



# Agrometeorological

Monthly

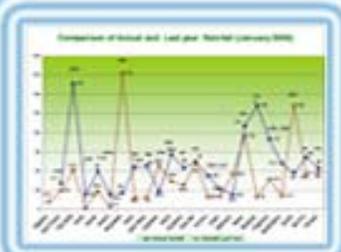


Bulletin



## March - 2006

### Inside this Issue:



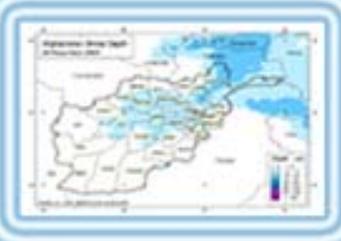
Comparison of Rainfall



Crop Information



Rainfall Situation

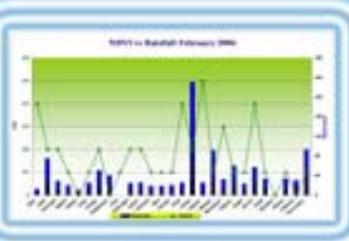


Snow Depth



# Agromet Project-Afghanistan

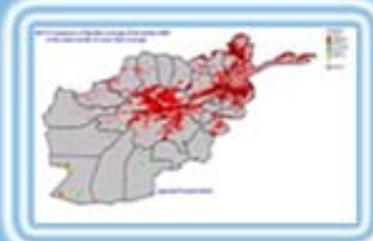
## Helping Agriculture to End HUNGER



Rainfall vs NDVI



NDVI



Comparison of NDVI

The Agromet Project of USGS, supported by the US Agency for International Development (USAID), is working together with the Ministry of Agriculture and Food (MAF) and the Afghan Meteorological Authority (AMA) Ministry of Transport (MoT)



### Agromet Network



## Summary

In most parts of the western region wheat fields are in emerging stage (crop has germinated and seedlings average height dose not exceed 10cm/4") including Qalainew the Center of Badghis Province and Chaghcharan Center of Ghor Province.

In the south western region, observed adverse factors are lack of rain or less rain such as in Lashkargah center of Hilmand province; weeds in Zabul province; and shortage of inputs as tractor, thresher, drug sprayer improved seeds, fertilizer and etc.

Maximum and minimum temperature values for the month of March 2006. Jalalabad experienced the warmest temperature of 31° C during the day in March 2006.

Rainfall for the month of March 2006 was less than that in March 2005.

The NDVI comparison of the month of March 2006 to the same month of 2005 shows large increase of NDVI during 2006.

## Crop Phenological Stages

### In the East Central region:

The winter wheat crop is at emerging stage (crop has germinated and seedling have emerged but average height dose not exceed 10cm/4") such as in Yakawlang district and surrounding Bamyan areas.

### In the North Eastern region:

In this region most of the fields are in emerging stage (crop has germinated and seedlings average height dose not exceed 10cm/4") including Taluqan the center of Takhar Province, Konduze and Baghlan Provinces. However in most parts of the Konduz and Baghlan provinces the crop stage is in vegetative stage (Plants are more than 10cm/4").

### In the North region:

In this region the crop is in vegetative stage including Maimana the Center of Faryab Province, Jawzjan Province, Aibak Center of Samangan Province, Takhtapul areas and surrounding Mazar shrif Center of Balkh Province (Plants are more than 10cm/4"). However, in some areas of Samangan Province the crop stage is emerging (crop has germinated and seedlings average height dose not exceed 10cm/4").

### In the Western region:

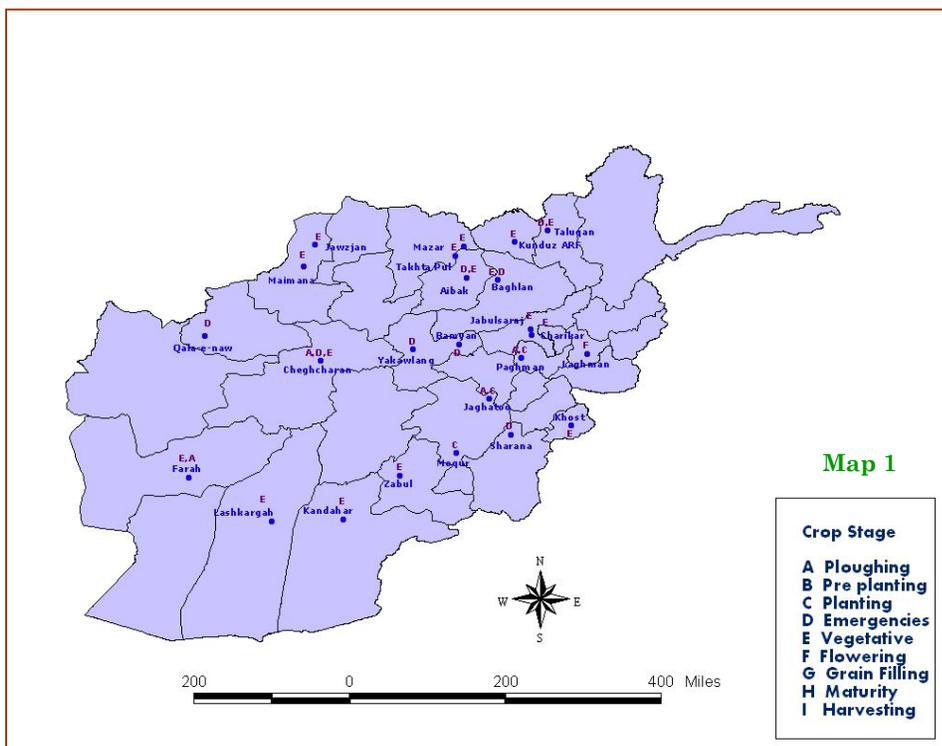
In this region most of the winter wheat fields are in emerging stage (crop has germinated and seedlings average heightdose not exceed 10cm/4") as for Qalainew the Center of Badghis Province and Chaghcharan Center of Ghor Province.

In most parts of Chaghcharan Center of Ghor Province the crop is in vegetative stage (Plants are more than 10cm/4") but, in some parts of this province the farmers are busy in plauging of their wheat fields (soil preparation) stage.

### In the Central region:

In Mahmood Raqee Center of Kapisa Province, Jabalse-rag and Charyakar of Parwan Province the crops are in vegetative stage (Plants are more than 10cm/4"). In Bande Chak District of Wardak Province the wheat fields are in emerging stage (crop has germinated and seedlings average height dose not exceed 10cm/4").

The reports from the Paghman District of Kabul Province and Jaghatoo District of Wardak Province are saying that the farmers in these Districts are plauging of their wheat fields (soil preparation) stage.



## Crop Phenological Stage

### In the Eastern region:

Most of the winter wheat fields are in the flowering stage. It is also reported that farmers in this region planted different vegetables such as tomato, okra, and onion. For example in Laghman province planting is in progress.

### For the South region:

In this region crops are in different stages: for Sharana Center of Paktika Province most of the crops are in emerging stage (crop has germinated and seedlings average height dose not exceed 10cm/4”).

In Khost Province winter wheat crop is in vegetative stage (plants are more than 10cm/4”). At the mean time, farmers in Khost province have started cultivating some vegetables including tomato, okra, and onion.

### .For the South western region:

Most winter wheat fields are in vegetative stage (Plants are more than 10cm/4”) as in Greshk, Nawa, Nadali and Lashkargah Districts of Hilmand Province, Kandahar, Farah and Zabul provinces. However in some parts of Farah Province the farmers are still at the soil preparation stage.

## Crop Condition

### For the South western region:

Different crop conditions have been observed through out this region. In Greshk,Nawa,Nad Ali, and Lashkargah Districts of Hilmand Province and Kandahar Province the crop condition is normal. In Farah Province the crop condition is better than normal. In Zabul Province the crops are in excellent condition.

### For the Western region:

In this region the crop condition is normal as in Chaghcharan Center of Ghor Province and Qalai new Center of Badghis Province.

### For the Central region:

The crop condition is normal as in Jabalserag and Charyakar Districts of Parwan Province and Chak and Jaghatoo Districts of Wardak Province.

### For the East Central region:

In this region crop condition is normal as in Yakawlang District of Bamyar and Center of Bamyar Province.

### For the Eastern region :

In this region crops are in excellent condition as in Laghman Province.

### For the Northeastern region:

Crop condition ranges from normal to better than normal.

