekad			
Qala – e – Naw			45.2 mm 3rd dekad	43 mm 1st dekad	24 mm 3rd dekad	34 mm 1st dekad	26 mm 1st dekad	28.7 mm 1st dekad				
Shindand						25 mm 1st dekad	60 mm 1st dekad	20 mm 3rd dekad				

## Total Snow Days (2009 – 2010)

Snow days was lower during the rainfall season (2009-2010) than last season (2008-2009) around the country . However snow days had a decrease for the season (2009-2010) compared to last season, but snow pack developed in the snow coverage is that snow cover during the (2009-2010) season was less than that of (2008-2009) season.

However, snow pack was greater during the 2009-2010 than that of last season, Maximum snow days have been recorded in Panjab 33 snow days, Sheber 29 snow days and Yakawlang 21 snow days, and lowest snow days recorded in Muqure 1 snow days during the rainfall season (2009 - 2010).

Snow Days of the Season 2009- 2010															Table (2)
Name	Region	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total Snow Days	
Badam bagh	Capital	0	0	0	0	1	4	0	0	0	0	0	0	5	
Chack		0	0	0	1	1	1	0	0	0	0	0	0	3	
Charikar		0	0	0	1	0	1	0	0	0	0	0	0	2	
Dara Panjsheer		0	0	3	4	1	9	0	0	0	0	0	0	17	
Darulaman		0	0	0	0	0	3	0	0	0	0	0	0	3	
Dashtak		0	0	0	1	1	3	0	0	0	0	0	0	5	
Gul Khana		0	0	0	0	1	3	0	0	0	0	0	0	4	
Jaghatoor		0	0	2	1	2	4	1	0	0	0	0	0	10	
Kapisa		0	0	0	0	1	1	0	0	0	0	0	0	2	
Kariz Mir		0	0	1	1	2	3	0	0	0	0	0	0	7	
Paghman		0	0	0	2	2	4	0	0	0	0	0	0	8	
Qargha		0	0	0	0	1	4	0	0	0	0	0	0	5	
Bamyan	Central Highlands	0	0	4	2	3	6	2	0	0	0	0	0	17	
Panjab		0	0	6	8	3	16	0	0	0	0	0	0	33	
Shebar		0	1	6	7	3	9	3	0	0	0	0	0	29	
Yakawlang		0	0	1	6	4	9	1	0	0	0	0	0	21	
Chardara	North east	0	0	0	0	0	4	0	0	0	0	0	0	4	
Aaqtepa		0	0	0	0	1	2	0	0	0	0	0	0	3	
Baharak		0	0	0	5	0	3	0	0	0	0	0	0	8	
Faizabad		0	0	0	0	1	5	1	0	0	0	0	0	7	
Kunduz		0	0	0	0	0	4	0	0	0	0	0	0	4	
Urgo		0	0	0	0	2	0	0	0	0	0	0	0	2	
Aibak	North west	0	0	0	0	0	3	0	0	0	0	0	0	3	
Dara-e-Soof		0	0	0	4	1	4	0	0	0	0	0	0	9	
Darzab		0	0	0	3	1	3	0	0	0	0	0	0	7	
Jawzjan		0	0	0	1	1	3	0	0	0	0	0	0	5	
Maimana		0	0	0	0	1	4	0	0	0	0	0	0	5	
Sari Pul		0	0	0	0	0	4	0	0	0	0	0	0	4	
Takhta Pul		0	0	0	1	0	3	0	0	0	0	0	0	4	
Zabul	South	0	0	0	0	1	2	0	0	0	0	0	0	3	
Moqr	South east	0	0	0	1	0	0	0	0	0	0	0	0	1	
Rohani Baba		0	0	0	0	1	2	0	0	0	0	0	0	3	
Sharana		0	0	0	2	1	1	0	0	0	0	0	0	4	
Tera Forestry		0	0	0	2	2	4	1	0	0	0	0	0	9	
Cheghcharan	West	0	0	2	3	2	4	0	0	0	0	0	0	11	
Muqr Badghis		0	0	0	1	0	2	0	0	0	0	0	0	3	
Qala-e-naw		0	0	0	1	0	2	0	0	0	0	0	0	3	

