The Afghanistan Agrometeorological Monthly Bulletin

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Agromet Network

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Summary

During the month of February 2007, in Southern region the main adverse factors were heavy rain, too much weeds and shortage of agricultural inputs as in Zabul and Kandahar Provinces. In Zabul Province heavy flood destroyed about 2000 Jerib of agricultural land.

Temperature for the month of February 2007 had a decrease compared to the same month in 2006 across the country.

Large increase of NDVI has been occurred in some parts of the Western and Northern regions and some parts of the Southern region during the month of February 2007.

Comparison of snow extent for the pried (10 – 17) February 2007 with the same period in 2006 clearly shows considerable increase in snow extent during the month of February 2007 compared to the same month in 2006 in the snow coverage areas.

Crop Phenological Stages

Central Region:

In some parts of this region the crops are in dormancy stage, (all of the crops have been covered by the snow) as in Siakhak and Jaghtoo Districts of Wardak Province and Seya Gerd District of Perwan Province. The same situation persists in Logar Province. In Karizmir District of Kabul Province the crops are in the vegetative stage. Reports showed from Darull Aman research station, Dara Disrisct of Panjshir Province and Kapisa Province that the crops are in the emergence stage (the highest of plant is less than 10 cm). In Sarobi District of Kabul Province the crops are in the vegetative stage (the highest of plant is more than 10 cm).

East Central Region:

Due to cold weather and snow cover on the ground in most parts of this Region the crops are in the dormancy stage as in Yakawlang, Sheber, Panjab and Center of Bamyan Province.

North East Region:

In this Region the crops are in different stages. In Imam Sahib, Chahadara, Aqtipa and Qala-e– Zal Districts and Center of Kuduz Province the crops are in the vegetative stage. In Baghlan Province the crops are in the vegetative and emergence stages. In Badakhshan Province the crops are in dormancy stage, but in Bangi District and Center of Takhar Province the crops are in the emergence stage.

North Region:

Reports from this region are saying that the crops are in the different stages, as in Sozma Qala Districts and Center of Suripul Province the crops are in the emergence stage, In Nahershahi and Dehdadi Districts of Balkh Province and Shaberghan Center of Jawzjan Province the crops are in the vegetative stage.

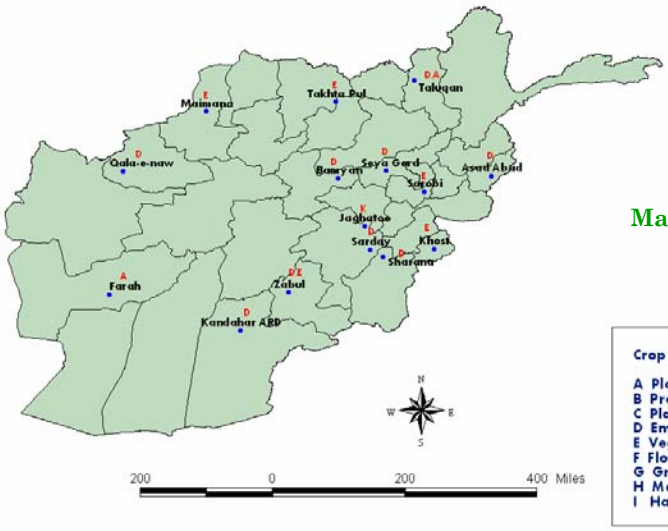
Southern Region:

From Nadi Ali, Nawa and Greshk Districts and Center of Helmand Province, Maqur District of Ghazni Province and Urozgan Province the crops are in the vegetative stage (the highest of plant is more than 10 cm). In Zabul and Kandahar Provinces the crops are in the vegetative stage, but in some areas of these provinces the farmers are busy in preparing their lands for wheat cultivation. In Sardy District of Ghazni Province the crops are in the dormancy stage (the crops have been covered by the snow).

Western Region:

From this region reports are saying that the crops are in different stages as in Ghor Province and Qala-e-Naw Center of Badghis Province the crops are in the emergence stage. From Maquar District of Badghis Province reports are saying that the crops are in the planting and emergence stages. In Farah Province the crops are in the ploughing stage and the farmer are busy in preparation of their lands for wheat cultivation.

Wheat Crop Stage February — 2007



Map 1

Crop Phenological Stages

Eastern Region:

In most parts of this region the crops are in the vegetative stage (the highest of the plant is more than 10 cm) as in Mehtherlam Center of Laghman Province and Jalalabad Center of Nangahar Province. From Asmar District and Asadabad Center of Kunar Province reports are saying that the crops are in the emergence and vegetative stages (the highest of the plant is less than 10 cm).

South Eastern Region:

It is reported from South Eastern Region that the crops are in the dormancy (the crops have been covered by the snow) and emergence stages as in Urgon, Khaircot and Center of Paktika Province , Gardiz and Tera Districts of Paktya Province. While in Center of Khost Province the crops are in the vegetative stage. In some parts of this province the farmers are busy in preparation of their lands for wheat cultivation.

Crop Condition

Central Region:

In most parts of this region the crops are in normal condition as in Chak and Jaghatoo Districts of Wardak Province, Seya Gard District of Perwan Province, Mahmood Raqee Center of Kapisa Province, Dashtak and Dara Districts of Panjshir Porvince. But in Center of Perwan Province the crops are in good form (the crops condition is better than normal).

Eastern Region:

In most parts of Eastern region the crops are in normal condition as in Asmar District and Center of Kuner Province and Nangarhar Province. Reports are saying from Center of Laghman Province that the crops are in the good condition (better than normal).

North Eastern Region:

In most parts of North Eastern region the crops are in normal condition as in Imam Sahib, Chardara and Aqtipa Districts of Kuduz Province, Faizabad Center of Badakhshan Province and Bangi Districts of Takhar Province. In Eshkasham District of Badakhshan Province the crops are in poor condition. While in Baghlan Province the crops are in better condition than normal.

Northern Region:

In most parts of this region the crops are in normal condition as in Sheberghan Center of Jawzjan Province, Nahershahi and Dehdadi Districts of Balkh Province and Sozmaqala District and Center of Saripul Province. In Samangan Province the crops are in good condition (the crops are better than normal).

Southern Region:

In this region the crops are in normal condition as in Nadi Ali, Nawa and Greshk Districts of Helmand Province, Moquar and Sardy Districts of Ghazni Province and Center of Kandahar Province. In Nimroz Province the crops are in poor (below normal) condition. But In Zabul Province the crops are in good (better than normal) condition.

Western Region:

In this region the crops are in normal condition as in Ghor and Farah Provinces, Maqour District of Badghis Province. In Qala-e-Naw Center of Badghis Province the crops are in good condition (better than normal).

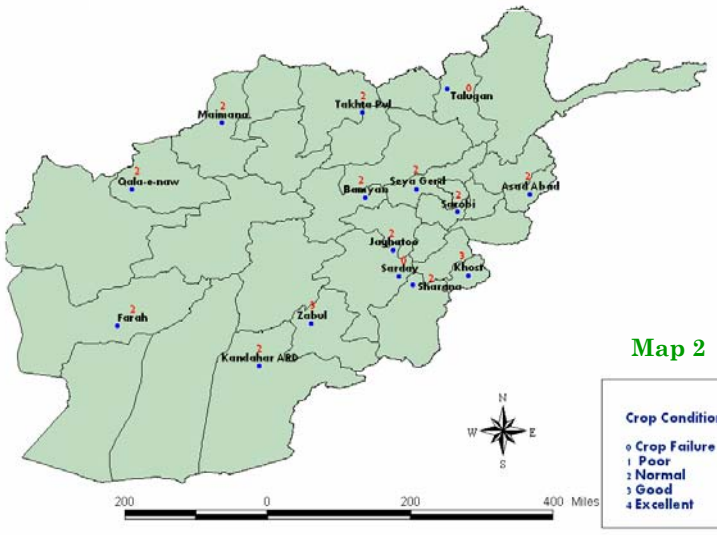
East Central Region:

From this region reports are saying that the crops are in normal condition as in Panjab, Yakawlang and Shiber Districts and Center of Bamyan Province.

South Eastern Region:

As reports are saying from Khircot, Urgon Districts and Sharana Center of Paktica Province and Gardiz Center of Paktiya Province that the crops are in normal condition. From Shamal and Alishir of Khost Province reports are saying that the crops are in good condition (better than normal).

