

APPENDIX 4

BIO-PHYSICAL PROFILE OF FOCUS AREAS IN MONGOLIA

1. Ovorhangai Focus Area

Location: Longitude: 102⁰⁷' Latitude: 46⁰³'

Ovorhangai is located in the western part of Mongolia at a distance of 420 kilometers from Ulaanbaatar. It is bordered by Bayanhongor *aimags* and the *soums* of Uyang, Zuunbayanulaan, Bayangol, and Guchinus of Ovorhangai *aimag*. The Ovorhangai focus area covers 11,700 square kilometers, of which 6% is sandy and Gobi desert. Total population is 26,500.

The total forested area is estimated to be 20 % of total territory. Livestock is the basic economic activity. The area is rich in various natural resources such as gold, other heavy metals, and construction materials.

About 250 plant species are found in the area and wildlife fauna is dominated by mountain sheep (argali), mountain goat (yangir), and antelope. The area is also the residence for a number of soft fur animals, such as marmots, fox, wolf, and etc.

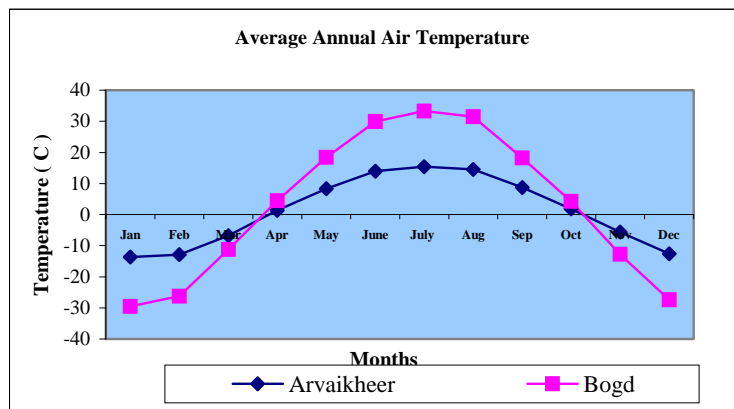
The main goals of the long term development of the focus area are aimed at being economically independent and ecologically sound; being able to provide all needs for human development through ecologically sound livestock management; and having mining outputs through the use of environment-friendly technologies.

Extreme drought, livestock population growth, and irrational use of water, soils, and pasture over many years have resulted in the continued decline in the environment of Ovorhangai. The results are the drying and disappearance of River Ongi, decline in underground water levels, deterioration in water quality and vegetation, loss of biodiversity, expanding desert area and increased frequency of sandstorms. The sandstorms in the focus area occur any time during the year.

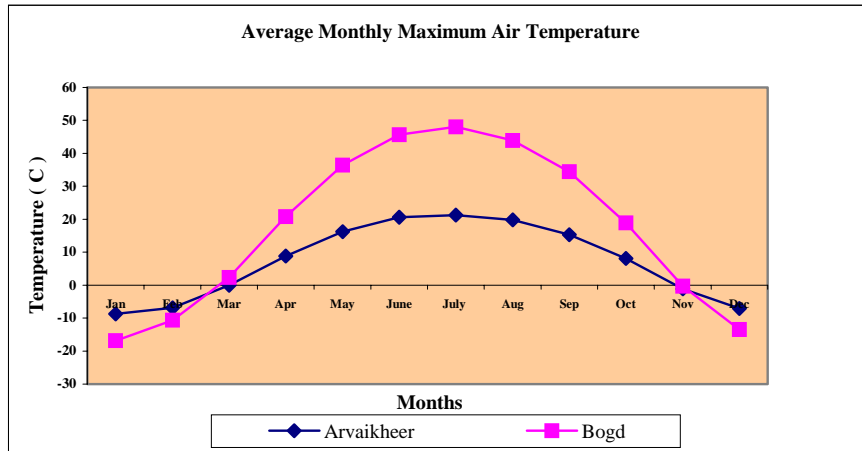
Climate:

Air Temperature:

The average air temperature are -2.1⁰C in the mountain areas, 1.0⁰C in the steppe and 1.7⁰C in the gobi. Lowest air temperature in January is -13.7⁰C in Arvaiheer and -15.8⁰C Bogd. But it is 15.4⁰C in Arvaikheer and 17.9⁰C in Bogd in July.

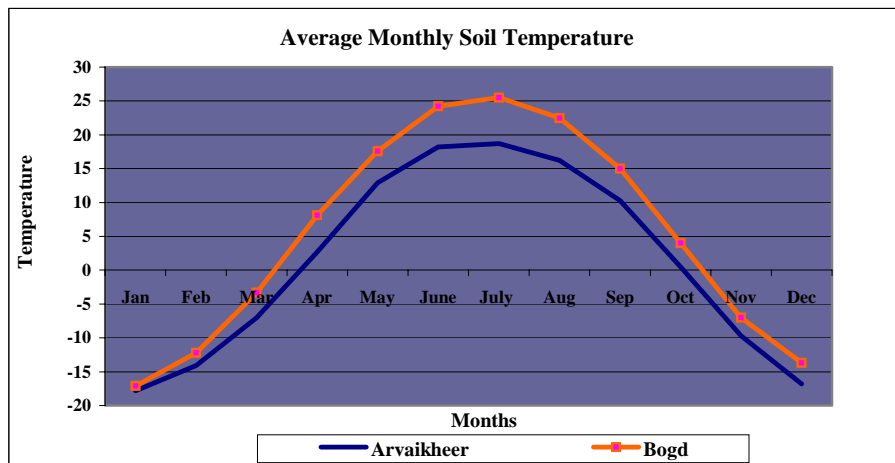


Maximum air temperatures in mountain, steppe, and gobi areas are 6.3°C, 7.4°C, and 10.3°C, respectively.

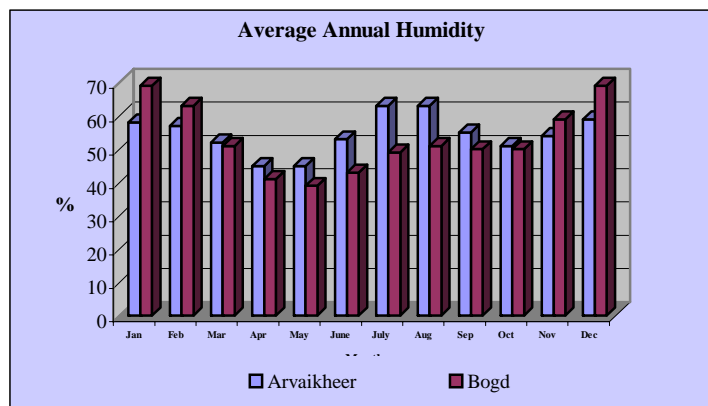


Soil Temperature:

Annual average soil temperature in mountain, steppe, and gobi areas are 0.0°C, 1.0°C, and 4.4°C, respectively.

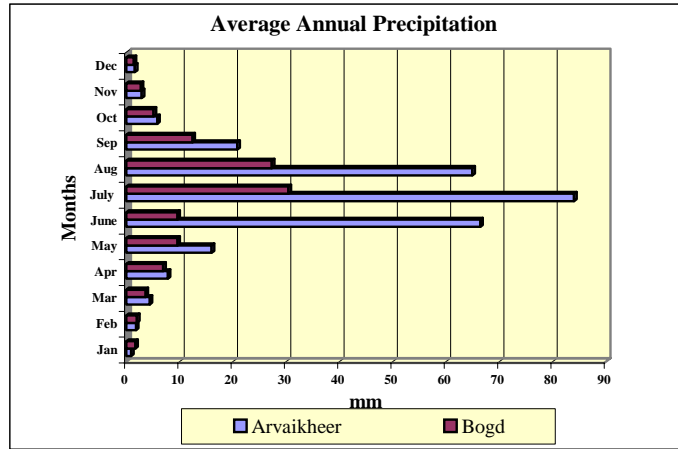


Humidity:



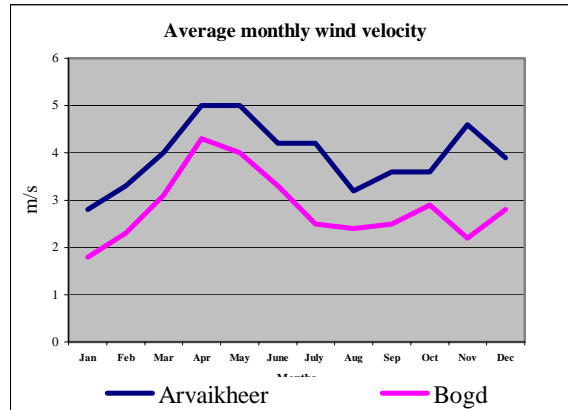
Precipitation:

Average annual precipitation in mountain areas is 306.2 mm while in the steppe is 277.3 mm and the gobi areas is 117.2 mm. Most rainfall occur during warm seasons like June, July, and August.