## Afghanistan Snow Depth (2009 – 2010)

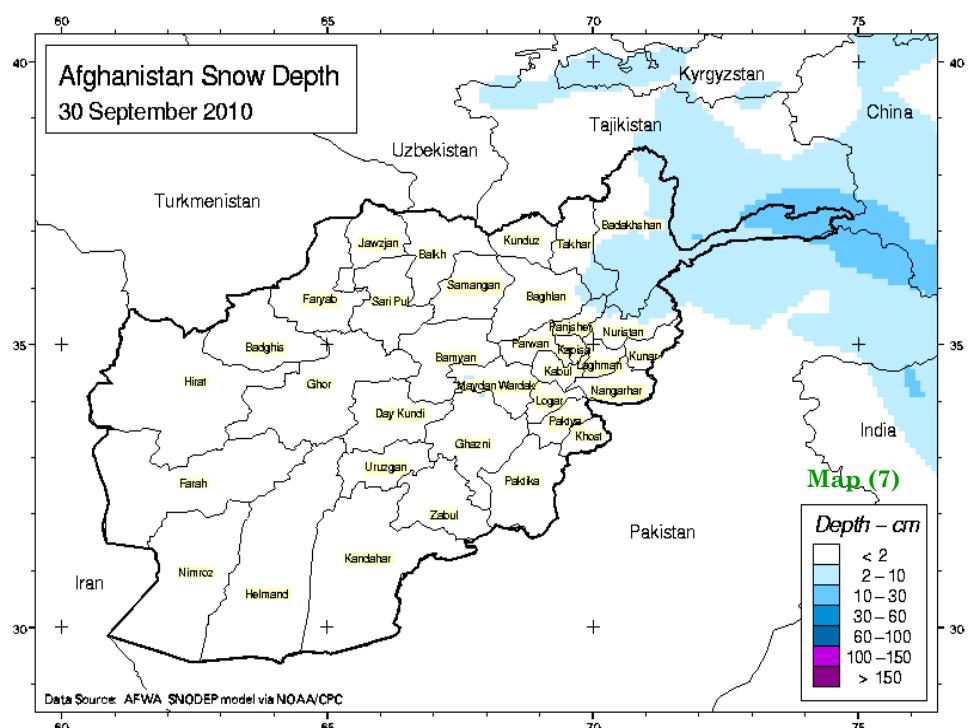
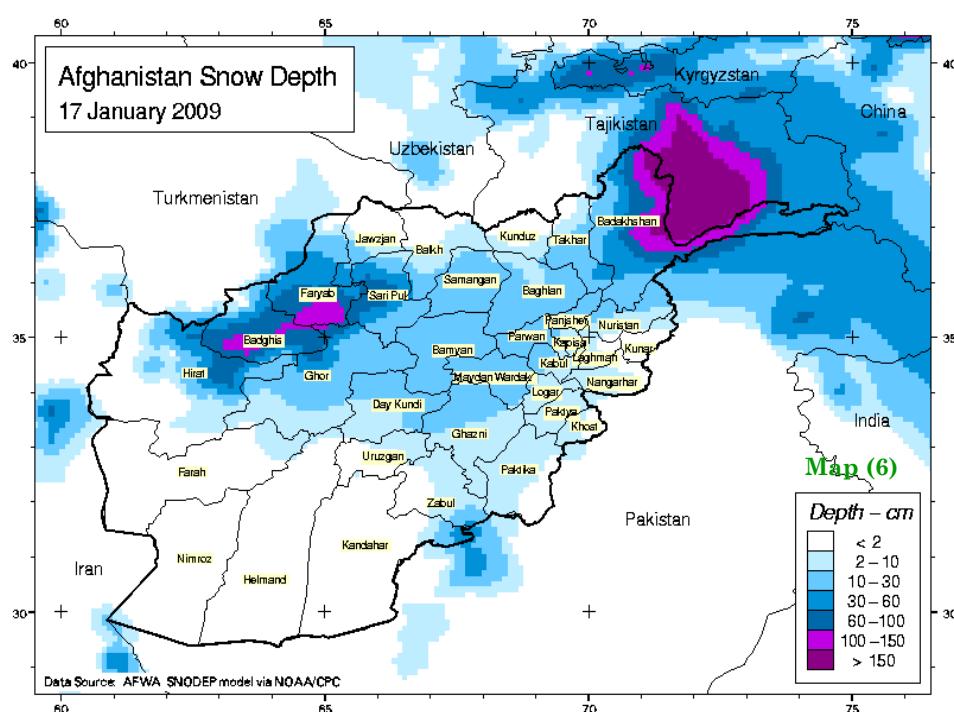
The snowfall started in the Central Highlands in October 2009 and continued till March 2010 in the Central Highlands, in some parts of the Capital region, and in some parts of the Northeast regions.

