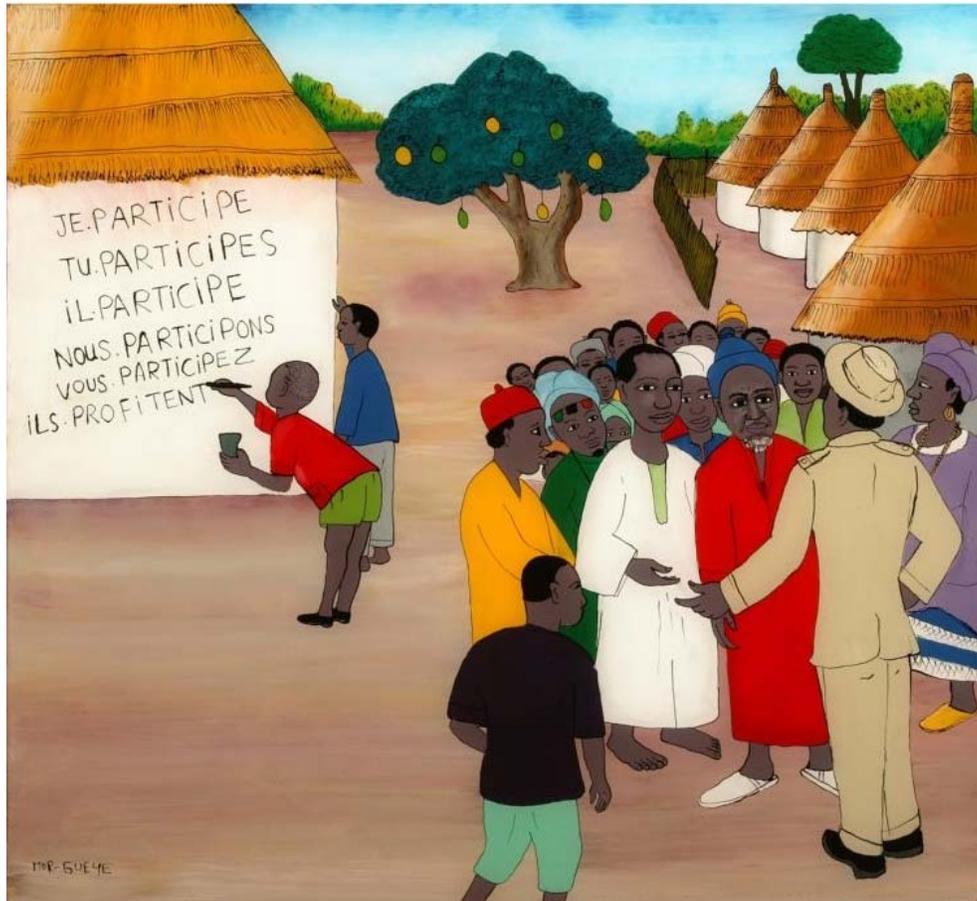


REPRESENTATION, EQUITY & ENVIRONMENT

Working Paper Series



Working Paper 29

Undermining Grassland Management Through Centralized Environmental Policies in Inner Mongolia

by

Wang Xiaoyi

August 2007



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Mor Gueye is an internationally renowned Senegalese artist. At over 80 years of age, Mor Gueye is considered the 'dean' of Senegal's reverse glass painters. This technique, where he paints on one side of a glass pane to be viewed from the other, is popular in urban Senegal. The reverse glass paintings on the cover were photographed by Franklin Pierre Khoury, the art photographer of the Museum of African Art at the Smithsonian Institute in Washington, DC.

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WORKING PAPER 29

**Undermining grassland management through centralized environmental
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Series editor:
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ABSTRACT

China's government is trying to protect grasslands from desertification. The government first 'contracted out' pasture land to individual herding households because it believes private ownership provides incentives for households to protect their pasture holdings. Pasture contracting out, however, did not solve the problem. Faced with continuing serious desertification the government responded with new environment policies and more-direct intervention—with additional funding to strengthen centralized government' policy implementation and enforcement capacity. These new policies have also failed to stop grassland degradation. This paper, based on a case study in an agro-herding area in Inner Mongolia, China, shows how and why the pasture contracting system and subsequent centralized environmental protection policies failed to enhance conservation. The policy of pasture contracting out damaged the existing local administrative practices of common grassland management, while grassland protection policies undermined local management capacity.

