

To Fence or Not to Fence? Perceptions and Attitudes of Herders in Inner Mongolia

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ABSTRACT

The most important part of recent grassland tenure reforms in Inner Mongolia has been to divide the collective grassland to household level, then fence and enclose grassland. Fencing is a form of strongest signal of private property right and aims to exclude over-boundary grazing, attempting to solve “tragedy of the commons” from open access. Fencing gives herders a “user right”, though ownership still resides at a village level. But fencing significantly limit animal and herdsman mobility critical to the pastoral society and coupled natural and human systems. The “dilemma of enclosure” has become a key debated issue of grassland management. Positive and negative effects have been widely discussed, but few empirical studies have been conducted into this dilemma. Ecologists in general believe fencing would negatively affect the integrated ecosystem and seasonal rotation of herding. In contrast, economists think the fence would avoid the “tragedy of the commons” and create an incentive to protect herders own resources. Economists also understand that fencing would reduce the scale of economy and fencing itself is costly. After reviewing current fencing policies and the scale of the fencing activities in Inner Mongolia, we surveyed the effects of existing fencing policies and their impact on herdsman households to evaluate herders’ attitudes and perceptions towards fencing.

Keywords: fencing, grassland management, land tenure reform, Inner Mongolia

INTRODUCTION

In recent years, transformation to privatization of grassland use right has become a driving policy for economic reform in rural areas of developing countries. Since 1978, both political and economic reform has been progressively introduced across China, including vast grasslands of Inner Mongolia (IM). HPRS (Household Production Responsibility System) was the main policy change. The goal of this policy is to promote rural household production by the incentive of a semi-private property right reform mainly the user right. Livestock and buildings have been divided and allocated to individual first,

while individual households have not been granted user-rights to land until mid-1990s. Herdsmen now manage grasslands based on their own interests and demands. As a result, a “double contract HPRS” was implemented, meaning the contract for herds and grassland (Li et al., 2007).

Under such a property right system, fencing is the signal of private property right and aims to exclude cross-boundary grazing. By clearly claiming the use of the land, herd mobility is limited. The “dilemma of fences”, as some scholars would state, has become a key issue of grassland management, an elementary component in common-pool resource (CPR) problems. Especially in developing areas, the consequences of such a dilemma can have great effects, mainly on negative side. As a result, it is necessary to assess fence policy and examine the effects in these areas as more lands are fenced, with wire and concrete posts. At the same time, some supplementary policies were also introduced, like grassland monitoring stations within the local Animal Husbandry Bureaus, to regulate stocking rates.

Is dividing the grassland really bad for grassland management? The herdsmen know best. We surveyed herders to assess their perceptions and attitudes towards fencing. We believe that herders have the best knowledge of the policy, and their judgements would have significant policy implications for future reforms as well as for pastureland policy in other regions and countries.

LITERATURE REVIEW

There exists debate about whether dividing grassland would be beneficial or not. Williams (1996) argued that although the aim of de-collectivization was to yield maximized pastoral productivity, dividing grasslands into individual-owned parcels had the opposite effect, causing severe degradation, and suggested that other institutional changes like more stable land tenure and equal change of entering common resource for every community member would work better than simple privatization. Unanticipated outcomes, which conflict with the policy’s original purpose, to increase grassland productivity, were also observed by Taylor (2006). Li et al. (2007) argued that semi-private ownership (meaning group-held private rights) in grassland would bring more benefit than the current HPRS, under which it is privatized ownership. At the same time, grassland degradation was observed in areas where HPRS was applied. Similar negative ecological impacts of dividing and fencing grasslands for private use occurred where fences created boundaries leading to poor ecological performance in the face of dramatic climate change (Li and Huntsinger (2011)). The inflexible boundaries, pasture movement, which was considered effective in fighting disaster, would lead grassland ecology more damages. Ying and Ruimin (2011) argued that losing mobility would lower the response against urgent situations, which would increase vulnerability facing disasters or droughts. Yan and Wu (2005) demonstrated that privatized land tenure with uneven water resource distribution had lowered the water table and changed the landscape in a study of ecological damage in the Eastern Tibetan Plateau. Li (1993) argued that fencing was proven to have negative effects on biodiversity, causing grassland degradation on fixed grazing grasslands. Fencing might also bring negative impacts on alpine wildlife, increasing the death rate, so we need to examine our current livestock management practices for wildlife conservation in plateau areas (Thwaites et al., 1998; You et al., 2013). Borer et al. (2014) showed that fencing did not consistently affect diversity and biomass on grasslands based on evidence of most recent finding.