At the beginning of the rainfall season snow started in some parts of the country. During October 2009 snow pack developed in most parts of the country particularly in the Central Highlands and Northeastern region, during December and mid of January snow was light and early January snow increased in most parts .However snow extent had not significant change in some months, in general

snow depth had a decrease in most parts of snow coverage areas during the rainfall season(2009 - 2010) compared to last season (2008-2009).

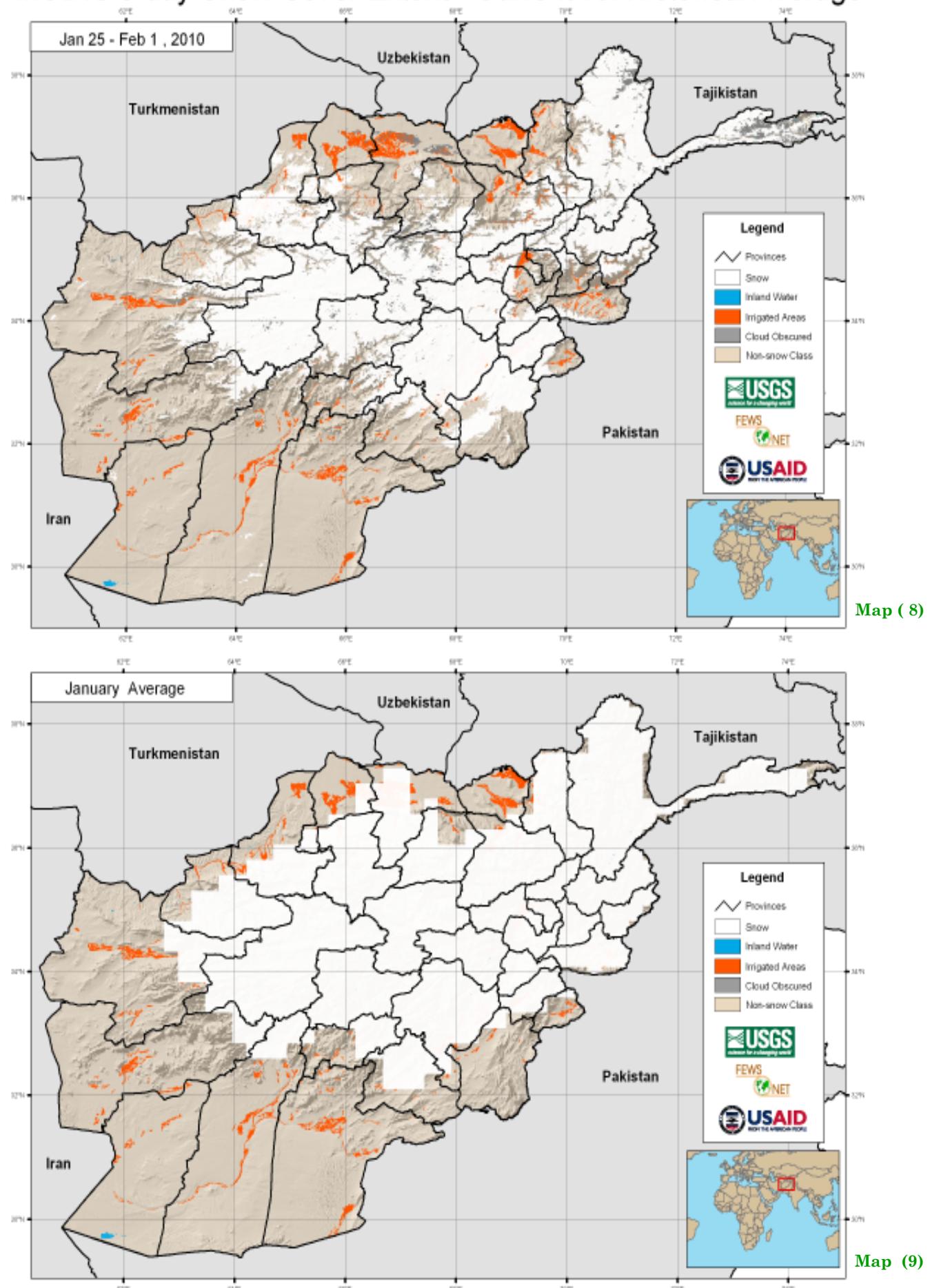
Early January2010snow pack built up and snow extent and depth increased particularly in the Central Highlands and Northeastern mountains as (Map 6).

