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KOREA FOREST SERVICE

The Global Fire
Monitoring Center

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CLIMATE CHANGE IMPACTS ON FIRE REGIMES IN THE MONGOLIA

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Mongolia is located in Central Asia with an area of 1 565 000 km^2 and a population of 2.65 million, which makes Mongolia one of the least populated countries in the world. The country borders Russia in the North and China in the South.

Mongolia is a highland country located deep within the interior of Eurasia and has a marked continental climate with poor soil fertility, scanty surface water resources and harsh natural conditions.

The official coat of arms of Mongolia was adopted in 1992 following the fall of the communist government. The outer rim features a tumen nasan, symbolizing eternity, surrounding a circular blue field, symbolizing the sky. On the centre of the field is a combination of the soyombo and the wind horse /treasured steed/, symbolizing Mongolia's independence, sovereignty, and spirit. Above the field is a chandmani, representing the Buddhist Three Jewels, which in Mongolian folklore grants wishes, and symbolizes past, present, and future. Below the central emblem is a green mountain range, with the wheel of destiny at the center. On the bottom of the mountain range and wheel is a khadag, a ceremonial scarf.

The modern flag of Mongolia was adopted on February 12, 1992. It has three equal, vertical bands of red /hoist side/, blue, and red. Centered on the hoist-side red band in yellow is the national emblem.

Mongolian climate – Ìîíãîë îðíû óóð àìüñààä

Mongolia is located in the Northern Hemisphere temperate zone. Situated at an average altitude of 1500 m above the sea level separated from the oceans, surrounded by high mountain chains that are blocking the wet winds, Mongolia has an extreme continental climate. The winter continues long with cold temperature but summer is hot and not so long. Winter lasts from November to late April, Spring May through June. Summer continued from July through to September. The average summer temperature is +28c (+65F) . Winter is –28c (-13F) . The wind is 1.5-4.5m/s. The average rainfall 200-220 mm. In Mongolia there are 250 sunny days a year, often with clear cloudless skies. Therefore Mongolia is known to the world as a country of "**Blue Sky**"

Mongolia winter

Mongolia spring хав

Mongolia summer

зун

Mongolia autumn

The average monthly temperature and precipitation in Ulaanbaatar , the capital of Mongolia

	I	II	III	IY	Y	YI	YII	YIII	IX	X	XI	XII
Temperature C	-25	-30	-12	-2	+6	13	+17	+15	+7	0	-13	-22
Temperature F	-13	-22	+10	28	+43	+55	+63	+59	+45	+32	+8.6	-7.6
Precipitation	0	0	3	6	12	30	75	55	24	7	5	3

Average summer temperature: +20C (+65F)

Average winter temperature: -20C (-13F)

Average precipitation: 25.4 cm

There are four well-defined seasons, and on average, the sun shines for well over 200 days a year.

The climate is harsh continental with low precipitation. The temperature varies greatly within the year and also diurnally. The last 60 years of meteorological observation show annual average temperatures of 8.5C in the Gobi and -7.8C in the mountains. The extreme minimum temperature is between minus 31.1C and minus 52.9C in January.

The extreme maximum temperature is between plus 28C and plus 43.1C in July. Annual precipitation is low, averaging 200-220mmm, ranging from under 50mm in the extreme south (Gobi desert) to 400mm in limited areas in the north.