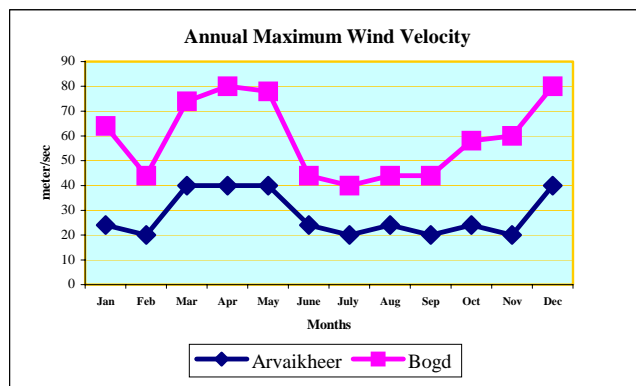


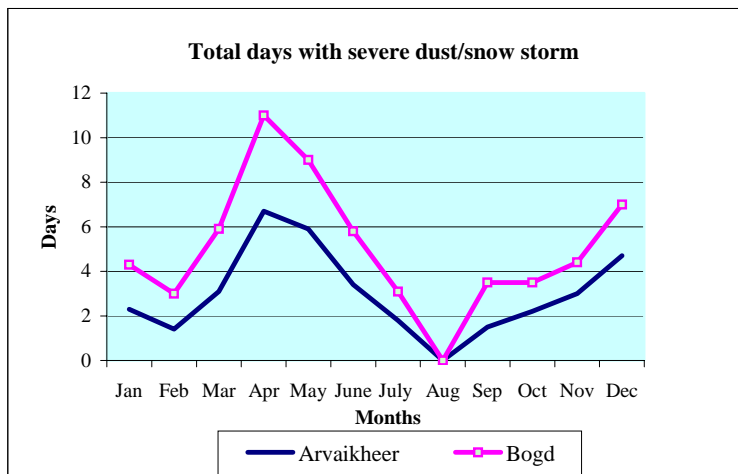
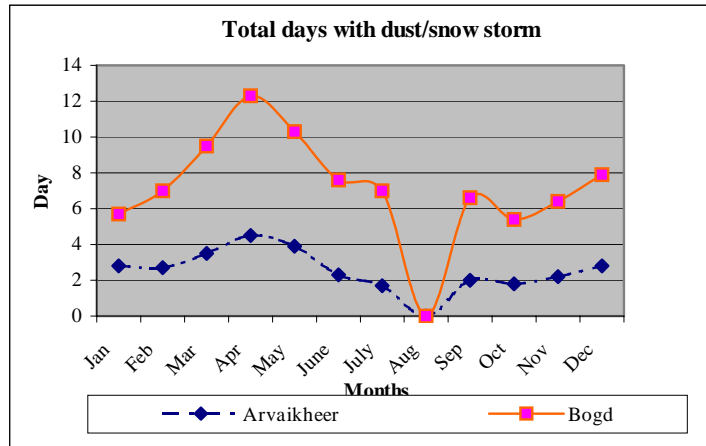
Wind:

Wind velocity varies in different areas: 18 –25m/s in mountain and 20 –40m/s in steppe and gobi areas.



The highest wind velocity is observed only during March, April, and May with speeds of 40 m/s or more.



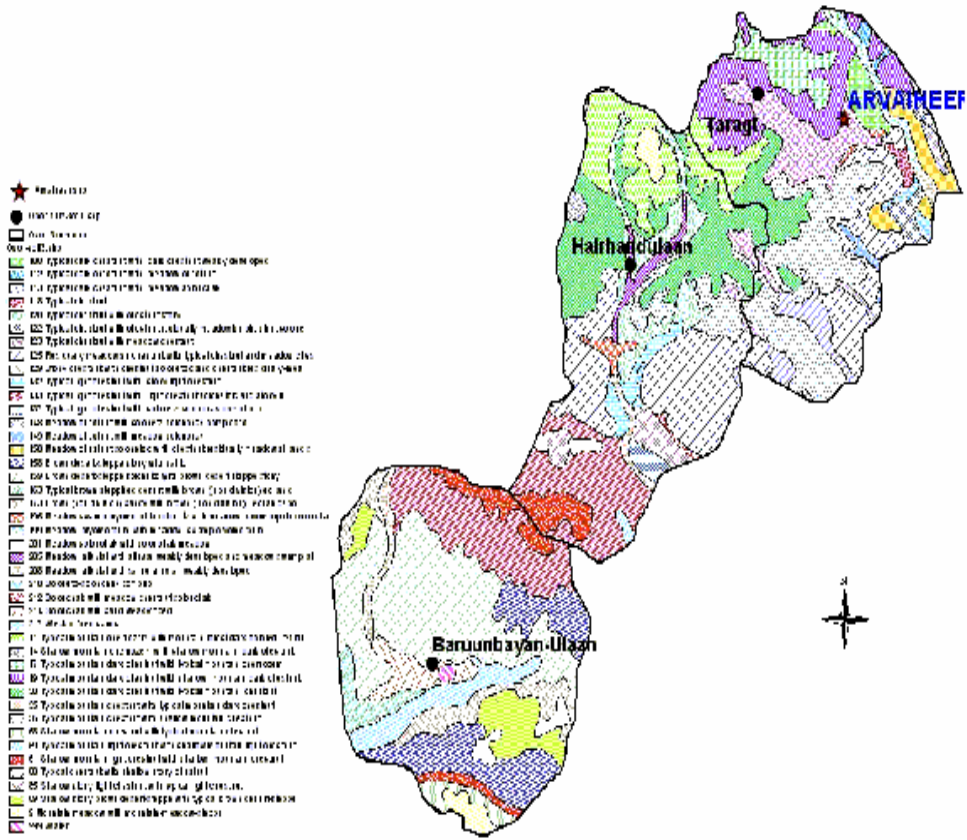


Vegetation and Soil Condition.

The vegetation and soil condition of Ovorkhangai focus are. It is a fragile area of desertified grassland, 35 % of which is degraded.

Desert-like steppes are widely encountered to the south of regular/dry/steppes in between the isopluvial lines of 200 and 150 mm on chestnut soils. They stretch in narrow strips south of Khangai and form a transient belt between shrubby grass and desert semi-shrub/shrubby grass steppes. Main dominating species are *Stipa gobica*, *S. Klemenzii* in the east and *S. glareosa* in the west. Besides the above species the following plants are commonly found in typically sub zonal areas: *Artemisia frigida*, *Caragana stenophylla* and *C. pygmaea*, *C. lencophloea*, *Agropyron cristatum*, and *Cleistogenes squarrosa*. The cover of this dry steppe elements increases in light textured soils. Saline substrates support Central Asia types of semi-shrubs (e.g. *Salsola passerine*, *Anabasis brivifolia*, *Reamuria songorica*). Desertified semi-shrub grass steppes (or grass-type deserts) cover vast areas in the southern part of Mongolia on northern (desert-steppe) brown soils, thus the latitudinal or sub zonal belt of desertified steppes stretches from Lake Bon-Tsagan-Nur to the borderline of Mongolia taking up the entire territory of the East Gobi.

The Soil Types of Ovorkhangai Focus area



2. Omnogobi Demonstration Focus Area

Location: Longitude: 104°4' Latitude: 43° 6'

Omnogobi focus area is located in the southern part of Mongolia at a distance of 700 km from Ulaanbaatar. It is bordered by Dornogobi and Ovorhangai *aimags* and Tsogttsetsii, Nomgon, KhurmenNaran and Sevrei *soums* of Omnogobi *aimag*. The Omnogobi focus area covers 40,200 square kilometers, of which 70 % is sandy and gobi desert.

It is a fragile area of desertified grassland. The total forested areas in focus area is estimated to be 5 % of total territory. It has the biggest sand dune, which is called as Moltsoq els. Livestock is the basic economic activity of the focus area. It is rich in various natural resources such as coal, gold, and other heavy metals.