Map (7) shows snow pack is remained confined to the high elevations of the Northeast region, this is typical for this time of the year. Based on the map (7) the snow depth is 10 to 30 cm.



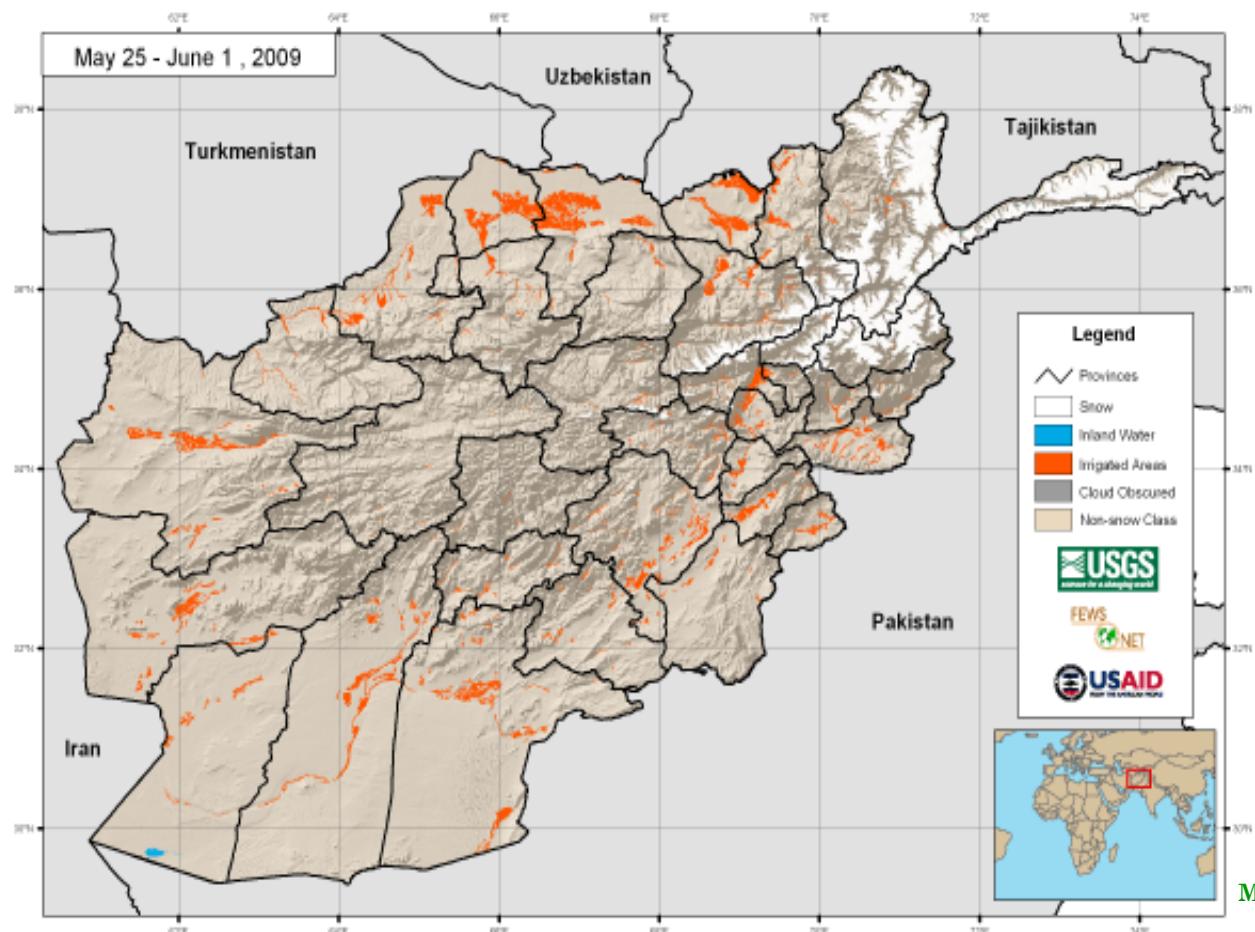
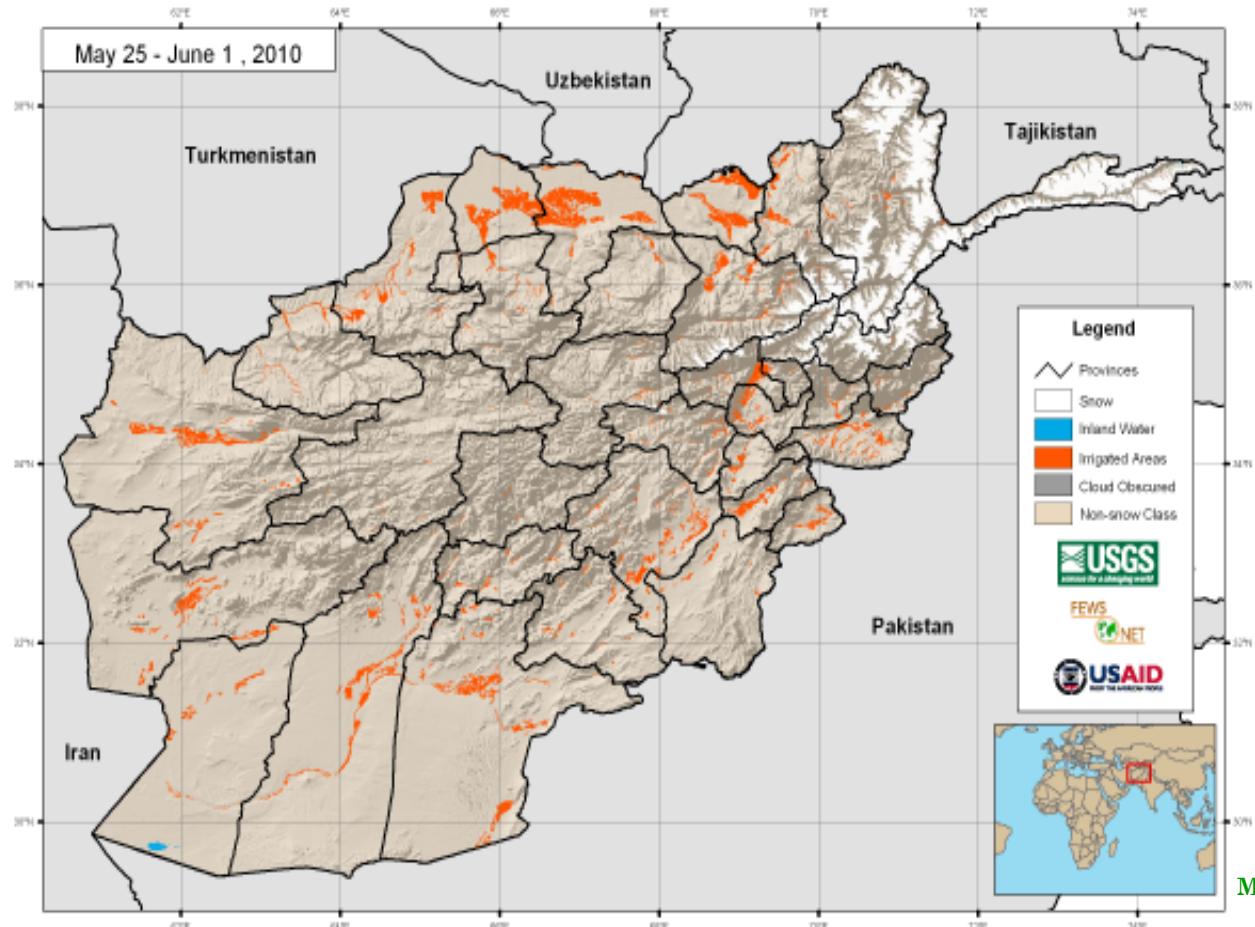
## Snowfall Occurrence (2009 – 2010).