Wheat Crop Condition February - 2007



Map 2

Adverse Factors

Central Region:

During the month of February 2007 the main adverse factors in Central Region were shortage of inputs such as tractor, seed cleaner machine, drug sprinkler, chemical fertilizer and too much weeds. In Dashtak District of Panjshir Province, Jaghatoo District of Wardak Province, Paghman District of Kabul Province and Logar Province the main adverse factor were heavy snow, sharp frost and too much rain. But in Kapisa Provinece the main problems were late planting, heavy snow and aggressive rainfall.

East Central Region:

As reported from this region main adverse factors were heavy snow, too much cold and lack of agricultural inputs during the month, while areas suffered were Panjab and Yakawlang Disricts and Center of Bamyan Province.

North Eastern Region:

During the month of February 2007 the main adverse factors in North Eastern Region were lack of agricultural inputs, heavy snow and too much rain. Pests like cut worm of wheat spread diseases in the crops, Specifically in Takhar Province. While in Baghlan Province late planting existed.

Northern Region:

In this region the main adverse factors were shortage of inputs and late planting. Shark frost and late planting were other constraints found in Sozma Qala District and Center of Saripul Province. But Balkh and Jawzjan Provinces faced with the shortage of inputs and lack of improved seeds.

Southern Region:

During the month of February 2007 the main adverse factors were heavy rain, too much weeds and shortage of agricultural inputs as in Zabul and Kandahar Provinces. In Zabul Province heavy flood destroyed about 2000 Jerib of agricultural land.

Western Region:

In this region the main adverse factors were lack of agricultural inputs, too much weeds and late planting as reported from Ghor Province and Qala-e-Naw Center of Badghis Province.

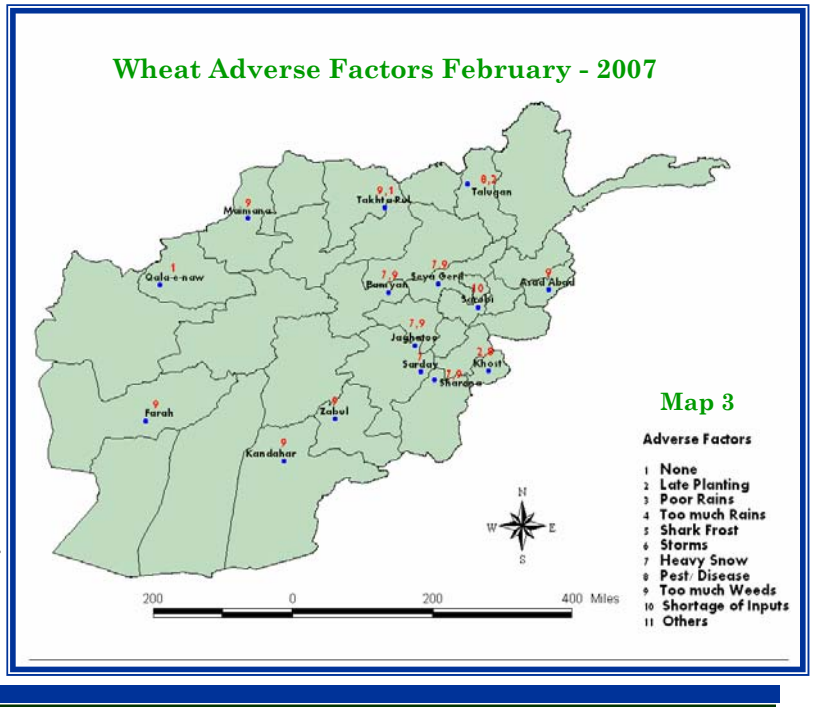
Farah Province had a heavy hail which resulted in damaging wheat and vegetable fields.

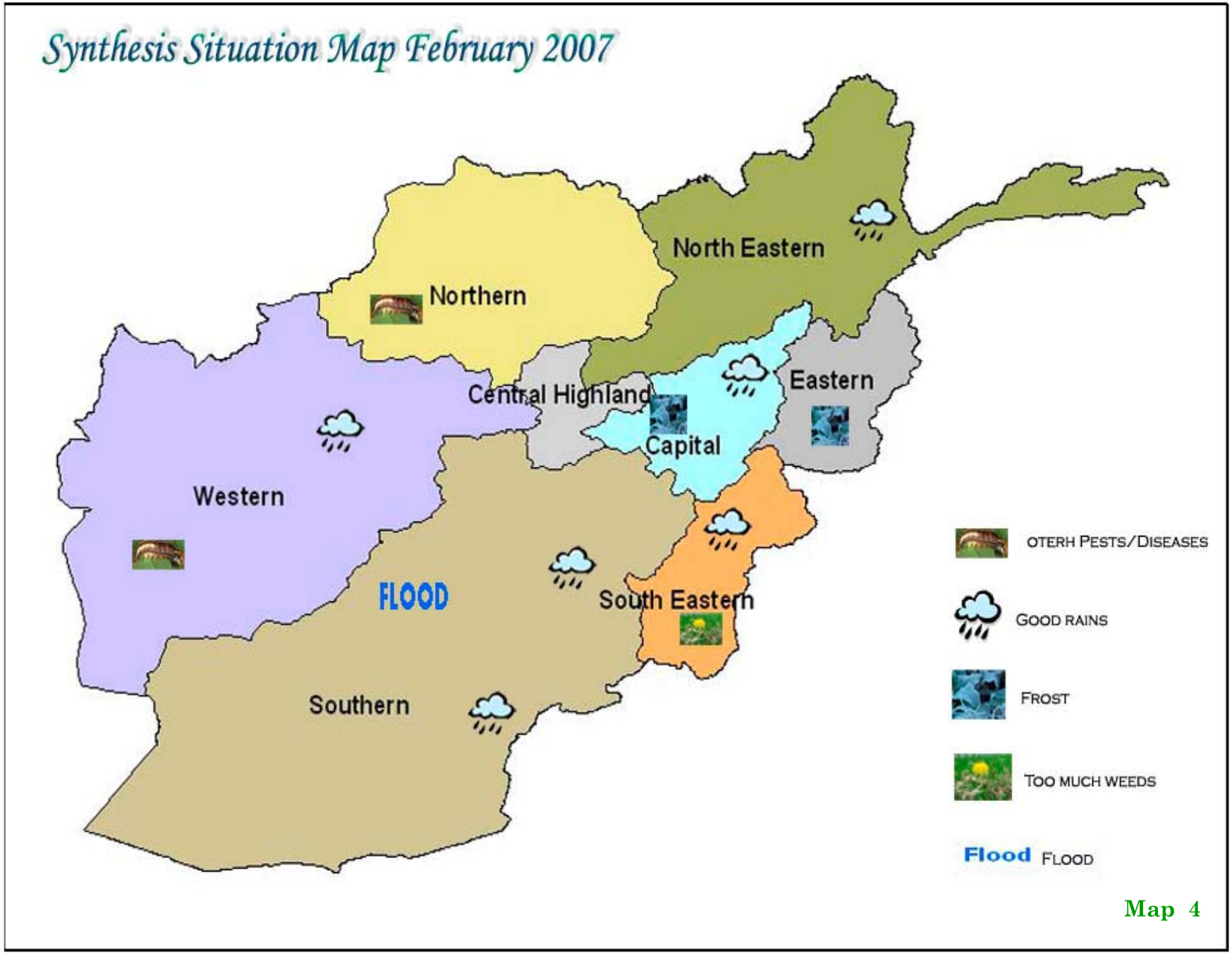
Eastern Region:

In this region from Asadabad District of Kunar Province late planting and shortage of agricultural inputs are reported. In Laghman and Nangarhar Provinces the main adverse factors were heavy rain and shortage of chemical fertilizers. Competitive weeds were other hurdles.

South Eastern Region:

In most parts of the south Eastern region as Khairkot, Urgon and Sharana Districts of Paktika Province, Paktya Province and Khost Province the main adverse factors were sharp frost, heavy snow, too much weeds and lack of agricultural inputs as tractor, thresher, seed cleaner machine, drug sprinkler and chemical fertilizer.




Synthesis Situation Map February 2007
North Eastern
Northern
Central Highland
Eastern
Capital
Western
FLOOD
South Eastern
Southern
OTERH PESTS/DISEASES
GOOD RAINS
FROST
TOO MUCH WEEDS
Flood FLOOD

Map 4

Rainfall Satiuation

Rainfall for the month of February 2007 had significant increase compared to the same month in 2006 in most parts of the country, except Baghlan, Faizabad, Ghazni, Gardiz, Kandahar and Kunduz where the rainfall had decrease during the month of February 2007 over the same month in 2006.