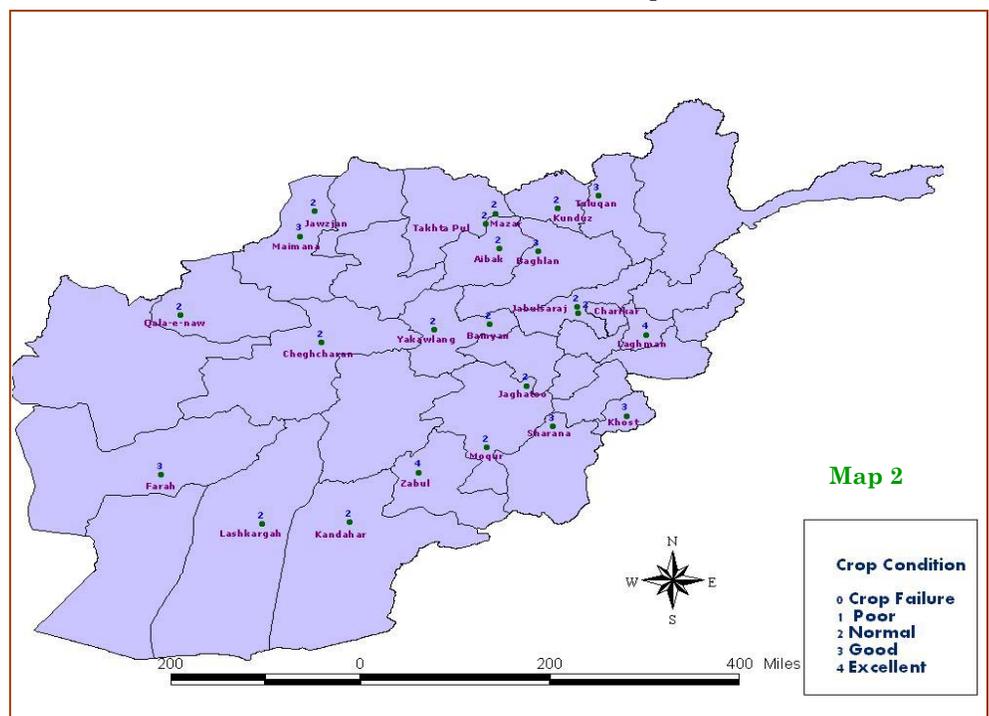
In Chardara, Amamsahib Akhtipa and Qalaizal District of Kundoz Province and Center of Kundoz Province the crop condition is normal and in Taluqan Center of Takhar Province and in Baghlan Province the crop condition is better than normal.

### For the north region:

In this region the crop condition is normal as in Mazare shreef Center of Balkh Province and Takhtapul District of Balkh Province, Aibak Center of Samangan, Jawzjan and Faryab Provinces.

### For the South region

Crop condition is better than normal as in Khost province and Sharana center of Paktika province.



## Adverse Factors

Since the weather is getting warmer each day, winter wheat and other plants are progressing into the next phenological stages, the adverse factors such as sun pests, locusts, borer and cutting worms of wheat, weeds problems are becoming to surface and we are watching closely each of the regions.

### In the Western region:

In this region as in Qalia new Center of Badghis Province, the observed adverse factors are mainly shortage of inputs including tractor, thresher, drug sprayer improved seeds, and fertilizer.

In Chaghcharan Center of Ghor Province, the winter wheat crop failed. Some of the contributing factors include: frost and the distributed, suppose to be, improved seeds, which was distributed with out any research and experimental tests did not germinated. Farmers have lost their crop and food security issues may arise. We are watching the situation closely and in close collaboration with FEWS NET and other partners.

### In the south Western region:

The major adverse factors in this region are lack of rain, weeds and shortage of inputs. lack of rain effect on crop is observed in Lashkargah Center of Hilmand Province, weeds and shortage of inputs (i.e. tractor, thresher, drug sprayer improved seeds, fertilizer) are the common adverse factors recorded in Zabul Province..

### In the south region:

Weeds are major problem in Khost province and late planting in Sharana center of Paktika province.

### In the eastern region:

In this region much rain caused the weeds are the major problem in Laghman province that the farmers have to deal with, which requires intensive labor due to the lack of machinery.

### In the north east region:

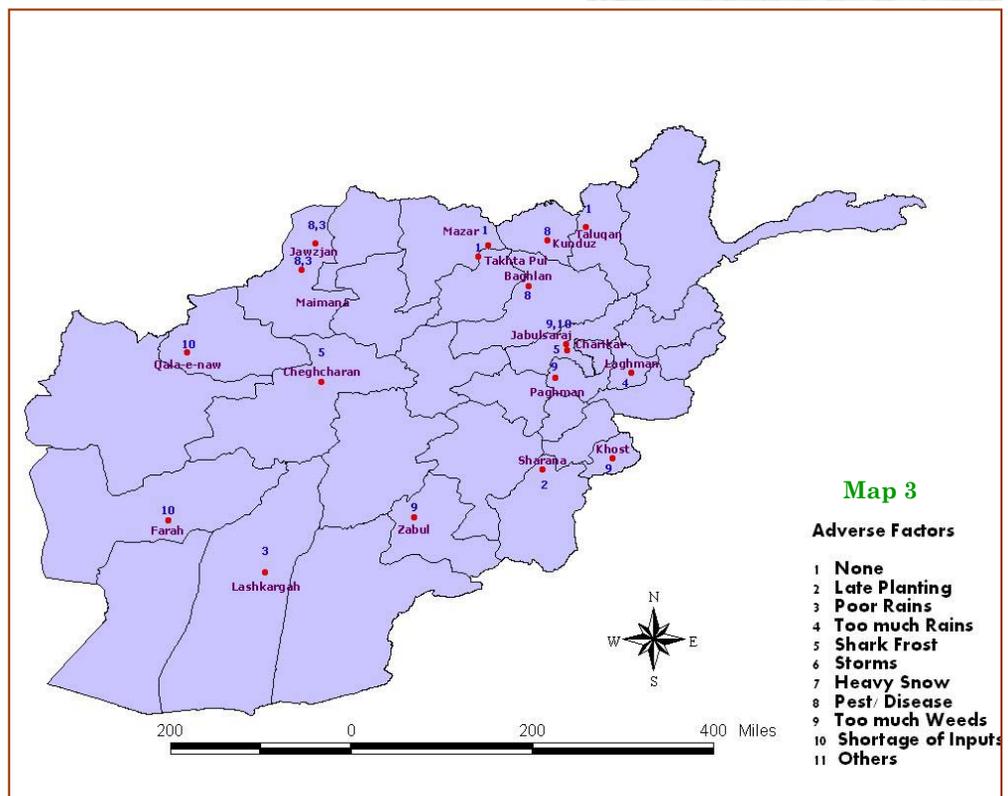
No adverse factors reported in Takhar. Kundoz and Baghlan provinces reported borer and cutting worm of irrigated and rain fed wheat, no detail assessment of the damage is available at this time.

### In the northern region

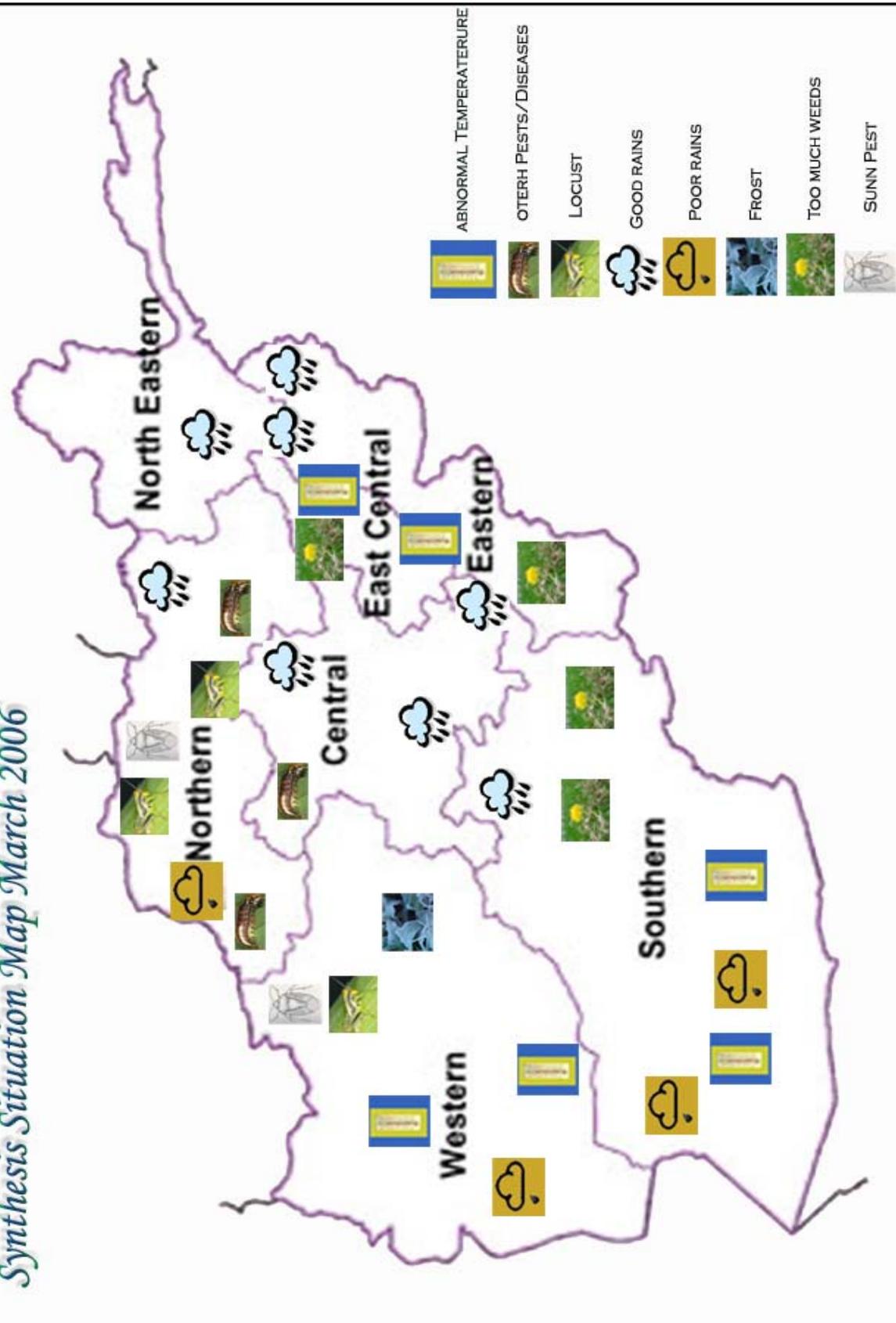
Adverse factors include sun pest in Darzab district of Jawzjan and in center of Jawzgan province; borer worm of irrigated and rain fed wheat in Sarepul and Frayab provinces especially in irrigated areas of winter wheat; and no adverse factors yet observed in Takhtapul district and center of Balkh province.