### MODIS 8-day Snow Cover Extent - Current vs. Historical Average



## Snowfall Occurrence (2009 – 2010).

### MODIS 8-day Snow Cover Extent - Current Period 2010 vs 2009



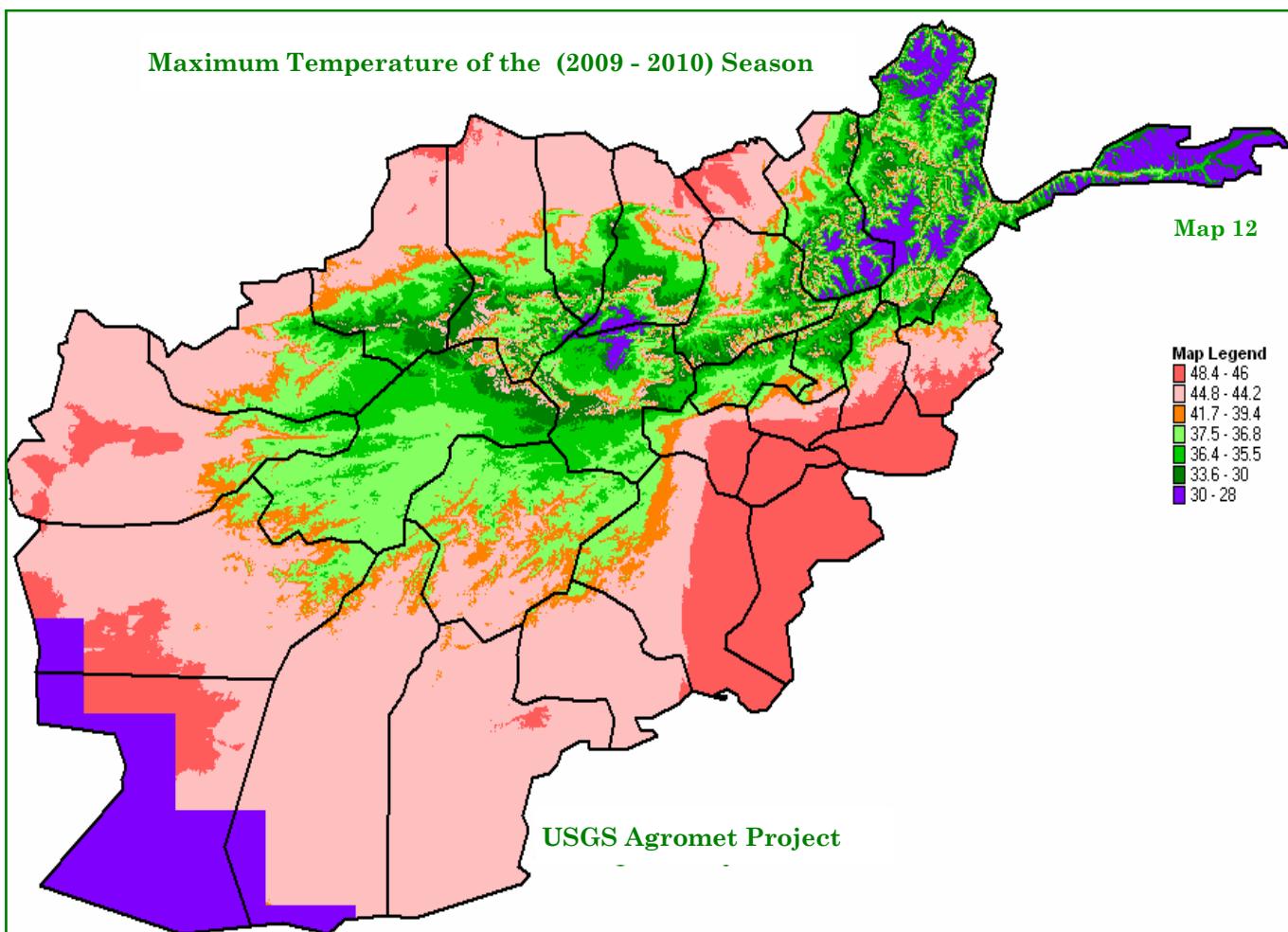
## Temperature and its effect

Temperature for the growing season (2009 – 2010) was higher compared to the last season (2008 – 2009) around the country.