In the 1950s, high expenses of fence and loss of production were the major concerns in fencing implementation (Gardner, 1950). In recent studies, it was shown again that fencing was too expensive to be widely accepted: more than 70% of the respondents could not afford the fencing cost (Li et al., 2007). However, Banks et al. (2003) argued that community-based management can reduce the fencing cost, and showed that such management has significantly affected the herdsman livelihood security positively from

asset composition and food consumption with more than 10 years of “*Fencing grassland, forbidding grazing and moving user*” policy implementation. Also, such policy helps to restore grasslands (Xu et al., 2012). Fencing in desertified areas could increase the land stability, but will not increase herders’ incomes (Wu et al., 2009). Researchers also noted fencing would affect on herders’ traditional lifestyle (Zhizhong and Wen, 2008). In privatized grasslands, fencing would rupture the traditional and non-substitutable ecological and cultural functions brought by nomadism. As a result, we should give up fencing, to resume nomadism. Evidence is also shown through the comparison between fenced and non-fenced communities. According to Cao et al. (2011), “*Multi-household management pattern (MMP)*”, in which there is no fences would bring more economic benefit than “*Single-household management pattern (SMP)*” because it requires less production costs, while SMP was more likely to cause grassland degradation. Fencing also has impacts on herder demographics. Fencing would greatly reduce men’s participation in grazing, making more women and children involved, which could reduce schooling (Richard et al., 2006). What’s more, fencing would lower the equity of access pasture (Yangzong, 2006).

DATA COLLECTION

The above review is based on academic research. Is dividing the grassland really bad for grassland management? We conducted a survey in summer 2013 using face-to-face interviews. Questionnaires were written in Chinese and finished by respondents individually at their homes. Most of the questions are closed-ended and few are open-ended. For those who were unable to understand Chinese, interpreters were there to help for the translation. We surveyed 44 households in 3 prefectures (Leagues): Xilin Gol, Ulanqab, and Chifeng by random selection. The survey questionnaire includes respondents’ satisfaction about the fence.

RESULTS

The results are presented in Figure 1, Figure 2, and Figure 3. Based on our survey, nearly all of the respondents (91%) have wire fences to demarcate their private grassland. However, not all herders graze inside fenced areas. The fenced grazing is not the dominant method of grazing even though most people have fenced areas. While over 57% of respondents apply rotational or fenced grazing, about 17% still live on pasture or practice other forms of unrestricted grazing (these herders do not have targeted area for grazing), where the results are shown in Figure 1a. Interestingly, we notice that 26% of respondents are raising their livestock in barns. This finding suggests that loose grazing on grassland is no longer the major way of livestock husbandry. Herdsmen are getting more involved in barn feeding. According to Fontaneli et al. (2005), barn feeding would bring more livestock product yield, and then increase herders’ income if fodder price is low.

As seen in Figure 2a, only 16% of respondents consider seasonal grazing is the optimal option. What’s more, controlling grazing intensity (43%) is as important as fencing for better usage of grassland resources (41%). If we combine maintaining appropriate grazing intensity and fenced grazing with rotations it would be is the optimal way of effective grazing. Relating this finding to the question above, the expected optimal grazing method corresponds with their current grazing method, which shows herders are generally satisfied with their current fenced grazing. About two third of the respondents believe that combined fencing and prohibiting grazing is the best way to restore degraded grasslands (see Figure 2b). Such finding corresponds with the commonly accepted fencing effect about recovering degraded grassland. Few people would agree that replanting grass seed or prohibiting grazing is the best solution. To fence is best solution

in excluding people who are still pasturing or unrestricted grazing from entering degraded areas. We should also notice that 18% of the respondents claim that there is no way to restore degraded grasslands.