### .In the central region

Frost, weeds and shortage of inputs are mainly the observed adverse factors in the Central region. Frost observed in Charyakar center of Parwan province, weeds in Mahmood raqee center of Kapisa ,Paghman areas and Jabalseraj areas belong to Parwan province , and shortage of inputs such as tractors, thresher, drug sprayer improved seeds, and fertilizers, were a major problem to farmers in Jabalserag reported shortage of inputs as and etc.



# Synthesis Situation Map March 2006



Map 4

## Rainfall Satiation

Rainfall for the month of March 2006 was less than that of March 2005. Chart 1 shows 2005-2006 rainfall comparison.

Rainfall was significantly less during the month of March 2006 than that the same month of 2005 in most parts of the country except in Faizabad, Kunduz, Sheberghan and Logar where the rainfall has increased during the month of March 2006 compared to 2005.

The Northeast region experienced more rainfall than other parts of the country during March 2006 and less rainfall in South and West regions, compared to same period in 2006. The percent +/- in rainfall during the month of March 2005 – 2006 is as follow:

In Kabul – 53 %, Karizmir – 51%, Paghman – 45%, Darul Aman - 75%, Saribi – 60 %, Jabul Seraj – 11 %, Gazi Abad -60 %, Jalalabad – 17 %, Gardiz – 56 %, Gazni – 40 %, Kandahar – 14 %, Farah – 86 %, Herat – 91 %, Mazar -100 %, Baghlan – 57 %, Sari Pul – 83 %, Maimana – 82 %.

Some stations recorded increase in rainfall compared to march of 2005:

in Fazabad +144 %, Kunduz + 679 %, Sheberghan + 710 % and logar +57 %.

+ 710 % and logar +57 %.

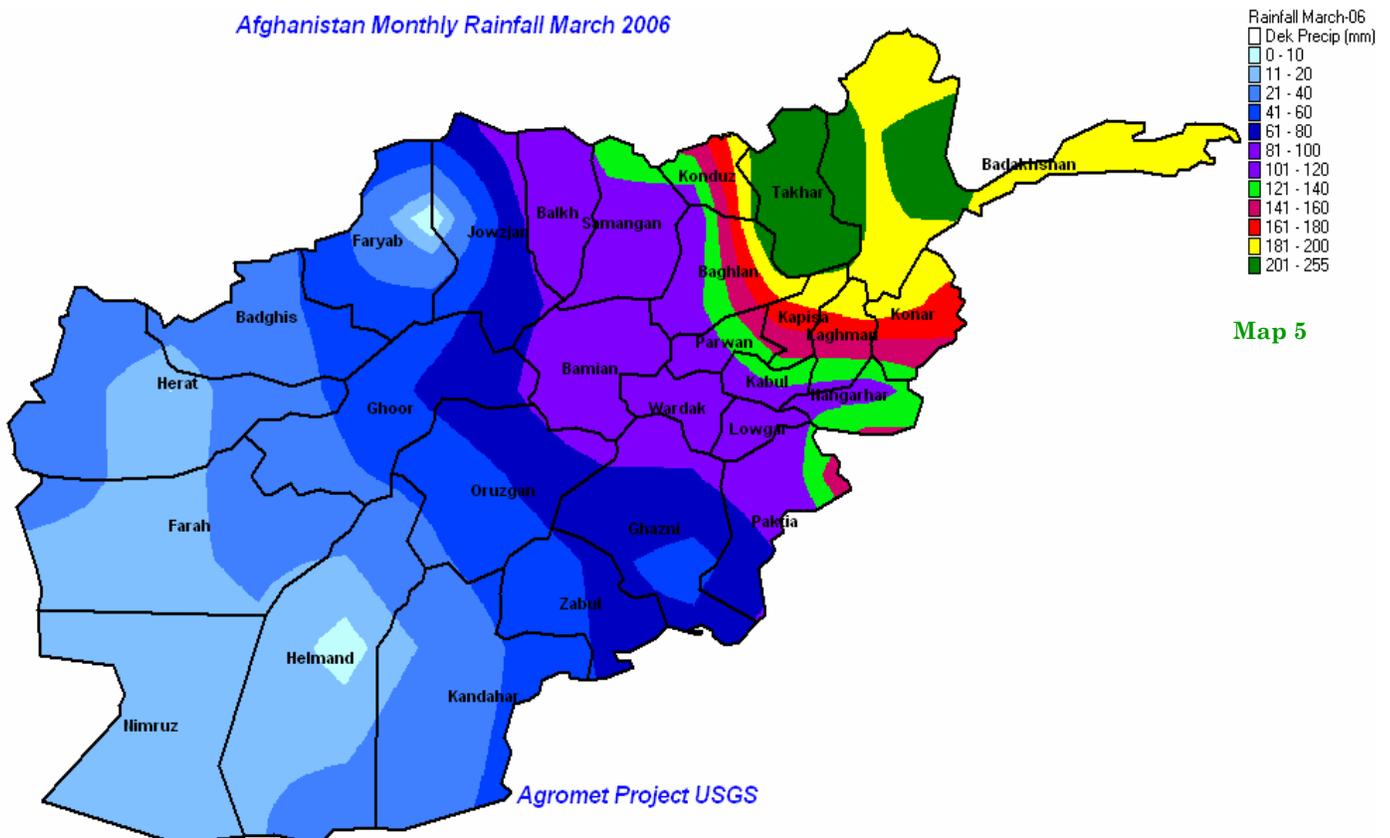
In the month of March 2006, the rainfall was less than the long term average in most parts of the country except in Kunduz, Sari Pul, Sarobi, Kabul, Gaziabad, Farah and Kandahar where the rainfall showed an increase over that the long term average . Chart 2 compares recorded rainfall for March 06 with long term average. The percentage increase/decrease as follow:

In Darul Aman – 48 %, Paghman – 25 %, Kariz Mir – 60 %, Jabul Seraj – 2 %, Logar -19 %, Gardiz – 94 %, Gazni – 51 %, Jalalabad – 47 %, Faizabad – 62 %, Taluqan – 52 %, Baghlan – 2 %, Sheberghan – 85 %, Mazar – 100 %, Maimana – 52 %, Herat – 88 %.

The stations where the recorded rainfall showed increase during the month of March 2006 than that of the same month of long term average as follow:

In Kunduz +148 %, Sari Pul +16 % and Sarobi +59 %, Ghaziabad + 9 %, Kandahar +257 %,Kabul + 3 %,Farah +46 %.