The land is dry and soil is steppe brown, red –brown, light brown clay poor in humus. About 300 plant species are found and the common wildlife fauna are mountain sheep (argali), mountain goat (yangir), antelope, and black tail gazelle. It is the home of a number of soft fur animals, such as marmots, fox, wolf, hare, rabbit, lynx, etc.

The main goals of the long term development of the focus area are to be self-sufficient, economically independent, ecologically sound, able to provide the needs for human development through ecologically sound livestock management, and to have mining outputs through the use of environment-friendly technologies.

Extreme drought, livestock population growth, and irrational use of water, soils, and pasture over many years have resulted in sustained decline in the focus area environment. The results are the drying and disappearance of Lake “ Ulaan”, loss of wetlands, contraction of oases, decline in underground water levels, deterioration in water quality and vegetation, loss of biodiversity, expanding desert, and increased frequency of sandstorms. The sandstorms in the focus area occur any time during the year while severe sandstorms occur frequently from March to May after spring thaw. The wind erosion in the focus area usually occurs where wind speeds are greater than 8 ms⁻¹. The number of dusty days ranges from 91 to 120 over the Omnogobi focus area. The highest occurrence of dusty days is around the Khongor Els area. Average duration of a dust storm is 4.6 hours and of driving dust is 3 hours in Dalanzadgad station.

Degraded land areas are increasing while vegetation cover is decreasing and lakes and rivers are drying out. These are clear consequences of the desertification that contribute to DSS. One of the main reason of such changes are global air moisture cycle in continental and local scale and the depletion of precipitation.

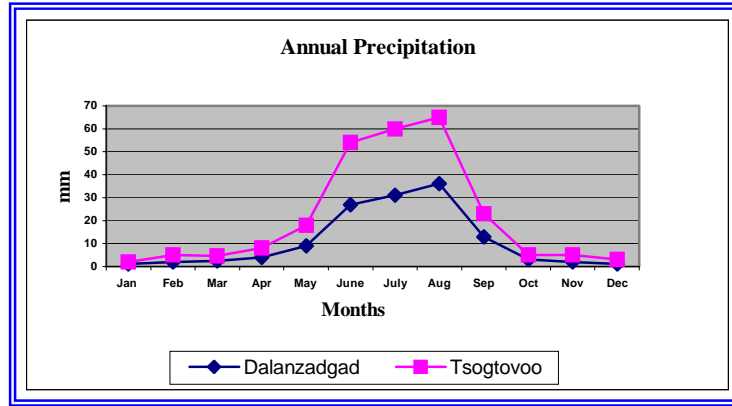
Precipitation is too low and too unreliable to support efforts to revegetate the focus area without supplementary irrigation. Water is in short supply. So, the strategy here will need to rely on natural regeneration of the rangelands.

The major form of land use has always been semi-nomadic animal husbandry in the area. However, the recent increase in the number of livestock and loss of traditional grazing practice are major causes for deteriorated soil and destruction of habitat. The drastic increase in livestock numbers occurred in the beginning of 1990s due the the privatization of livestock. In addition, the traditional grazing practices, nested on a sustainable land utilization system was lost and forgotten.

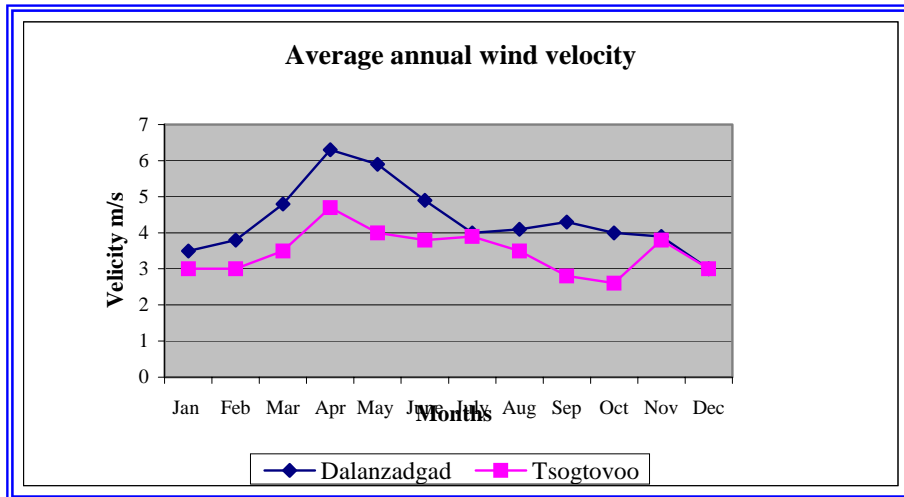
Further, the habitats become degraded as truckloads of bushes and small trees (mainly willow *Salix viminalis*) are removed and used as fuel wood. The forest habitats particularly around the Ongi River, is heavy grazed.

Climate:

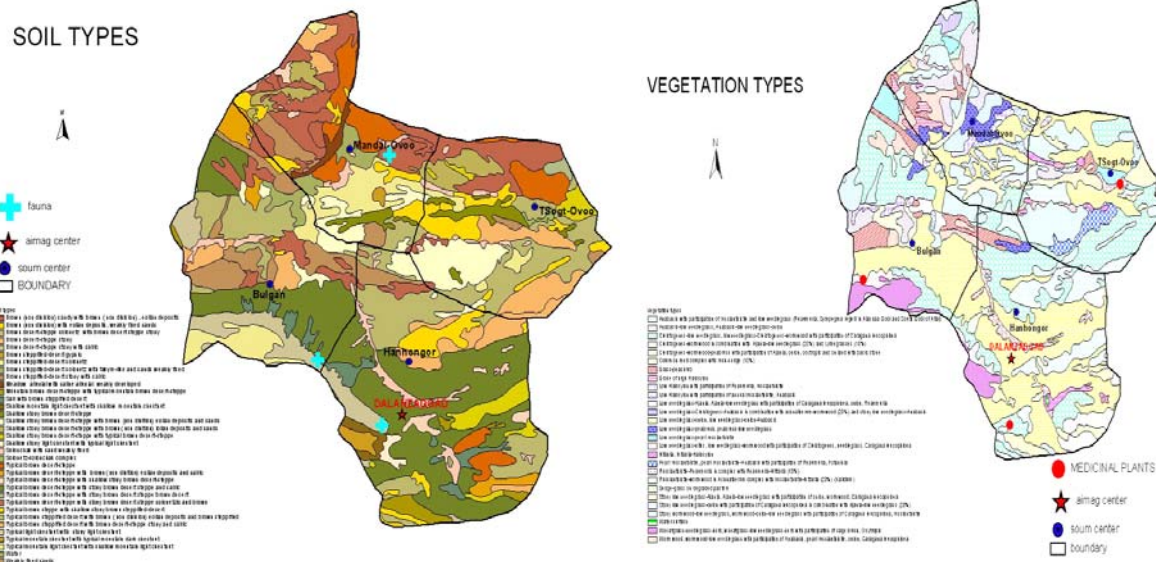
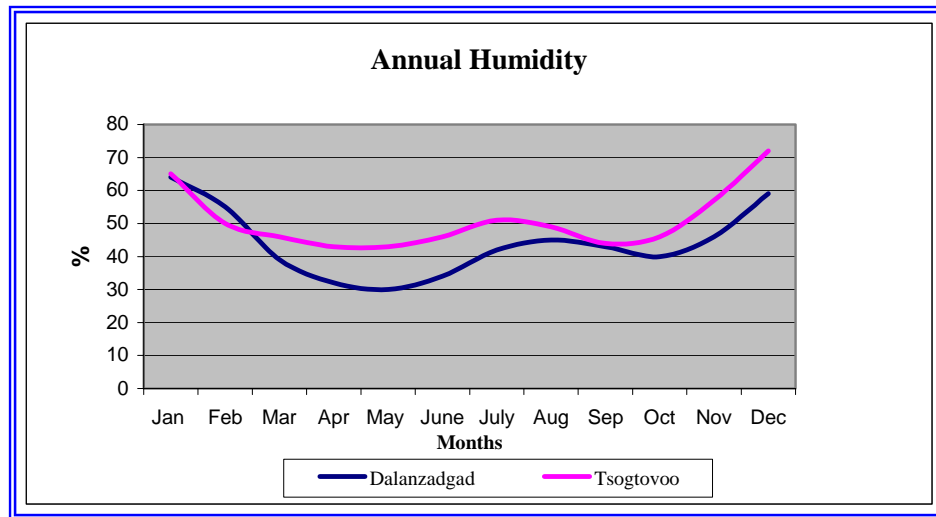
Starting from the first week of March till the month of May (about 48-54 days), the steppe areas get warm 10-20 days earlier than mountain areas. Air temperature is -1.2 to 7°C at the beginning and increases 12.6 to 16.4°C in late of spring. Maximum temperature is 32.0 – 36.0°C .