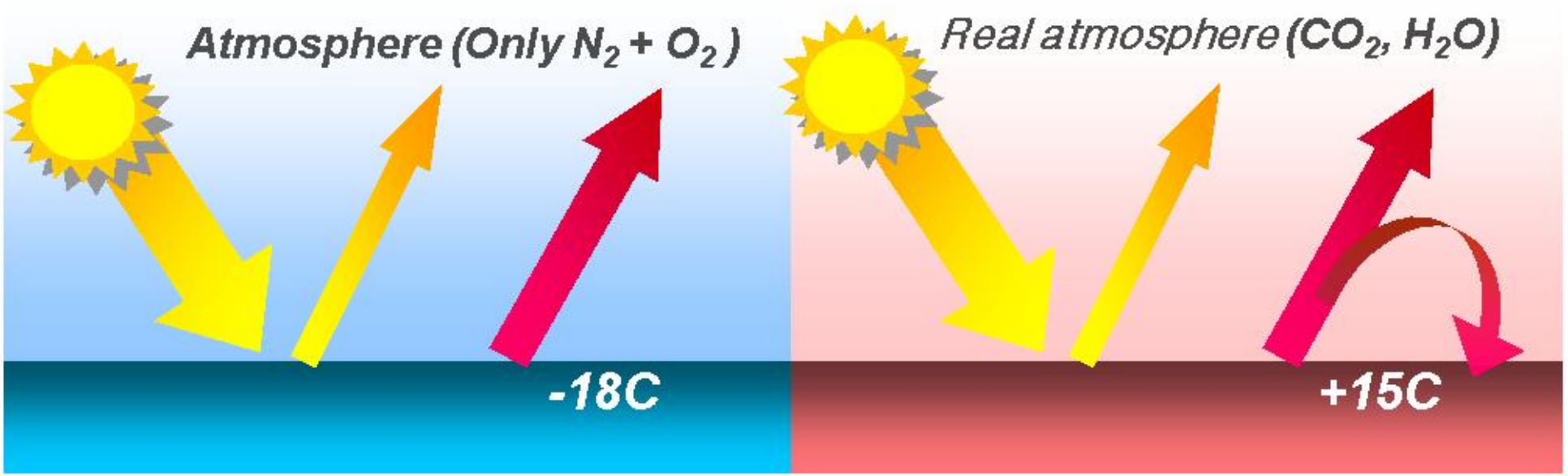
Most precipitation occurs in June, July and August, and the driest months are November to March. The same meteorological records show that the annual air temperature has raised 1.56C on average, more in winter (3.61C) and less in spring (1.4-1.5C).

Summer temperatures have fallen decreased 0.3C. There has been more temperature increase in May and September, but little change in April. The summer temperature drop has been mainly in June and July. Temperature changes have also been spatial. Winter warming has been more pronounced in the high mountains and valleys and less in the steppe and Gobi. There is a thawing of permafrost in 63 percent of Mongolia, which some claim is due to global warming.

Half of the country has an average temperature of below freezing point. The length of time of snow covering has reduced, and soil erosion has increased in recent years. The number of days with dust storms has tripled over the last 40 years. In 1999-2002, over half of Mongolia was drought-stricken, more intense than any time in the last 60 years, coupled with dzud. These unfavorable weather factors have had an adverse effect on Mongolian social and economic development. Meteorologists stress, however, that the environmental and ecological degradation being experienced is not solely the result of weather and possible climate change, but also because of human activity.