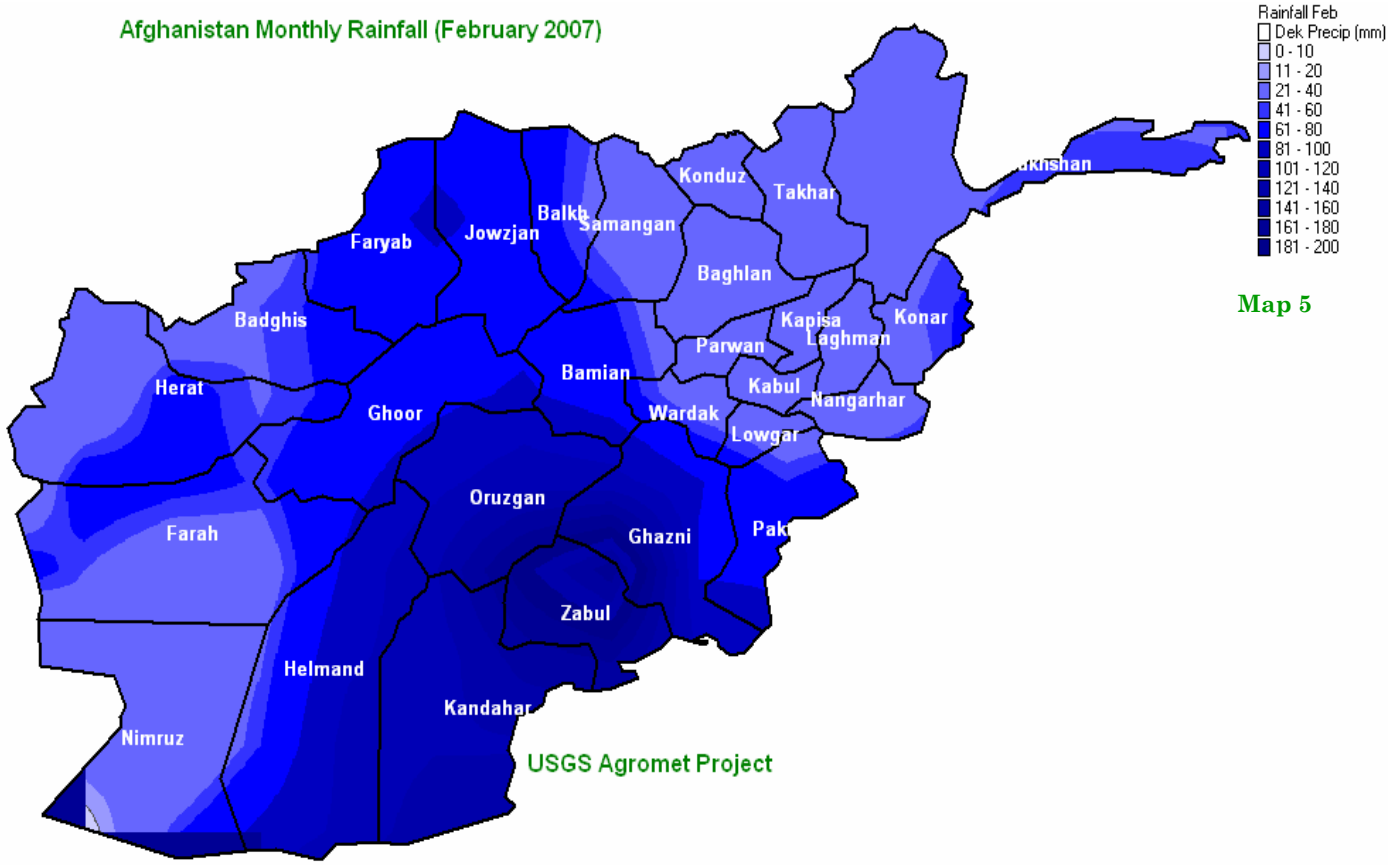
Adequate moisture resulted favorable precipitation in the month of February and during the spring sufficient water resources are expected for most parts of the country. The percentage +/- of rainfall is as follow:

In Baghlan – 34 %, Darul Aman + 96 %, Faiz Abad -14 %, Farah 2950 %, Gardiz – 1 %, Ghazni – 22 %, Ghaziabad 33 %, Herat 102 %, Jabul Seraj 43 %, Jalalabad 1027 %, Kabul 182 %, Kandahar -26 %, Kariz Mir 263 %, Kunduz -40 %, Logar 91.7 %, Maimana 0 %, Mazar 33 %, Paghman 16 %, Sheberghan 51 %, Sari Pul 112 %, Taluqn 52 %.

In the month of February 2007 the rainfall had an increase compared to the same month of long term average except Baghlan, Darul Aman, Gardiz, Ghazni and Taluqn where the rainfall had decrease during the month of February 2007 compared to the same month of long term average.

Chart 5 shows an increase of rainfall during the month of February in most parts of the country. The percentage +/- of rainfall is as follow:

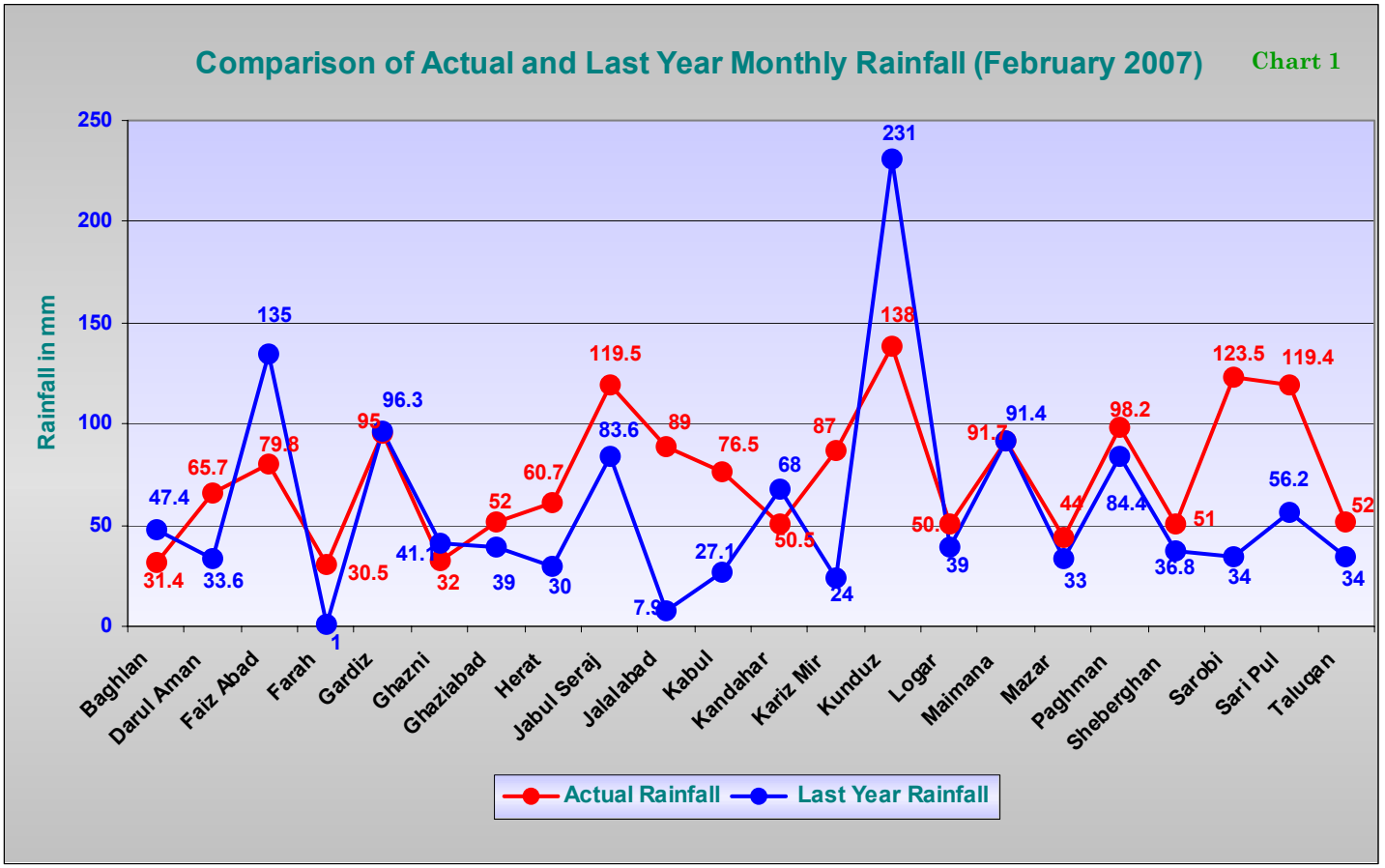
In Baghlan – 25 %, Darul Aman – 8%, Faiz Abad 27 %, Farah 24.8, Gardiz 34 %, Ghazni – 43 %, Ghaziabad 107 %, Herat 56 %, Jabul Seraj 35 %, Jalalabad 259 %, Kabul 76.5 %, Kandahar 50.5 %, Kariz Mir 26 %, Kunduz 168 %, Logar 45 %, Maimana 64 %, Mazar 16 %, Paghman 43 %, Sheberghan 17 %, Sarobi 125 %, Sari Pul 552 %, Taluqan – 33 %.