The wind is coming mainly from west and northwest and its velocity (6.0- 9.3 m/s) is high comparing to other seasons.



Relative humidity is low as 28-45% in month of May. Precipitation is 2-4 mm in March, 4-10 mm in April and 10 mm in May.

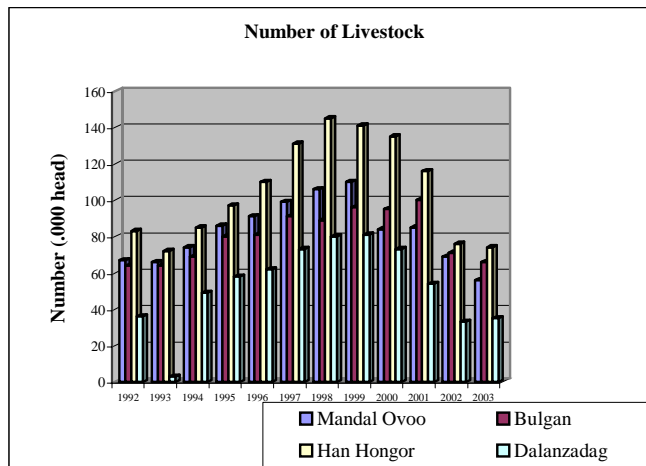
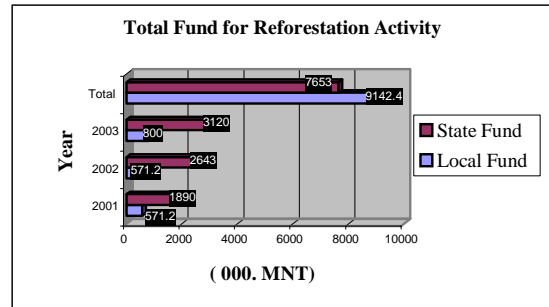
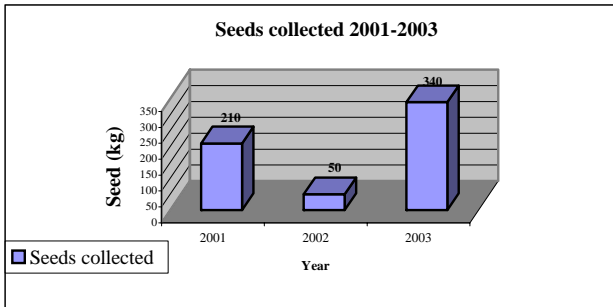
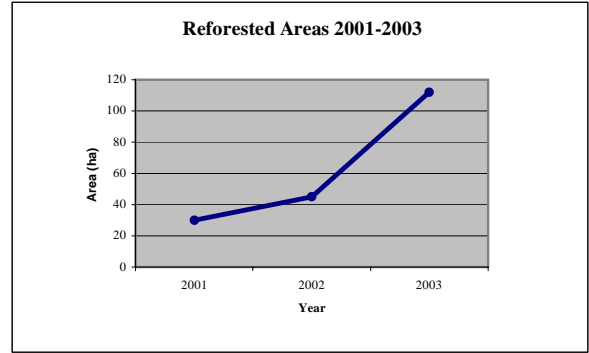
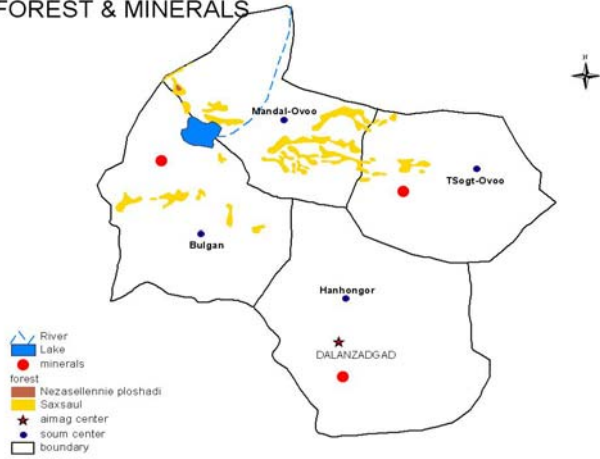


Vegetation and Soil Condition:

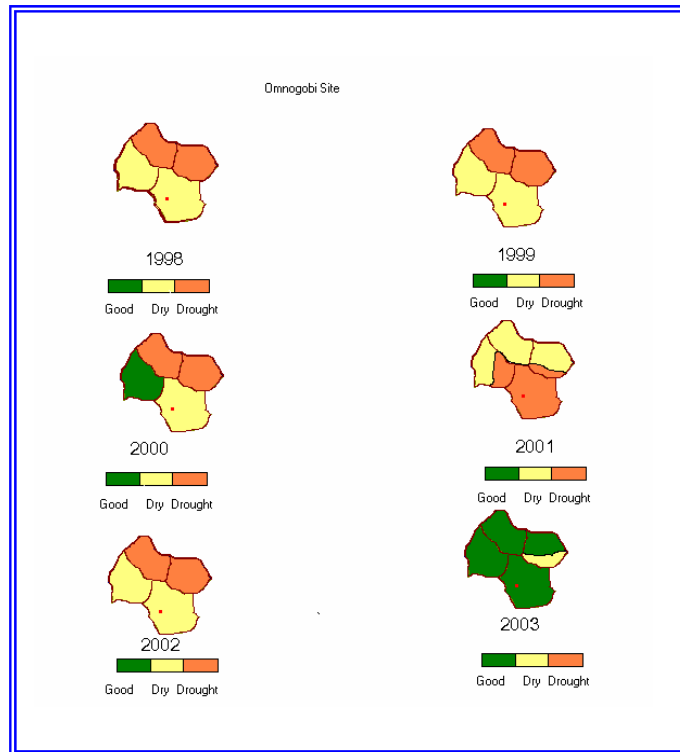
Projected foliage cover of vegetation communities in desertified steppes averages 20-25%, but may be as low as 15%.

Sandy-grass family semi-shrub communities develop on southern brown soils south of desertified steppes. They form the specific sub zone of steppe-like deserts. The main element of the structure of the communities is the dominating superiority of semi-shrubs (*Anabasis breviflora*, *Reamuria sangorica*, *Salsola passerine*, *Sympegma regeli*, *Artemisia xerophytica*, *Namophyto erinaceum*, *Anabasis salsa*, *Anabasis aphylla*, *Artemisia gracilescens*). The four latter species concentrate in the Ozhungar Gobi. Shrubs are represented by *Potaninia mongolica*, *Zygophyllum xantoxylon*, *Ephedra przewalskii*, *Brachanthemum gobicum*, etc. Soddy grass family plants, onions play a secondary role (*Stipa glareosa*, *S. gobica*, *Cleistogenes songorica*).

FOREST & MINERALS



Drought Sequences 2003 and Seasonal Trends 1998-20



3. Sukhbaatar Focus Area

Location: Longitude: 113⁰3' Latitude: 46⁰,3'

Sukhbaatar focus area is located in the eastern part of Mongolia at a distance of 670 km from Ulaanbaatar. It is bordered by the PRC and Dornogovi *aimags* and Asgat, Dariganga, Naran, Ongon *soums* of Sukhbaatar *aimag*.

The Sukhbaatar focus area covers 22,001 square kilometers, of which 57 % is sandy and gobi desert. Total population is 23,189.

It is a fragile area of desertified grassland. The total forested areas in focus area is estimated to be 10 % of total territory. It has the biggest sand dunes, which is called Moltsog els and Ongon els.

Livestock is the basic economic sector of the focus area. The focus area is rich in various natural resources such as brown coal and other heavy metals.

About 200 plant species are found and the common wildlife fauna are antelope, black tail gazelle, marmots, fox, wolf, hare, rabbit, lynx, etc.

Extreme drought, livestock population growth, and irrational use of water, soils, and pasture over many years have resulted in sustained decline in the Sukhbaatar focus area environment. The result has been drying and disappearance of small gobi lake like Lake "Tsagaan", contraction of oases, decline in underground water levels, deterioration in water quality and vegetation, loss of biodiversity, expanding desert and increased frequency of sandstorms.