Welcome to Mongolia

Green house gas and its effects and mechanisms

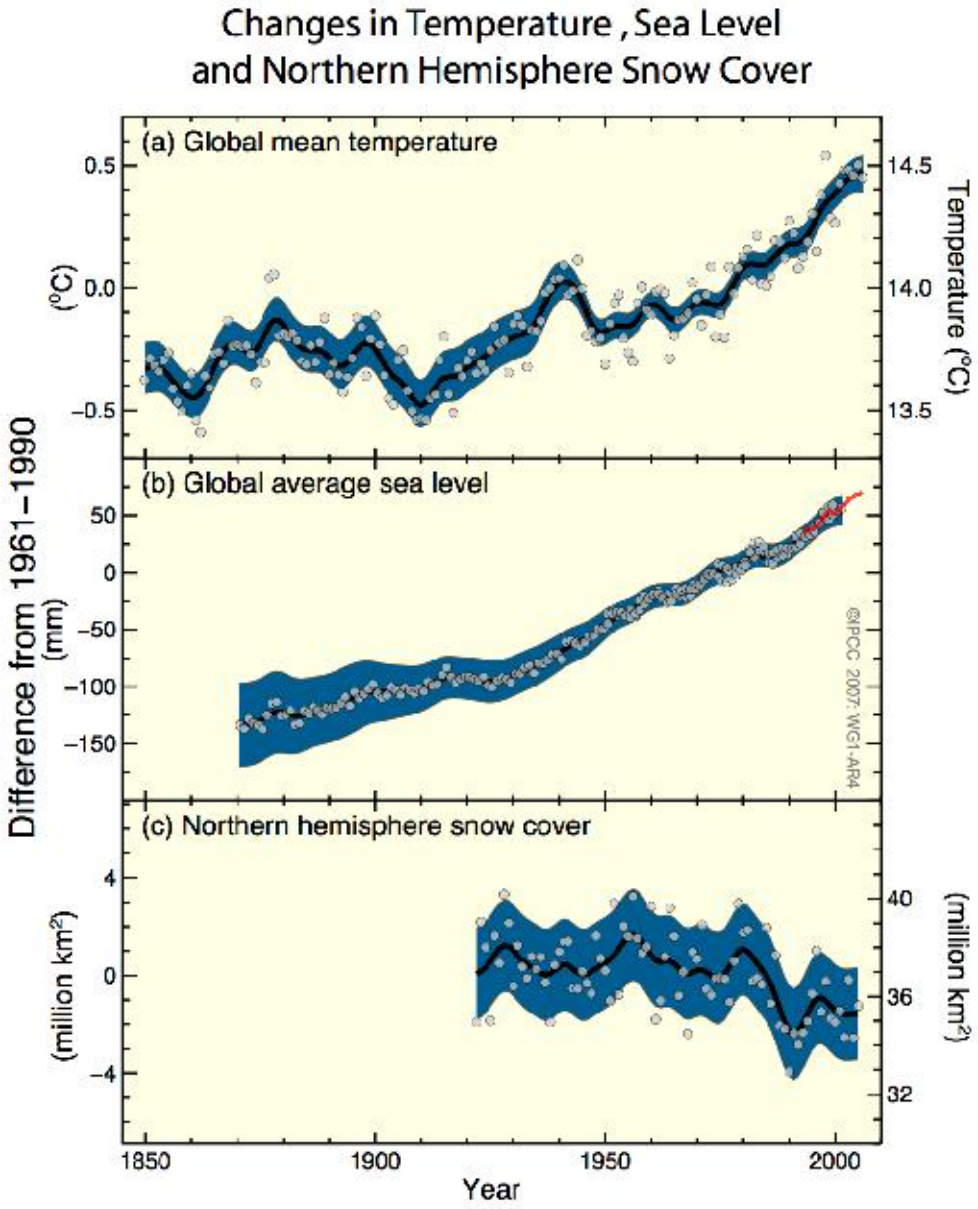