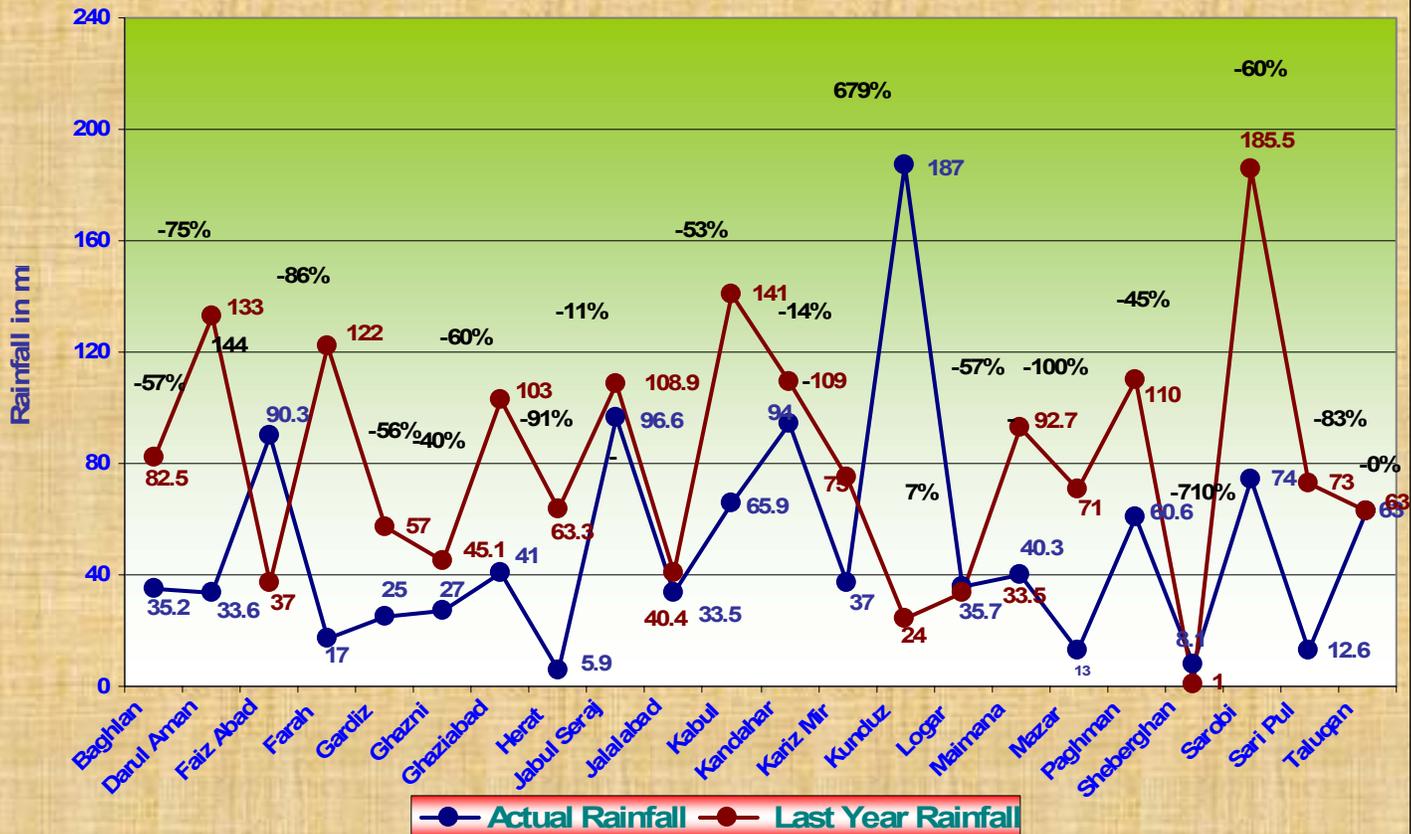
Afghanistan Monthly Rainfall March 2006



## Rainfall Graphs for the month of February 2006

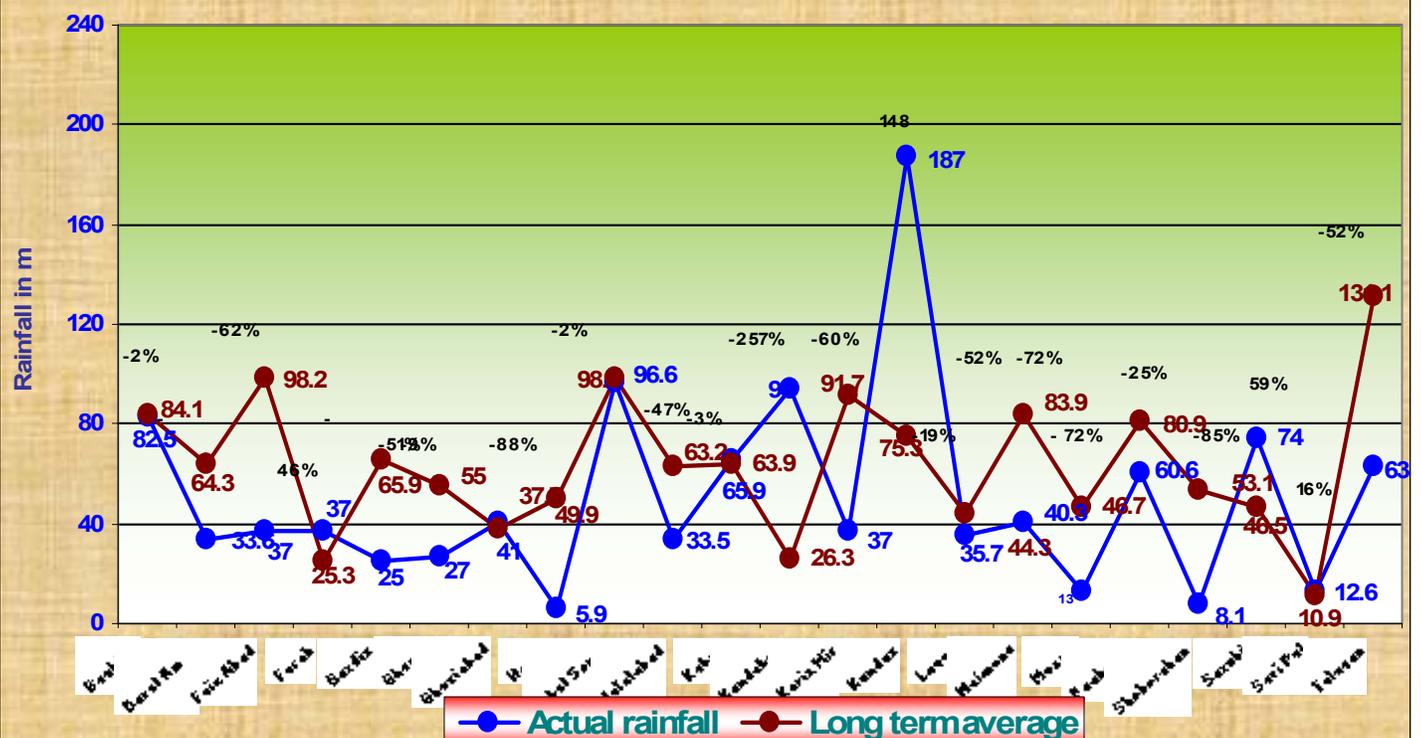
### Comparison of actual and last year monthly rainfall (March 2005)

Chart 1



### Comparison of actual and long term average accumulated rainfall (March 2005)

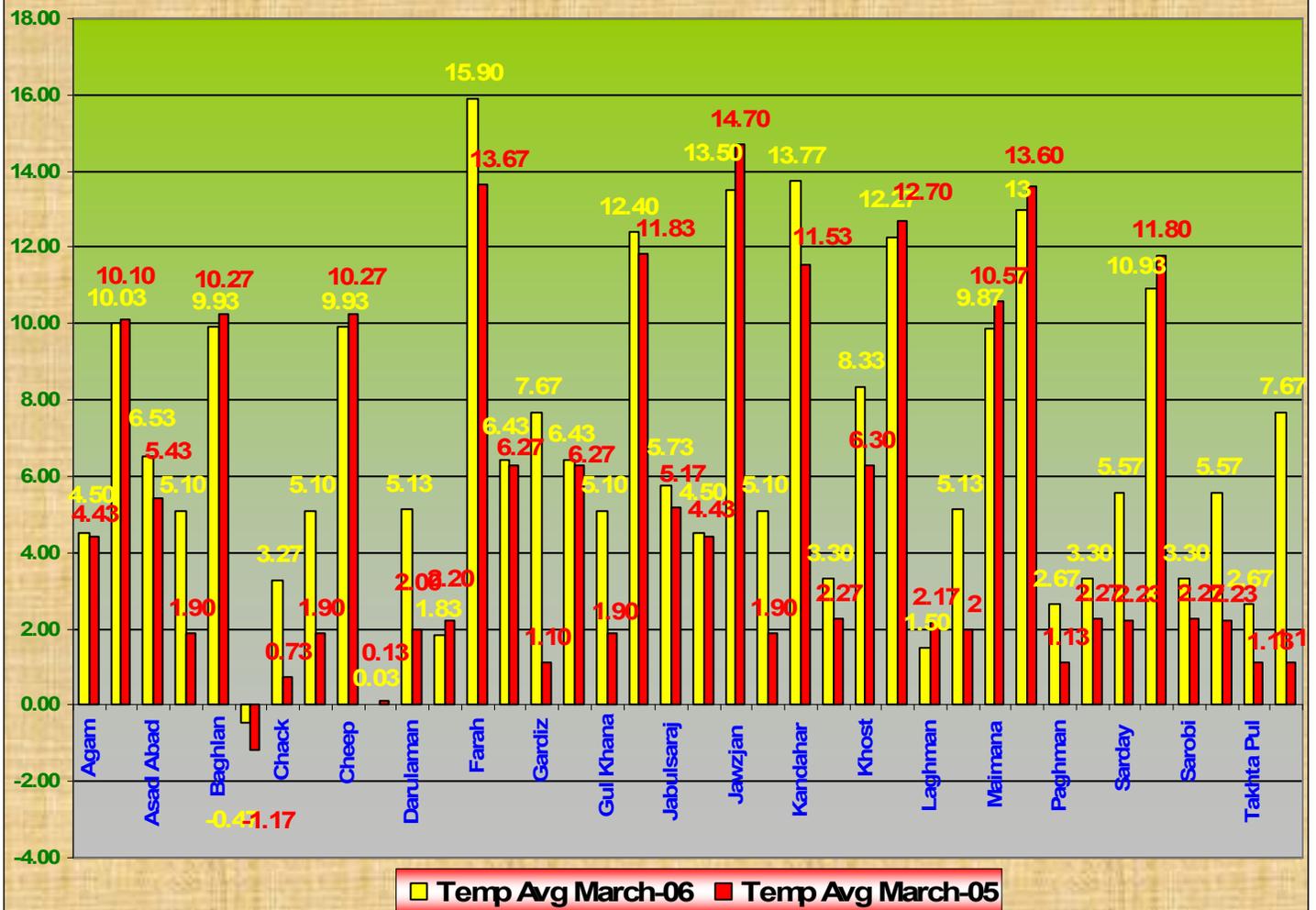
Chart 2



## Average Temperature for the Month of March 2006

### Comparison of Monthly Average Temperature of March 2006 to the same Month of 2005

Chart 3



The monthly average temperature of March 2006 is higher than that of the monthly temperature average of March 2005 in most parts of the country.