Climate:**a. Total days with light**

It varies based on the geographic location and cloud thickness. According to data received from Bayandeleger and Baruun Urt weather monitoring station total day lights continues 2832 – 3064 hours. It is higher by 130-160 hours than Hentii province and lower by 40 –15 hours than Dornodgobi province. Average days with sun continues 7.9 to 8.5 hours. In Baruun-Urt, 9-10 hours are with sun during summer season and 7-8 hours during winter season.

b. Seasonal difference**Winter:**

Winter starts from 2nd –5th November to 22nd –26th of March (total 138-143 days). Soil temperature normally gets –21^o C in month of January and reaches as maximum of – 43^oC. In winter precipitation is only 5- 7% of total annual precipitation. Days with snow cover continue for 85-110 days. Typical depth of snow is 13-17 cm.

Spring:

Spring starts from 22nd- 26th March till 5th-11th of May (total 44-50 days). Even though days are comparatively short during this season climate originated disaster occurrence is high. The spring is categorized into 2 groups based on variances of air temperature: Beginning: –5^o to +5^o C Late: +5^oC to +10^oC

Air temperature fluctuation is high during month of April with average temperature is 2.2^oC to +4^oC and daily maximum temperature reaches +20^oC to 30^oC in day time and –17^oC – 21^oC in night time.

Average soil temperature during month of April is +4^oC to 5^oC and daily maximum temperature reaches + 32 to +42^oC and –18 to –25^oC.

Wind velocity variation is high during this season. In April, average wind speed reaches more than 15 m/sec and days with dust storm is 3-7 days. Due to low precipitation and high fluctuation of air temperature, its climate become dry. Humidity in the air is only 38-28% during this period. Total days with lower than 30% humidity is 16-22 days in month of April.

Summer:

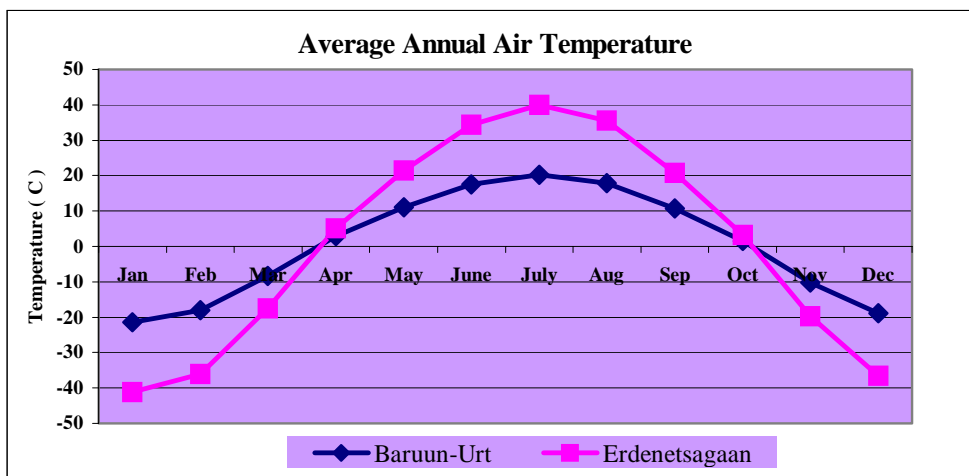
Starts from 8-15th of May till 16th of September (total 121 –131 days). In July having 55-74 mm and in August 44-65 mm precipitation and evaporation is high so air humidity increases by 58-66 % in August.

Most warm period is the month of July and average monthly temperature is 19.8 – 22^oC. One of the important parameter for successful agriculture development is the calculation total temperature with more than +10^oC. Total temperature is around 1930 –2400^oC all over province and its higher by 200^oC than neighboring Hentii Province.

Autumn:

Occurs when temperature decreases from -10^oC to winter season temperature (total 45 – 47 days). Maximum temperature reaches 24 -30^oC and minimum temperature reaches –5 to -9^oC in September and –17 to -23^oC in October. Its mean daily temperature fluctuation is high. In Autumn, precipitation is only 10.5 – 17.6% of total annual precipitation. In September, it is 35mm around Erdene-tsagaan *soum* and while 12-23 mm for the rest of areas. Wind speed increases up to 3-5 m/s, which is higher than that in summer.

Temperature:



From this graph temperature increases by passing 0°C in month of April and reaches its highest temperature in July and slowly reduces and reaches the lowest temperature in January.

Maximum and minimum air temperature:

Based on the many years data max. temperature is 40°C and min. temperature -44°C.

Total temperature: Its necessary for any plant species to have good condition to grow. In field of agriculture the total temperature during the warm seasons is one of important parameter. Based on this data, the best opportunity for planting and cultivating fruits, vegetable and fodder plants can be explored. Total temperature above 10°C is +1930 to +2450°C and above +15°C total is 1370 to +2002°C. As altitude increases the total positive temperature of that place decreases.

Table A4.1 Total Temperature of below 0,-5,-10,-15,-20 and above 0,5,10,15 and 20

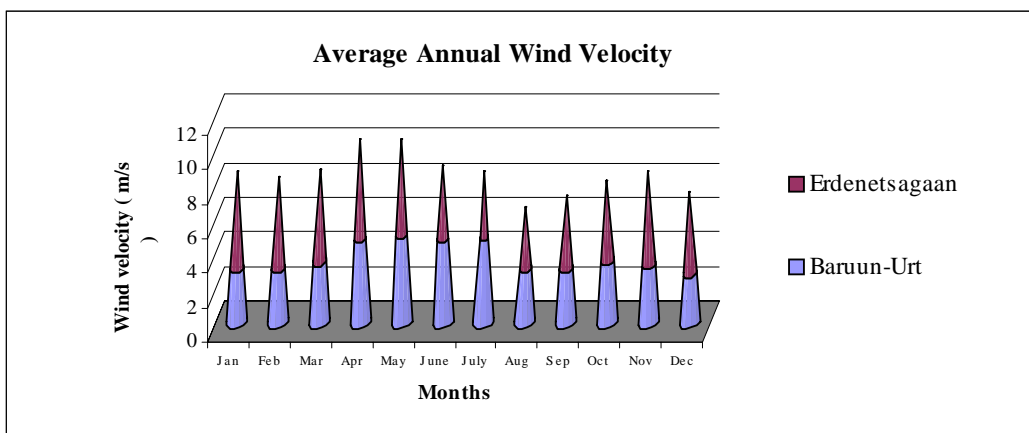
Station	-20°C	-15°C	-10°C	-5°C	-0°C	0°C	5°C	10°C	15°C	20°C
Baruun-Urt	-1350	-1759	-2238	-2340	-2502	2520	2435	2162	1650	322
Baishint	=1651	-2132	-2408	-2559	-2590	2798	2716	2436	2002	1127
Erdenetsagaan		-1697	-2050	-2226	-2270	2350	2258	1931	1370	-

Soil Temperature:

Annual average soil temperature of Sukhbaatar province is fluctuating between 1.3 to 2.6°C. Minimum soil temperature is -20°C in month of January, which is lower than air temperature in same period. This is due to the snow cover. Soil temperature increases from April by 4°C to 7°C and in May reaches to 13°C to 17°C. Maximum temperature is in the month of July when its reaches 24-26°C. It's also higher by 2.0 –4.0°C than air temperature.

Air Pressure and Wind Direction:

Generally, most wind direction originates from the north and north-west side. Wind direction varies because of Central Asian seasonal differences. For example, for Erdenetsagaan *soum* in January, most of the wind originates from the west and when it gets warmer, the direction changes to the east.



Annual average wind velocity is 3.2 –4.9 m/s and in west, south-west and south (which is relatively high) 4.3-4.9m/s and in other areas the wind velocity is 3.2 – 4.1 m/s. Wind velocity in winter is low and in spring slowly increases and reaches a maximum of 3.2 –4.9 m/s only in the month of April and reduces in summer. Compared with neighboring *aimags*, the wind velocity is higher 1.0 – 1.9 m/s than Khentii and 0.3-1.0 m/s than Dornod and Dornogobi province.

