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"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

Socio-economic and ecologic factors for mobility of herder households in Mongolian steppe

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Abstract

Mobile grazing has been identified as a superior environmental practice compared to sedentary grazing. This study examines the factors influencing herder mobility in Mongolia, considering the impact on rangeland degradation and environmental health.

In Mongolia, the number of livestock has increased significantly over the years, leading to overgrazing and environmental degradation. Studies have shown that approximately 70 percent of the grasslands in Mongolia have been degraded. The reduction in herder mobility since the 1990s, when Mongolia transitioned to a market economy and privatized livestock, has been influenced by social, economic and ecological factors such as increasing poverty, the increasing livestock density, declining terms of trade, lack of social services, and the loss of formal regulatory institutions. The research aims to address the the factors that affect to the herder household mobility in nomadic and pastoral livestock husbandry in Mongolia.

The semi-structured survey questionnaire was conducted at 11 coresites in four provinces of Mongolia between 2019–2022, excluding 2021, three years panel data of 253 herder households, that are selected stratified random selection method. We employed robust fixed effect econometric model for analysing the factors, and to validate the results we also tested ecometric models such as Pooled OLS, Pooled OLS robust, and RE robust models.

The findings reveal that certain social factors, such as the number of households grazing in the same area and drought, negatively affect herder mobility, while perceived vegetation cover after using seasonal pastureland positively influences mobility distance. Economic factors, including distance from the soum centre, moving in accordance with local government plans, availability of manpower, and the cost of mobility were also found to impact mobility decisions. Ecological factors include vegetation condition and water availability, grassland availability within administrative units, response to natural hazards such as drought and Dzud, household wealth.

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By understanding the complex interplay of social, economic, and ecological factors, strategies can be developed to encourage herders to move farther and more frequently with their livestock, thereby mitigating the adverse effects of overgrazing and promoting environmental conservation.

Keywords: Environmental degradation, factors for herder mobility, herder mobility, livestock grazing