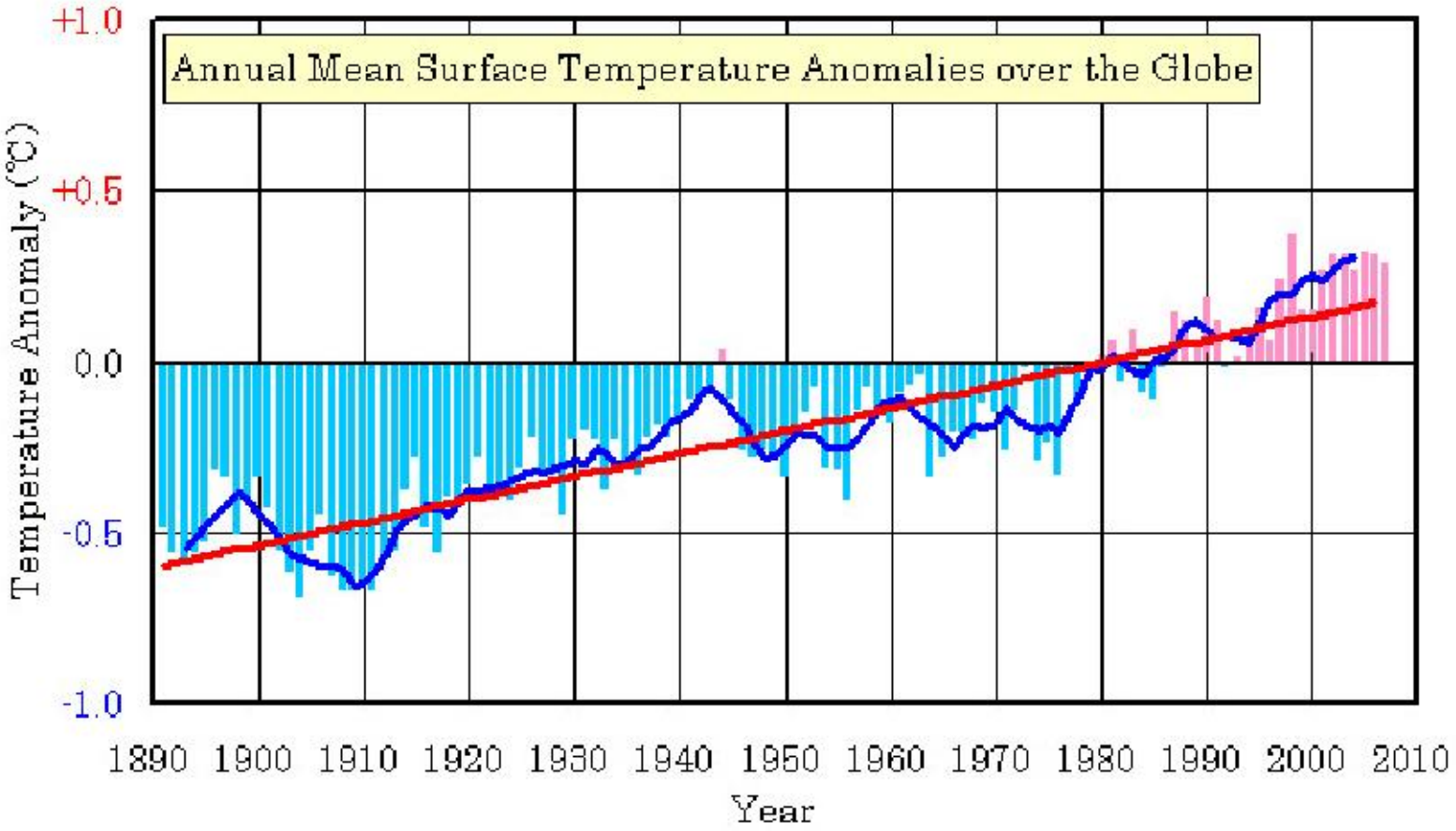
World average temperature

Value of trend 0.74 in the 100 years (1906–2005)