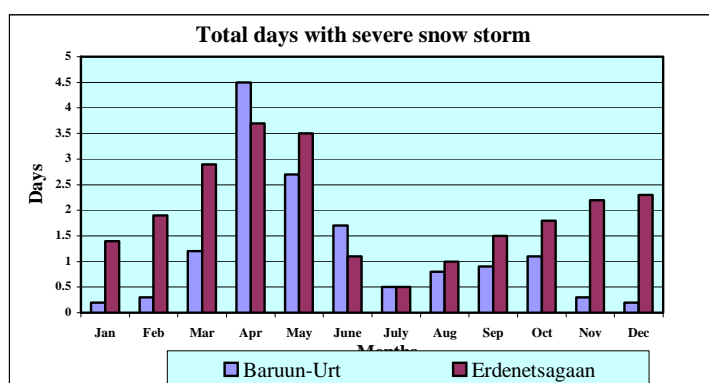
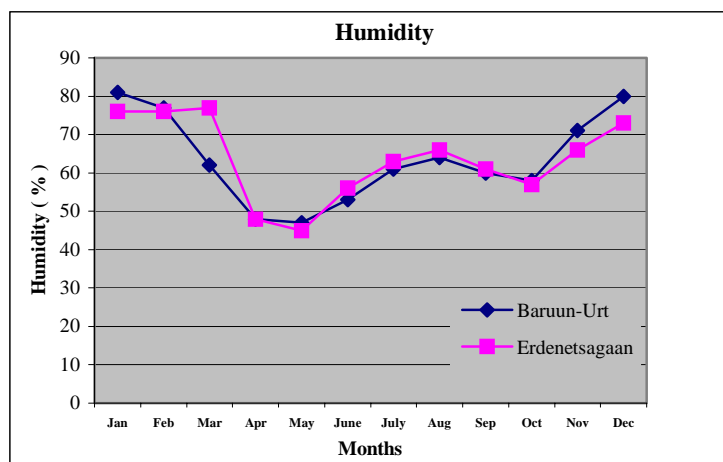
Sukhbaatar *aimag* is an area, which has high wind velocity because it does not have major hills and mountains which can block the wind.

Frost:

Frost is a phenomenon when spring and autumn air temperature is above 0°C the air or soil temperature drops below 0°C. The plant is very sensitive during its planting or growing period so frost is one of the negative weather phenomenon, which will create negative impact on plant germination and it slowly damages plant growth. It even destroys recently planted species. In Sukhbaatar *aimag*, the last frost occurs from 3rd ten days to 4th ten days of May. This is an important fact for planning the planting measurements

Table A4.2 Latest and Earliest Frost Occurrence in Sukhabatar *Aimag*

Indicators	Late spring			Beginning of autumn			Non frost period		
	Average	Earliest	Latest	Average	Earliest	Latest	Average	Short	Long
Baruunurt	May16	May4	June4	Sep19	Sep9	Oct2	126	114	138
Baishint	May17	May17	May31	Sep20	Sep6	Sep30	126	103	157
Bayndelger	May14	May4	May21	Sep17	Aug30	Sep24	126	94	139
Erdentsagaan	May21	May1	June12	Sep11	Aug28	Sep27	113	87	145



One of the critical parameter for development of crop farming is humidity. Besides of positive temperature and lights the humidity is important factor for growth of fodder and pasture plants and selection of right plant species.

Days with strong wind is low in winter and summer (0.2 –0.3 days) but in spring and autumn high (0.8 –4.3 days). Specially in springtime, most strong wind occurrence is high in Baruunurt 4.3 days and even reaches 9 days in some years.

It is practically important to know how long and what level of speed wind is continuing. For Sukhbaatar province, annual average continuation is 62-114 hours and the longest storm occurs during spring and autumn. Wind, mostly from west and northwest, blows for around 1.1 to 6 hours/day on average. In some cases, velocity of strong wind reaches up to 28-34m/s.

Table A4.3 Frequency of Strong Winds at Different Velocity (meters/second)*

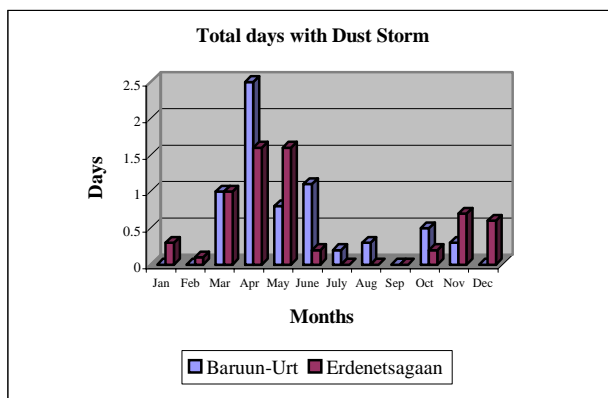
Stations	15-18 m/s	19-22 m/s	23-26 m/s	27-30m/s	31-34m/s
Baruunurt	88.6 %	8.9 %		1.3%	1.2%
Erdenetsagaan		20.2%	2.8%	0.8%	

* Force 8 winds on the Beaufort scale is about 12 m/s

Sandstorm::

Sandstorm damages the country’s economy. Sandstorm is one of natural disasters and it is periodicity, frequency (number of days), and geographic extent varies widely.

The province is counted as one that has frequent sandstorms (6-19 annually) most of which occur in spring and autumn. They occur less often in winter and summer.



The frequency of sandstorm is high during April (a month of low precipitation) because of the melting of snow cover that exposes the dry soil. Even though storm velocity is low the possibility of sandstorm is high in selected focus areas because low precipitation, and hot and dry air, at a time when vegetation cover is sparse. The main types of vegetation are low needle grass in association with the shrub *Caragana* spp..

Vegetation Type Sukhbaatar *aimag*

The dominant soil of the Gobi desert zone is a brown clay loam characterized by poor fertility with a low humus content and a high sensitivity to wind and water erosion. In this area, activities such as decreasing of land use capacity, rehabilitation of land vegetation cover, and plantation of trees and shrubs combat to land degradation should be pursued.

There are 12 vegetation associations and 10 pasture land types in Sukhbaatar. The main pasture land type is the *Caragana* shrub association, which is overgrazed around the settlements.

4. Dornogobi Focus Area

Location: Latitude 44.8° Longitude 110.2°
Altitude: 900 m above sea level

Dornogobi focus area is located in the southern part of Mongolia at a distance of 700 km from Ulaanbaatar. It is bordered by Ikhkheth, Airag, Saihandulaan, Mandakh, Hovsgol, Erdene, Orgon and Delgerekh *soums* of Dornogobi *aimag*.

It has a size of 26,900 km² and covers entirely the territory of three *soums* (Shainshand, Altanshiree, and Ulaanbadrakh)

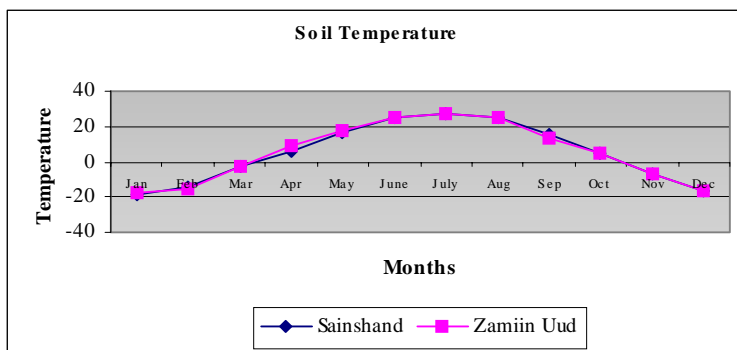
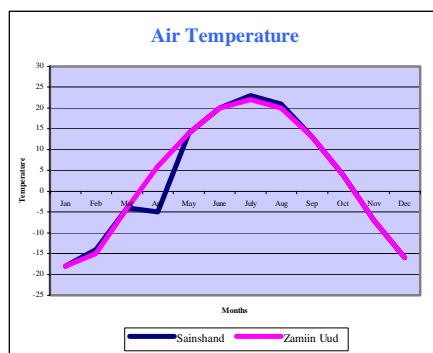
The Dornogobi focus area covers 20,900 square kilometers, of which 8% is sandy and gobi desert. Total population is 7,600. It is a fragile area of desertified grassland. The total forested area is estimated to be 10 % of total territory. Livestock is the basic economic activity of the focus area. It is rich in various natural resources such as coal, gold, and construction materials. The land is dry and soil is steppe brown, red-brown, light brown clay poor in humus. About 200 plant species are found and wildlife fauna includes antelope, black tail gazelle, fox, and wolf.