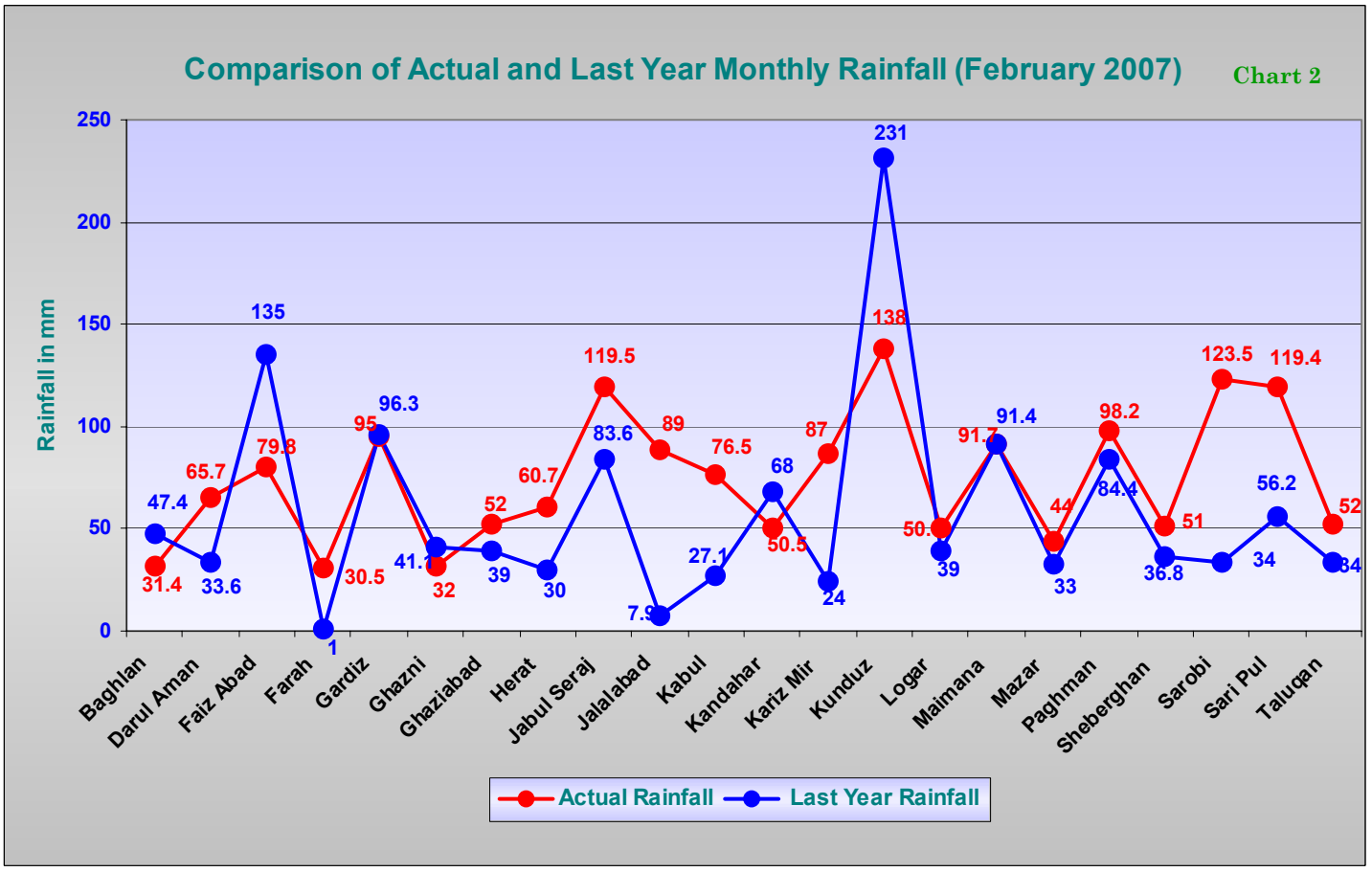


Map 5

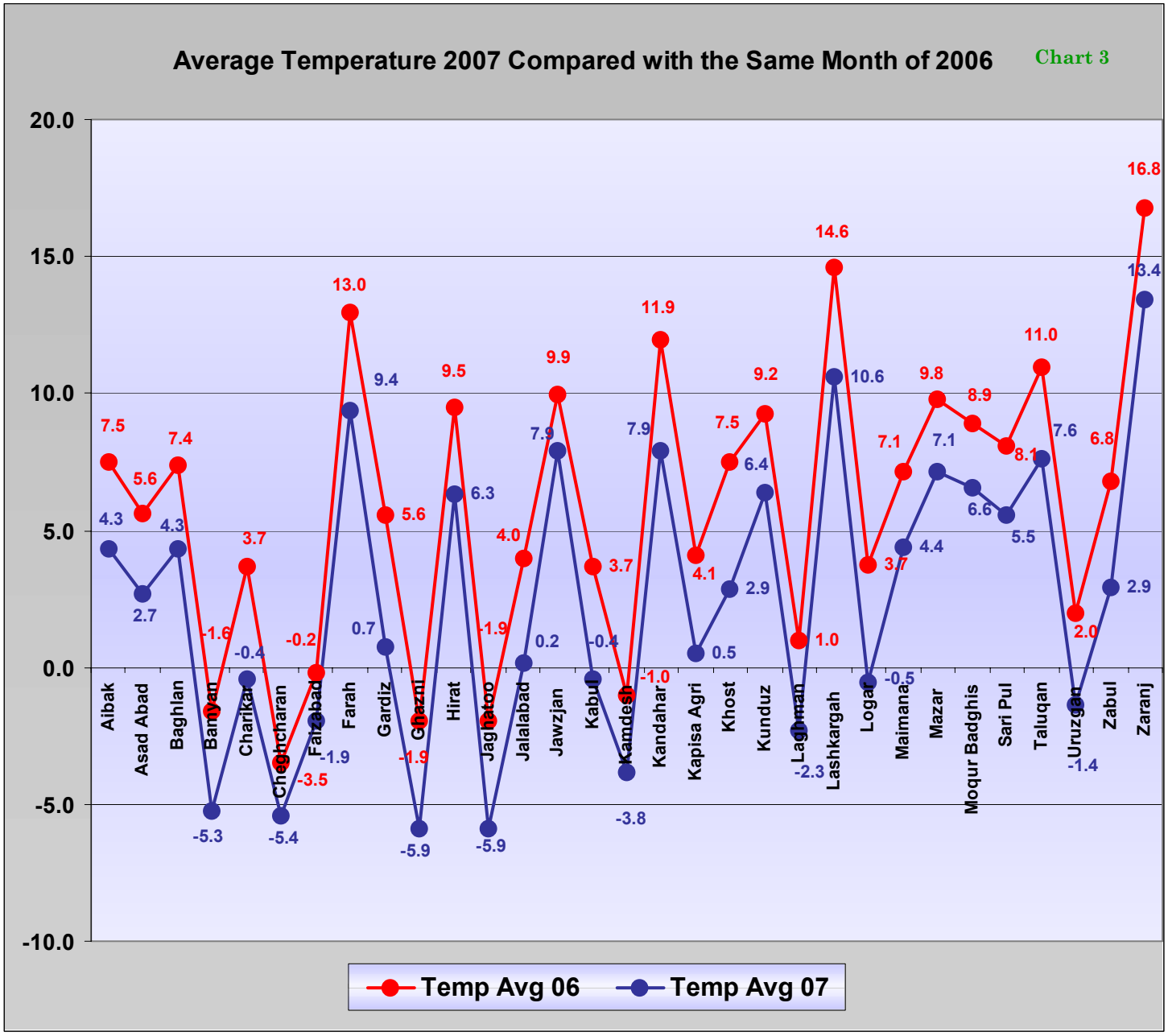
Distribution of rainfall is variable in different regions of the country as map (5) shows that much amount of rainfall occurred in most parts of the Southern region (particularly in Uruzgan province) and some parts of the Southeastern region. The North Eastern and some parts of the Southern Regions (Nimruz and Farah) experienced less amount of rainfall then other regions during the month of February 2007.