Unlike other findings about the major concern in grazing, we found that more than half of the respondents consider water quality (57%), which is measured by the availability of clean water for herds, is the primary issue in grazing, while overgrazing only accounts for 23% (Figure 3). Traditionally, people would consider seasonal and rotation grazing as the main tool to control overgrazing. But in recent years, with more and more fixed property rights in both residence and grazing, fencing is becoming more widely accepted. Since overgrazing is not the primary issue, people would have less interest in building fences than pursuing steady and reliable water supply for herds. Such finding corresponds with Thwaites et al. (1998) who claimed that one of the major threats brought by fencing is lowering water supply. If we separate grassland into fixed parcels, it would increase the distance of collecting water and thus increase the watering cost. Five percent of the respondents were concerned about under grazing, which is rarely seen in other studies about IM region.

Seen from Figure 1b, more than 54% of all respondents have not changed their grazing method during the past 10 years. For those who had changed, there is a tendency of unregulated grazing to regulated or restricted grazing. However, the survey does not provide us information about whether such changes were voluntary or forced by government.

CONCLUSION AND DISCUSSION

The survey did find that most people had fences, and the herders in general are in favorable to supporting the pastureland reforms which divide the communal pasture into household and using fencing, regarding that fencing is the only alternative under current system. It is considered useful to divide and fence their land to recover degraded areas. The results significantly depart from most literature that sees negative sides of dividing and fencing the grassland. One reason is that the herdsmen are adaptive such as combing loose grading and barn raising with forage and other feed. It seems that water would be another major problem from the dividing pasture resource, and alternative solutions should be investigated. The question is why is overgrazing still occurring on the private and fenced grassland owned and used by each household. The potential reason could be from time preference from poverty or poorer precipitation as expected. All these questions are worth to investigate for better policies in the future.

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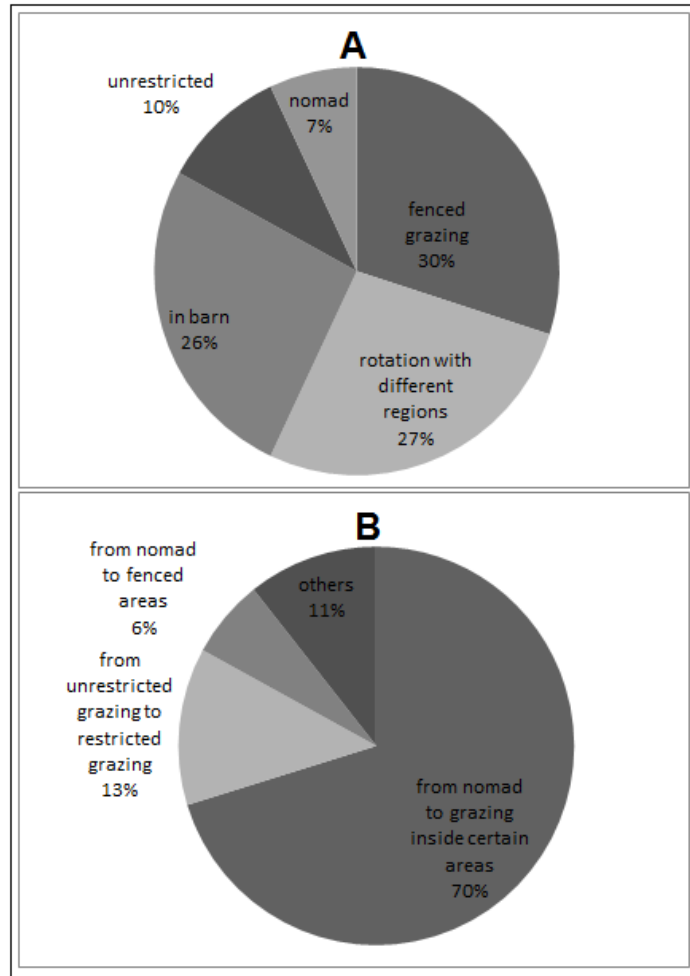


Figure 1 The structure of a) current grazing methods, and b) grazing method change during recent 10 years. Note: **Unrestricted grazing**: herders would graze wherever they want, although private boundary was clearly defined; **Restricted grazing**: herders would only graze inside their own properties; **Nomad grazing**: herders would graze whenever their herds were

