

MORE STEP – Mobility at risk: Sustaining the Mongolian Steppe Ecosystem

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Editorial

The MORE STEP team welcomes you to our third newsletter! MORE STEP – Mobility at risk: Sustaining the Mongolian Steppe Ecosystem is a collaborative and interdisciplinary research project run by Mongolian and German partners and funded by the German Federal Ministry of Education and Research.

This edition of the newsletter is to briefly share key messages of a MORE STEP publication about a Cost-Benefit Analysis of herder mobility.

Enjoy your reading!
Your MORE STEP Team

Herder Mobility

Mobility and a nomadic lifestyle are important strategies for mitigating environmental degradation. As a working definition, **herder mobility** is defined as a management strategy of the herder household(s) to move in order to search for better pasture with water sources and/or to use the pastureland rotationally, which is to maintain their pastoral and nomadic livestock-based livelihood. However, herder mobility was reduced greatly since 1990s due to increase of livestock number and economic development, which hinders more degradation of pastureland. Thus, the following question arises from this trend:

“Is mobility economically beneficial for herder households?”

In 2020, we collected herder mobility data derived from a quantitative questionnaire.



The study covered a total of 288 herder households from Tuv, Khentii, Sukhbaatar, and Dornod provinces. In order to conduct a Cost-Benefit Analysis of herder mobility,

we weighed 942 goat, sheep and cattle and milked 352 goat and cattle from 69 households in 2020.

Costs of Herder Mobility

The annual cost of mobility among 288 herder households was equivalent to \$134.6 or \$0.28 per sheep unit. Labor cost accounts for 63.6%, followed by fuel costs (30.8%), and costs of truck rent (5.5%). This result indicates that mobility is labor-intensive as it accounts for the majority of the cost.

Benefits of Herder Mobility

We considered three types of benefit for herder mobility in our estimation, including 1) an increase of livestock weight, 2) an increase of milk output, and 3) a reduction of cost of hay. For the analysis, we used the frequency metric (how many times the herder household moved in a year) and the distance metric (how far the household moved in a year). Depending on the mobility metrics, the total benefit of mobility varied considerably.

The frequency-based estimation showed that a household on average received an annual total benefit equivalent to \$1.9 per sheep unit (SHU), of which 76.7% is the benefit of increased livestock weight, 0.3% is increased milk output, and the remaining 23.0% is the benefit of saved costs for harvesting or purchasing hay.

The distance-based estimation showed that the total benefit of mobility per sheep unit was \$1.4. This benefit can be explained with an increase in livestock weight, as the model could not show that the increase of milk output and the reduction of hay cost related to mobility distance.

Distance vs. Frequency

The benefit of herder mobility estimated by movement frequency per year shows an inverse U-shape pattern. The average total benefit per sheep unit was the highest (\$2.66) for households that moved 4 times a year, as it begins to decrease for either more mobile or less mobile households (Figure 1).

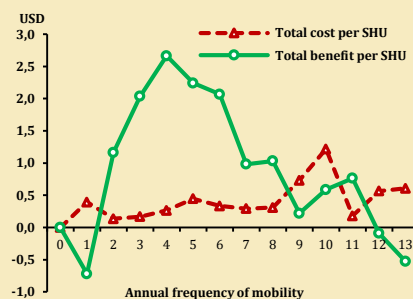


Figure 1. Total cost and benefit of herder mobility per sheep unit (SHU), by frequency metric

The distance-based estimation of total benefit showed an exponential pattern (Figure 2). In other words, the study suggests that the farther household moves, the more they can benefit.

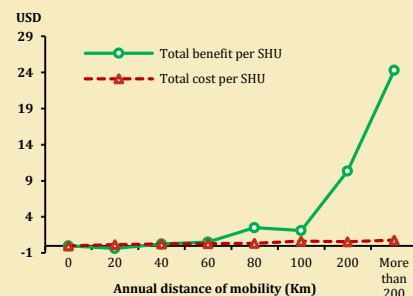


Figure 2. Total cost and benefit of herder mobility per sheep unit (SHU), by distance

Take away message

Although mobility is beneficial, moving too many times can be inefficient. Based on the result, we can say that it is economically more beneficial for herders to move closer to four times a year. The result also suggests that maintaining longer distance movement is important for herders.

Reference

Gonchigsumlaa, G., & Damdindorj, S. (2021). Private Cost-Benefit Analysis of herder household mobility in Mongolia. *Mongolian Journal of Agricultural Sciences*, 34(3), 65–79. <https://doi.org/10.5564/mjas.v34i3.1921>