Rainfall Graphs for the Month of February 2007





Average Température for the Month of February 2007

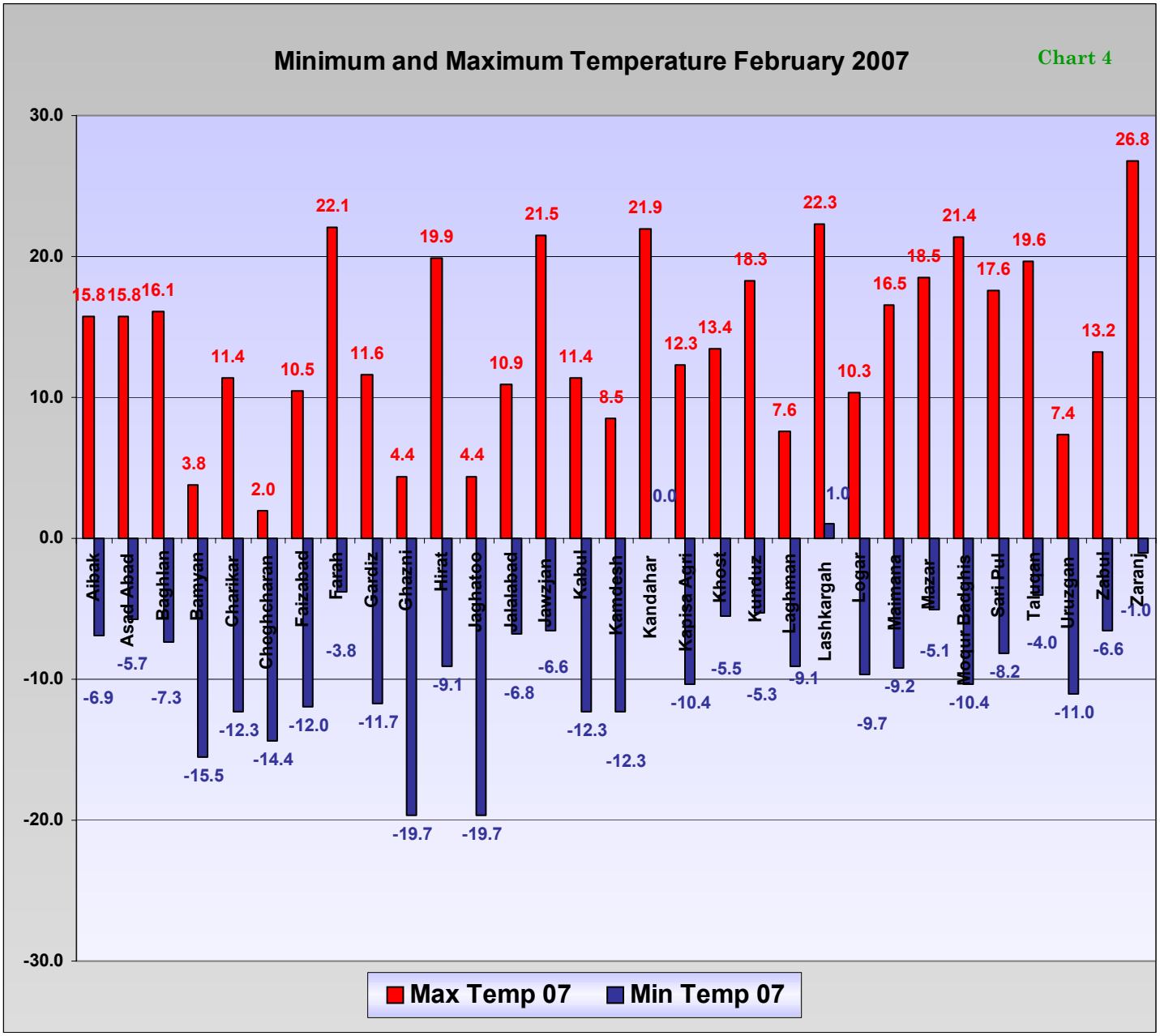


Temperature for the month of February 2007 had a decrease compared to the same month in 2006 across the country.

Temperature for the month of February 2007 had a decrease compared to the same month in 2006 across the country. Comparison of temperature value (chart 3) clearly shows the temperature decrease during the month of February 2007 over the same month in 2006 in the whole country.

Decreasing of temperature during the month of February 2007 resulted much precipitation across the country and prevented the snow rapid melting where the snow is an important source for surface and ground water.

Temperature for the Month of February 2007

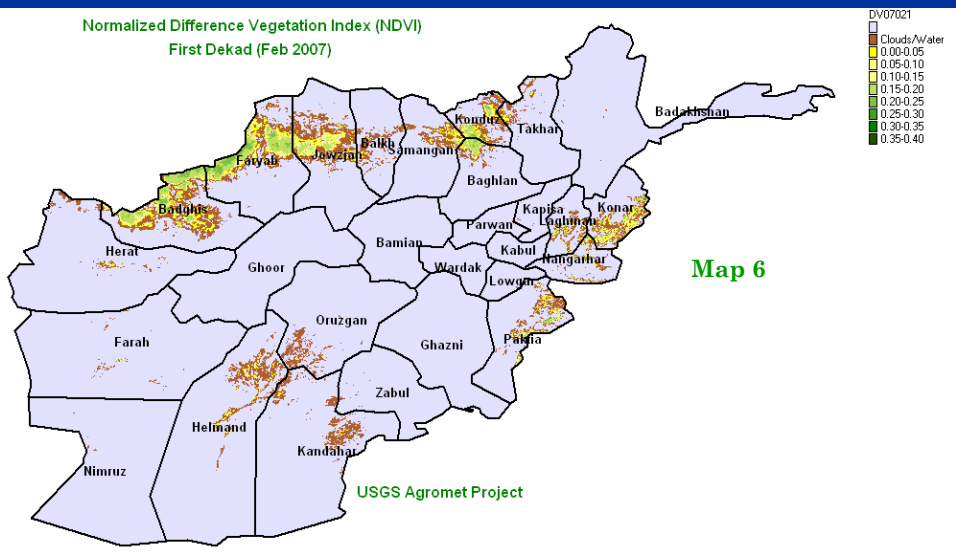


Zaranj with 26.8 ° C was the warmest part of the country during the month of February 2007.

Decreasing of temperature during the month of February 2007 resulted much of precipitation across the country and prevented the rapid melting of snow, which helped in keeping the snow resources as an important fount of water for surface and ground water in coming season.

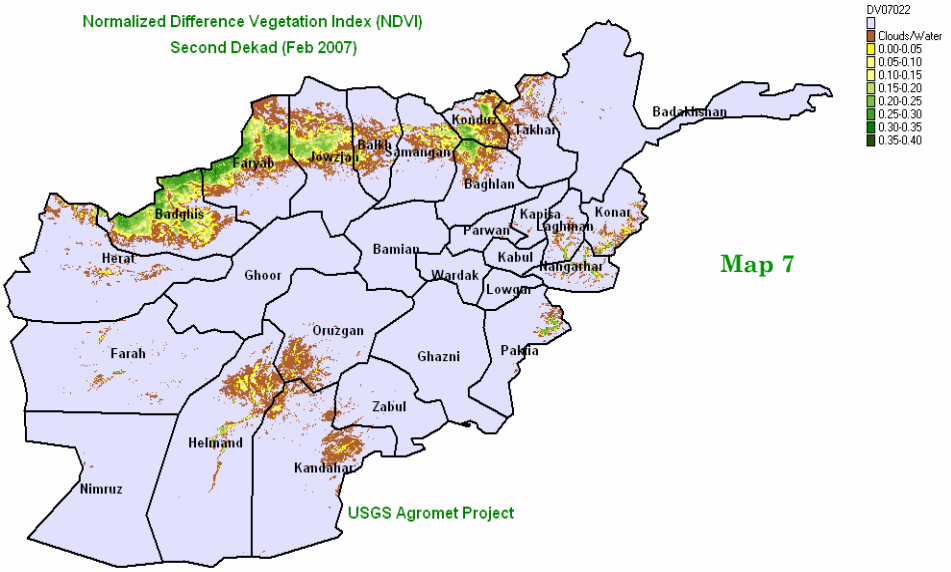
Zaranj with 26.8 ° C was the warmest part of the country during the month of February. Ghazni and Jaghatoo with – 26.8 ° C experienced extreme cold compared to other regions of the country. The extreme cold temperature limited in some parts of the Capital, Central Highlands, Hindokush areas and Northeastern regions during the month of February 2007.