World average see level

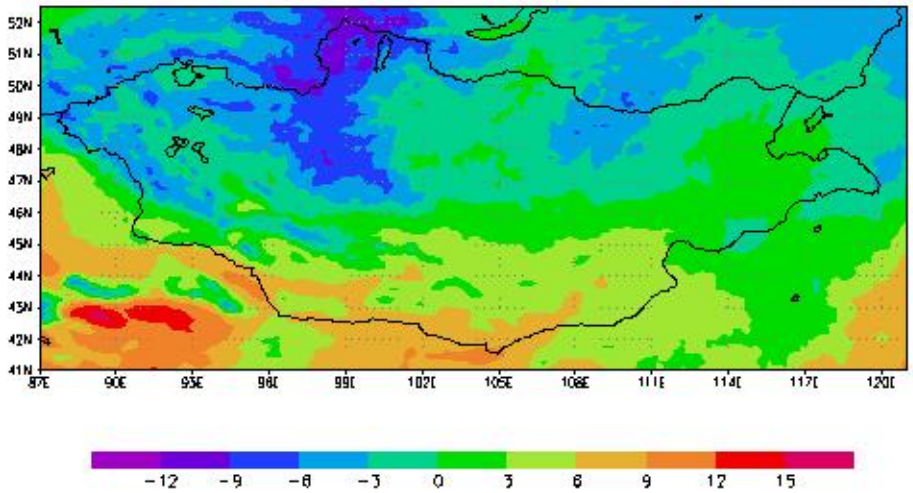
Snow cover of the northern hemisphere

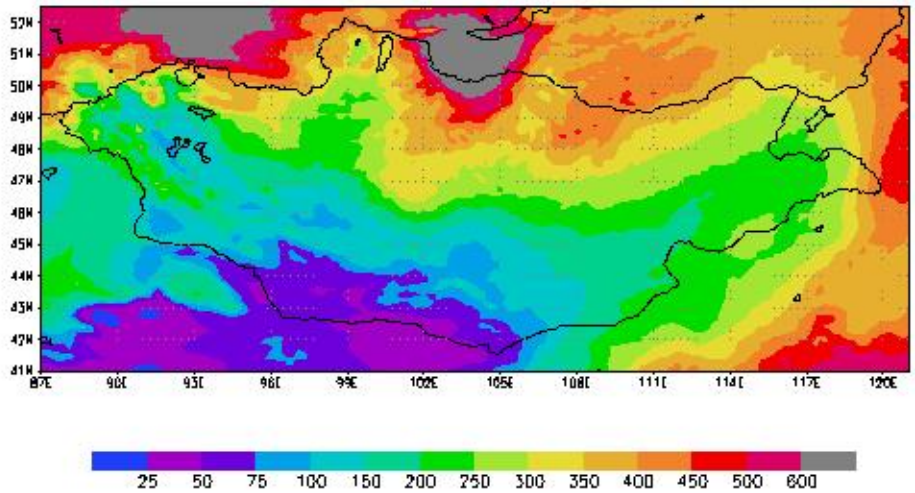



Annual Mean Surface Temperature Anomalies over the Globe
Temperature Anomaly (°C)
+1.0
+0.5
0.0
-0.5
-1.0
1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010
Year

Mongolian cliate change

Source data from: Mark New, Mike Hulme and Phil Jones





Temperature

Average annual temperature -15 ^{0}... -34^{0}Ñ

Average temperature in most hot month +15^{0}Ñ...+25^{0}Ñ

Precipitation

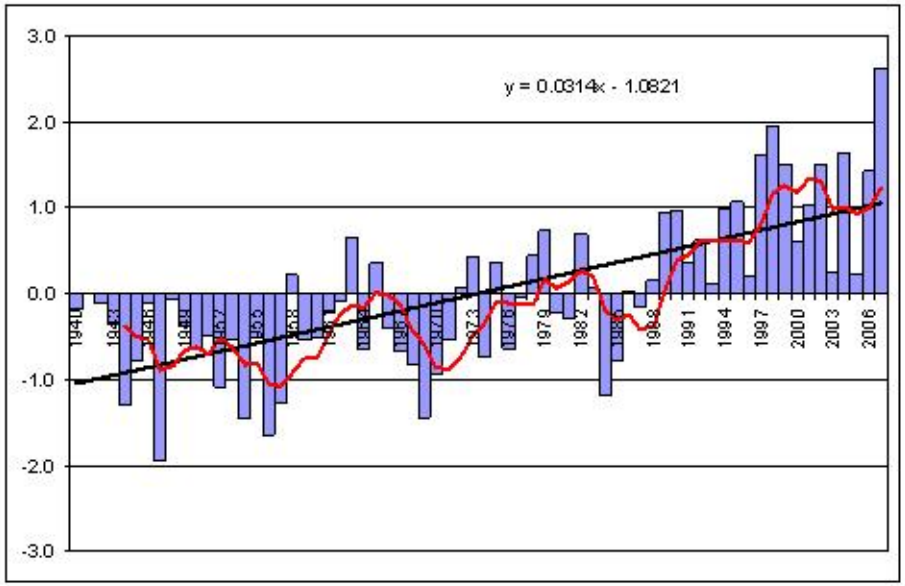
Khangai, Khentii and Khuvsgul mountain 300-400 mm

