CLIMATE CHANGE STUDIES IN MONGOLIA

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NATIONAL CIRCUMSTANCES

Mongolia is land-locked developing country located in the northern latitudes where is the highest global warming is occurring on our Earth.

Location: 41°35'N and 52°09’N and 87°44'E and 119°56'E.
Total area: 1,566,600 km²

Population: 2.5 ml
Annual Mean Temp: -7.8 ...8.4°C
Annual Precipitation: 200-220mm

220 mm The Mongolian economy is relatively diversified.
• Agriculture
• Industry and construction
• Tourism
• Mining
Climate Changes Studies in Mongolia

- The government of Mongolia signed the UNFCCC on June 12, 1992 and the Parliament of Mongolia ratified it on September 30, 1993.
- The first climate change study was carried out under the US Country Studies Program (USCSP).
- In 2000, Mongolia developed its National Action Programme 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 2002-2005.

Animal Husbandry

- The pastoral livestock sector directly engages half of the Mongolian population & provides food and fiber to the other half.
- Livestock and livestock-processed exports amount to about one-third of foreign exchange earnings.
- Mongolia’s development is highly dependent on pastoralist.
- The total number of Livestock: 37.4 ml.

- Mongolian native breeds of animals are characterized by en excellent adaptation to the harsh environmental conditions.
- Nevertheless, about 2.4% of the population dies each year because of severe weather conditions.
Temperature in Mongolia has increased by 1.9°C since 1940.

Permafrost is degrading intensively in mountainous areas of Mongolia.

Extreme hot and cold weather

The occurrence of natural disasters like extreme hot and cold weather, drought, dzud, flood and sand storms in Mongolia has increased.

Melting of high mountain glaciers has increased.

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.
Impacts of Climate Change

- A climatic factor that is associated with animal grazing in summer high temperature.
- Expected ewe weight changes estimated for climate change projections from HadCM3 model as an example of animal weight decline under future climate.
- The incidence of drought is expected to increase in the future. There is also a strong relationship between drought/dzud (severe winter) and animal deaths.
- Dzud represents a high risk of humans in the affected areas because of their reliance on livestock for livelihoods and food.

Land cover changes in Mongolia

Land cover map of Mongolia, 1992

Land cover map of Mongolia, 1997
Development of adaptation strategy

- Assess past and present climate change
- Identify more vulnerable areas and sectors

- Assess potential impacts
- Identify adaptation options

- Options
- Examine constraints
- Formulate
- Develop implementation strategies

Legal Framework

- Mongolia developed its National Action programme on Climate Change (NAPCC) in 2000.
- NAPCC includes adaptation measures in Agriculture Sector of Mongolia.
- NAPCC has three phases:
  
  Short term 2000 – 2005
  Medium term 2006 – 2015
  Long term Beyond 2015
Mongolia has been involved in climate change activities for about two decades.

After the Initial National Communication was submitted by the government in 2001, a National Action Programme on Climate change was developed.

Government strategy for implementation of adaptation measures in the agricultural and water resources sectors should focus on the following main aspects:

- Education and awareness campaigns targeting decision makers, the agricultural population and the general public;

- Technology and information transfer to farmers, herdsmen and local communities;
- Research and technology to ensure agricultural development that could successfully deal with various environmental problems in the 21st Century;

- Management measures by coordinating information on research, greenhouse gases inventory and monitoring;

- Development, implementation and evaluation of appropriate adaptation projects

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**The Way Ahead**

Mongolia’s ability to adapt to a changing climate should be strengthened.

**Planning Options**

- Reduce vulnerability of livestock and other sensitive sectors to the impacts of climate change through the suggested adaptation measures which require actions in a coordinated way and incorporation in longterm planning.
Planning Options

➢ Continue research, training, strengthening and building upon existing capacity might be the most important measure for strengthening the adaptive capacity.

➢ Assess and when needed, improve forecasting and warming systems for disaster preparedness such as for drought, zud, etc. to help meet potential threats.

Planning Options

➢ Refine existing impact and vulnerability analyses discussed herein to the greatest extent possible, reducing the uncertainties and fine-tuning the assumptions towards more meaningful policy recommendations. Translating these findings and recommendations into easily understandable and not-so-technical terms will be most useful.
Planning Options

- Continue to improve and refine the existing vulnerability and adaptation research in other areas such as energy, biodiversity and forestry, crops and the direct and indirect health effects of climate change.

- Implement greenhouse gas reduction projects through the recommended mitigation measures in energy, industry, transport, forestry and waste management sectors.

Planning Options

- Pursue national and international collaboration such as research, resources sharing and climate/weather forecasting at the North-East Asia sub-regional level, for Mongolia to take an active lead role due to current exigencies.
Thank you for your attention!

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