Normalized Difference Vegetation Index (NDVI) (February 2007)



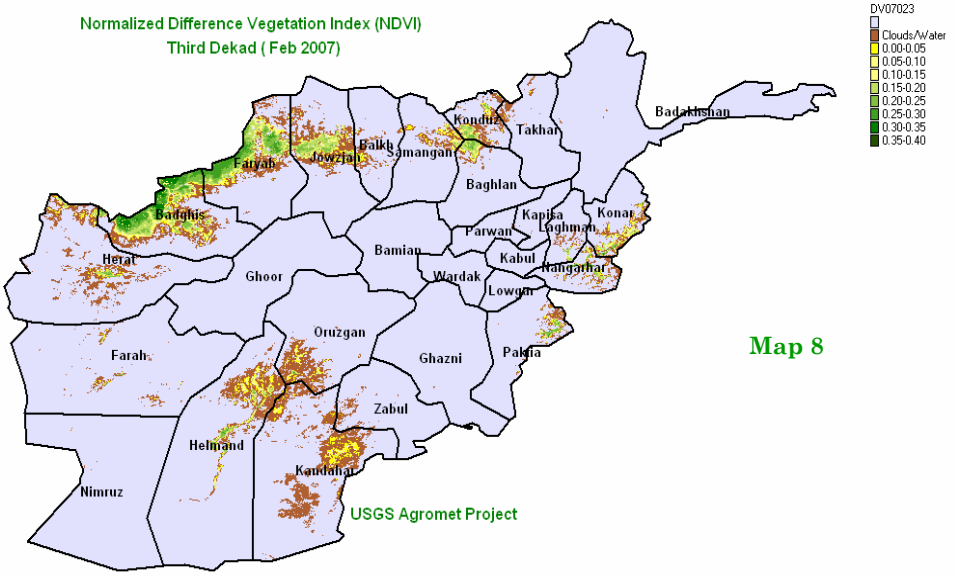
Map 6

Vegetation Index (NDVI) 1st Dekad of February 2007—Afghanistan



Map 7

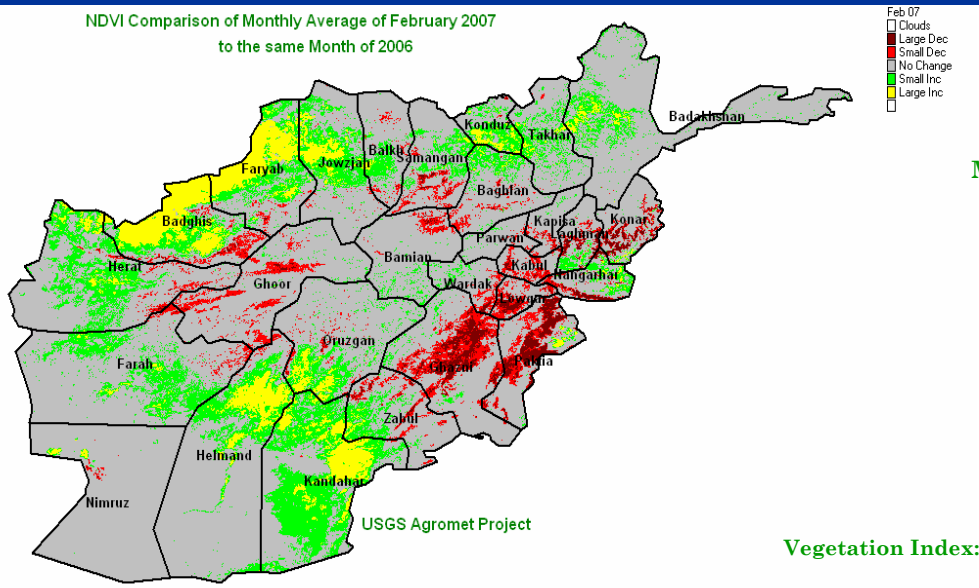
Vegetation Index (NDVI) 2nd Dekad of February 2007—Afghanistan



Map 8

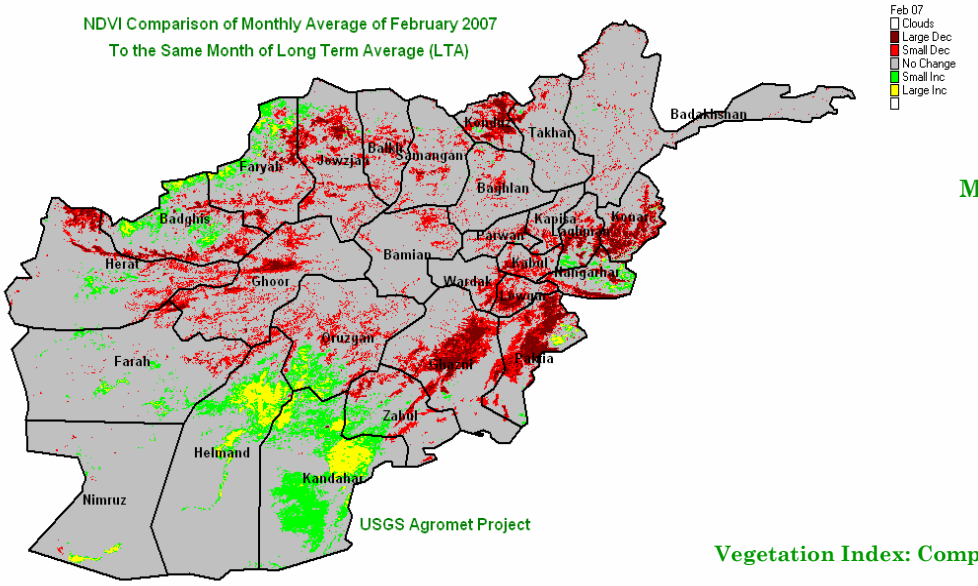
Vegetation Index (NDVI) 3rd Dekad of February 2007—Afghanistan

Comparison of NDVI February 2007



Map 9

Vegetation Index: Comparison to Last Year



Map 10

Vegetation Index: Comparison to Long Term Average

NDVI: February 2007

Large increase of NDVI has been occurred in some parts of the Western, Northern and some parts of the Southern Regions during the month of February 2007.

Comparison of monthly average of NDVI for the month of February 2007 with the same month in 2006 (map 9) shows large increase of NDVI in some parts of the Western, some parts of Northern and some parts of the Southern Regions. Small decrease of NDVI occurred in some parts of the Southeastern, Capital, and some parts of Eastern regions during the month of February 2007 compared to the same month in 2006. There is no change of NDVI in the remaining regions of the country during the month of February 2007 over the same month in 2006.

Comparison of monthly average of NDVI for the month of February 2007 with the same month of long term average (map 10) shows large increase of NDVI in some parts of the Southern regions and small decrease of NDVI occurred in the Capital, Eastern, Western, Central Highlands and some parts of the Northern regions during the month of February 2007 compared to the same month of long term average.

There is no change of NDVI in the remaining regions of the country during the month of February 2007 over the same month of long term average.

Protection of plants against frost

The frost is meteorological phenomena where prevention from it is difficult, but the uses of method against frost and applying knowledge and experiences could reduce the damageing of agricultural crops .When the temperature drop down up to – 3 ° C with the application of physical methods plants can be protected from the frost. The methods are as follow:

Using Heater (Stove):

Protection by this method is very common to be prevented from frost which is implemented in the gardens, thus the lost of radiational temperature during night where the inversion conditions like to be 9 -18 % Col / cm^2 /min it should provide 3- 5 % Col /cm^2/min. Economical aspects should be considered for the application of this method.

Using Wind Generator:

This method is used for combination of cold air with nearest warm layer on time with inversion phenomena. This method is only used for radiation of frost and the expenditure is 20 % of stove.