Extreme drought, livestock population growth, and irrational use of water, soils, and pasture over many years have resulted in sustained decline in the Dornogobi focus area environment.. The sandstorms in the focus area occur any time during the year while severe sandstorms occur frequently from March to May after spring thaw

Climate:

Air Temperature:

Dornogobi province has 7 months where the air temperature is above zero. The coldest period is January. In Zamiin-Uud, temperature gets to -20°C while other areas will have only -15°C to -18°C . In April, temperature gets warm from 2.3°C to 7.5°C .



Soil Temperature:

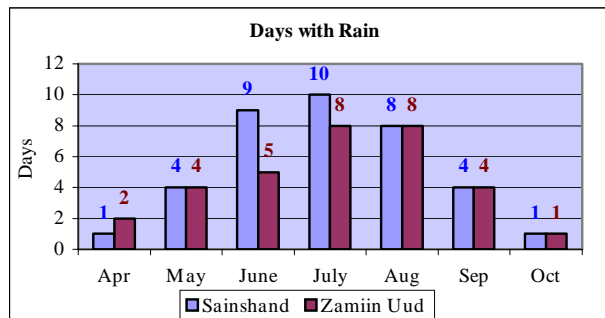
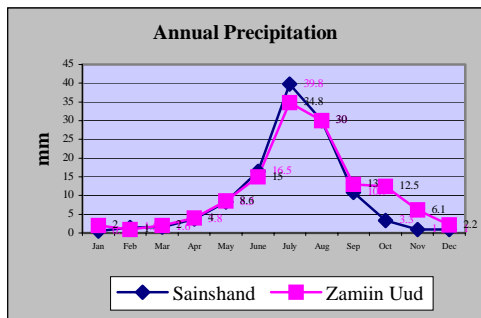
Average annual soil temperature is 1.6°C warmer compared with air temperature. From November to March the soil temperature is below 0°C and from April temperature raises from $5-9^{\circ}\text{C}$ and it reaches $15-18^{\circ}\text{C}$ in May.

Table A4.4 Soil Temperature (max, min and average)

Stations	Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sainshand	Average	-20	-16	-4	8	17	25	27	24	15	5	-8	-18
	Max	8	23	36	48	59	69	69	53	45	27	22	10
	Min	-39	-40	-32	-23	-11	0	6	0	-6	-23	-30	-38
Zamiin Uud	Average	-19	-16	-3	9	18	26	28	25	16	5	-7	-18
	Max	8	25	35	49	56	64	63	59	49	39	26	15
	Min	-39	-43	-35	-20	-8	-1	8	0	-5	-20	-31	-43

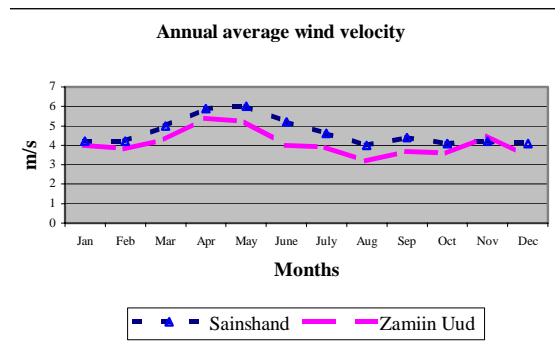
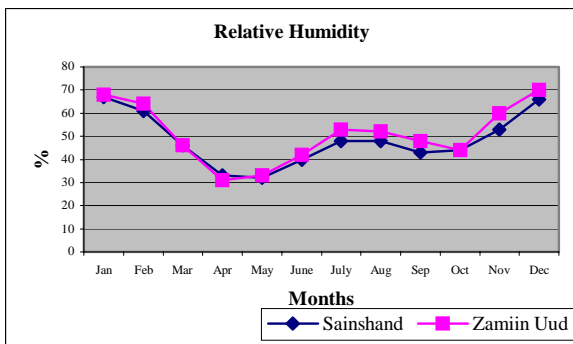
Precipitation:

Annual precipitation is 90-130 mm and mainly falls in July and August. Normally 2.2 – 3.0 mm per rain and sometimes is as high as 3.0 –4.0 mm.



Relative Humidity:

Average annual humidity is 40 – 55%. Minimum humidity occurs during April because of higher air temperature, dry soil and melting snow.



Wind:

There are no major mountains areas for Dornogobi for blocking the wind. Most wind is from north and northwest so it lies in the path of the DSS.

Table A4.5 Frequency of Wind Direction (%) in Shainshand

Months	N	N-E	E	S-E	S	S-W	W	N-W	Days with no wind
Jan	18.5	4.9	1.7	2.2	9.2	5.3	16.5	42.2	27.5
Feb	21.8	9.0	3.5	1.9	8.3	3.9	15.9	35.7	25.0
Mar	18.9	11.6	6.3	4.9	10.6	6.2	11.6	29.9	18.3
Apr	19.6	10.8	5.6	5.2	8.7	7.2	15.3	27.6	13.1
May	20.0	12.1	6.7	5.1	9.7	7.5	13.8	25.1	11.6
June	22.5	14.3	9.1	8.2	10.5	7.4	13.8	19.3	11.9
July	20.3	17.1	10.7	8.1	11.8	6.5	6.7	17.6	13.7
Aug	19.6	14.7	11.0	8.9	15.2	7.2	7.9	15.6	16.6
Sep	16.1	10.1	6.3	5.8	12.9	8.0	7.8	29.3	20.5
Oct	16.7	8.7	4.0	5.3	13.6	8.5	11.0	29.1	24.7
Nov	15.6	8.8	3.6	3.6	13.0	7.2	14.1	30.3	24.7
Dec	15.3	4.0	2.2	3.1	11.6	4.8	17.9	29.3	27.6
Average annual	18.7	10.5	5.9	5.2	11.3	6.6	13.4	28.4	19.6

The main wind direction in Shainshand is from west and north west.

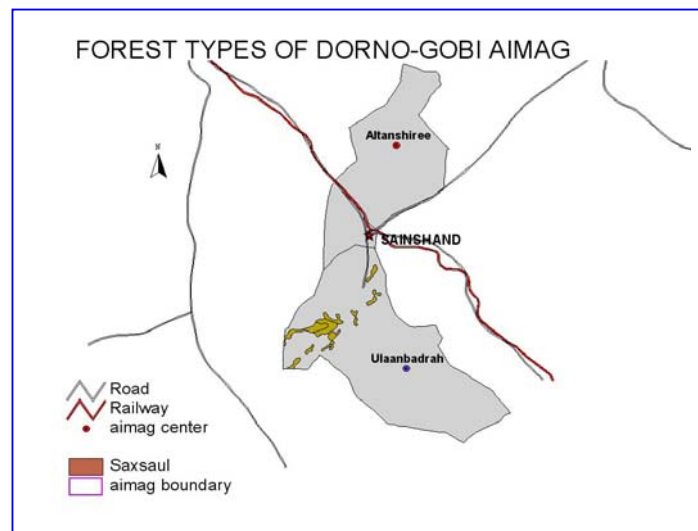
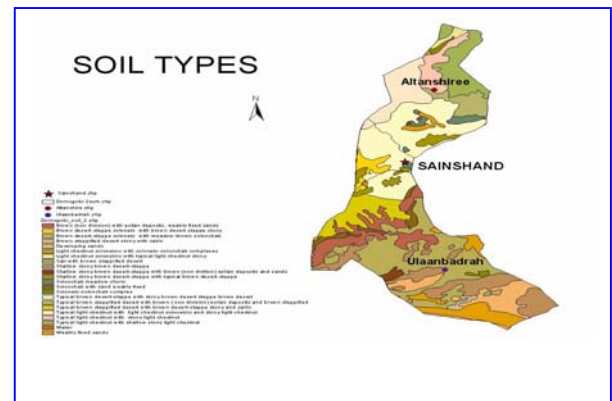
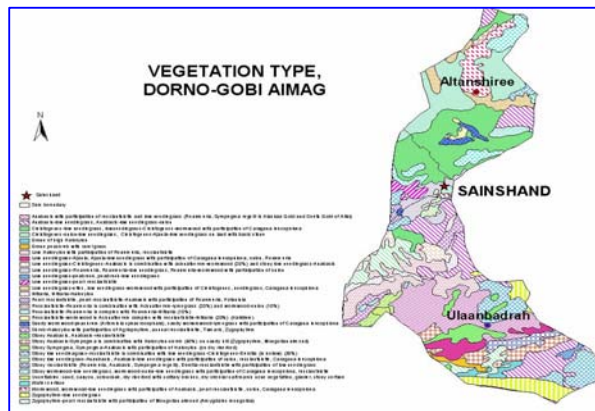
Duststorm:

The duration of dust storm is different between stations: in Shainshand 44% of total recorded dust storm lasts for less than 2 hours and about 4% lasts more than 12 hours. In Zamiin-Uud about 20 % continues between 4-6 hours. Dust storms that continue more than 12 hours are less common (4-9%). Dornogobi province experiencing dust storm for 26- 321 hours per year and of which 26-80 hours occur only in April and May. Regarding timing, 60- 67% of dust storm occur between 0900 to 1800 and 21.7 –26.3 % are in the afternoon between 1500 – 1800.