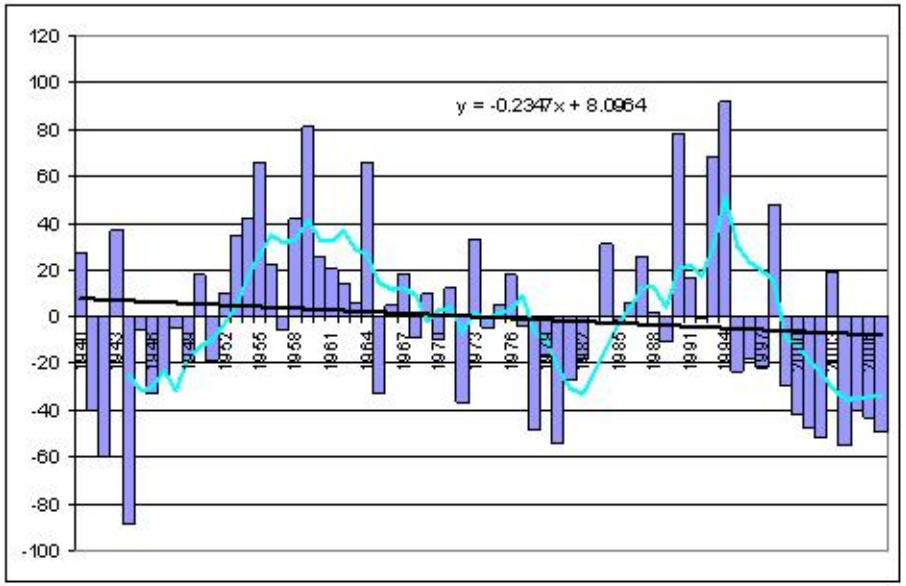
Mongol Altai and forest and Grass land region 250-300 mm

Steppe region 150-250 mm

Gobi desert region 50-150 mm

Mongolian climate change





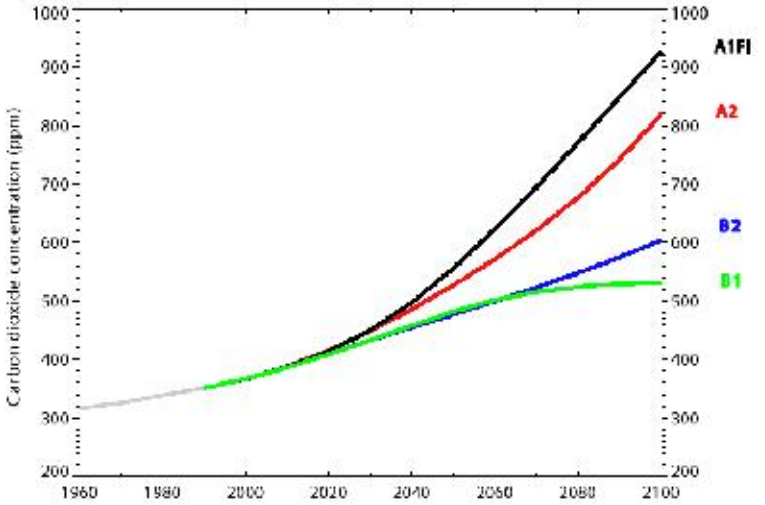
Temperature

2007 had a most hot year since 1940 in last 68 years. Mongolian average temperature in a year increased by 1.90 ^{0}C according to the 41 station in Mongolian territory.