The monthly average temperature of March 2006 is higher than that of March 2005 in most parts of the country.

in most stations except Sari Pul, Mazarisharif, Maimana, Jawsjan, Faizabad, Baghlan and Aibak where the temperature is lower during the month of march 2006 than that of 2005.

The temperature value in chart ( 3 ) shows higher temperature during the month of march 2006 compared to the same month in 2005

Temperature for the Month of March 2006

Afghanistan Monthly Minimum & Maximum Temperature of March 2006

Chart 4

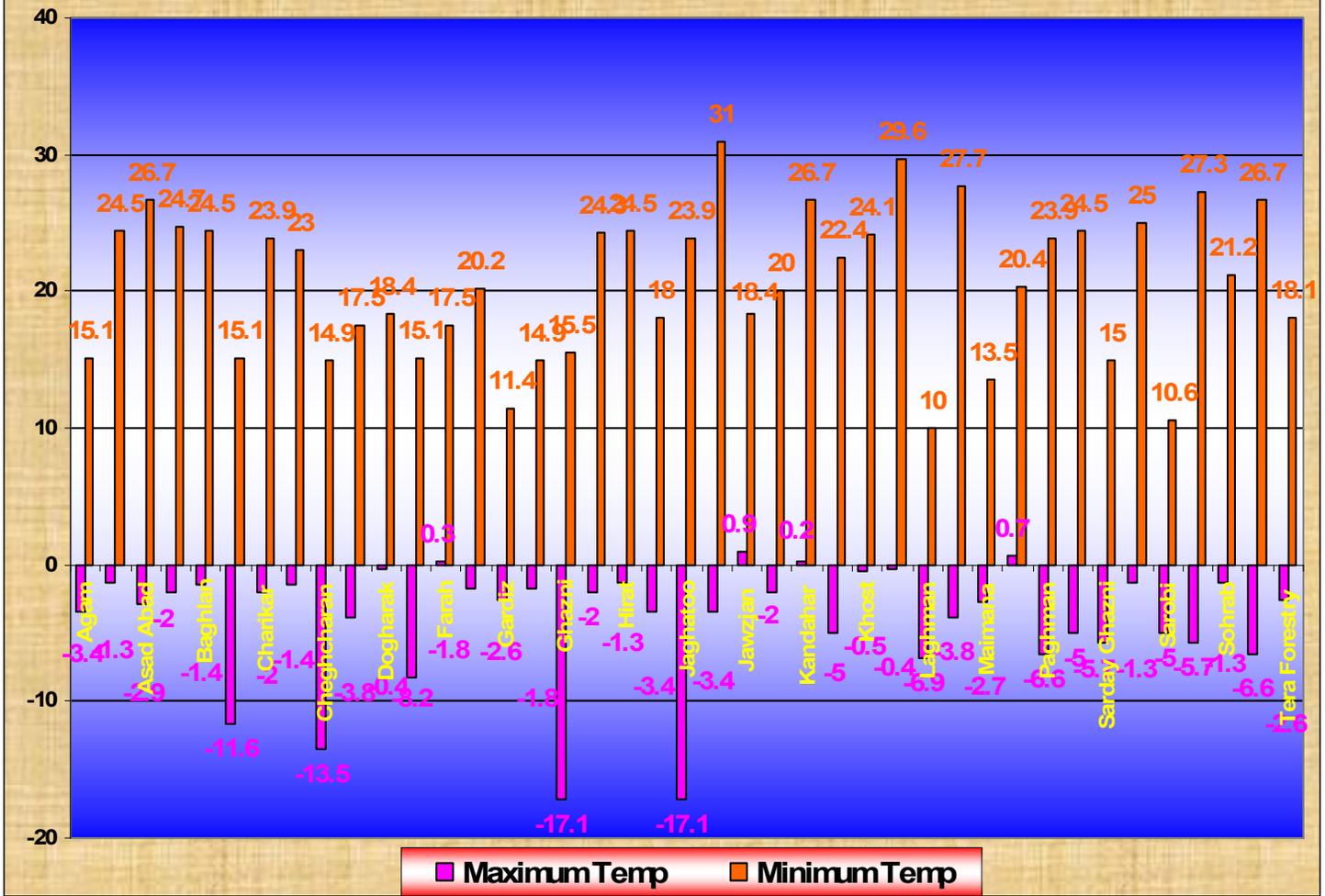


Chart ( 4 ) shows the maximum and minimum temperature value for the month of March 2006. Jalalabad experienced the warmest temperature of 31° C during the day in March 2006.

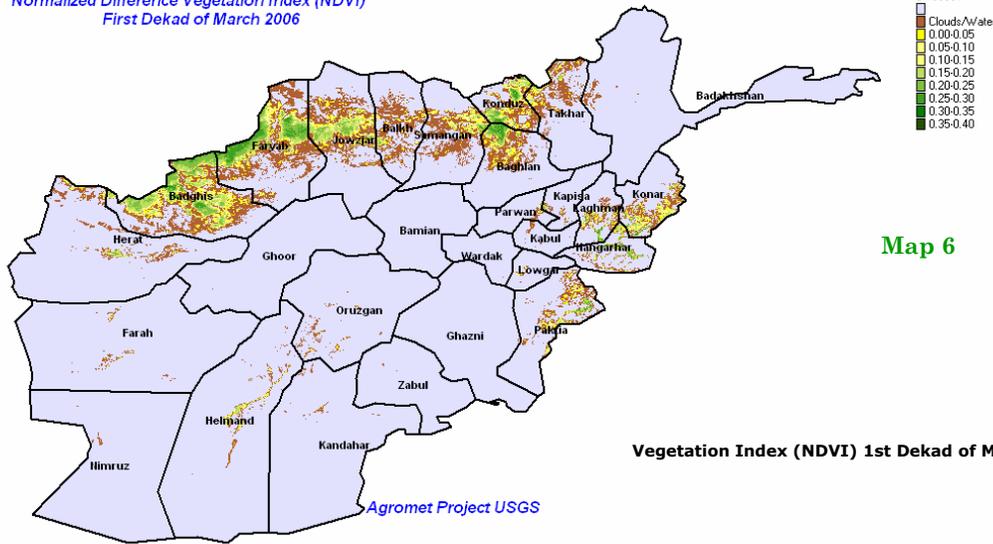
Chart 4 shows the maximum and minimum temperature values for the month of March 2006. Jalalabad experienced the warmest temperature of 31° C during the day.

The minimum temperature was below zero in most stations during the month of March 2006 except Mazarisharif, Kandahar, Jawzjan and Farah which experienced above zero temperature during the night.

Gazni and Jaghato with - 17 ° C were the coldest areas during the month of March 2006.