Haloxylon is mainly encountered on sands. Insular patches of steppe-like deserts support mainly *Anabasis breviflora*, *Reamuria sognorica* and *Nanophyton grubovii* and are mainly found on the beds of depressions. (the Valley of Lakes, the depression of Great Lakes).

The total projected cover of the above communities is about 10-15%. In the south the conditions become drier steppe-like deserts give way to deserts on grey-brown soils. They cover almost whole of the territory of the Dzhungar, Trans-Altai and Alshan Gobi. Vegetation communities are dominated by Central Asian semi-brushes like the above mentioned and other species typical of the given sub-zone (*Salsola larificola*, *Ephedra przeulalskii*, *Hjiniia regelii* and *Nitraria sphaerocarpa*).

Haloxylon spp. generally develop scattered and low communities. Perennial grasses are sparse. The projected cover is normally within 5-10%



Five percent of Dornogobi focus area is covered by forest. Forest type vegetation is gobi saxsaul (*Haloxylon* spp.).

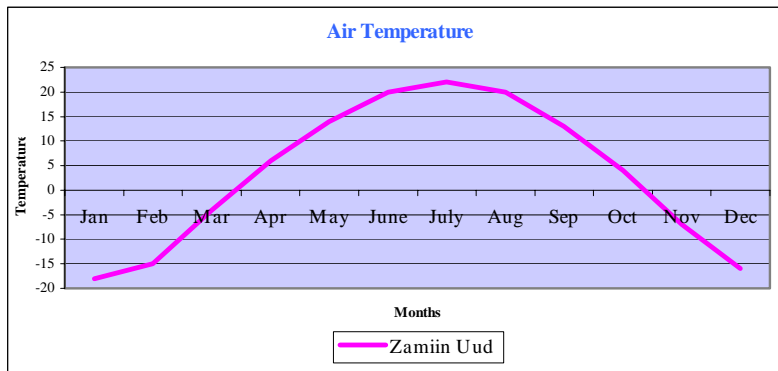
5. Zamiin Uud Focus Area

Location: Latitude 43°.4' Longitude: 111°

Altitude: 800 m above sea level

Air Temperature:

Dornogobi province has 7 months where the air temperature is above zero. The coldest period is January. In Zamiin-Uud temperature gets – 20 centigrade where other areas will have only –15 to –18°C. In April temperature gets warm in 2.3 to 7.5 °C.



Soil Temperature:

Average annual soil temperature is 1.6°C warmer comparing with air temperature. From November to March the soil temperature is below 0°C and from April temperature raises from 5 –9°C and it reaches 15-18°C in May.

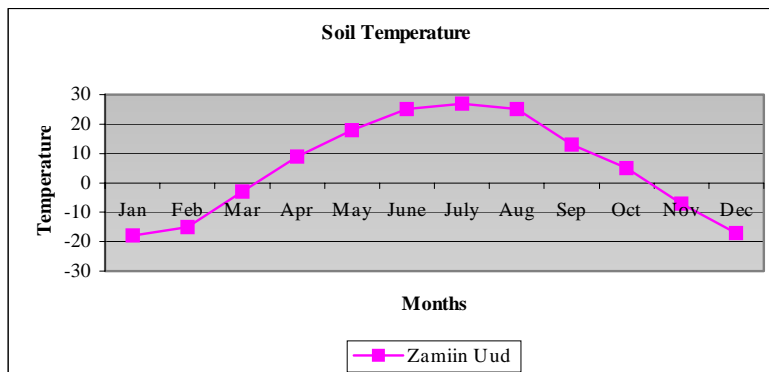
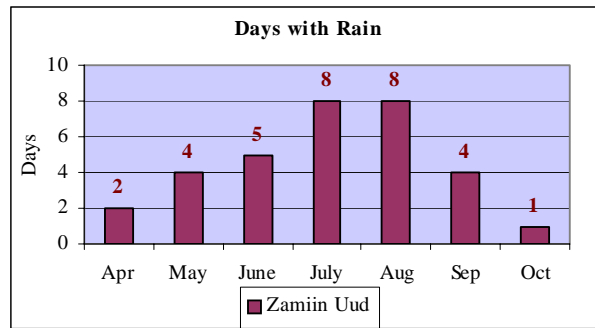
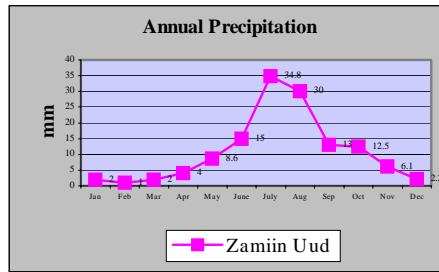


Table A4.6 Soil Temperature (max, min and average)

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	Min	-39	-43	-35	-20	-8	-1	8	0	-5	-20	-31	-43

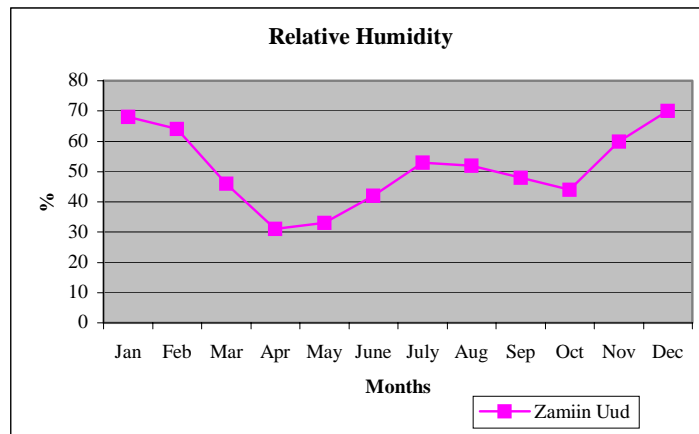
Precipitation:

Annual precipitation is 90-130 mm, mainly in July and August. Normally 2.2 – 3.0 mm per rain and sometimes as high as 3.0 –4.0 mm.



Relative Humidity:

Average annual humidity is 40 – 55%. Minimum humidity is occurring during month of April because of the increase in air temperature, the dry soil and melting snow.



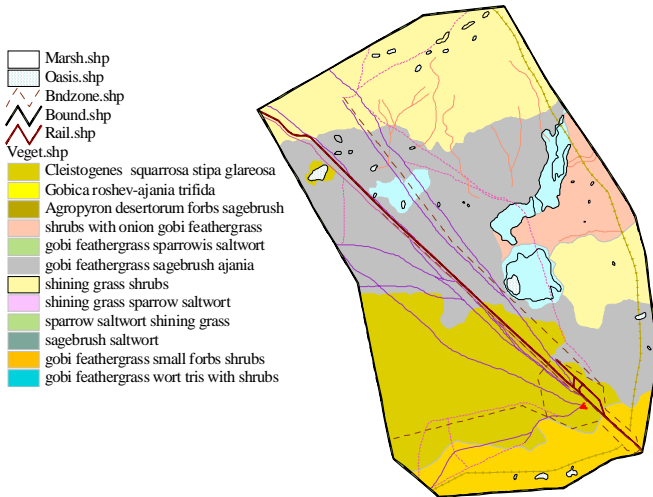
Vegetation and Soil Condition:

There are 10 vegetation associations and 8 pasture land types in Zamiin Uud . The dominant vegetation pastureland type is a *Caragana* spp. Association

About 95,5% of total land has been occupied by agriculture and pasture land. Pasture land of Zamun Uud *soum* is 3,283 ha and the calculated sheep carrying capacity is 6,985 head.

Water quality in Zamun Uud *soum* is poor (unsuitable for human consumption) and there is need to find new water resources and/or improve water quality using chemical methods. The following maps gives the physical characteristics of the area.

Soil Map



Vegetation Map

