

# Swiss Green Gold Project restores 5 million hectares of degraded rangelands in 8 years



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Mongolia's rangelands extend over 71% of the country's territory. According to the State Land Management Database, out of a total of 114.8 million hectares of arable land, 110.4 million hectares are used for grazing, making livestock production the most important form of land use. At the same time, natural rangelands are a major habitat for many rare and valuable plant species and wild animals. There are 3,000 natural species of plants in Mongolia, of which over 1,000 grow on rangelands. Rangelands also offer a wide range of ecosystem services, such as nutrient cycling, water purification or flood prevention.

As these ecosystems are threatened by over-grazing and changing climatic conditions, sustainable management of rangelands is crucial for Mongolia from both economic and ecological perspectives. The Green Gold Animal Health Project, financed by the Swiss Agency of Development and Cooperation in Mongolia, has contributed to paving the way towards sustainable rangeland management in the context of nomadic herding.

## The Green Gold Animal Health Project

Through the Green Gold Animal Health Project, the national rangeland health assessment system has improved the accuracy in determining rangeland degradation and regeneration capacity. The results are periodically published in the National Rangeland Health Assessment Reports. The one released in 2018 stated that 57% of rangelands are degraded (about 68 million hectares). However, 90% of degraded rangelands could completely recover or significantly improve within 10 years provided that livestock grazing density is managed properly.



Nomadic herders during the summer training in Tariat county, Arhangai province (Photo credit: SDC Mongolia)

The Green Gold Project has also carried out research trials using a range of modern technologies to determine the ability of degraded rangelands to recover. Rehabilitation turned out to be both difficult and costly. These experiments also revealed that the best land management approach is the return to traditional rotational grazing and resting practices to allow for natural regeneration. As such, the project assisted herders in assessing the level of degradation in their seasonal rangelands and in planning their activities accordingly.

## Assessing rangeland degradation

The first step was to identify the baseline for each of the different types of rangelands. In other words, the project examined what is the ecological capacity, or potential, of a healthy rangeland. Every type is different. For example, Gobi or desert rangelands differ from those in steppe and forest steppe areas. This gave us a reference, from which we could determine the extent to which each rangeland type had been altered or degraded by comparing it to its natural ecological capacity or potential.

From this, the different rangeland ecosystems were classified across the different natural zones in Mongolia into 22 ecological site groups (ESG). Each has its own state and transition models that illustrate potential shifts between different states of rangeland, potential drivers, and restoration pathways.

## Rangeland Use Agreement for sustainable management of rangelands

The next next step was to assist herders in defining the level of degradation of their seasonal rangelands, and to formulate a collective grazing plan to prevent further degradation and plan sufficient time for recovery.

In Mongolia, herders are organized around a Pasture User Group (PUG), which is a union of herder households that share customary access to two to four seasonal rangelands. As of now, there are about 1'600 PUGs, which include 92'000 herder households. They represent half of the national herder households and the Government is committed to scale up PUGs nationwide. PUG members define the boundaries of grazing areas and regulate their use based on a common plan. These plans are the basis for establishing the Rangeland Use Agreements between PUGs and the local government. The agreements allow to enforce and monitor PUG rotational grazing and rangeland-resting plans. The efficacy of the enforcement of Rangeland use agreements is monitored via 5'000 monitoring sites installed in each of the four seasonal rangelands of PUGs that are registered in the National Land Management Database at the Agency of Land Management, Geodesy and Cartography. The Rangeland use agreement is the first ever legal document to assure user rights of nomadic herder households to their traditional rangelands.



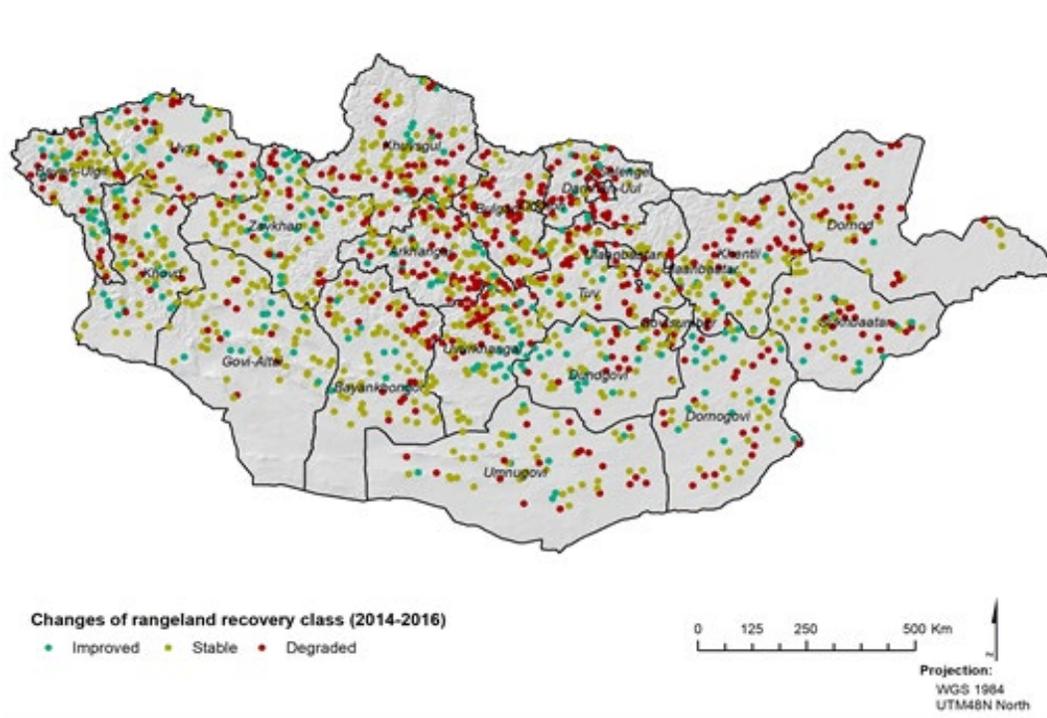
Nomadic herders spreading animal dung in the hay field in Erdenehairhan county, Zavhan province (Photo credit: SDC)

Rangeland Use Agreements have resulted in the recovery of 5 million hectares of degraded rangelands at various levels. More is yet to come, as an increasing number of herder households are accepting the conditions of these agreements and have improved their grazing practices, adjusting livestock stocking rate to a level that sustains or improves rangeland conditions. The agreements have also proven to be a useful instrument for resolving conflicts between herders and managing land conversion.

## Future Outlook

Ensuring healthy rangelands is crucial to sustaining the many ecosystem services they offer, such as nutrient cycling, oxygen production, soil formation and protection against erosion, as well as water purification, and flood protection. To this end, maintaining the natural regeneration ability and capacity of rangelands is critical. Over 10 years of cooperation experience has shown that Mongolia's rangelands can maintain their natural ability to recover by adjusting the number of livestock to the land's carrying capacity, thereby reducing the grazing intensity and land degradation.

Besides stocking, climate change has substantially contributed to the pressure these ecosystems face. Mongolia has seen a rise of the annual average air temperature, and most notably changes in precipitation patterns. Annual rainfall has decreased in taiga forests, steppe forests, steppes, and high elevation mountains, where precipitation is normally abundant, whereas rainfall has increased in the desert and desert steppe regions. Overall, Mongolia has seen its summer rain decrease across the country. Hence, with increasing environmental pressure on rangeland ecosystems, our recommendation to the herder households and all Mongolians is not to miss out on the opportunity to sustainably manage their lands.



Rangeland recovery monitoring sites in all the four seasonal rangelands of Pasture User Groups of herders