



OVERVIEW OF CLIMATE CHANGE ISSUES IN MONGOLIA

1. Policy background:

The Government of Mongolia signed the UNFCCC on **June 12, 1992** at the Rio Conference and the Great Khural (Parliament) of Mongolia ratified it **on September 30, 1993**. The Government of Mongolia ratified the Kyoto Protocol on **15 December 1999**.

2. Climate change studies

Several climate change studies have been conducted in Mongolia.

- The first climate change study was carried out under the US Country Studies Program (USCSP): the first GHG inventory for 1990 was prepared and preliminary GHG mitigation analysis was conducted.
- In 1999, Mongolia developed its National Action Programme on Climate Change (NAPCC) with assistance from the Government of the Netherlands.
- The latest studies of climate change impact on natural resources (environment), rangeland and animal husbandry are carried out by "Potential Impacts of Climate change and Vulnerability and Adaptation Assessment for Grassland Ecosystem and Livestock Sector in Mongolia" project (supported by GEF, START, TWAS, UNEP), Mongolia-2002. (*Living with climate change: Mongolia, 2002*).

Some results of the above studies are as follows:

Long lasting cold winter, cool summer, small precipitation, high temperature fluctuation and relatively high number of sunny days a year are characteristics of Mongolian climate. Accordingly, there are not only sharply distinctive four seasons but also, the months in each season vary greatly with respect to climate. (*Climate change and its impacts in Mongolia, 2000*).

The annual average temperature of the coldest month – January is -30...-34°C in Altai, Khangai, Khuvsgul and Khentii mountains, -20...-25°C in the steppe zone and -15...-20°C in the Gobi desert. The absolute minimum temperature reached -55.3°C in winter of 1976-1977, according to the observation data of the last 60 years. Ulaanbaatar is the coldest capital in the world and the lowest air temperature - -49.0°C - was recorded in December 1954.

July is the warmest month. The average air temperature in July is lower than 15°C in Altai, Khangai, Khuvsgul and Khentii mountains, 15-20°C in the downstream of the Orkhon and Selenge rivers basin, 20-25°C in southern part of Eastern steppe and the Gobi desert. Absolute maximum temperature is 28.5 - 44.0°C depending on the region. +44°C was recorded in Khongor *soum* of Darkhan-Uul aimag on 24 July 1999. (*Greenhouse gases mitigation potentials in Mongolia, 2000*).

During the last 60 years, the annual mean air temperature has increased by 1.66°C. The winter temperature has increased by 3.61°C and spring-autumn temperature - by 1.4-1.5°C. Particularly, the temperature increases rapidly in March, May, September and November and summer warming comes mostly in June and July (*Living with climate change: Mongolia, 2002*).

Changes in temperature have also spatial character. The rise in winter temperature has been observed throughout the whole territory. The summer temperature trend was not observed in the Gobi desert region.

In general, the amount of precipitation in Mongolia is low. It is 300-350 mm in Khangai, Khentii and Khuvsgul mountain regions, 250-300 mm in the Mongolian Altai and the forest steppe, 150-250 mm in the steppe and 50-150mm in the Gobi desert regions. Precipitation distribution depends very much on relief and landscape and decreases from north to south and from east to west (*Living with climate change: Mongolia, 2002*). For instance, 250-300 mm precipitation falls in Mongolian Altai mountains at altitudes above 3000m, while this amount of precipitation falls at altitudes of 2000m of Khangai mountains, and at altitudes of 1500 m of Khuvsgul mountains and at 1000 m of Khentii mountains (National Atlas, 1990).

Annual precipitation increased by 3.6 mm/year in the last 30 years, summer precipitation by 5.5 mm/year and in winter by 1.3 mm/year (*Living with climate change: Mongolia, 2003*).

3. Recent climate change impacts on natural resources

As reported in the Synthesis Report “Living with climate change: Mongolia, 2002”, during the last years occurrence of natural disasters like extreme hot and cold weather, drought, flood and sand storms in Mongolia has increased. For example, *Zud* disaster in winter and drought in summer of 1999-2002, which affected 50-70% of Mongolia’s territory, caused devastating damage in animal husbandry and agriculture. *Zud* is one of the natural winter disaster derived by climatic factor that is observed in Mongolia.

Seasonal and annual distribution of water resources is changing due to climate change impacts. Melting of high mountain glaciers has increased Uvs and Khyargas lakes water level by 1-2 m during the last 40 years. In the meantime, water level in other lakes and runoff from rivers in some areas where there is not sufficient input from glaciers has also been decreasing. Ground water table is decreasing in arid regions, and degradation and desertification of the land due to shortage of water and precipitation have been intensifying.

For more information on climate change issues in Mongolia visit: <http://www.mongolclimate.mn>

References:

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- National Atlas of Mongolia, 1990, Ulaanbaatar.

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