During October and December 2009 temperature was lower than that of January 2010. For the remaining of the season, most of the country experienced higher temperature than that of last season over the same period. Higher temperatures effect snow melt rate and could impact negatively the timely availability of water for irrigation.

Map( 12 ) shows the southwestern, some parts of the Western region, Southern, Southeastern and some Eastern regions experienced extremely hot weather during the growing season (2009 – 2010).

The maximum temperate recorded 47.6 °C in Zaranj province (Southwest) during the growing season (2009– 2010).



## Frost Days Recorded

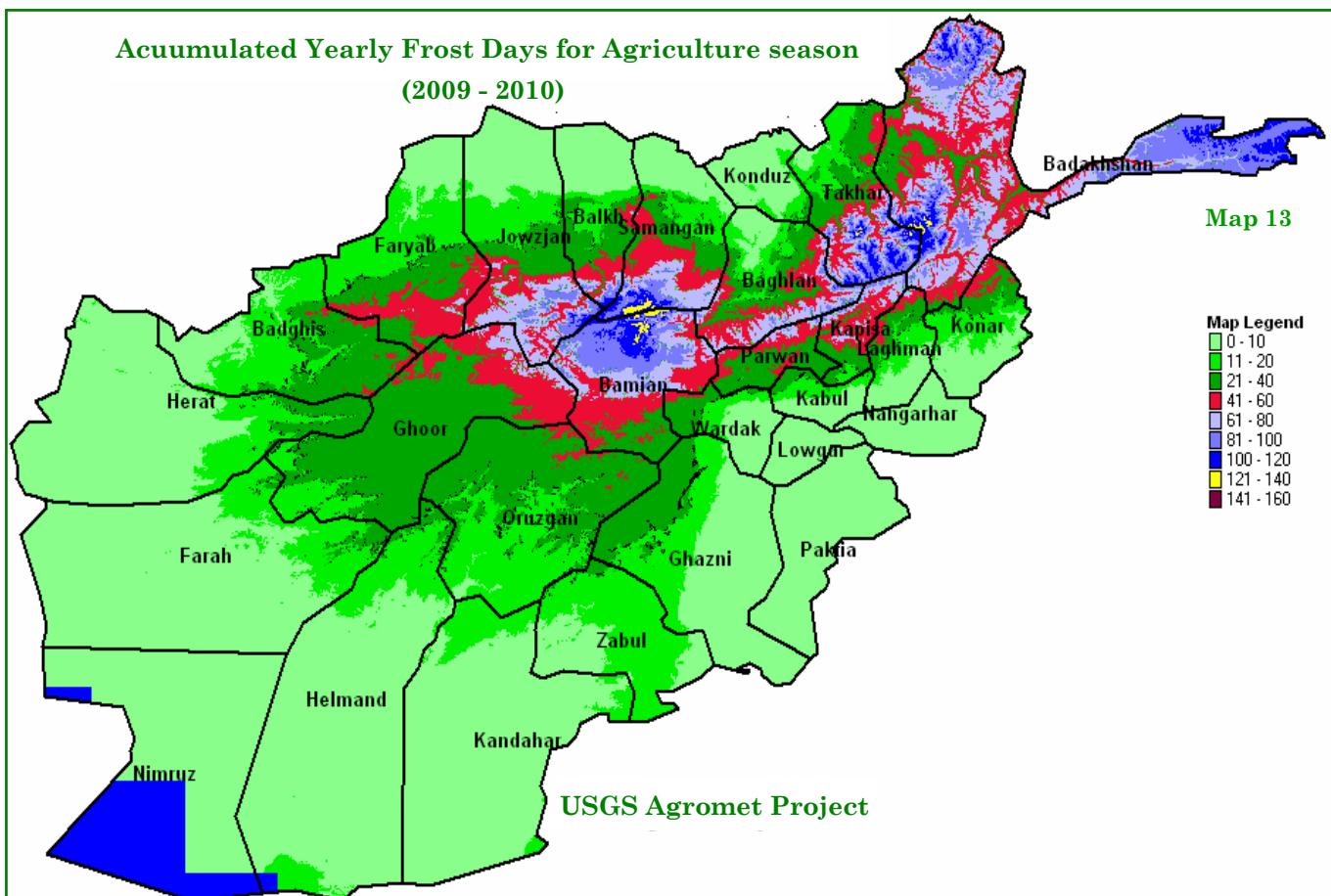
Based on temperature recorded data, frost days had significant decrease during the Agricultural season (2009 -2010) compared to last season (2008 - 2009) around the country.