Using Solid Fuel:

This method contains solid fuels. The advantage of these materials over the liquid is, we can put it under trees and its simple in usage.

Generating Syntactic Haze:

The method is preventive by decreasing of temperature. But it is dangerous for drivers and is not economical.

Saving by Covering:

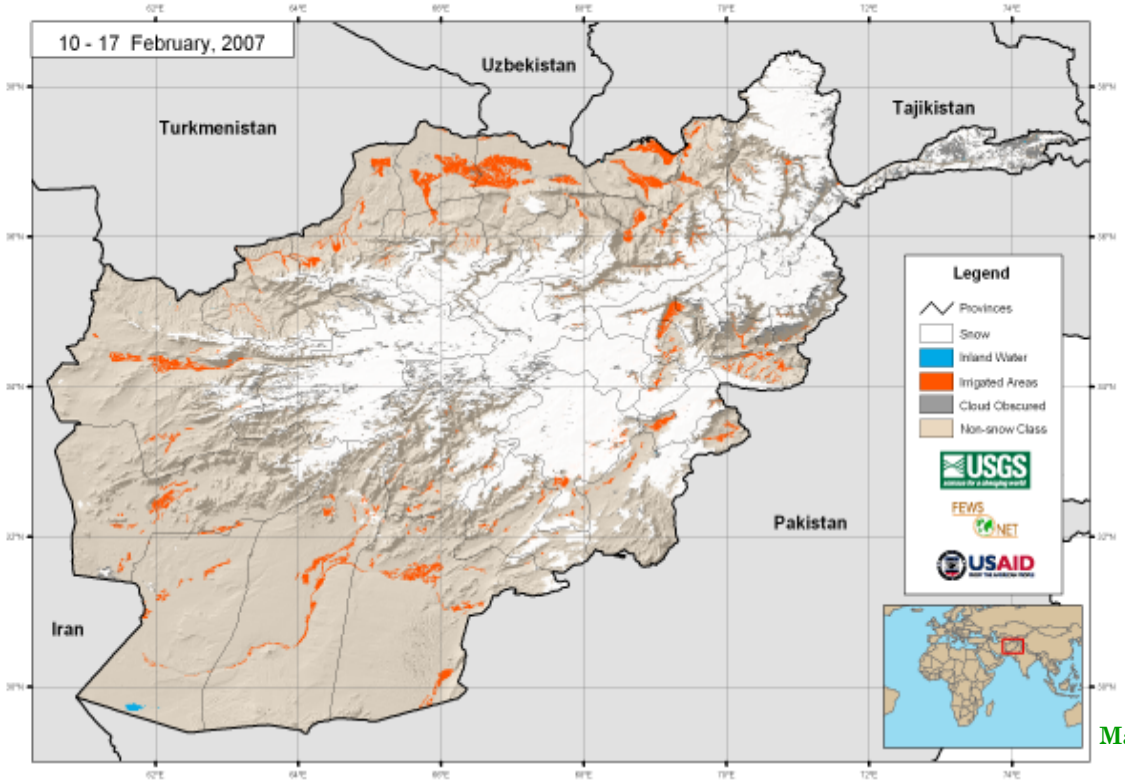
This method is very common for safety of plants against frost disaster. The seedlings are covered in soil, when the frost reduced and even finished yet then soil is removed and the seedlings are exposed. For the yearly plants during night the chances of frost occurrence is more. The plant to be prevented from frost, the Cone plastic Cap is used for its normal growth.

Using Optimal Soil:

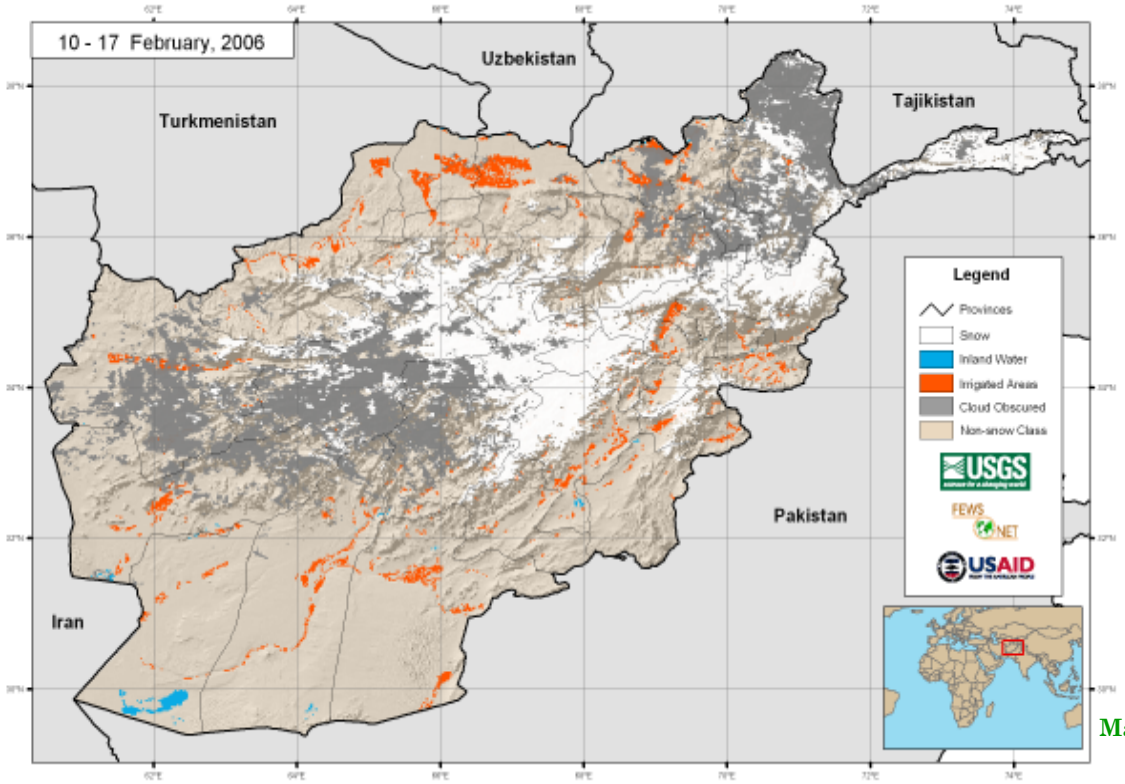
In the clear sky frost radiation occurred, in high elevation of the mountain loses of energy is faster than its depression. The cooler air moves in the bottom of the valley. The valley fills with the cold air and prevent the air flows, therefore the lands having good slope is optimal for agriculture and reduces the frost.