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INTRODUCTION

Grassland covers forty-one percent of total land area of China, most of which is in the arid or semi-arid areas of North China. The Inner Mongolia Autonomous Region (IMAR) has the largest grassland area in North China, accounting for over one fifth of total grassland in the country (Zhang, 2004; IMAR Statistic Bureau, 2004).

Grassland degradation has been a serious problem in the past decades. According to one study, approximately ninety percent of grassland in the country has been degraded to various degrees (Shen, 2005). In The Inner Mongolia Autonomous Region, forty-four percent of grassland has been seriously degraded and almost thirty-seven percent is undergoing desertification. The output of grasslands decreased by roughly fifty to sixty percent over the last twenty years (Zhang, 2004).

The result is not only a decrease in forage-grass output, but grassland degradation is also credited with producing sand storms. Research conducted by the Chinese Academy of Science shows that sixty percent of sand and dust in sand storm came from grassland with twenty percent coming from agro-herding areas (Da, 2004). Grasslands have attracted central government attention because sandstorms affect large metropolitan areas. This is especially salient given the upcoming 2008 Olympic Games will take place in Beijing.

There is considerable debate in China over the causes of grassland degradation and desertification. The popular discourse blames overgrazing and traditional herding. The conventional wisdom is that population increase coupled with a common grasslands holdings and backward livestock feeding practices caused the overgrazing and grassland degradation. The government tried to tackle the problem with the policies of grassland 'contracting out'. Grassland 'contracting-out' is a system of semi-privatization under which the contract recipients receive user right for thirty years over an area of grassland. Contracting out was accompanied by the introduction of new techniques, such as the breeding of new animal species, stall-feeding, grassland fencing and forage planting (Song et al., 2003). The government believed that the introduction of new techniques and management styles would promote economic development and grassland conservation (Shen, 2004; Song et al., 2003).

Some scholars, particularly in the Mongolian ethnic community, believed that the new approach was the cause of grassland degradation and desertification, rather than the solution. They pointed out that climate in the Mongol Plateau was erratic. Rainfall was limited and irregular. Grasslands were subject to substantial annual climate change. For these scholars, existing nomadic practices were the best means for managing grassland conservation precisely because nomadic lifestyle practices evolved as a response to erratic climate (Da, 2003). Sedentary practices, by contrast, caused grassland degradation because more and more animals grazed in the same place despite climate variability. According to this line of analysis, contracting out and grassland fencing were not the best mechanisms for reversing degradation (Liu, 2004).

Nevertheless, the Chinese government chose pasture contracting as the main means for protecting grassland against a ‘tragedy of the commons’ (Hardin, 1968). Like Hardin, Chinese decision-makers believe that using grassland as a commons causes overgrazing. The success in the contracting out of cropland in China encouraged the government to implement similar policies in rangelands. But grassland contracting was not a success. In the agro-herding areas, but not in the herding areas, most pasture lands continued to be used as commons despite having been allocated to individual households. As sandstorms attracted more government attention, government officials sought to address grassland problems by direct intervention¹. In particular, the government introduced numerous ‘environmental’ policies, such as animal quotas and a grazing ban. To avoid illegal grazing, state administrative agencies, such as the Forestry Bureau and the Eco-conservation Station, hired more people to monitor forests and grassland areas and imposed fines on local residents who grazed their sheep when or where grazing is restricted. Violations were common despite progressively stricter regulations on grazing. Local residents complained about negative results of these simplistic policies.

In contrast to standard neo-classic economists, Ostrom (1990) did not believe that government interventions or privatization could solve the ostensible ‘tragedy of commons’. She viewed the pasture as a common pool resource needing common management (Ostrom, 1990). Consistent with Ostrom’s views, Ho’s (2000) research in northwest of China found collective management of commonly held grasslands to be successful.

