

Climate Change Impacts in Natural Resources and Livestock in Mongolia Climate

P. Batima · L. Natsagdorj · L. Bayarbaatar · B. Bolortsetseg · N. Natsagsuren · B. Erdenetsetseg

Institute of Meteorology and Hydrology, Hudaldaany gudamj-5, Ulaanbaatar-24, Mongolia

Abstract : This paper discusses some results of observed changes of meteorological elements as temperature, precipitation and some extreme indexes in Mongolia.

Mongolia is one of the largest landlocked countries in the world. The climate is characterized by a long lasting cold winter, dry and hot summer, low precipitation, high temperature fluctuation and relatively high number of sunny days per year. During last 60 years the annual mean air temperature has risen 1.66°C. Intensive warming of >2°C was observed at higher altitudes of high mountains when warming of <1°C was observed the Dornod steppe and the Gobi Desert. *Heat Wave Duration* have statistically significant risen trend with increased number of days by 8-18 at significance level of 95-99.9% depending on geography and *Cold Wave Duration* have shortened by 13.3 days significance level of 95-99%.

In general, by the amount of precipitation, Mongolia falls in semi-arid and arid region. It is 300-350 mm in the high mountain regions while it is only 50-150 mm in Gobi Desert regions. The changes of annual precipitation have very localized character i.e. decreasing at one site and increasing at a site nearby. Annual precipitation decreased by 30-90 mm in the northern-central region and increased by 2-60 mm in the western and eastern region. The magnitude of alteration changes in precipitation regardless increasing or decreasing is 5-25%. A trends, significant at the level of 90%, found where changes are more than 40 mm or more than 15% of annual mean value.

Moreover, the soil moisture resources was decreased in the last 40 years. Specially, moisture contents of the top soil have decreased 2 times (N. Natsagsuren, 2002). Months of June and July in Mongolia is the period of the year that moisture is not inhibiting vegetation growth. Unfortunately, its also found that soil moisture in this time tends to decrease. Increased temperature, decreased precipitation and soil moisture are most likely resulted in occurrences of more intense drought spells that have taken place during the recent years. Intimately, these changes have considerable impact on livestock in Mongolia.

Key Words : temperature, precipitation, heat and cold wave duration

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