Mongolian climate change and its future trend

3. Future scenario of Mongolian climate change

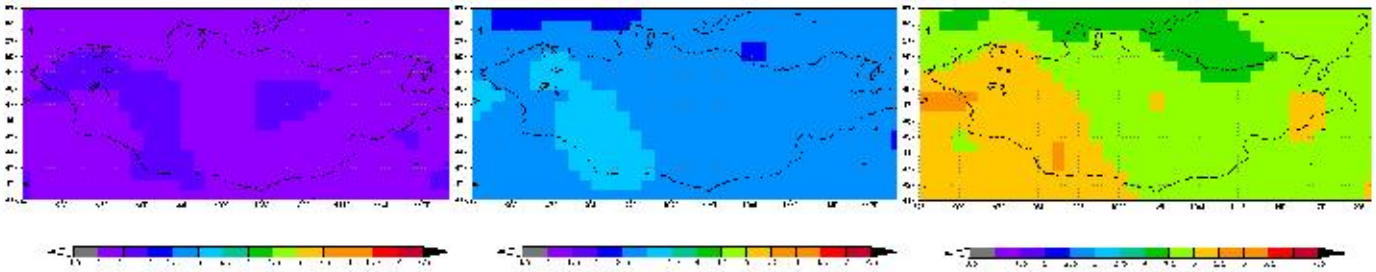
- **Large emission** **A1FI**
- **Medium large** **A2**
- **Medium small** **B2**
- **Small emission** **B1**



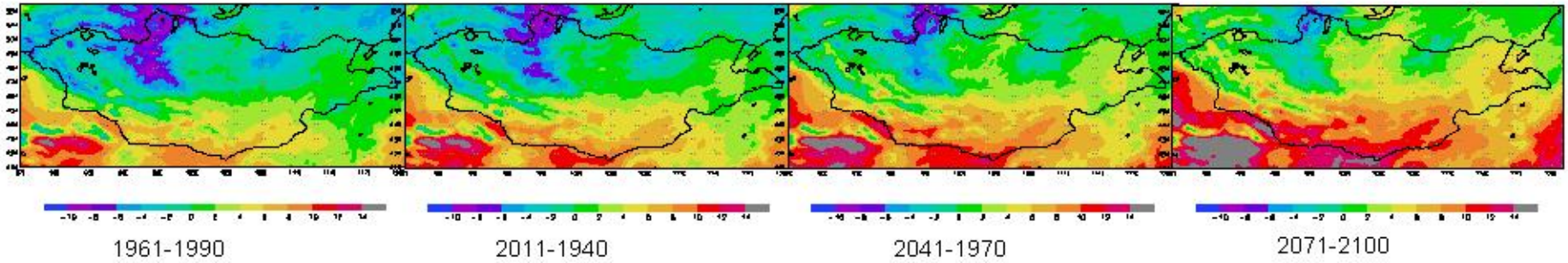
Variation	Description
A1	Economy increase in rapid tempo, the population increase reach its peak point, There will be social, cultural, and economic convergence of region, market economy mechanism will dominate.
A2	Conservation of region development., the population increase will go without interruption, there will be big difference in the economic development of the region.
B1	The clean and effective technology will introduce the materialistic expenditure will lessen, population increase which will continue in the mid of the recent century in social and natural sustainable development
B2	the issue of the sustainable development will settle in the local level., the population increase will be less than A2 alternative, a rapid technological change will be less than B1 and A1

What will be the weather of the Mongolia in the future?

The change of the average temperature of the year ºÑ



The average temperature of the year ºÑ



1961-1990 2011-1940 2041-1970 2071-2100

The intensive increase of the temperature in western and central region of our country.

Mongolian weather change is affecting the forest fire. Extreme fire seasons (from April to June) are caused by droughts. The average fire season has two peaks periods (from March to June) accounting for 80% of all fires and September to October, accounting from to 8% of all fires. In due to heavy rains, fires occurs rarely. But in the last years there occurred some forest fires in Summer.

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Thank you for your attention

WELCOME TO MONGOLIA