Scott (1998) tried to explain why state intervention brought development failure. He argued that to implement state policies or programs, the state applied simplistic and standard measures, regardless of the diversity in society. Backed by the authority of state, these simplistic and standard measures would mismatch the needs of most people affected, hurting society and bringing rejection of the policies and ultimately their failure. To avoid the failure in natural resource management, Ribot (2004) argues that decentralization may be a positive solution—helping to tailor policy responses to diverse local needs. Decentralization could create participation of local residents and democracy, improving management efficiency. Decentralization could contribute to natural resource sustainability. Ribot also argues that privatization, often carried out in the name of decentralization, is not decentralization.

Why has government argued for centralization of natural resource management? What is the effect of centralization on natural resource management? This paper tries to answer these questions through a case study of an agro-herding village situated on the edge of the Hunshandake (Otindag) Sandland, which is the desert nearest to the city of Beijing, the capital of China. This case shows that the centralized environmental management policies did not work as well as policy-makers expected. As the state intervened directly in grassland management and forest protection, traditional norms of local community grassland management were broken. Rather than collectively managing the resources, individual households sought to exploit pastures to increase their cash income. The state did not assign the community any role in eco-conservation. With the central government

¹ In August 2001, the Law of the People’s Republic of China on Prevention and Control of Desertification was promulgated by the president.

assuming a key role in the eco-environment program, the management, policy formulation, and resource allocation became the province of central ministries, such as the forestry bureau, which became more powerful than ever. As a result, whatever limited power balance had existed between township or county local governments and central ministries, suffered a major blow. Due to fines by monitoring officials, livestock feeding costs increased and local herders compensated their losses by exploiting the pasture resource even further.

Grassland privatization promoted by central government severely undermined community traditions. Although contracted out to households, rangeland continued to be used as commons. However, local regulations on grassland management ceased to be in effect. Grassland privatization did not encourage the local residents to protect grassland as their own property, yet diminished established collective local management practices. Direct intervention in grassland management by line-ministries damaged local community capacity to protect grassland. The top-down approach in decision making and resource provision reduced incentives for the local people to conserve grasslands.

The top-down approach to policy implementation undermined grassland management. China should therefore reconsider existing mechanisms and practices related to pasture conservation. In particular, the government should pay closer attention to local collective action and strengthen the local communities' ability for effective grassland management. The government should also reconsider its policies of privatization and state-led direct intervention related to grassland management.

The paper consists of three sections. The first provides background information on the village and macro-level grassland management policy. The second section explores why the contracting out of grassland and direct state intervention failed to protect grassland. The final section provides a discussion, conclusions, and policy recommendations.

BACKGROUND

The village

The administrative village (AV)² where this research was conducted is located in the eastern part of the Inner Mongolia Autonomous Region, between the pure herding and pure agricultural areas, on the edge of the Hunshandake (Otindag) Sandland. The desert is only 180 km away from Beijing.

The AV is comprised of nineteen natural villages (NV). All of the NVs are in turn grouped into three categories. The first is located in the Hunshandake (Otindag) Sandland with large sandy grasslands, and is surrounded by sand dunes. In such NVs, villagers have traditionally relied heavily on livestock for cash income. The second category includes NVs outside the desert area. In such villages, pastures are very small. Most villagers rely

² Normally 'village' refers to administrative village (AV), in which the elected village committee had been established. According to grassland contracting out, the administrative village owns the property of land and grassland. In each AV, there are some natural villages (NV, also called villager groups). Each NV has its customary boundary, and its own land or grassland.

on agriculture and off-farm jobs to generate cash income. The third area, between the first two, is a typical mix of agriculture and herding, with villagers producing grain on farm land and herding sheep in pastures.

Most people in the study AV belong to the Han ethnic group who migrated into the region over a century ago. The region was on the border between the Mongol herding people and Han farmers. The Han farmers were not allowed to migrate into grassland areas two centuries ago because grasslands belonged to the Mongol authorities. Some 200 years ago, farmers in central China were allowed by the central government to immigrate into peripheral areas for cultivation because Mongol patricians needed grain. The immigration also eased population pressures on central China.

Initially, population density in the case study AV was very low, with only a few households living in the area; however, it substantially increased in the late 20th century (for example, from four households in the 1930s to over forty households in 1980 in Zhongfahao, one of the nineteen NVs). The population has declined since the 1980s, with one third of all households moving out of Zhongfahao, most migrating to the cities.