# Normalized Difference Vegetation Index (NDVI) March 2006

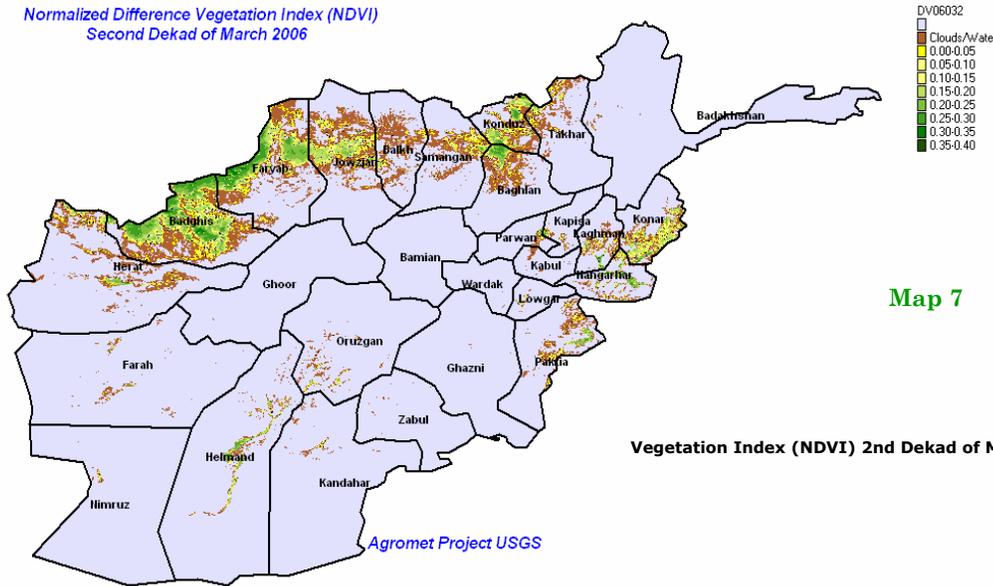
Normalized Difference Vegetation Index (NDVI)  
First Dekad of March 2006



Vegetation Index (NDVI) 1st Dekad of March 2006—Afghanistan

Agromet Project USGS

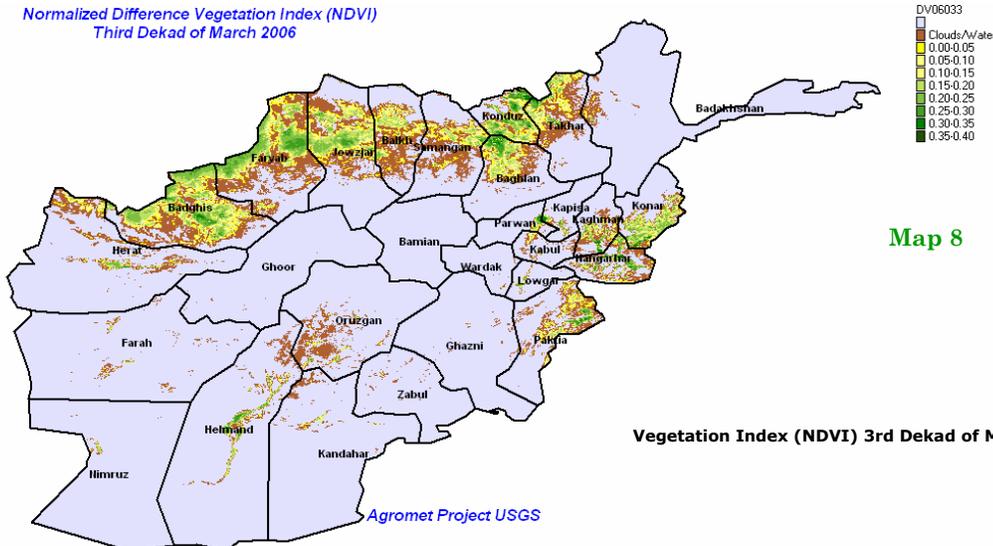
Normalized Difference Vegetation Index (NDVI)  
Second Dekad of March 2006



Vegetation Index (NDVI) 2nd Dekad of March 2006—Afghanistan

Agromet Project USGS

Normalized Difference Vegetation Index (NDVI)  
Third Dekad of March 2006

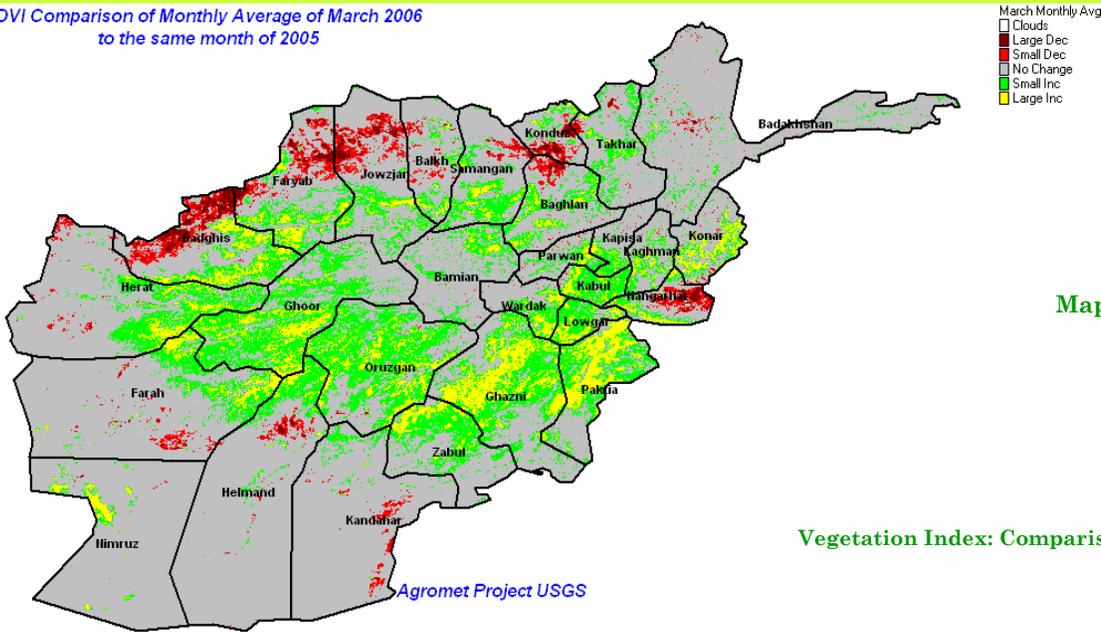


Vegetation Index (NDVI) 3rd Dekad of March 2006—Afghanistan

Agromet Project USGS

## Comparison of NDVI March 2006

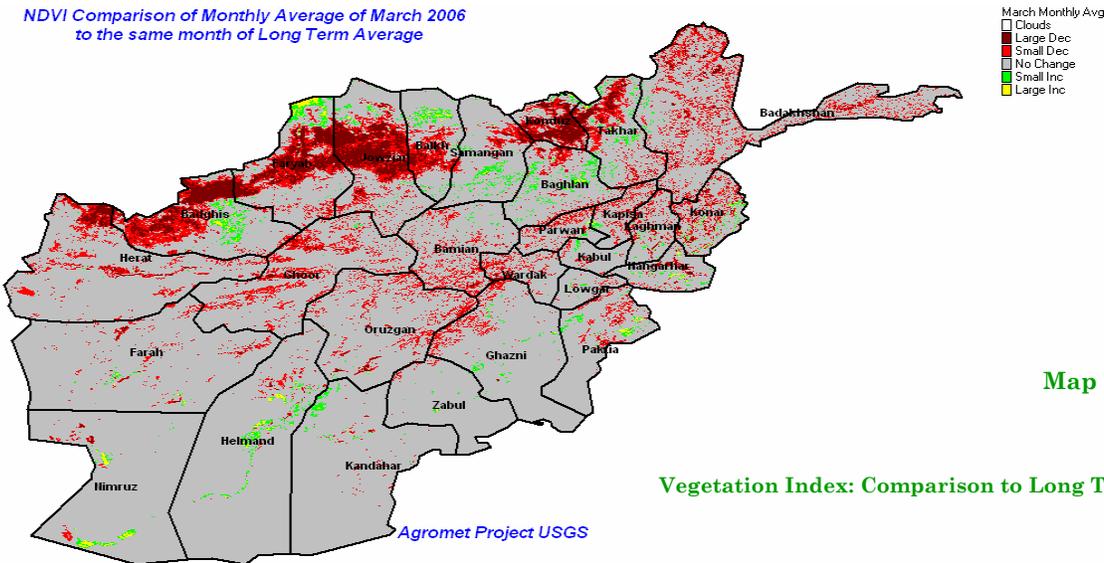
NDVI Comparison of Monthly Average of March 2006  
to the same month of 2005



Map 9

Vegetation Index: Comparison to Last Year

NDVI Comparison of Monthly Average of March 2006  
to the same month of Long Term Average