Temperature dropped to freezing on December 2009 in the Central Highlands and the Northeastern and Some parts of the Southeastern region and continued till February 2010 .

Map (13) shows the Central Highlands and neighboring areas, some parts of the Capital

regions, and Northeastern region experienced most frost days during the agricultural season (2009 - 2010) and the Southern, Southwestern and Western regions recorded lowest frost days.

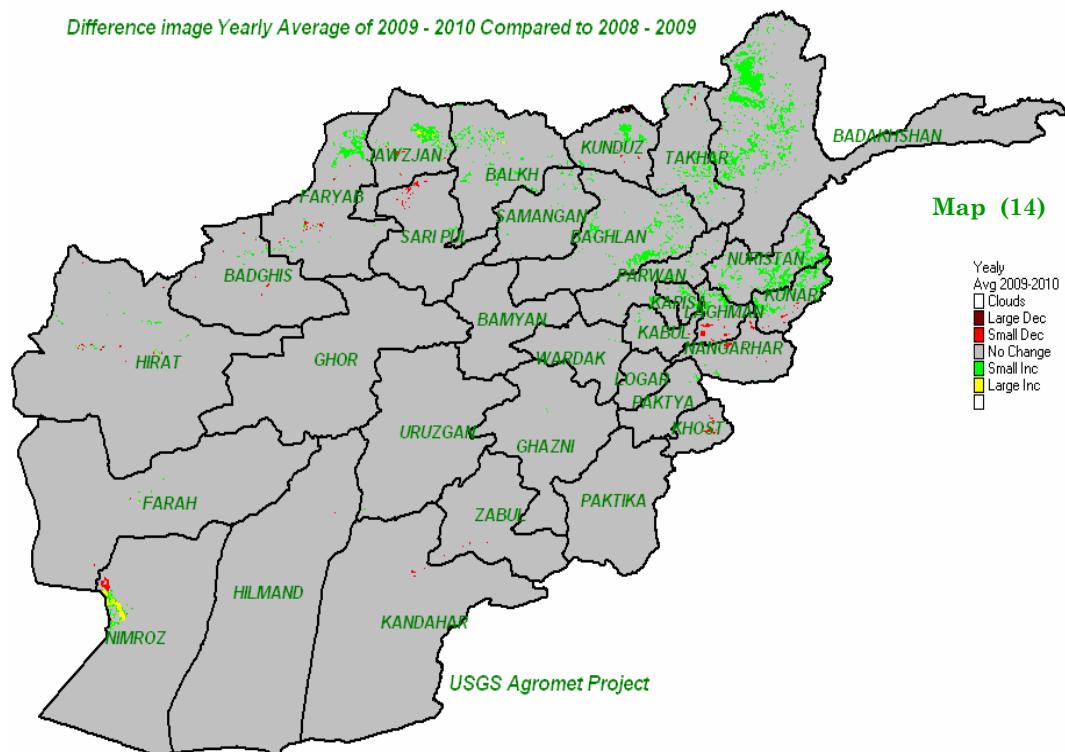
The maximum frost days recorded 125 frost days in Gazni, 123 frost days in Sardar (Southeastern region), 104 frost days has been recorded in Bamyan province (Central Highlands) and 131 in sardar and the minimum frost days was 9 frost days in Farah (Western region).



## Greenery of the (2009 – 2010) Season

Comparison of yearly average of NDVI for the growing season (2009 - 2010) with the yearly average of NDVI for the season (2008 - 2009), (Map14) shows small increase of NDVI in limited areas in the Eastern and Northeastern regions

during the growing season (2009 - 2010) over the growing season (2008 - 2009), and most parts in the remaining regions of the country no change observed in NDVI during growing season (2009 - 2010) compared to the growing season (2008 - 2009).



comparison of yearly average of NDVI for the growing season (2009 - 2010) with long term average of NDVI Map (15) shows small decrease of NDVI as separated in limited areas in the Northeastern and Eastern regions during the

growing season (2009 - 2010) over the long term average. In most parts in the remaining regions of the country no change occurred in NDVI during the growing season (2009 - 2010) compared to long term average.