The livestock population grew steadily from the 1980s to 1990s, declining in the 2000s. Han ethnic farmers did not raise livestock when they migrated into the area, although there were large grassland areas around the village and population density was very low at that time. Farmers who came from central China were not used to herding and could not protect their livestock from animal thieves, who flourished in the peripheral areas in wartime. These farmers started to raise livestock in the period of the Peoples' Commune (1958-1978). At that time, all livestock was owned by the collective, income from livestock was low, and farmers had little incentive to expand their herds. Following rural reforms in early 1980s, all livestock was allowed to be privatized by villagers, which encouraged them to increase their herds. The total population of sheep and goats for each NV rose to over 2000 animals in the late 1990s.

This led to rapid environmental change. Village old-timers recount that environment in the past was much better than it is today. They remember lush vegetation of the early 20th century, an abundance of wild animals which one could, as they describe, hunt simply with a stick, and the profusion of fish in ponds which one could catch with gourd ladle. It was also very easy to find fuel wood everywhere. After the heavy grazing in the late 1990s, bush stocks were reduced, grassland degraded, and the desert expanded.

My research was conducted in two NVs, one in the desert and another between the desert and a farming area. The first, desert-located NV, called Pifang, has around 2,000 hectares of sandy pasture, about 200 hectares for each household. Villagers here have traditionally relied on livestock for income. However, lack of adequate transportation created major barriers to market access. By contrast, more off-farm opportunities have been available in the second NV, Zhongfahao, because it is located on a major road. Pasture in the second NV was small, about 200 hectares (only 5 hectares for each household). It was also degrading, although approximately one third of all households had moved out, while some of those who remained in the village no longer raised sheep, and most of the goats had been sold. In the late 1990s, a large area of desert in the two NVs was fenced off by the

government, and grazing in the fenced area was forbidden. The vegetation did improve in the fenced areas, but areas without fence were seriously damaged by livestock overstocking.

Rural reform and local politics

In the late 20th century, as pressure on natural resources became heavier with population increase, conflicts over natural resources became intense. As a result, villagers wanted to have clear boundaries and, subsequently, explicit property rights. In the early 20th century, there were few households living in the area. Farmland was developed and owned by farmers. With few draught animals and limited labor force, there was no competition over natural resources. The mountainous area was large, but only a small portion was farmed. During the period of collectivization in the 1950s, all land became collectively owned and there were no serious natural resources conflicts.

Traditionally, NVs are conceived as a community. The members of NV live together and share common resources. They possess common identities and interests because cropland and grassland are collectively owned. During the period of the People's Commune (1958-1982), the basic production and income distribution unit was the production team, which built on the NV. The farmers, called Commune Members at the time, were organized into production teams in which they worked together and had similar incomes. One Commune consisted of several Brigades and one brigade consisted of several teams. Farmland and animals belonged to the production team. If the collective income of the production team was high, then every household could count on higher allocations. If the production team had less income, all farmers would be affected.

Consistent with the rural reform of the early 1980s, farmland and animals were contracted out to farmers within each production team. Farmers no longer had to work collectively. Farmland was divided into pieces that were cultivated by village households. The production teams were disbanded, although NVs still play an important role. Natural resources became the central factor affecting villagers' livelihood.

After the disbanding of the Peoples' Commune, a new local political system was built based on the AV. Under the AV system, a Villager Committee, that is, the agency in charge with the management of village affairs, was set up based on elections organized at the AV level. The committee consists of five members, who must be residents of the village. According to the Villager Committee Organic Law of 1998, all committee members should be popularly elected. Although in practice the local government³ at the county and

³ 'Local government' refers in China to county and township government. The villager committee in the AV is considered as a form of self-organization of villagers. The NV consists of only a few households.

Administrative level	Staff number for administration	Population in the area	Legal status	Mechanism of selection
County	Several hundreds	100,000 to 1,500,000	Government	Indirect election
Township	50 to hundreds	10,000 to 20,000	Local government	Indirect election
AV	3 to 7	Hundreds to thousands	Villagers self-organization	Direct election

township levels can influence the choice of AV candidates, the election is ostensibly aimed at reflecting villager preferences. As a form of villager self-governing organization, the villager committee is mandated to work for its village's interest. It is responsible for keeping order in the village, resolving conflicts, and making decisions related to village affairs. The committee also works as an intermediary between villagers and national government agencies. Central and local government are supposed to implement policies with the support of the villager committee, providing the latter with financial resources in turn. Until recently, villager committees' income derived from fees charged to residents, whereas now the government covers all village expenses, including committee member salaries. National policy makers believed that AV elections would become a vehicle for villager self-government and self-rule and that democratic decision making would encourage residents to make decisions that would be in their best interest.