Map 10

Vegetation Index: Comparison to Long Term Average

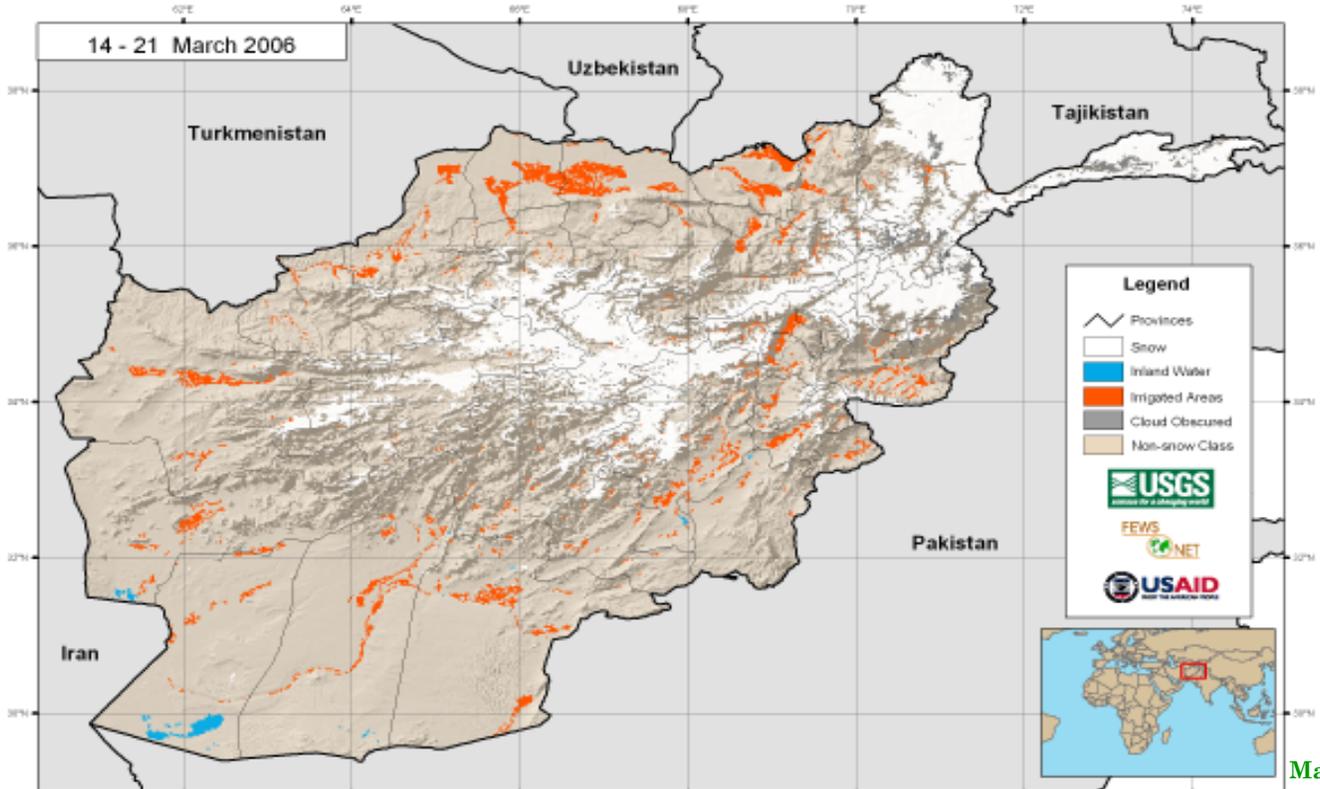
## NDVI: March 2006

The NDVI comparison of the month of March 2006 to the same month of 2005 (map 9) shows large increase of NDVI during 2006, especially in the southeast, some parts of West mountainous areas, some parts of North mountainous regions and some parts of the East region such as Kunar province. Small increase of NDVI occurred in some parts of Central Highlands, East center and some parts of Northeast. Comparison also shows large decrease of NDVI in the North flat area. There is no change of NDVI value in remaining regions. Map (10) compares NDVI values from March 2006 to the long term average of the same month.

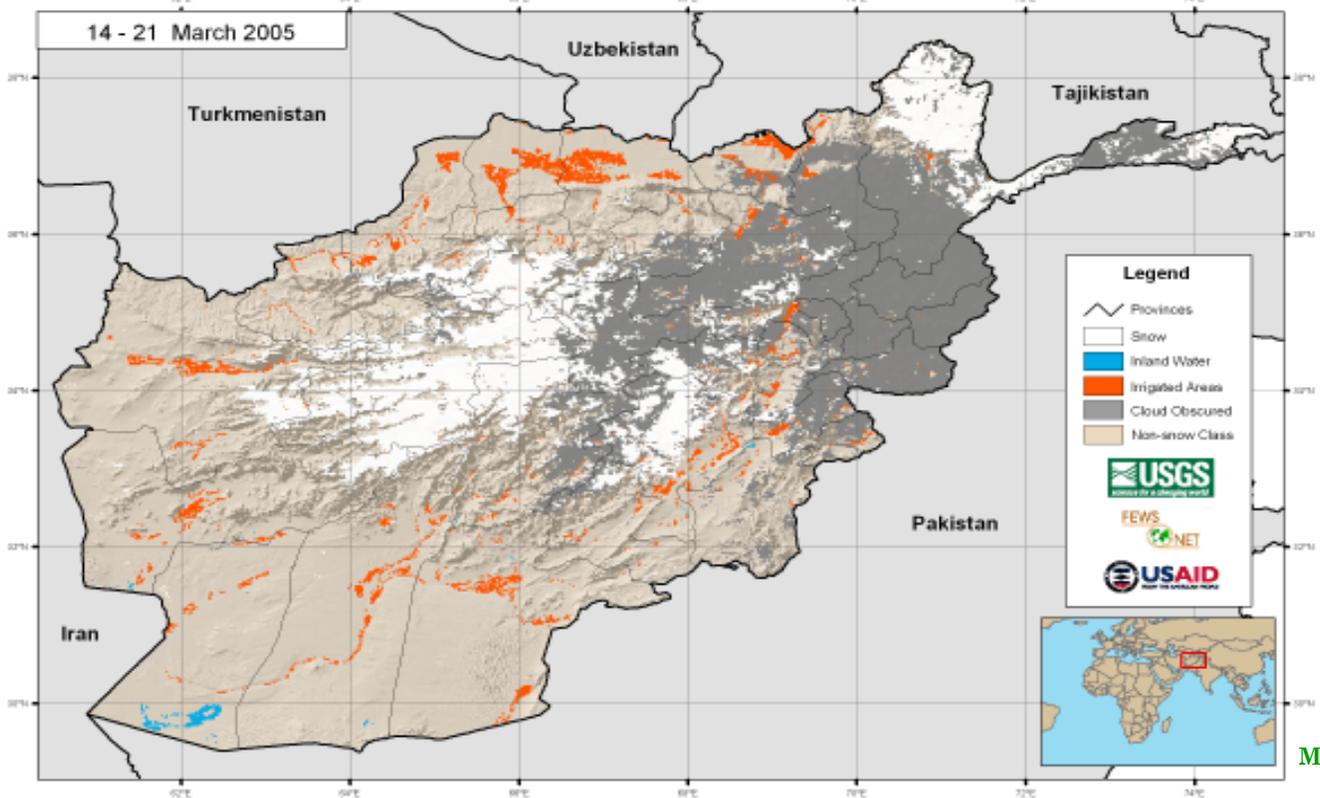
Large decrease of NDVI in the North and some parts of Northeast regions especially in Kunduz and Takhar provinces. Comparison also shows small decrease of NDVI in most parts of the Northeast, Hindokosh mountains, Central Highlands and East center regions during the month of March 2006 over the long term average. There is no change of NDVI value in remaining parts of the country.