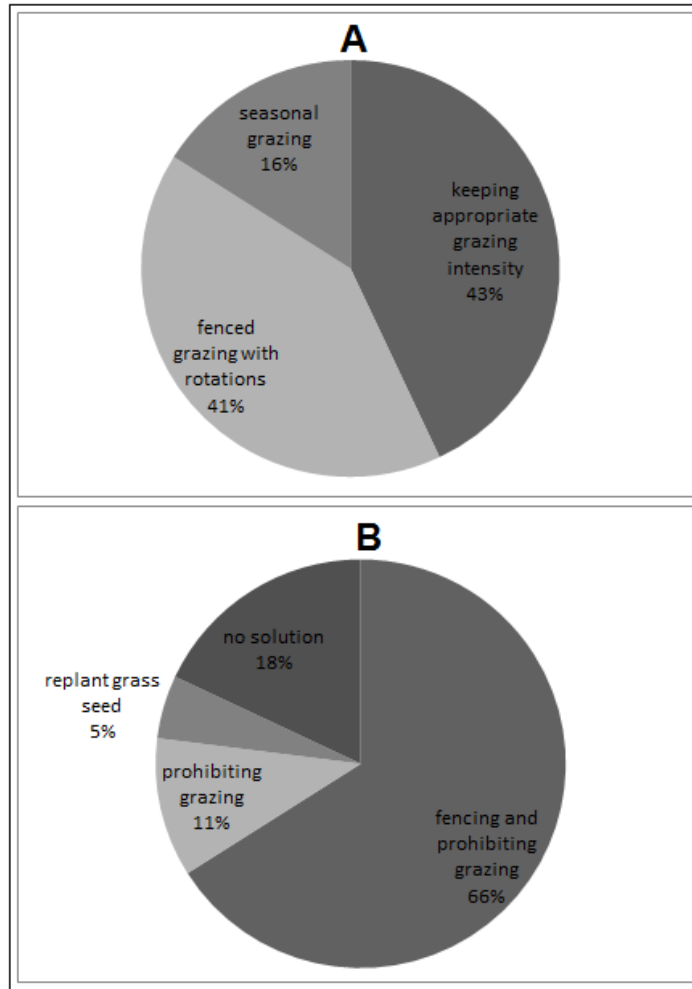


Figure 2. The comparison between a) best way of effective grazing, and b) best way to recover degraded grasslands.

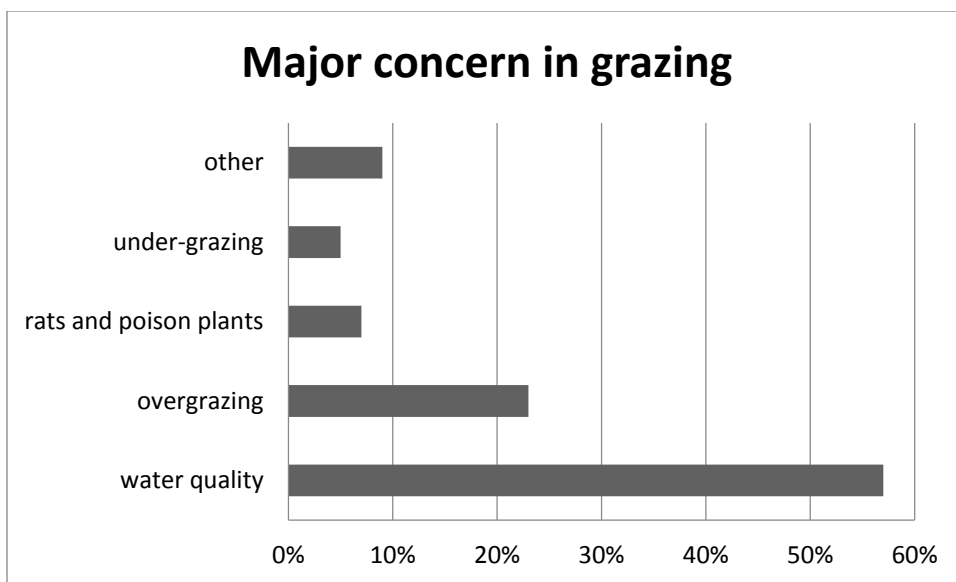


Figure 3. Major concerns in grazing on grasslands.