Comparison of snow extent and depth

MODIS 8-day Snow Cover Extent - Current Period 2007 vs 2006



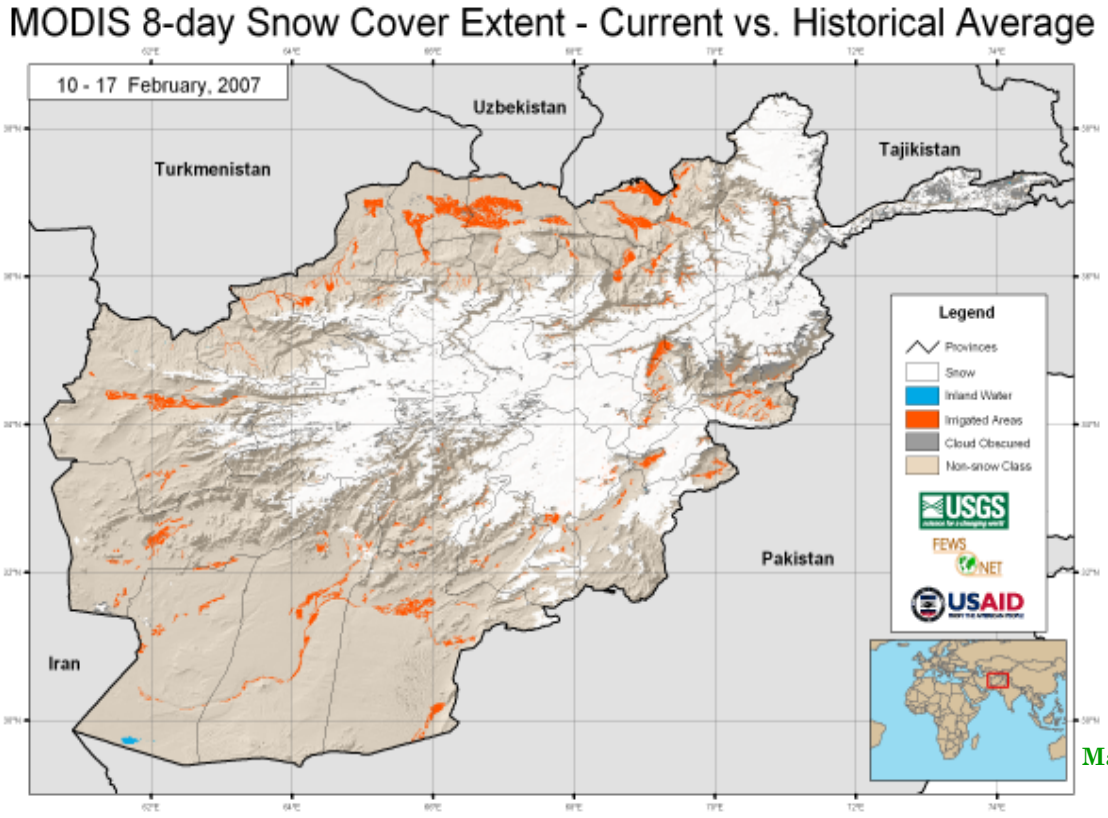
Map 11



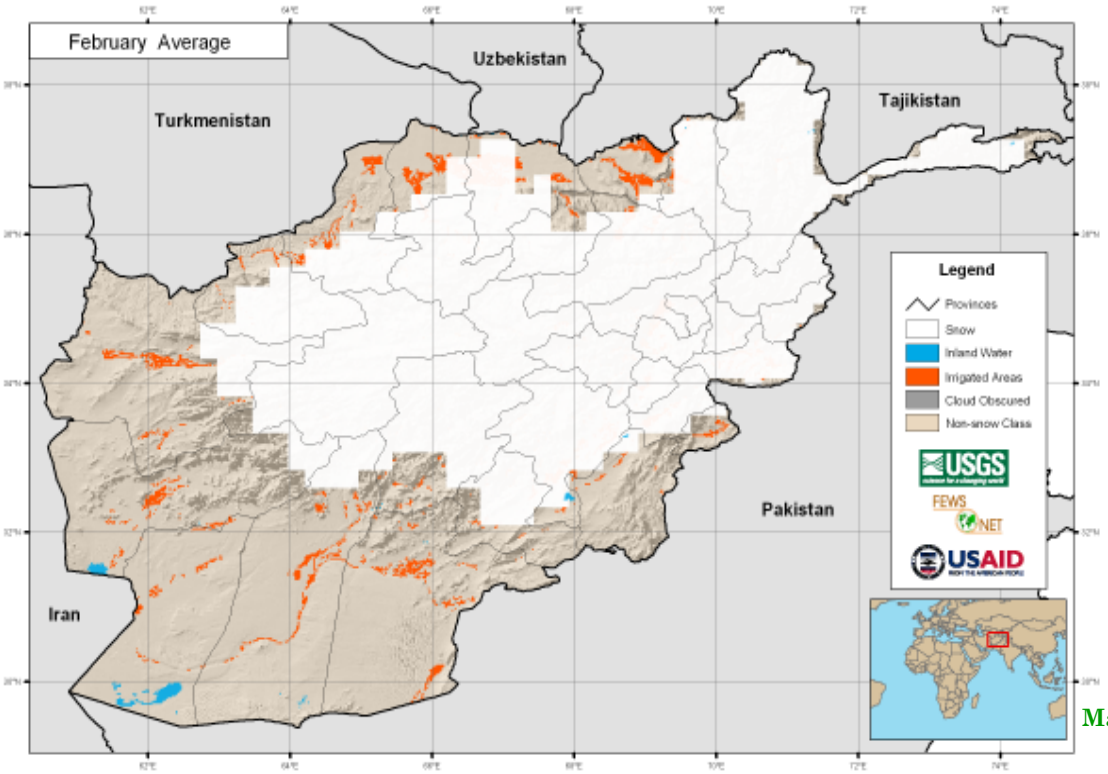
Map 12

Comparison of snow extent for the pried (10 – 17) February 2007 with the same period in 2006 (map 11) clearly shows considerable increase in snow extent during the month of February 2007 compared to the same month in 2006 in the snow coverage areas.

Comparison of snow extent and depth



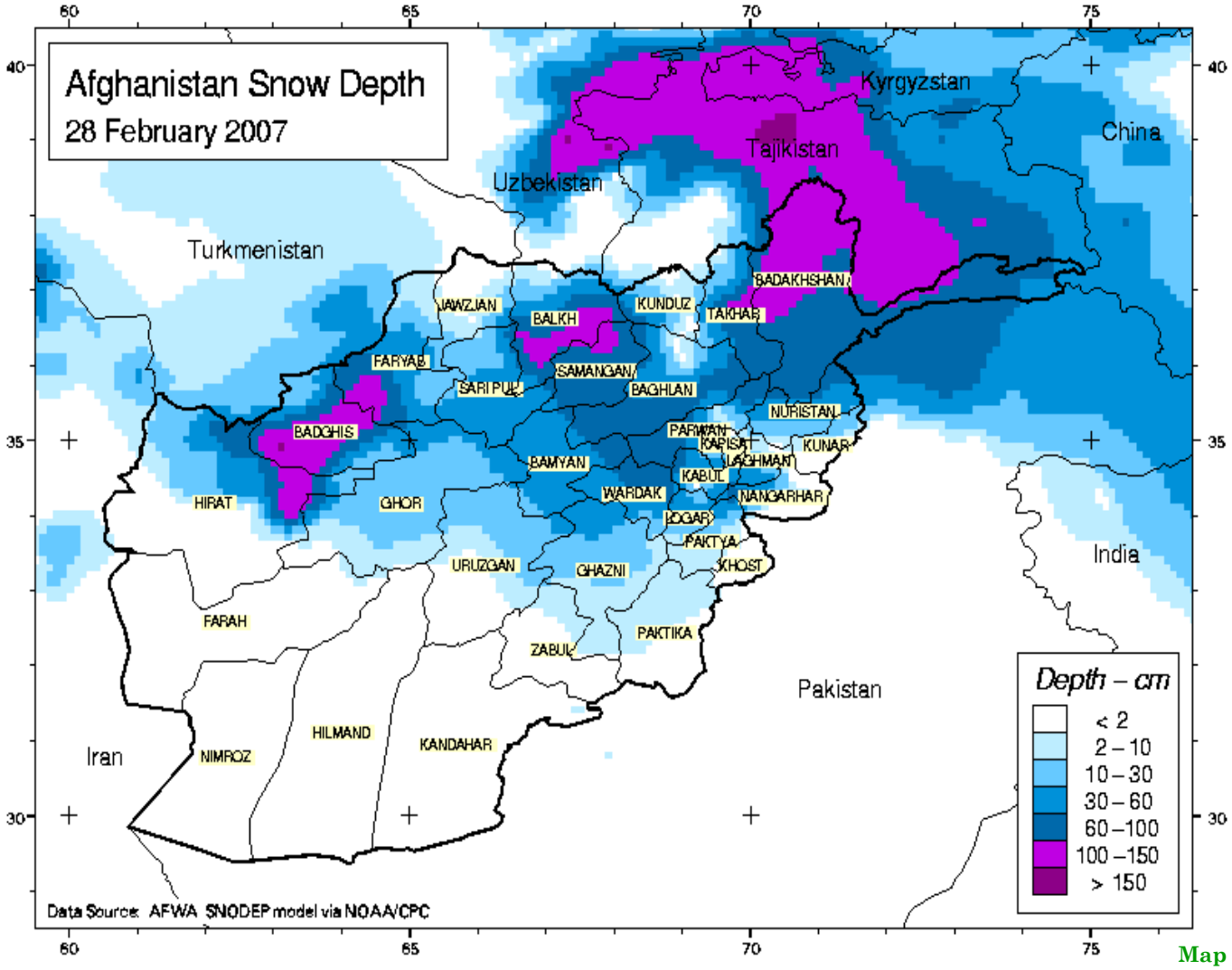
Map 13



Map 14

Comparison of snow extent for the month of February 2007 with the same month of long term average (map 13) shows a decrease of snow extent during the month of February 2007 over the same month of long term average in most parts of the snow coverage areas.

Afghanistan Snow Depth February 2007



Map 15

Map (15) shows the snow depth for the country, where the snow depth 100 – 150 cm recorded in some parts of Northwestern, some parts of Northern mountainous areas and in Northeastern regions.

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