## Comparison of Snow extend and Depth

### MODIS 8-day Snow Cover Extent - Current Period 2006 vs 2005



Map 11

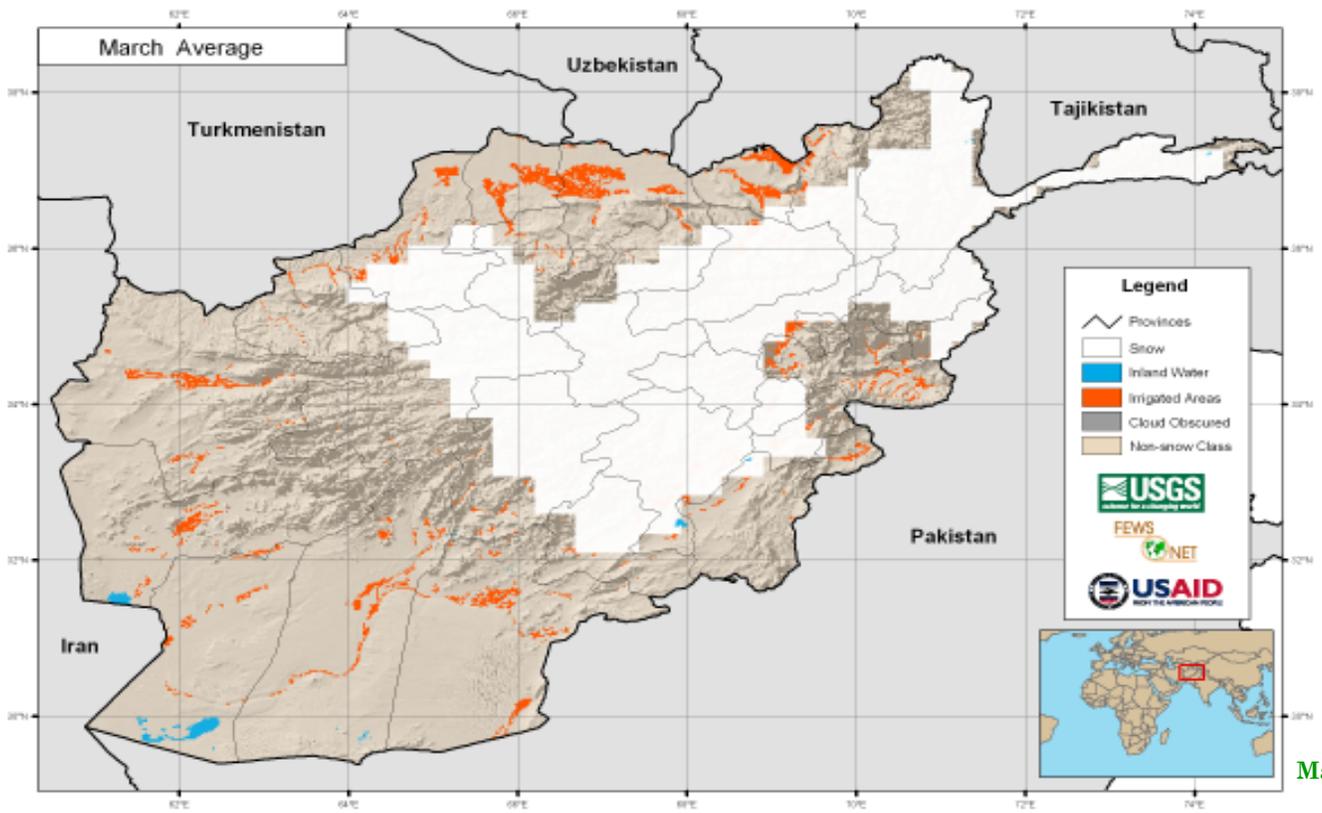
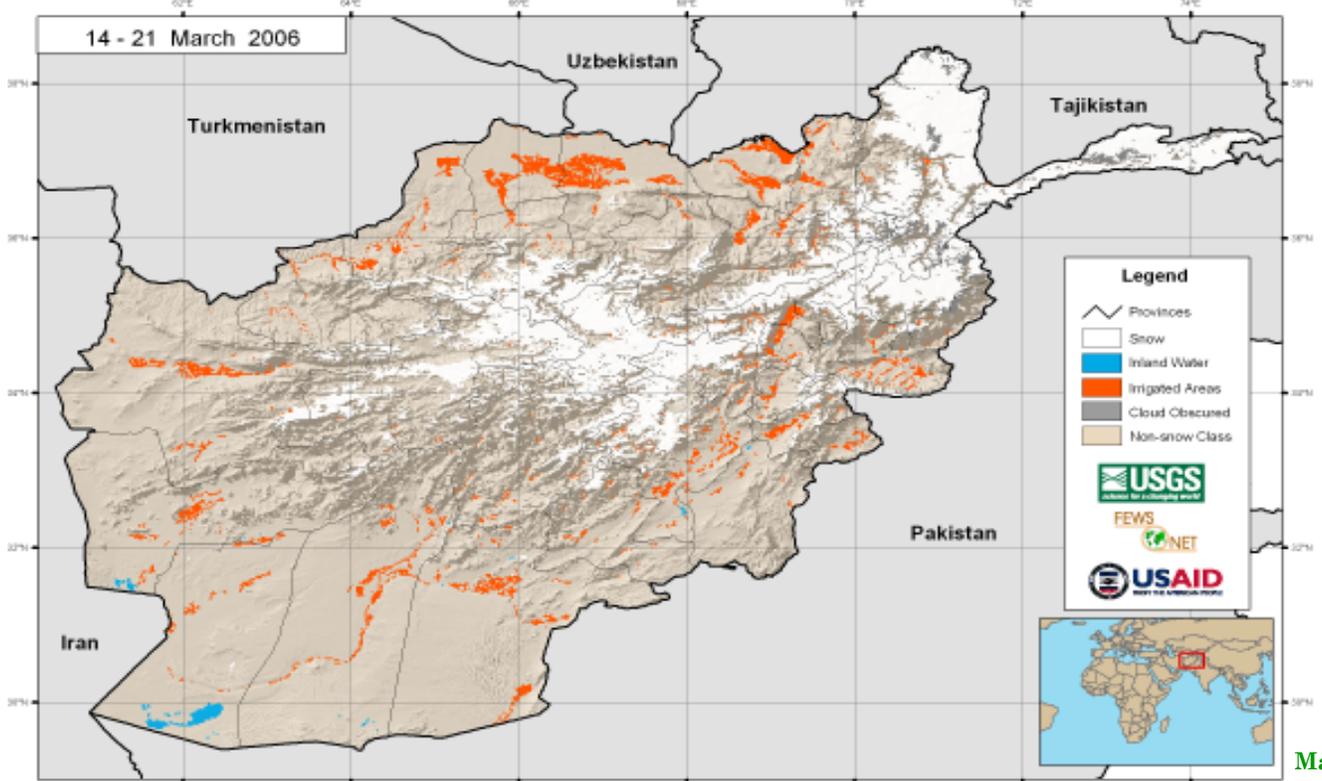


Map 12

Comparison of snow maps ( 11 and 12) shows decrease of snow extend in the period 14 – 21 March 2006 to the same period the month of March 2005. Comparison of snow extent during the month of March 2006 to the same month of long term average maps ( 13 and 14)shows a decrease of snow extent.

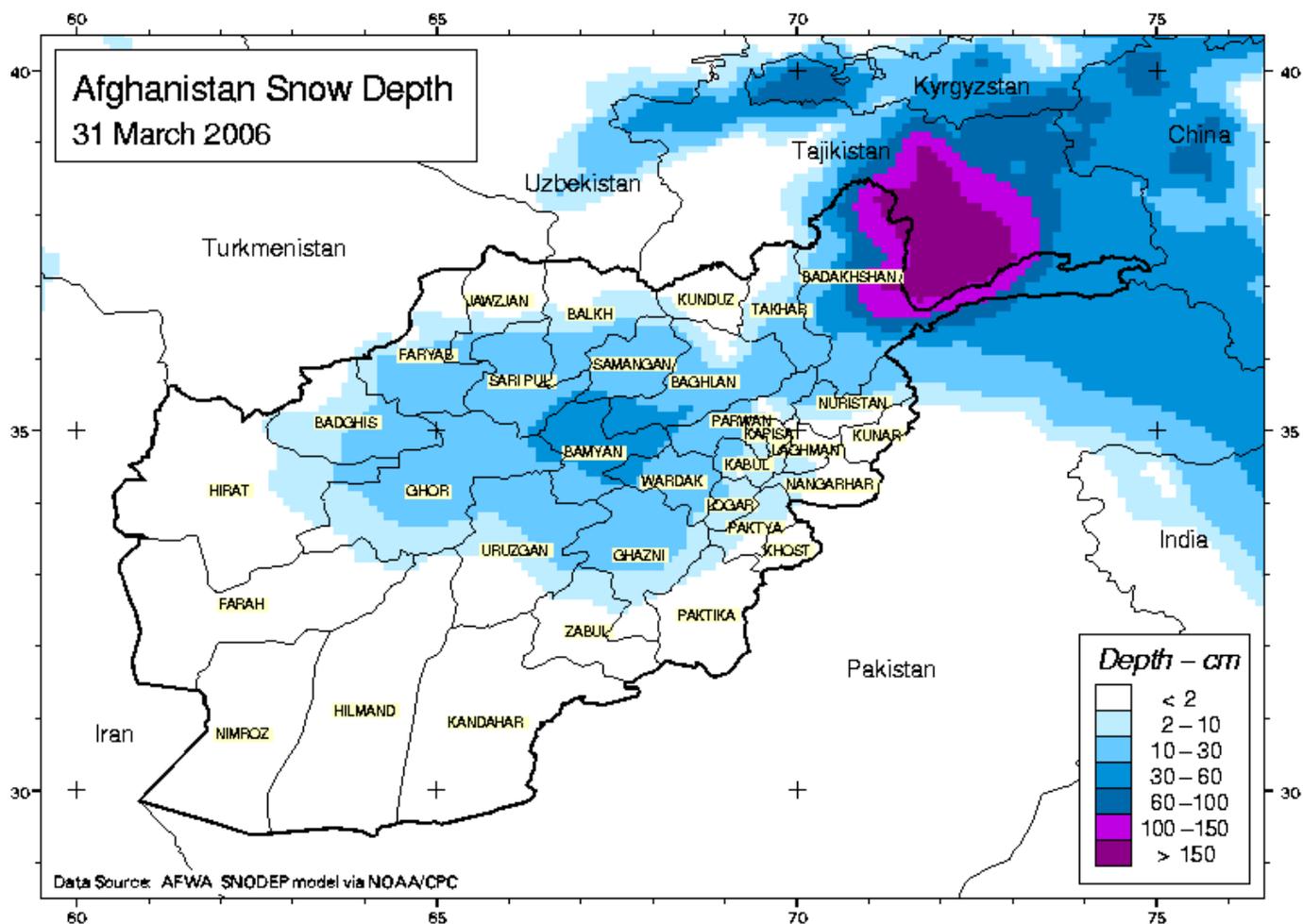
## Comparison of Snow extend and Depth

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



Variation of snow depth in the various regions is shown in map 15. It shows the snow depth is over 150 cm in the Northeast and around 60 cm in the Central Highlands.

## Afghansitan's Map with 34 provinces



Map 15



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