In the 1990s, a new policy directive was issued calling for the merger of AVs to reduce the costs of village administration by cutting the number of AVs, and therefore of paid committee members. Pursuant to this policy change, two villages were merged to form the new administrative village in which this research was conducted. When the new AV was established, the bond between village heads and villagers became weaker, because the new AVs had much wider geographic and demographic scales and people identified less with them. Even under the old system, some villagers didn't know who was head of their AV. In the larger AVs, even fewer people were engaged with AV activities. The village was no longer a traditional community with familiar neighbors, but a local administrative entity with faceless and unknown residents. The merged AV at the center of this research counts around 600 households and over 2,500 residents. It covers a large area, with a distance between the farthest-located NVs of over twenty kilometers.

The villager committee of the AV plays dual roles. It functions as a community organization with a long history, membership, and specific interests, and also as a government-controlled administrative agency. For example, when government sought to control goat stockbreeding, committee members had to work with government officers to check farmers' flocks. In this case, the committee acted as a local subordinate of the government. At other times, however, the committee also worked on behalf of the villagers. For example, when the villagers in Pifang faced serious water shortages, the committee head applied for funding from the government to help villagers dig a deeper well. Although the committee is bound by government regulations, it occasionally pursues strategies against government policies, but in the villagers' best interest.⁴

The dual role of the AV committees produces internal conflicts, especially when there are conflicts between government policies and villagers interests. For example, when the

NV	1	Tens to hundreds	Part-time leader	Direct election, but sometimes appointed by AV Committee
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⁴ There are many examples of the AV's dual role. The government issued a strict regulation on tree cutting. Anyone who wished to cut trees had to apply for a special license issued by the local Forestry Bureau. But the AV head gave support to a villager to cut trees without a special license, because he was in urgent need of wood to construct a house when his old house collapsed.

environmental program to enclose large sandy pasture for vegetation rehabilitation was being implemented in the village, AV heads tried to help villagers avoid sanctions when they violated government regulations such as the grazing ban or herding quota.

The NV became weaker after the establishment of the AV villager committee. There is only a part time group leader in the NV. The NV leader's authority derives from three sources: the state; a role in the management of the commons; and local norms. The authority derived from the state was limited because of the distance from local government (township government). Local government relied on the AV for village affairs, not on NV leaders. Moreover, NV leaders' position in the management of common property was threatened by the contracting out of cropland and grassland to households and by direct state intervention. Common property was not recognized in NV law. Property in the NV belongs to individual households or the state, although most grassland had been used as the commons. Finally, local norms were not as effective as before because of state intervention and individualism in the NV. Enjoying less support from the above sources, the NV leader was not as powerful as before. The result was the failure of the NV to function collectively as a community.

Since rural reforms were implemented, the NV has hardly functioned as a community. Because of privatization the NV lacked authority and legal status. The AV committee was the ostensible representative of villagers, but it did not function well since it depended on support from government for finances and authority.

POLICY IMPLEMENTATION FAILURES

The pasture contract and its failure

Encouraged by the success of the farmland contract system, Inner Mongolia Autonomous Region authorities applied the same mechanism to pastures. In contrast to contracts in agriculture, the policy on pasture contracts was not only aimed at increasing villagers' income, but also at environmental conservation. The government believed that grassland degradation was the result of common use of grassland, and that property ownership could encourage pasture owners to protect and invest in their pastures.

In the early 1980s, when the People Commune was disbanded, all livestock was privatized to villagers. After livestock privatization, the population of animals increased rapidly because livestock provided major cash income for the villagers. There had been between 400 and 500 sheep and goats in the Peoples' Commune period in Zhongfahao. By contrast, in the mid-1990s it increased rapidly to approximately 2,500. The factors contributing to livestock increase were complex.

Policy makers believed that privatization of livestock gave villagers incentives to increase their herds. This incentive was thought to be the major factor behind the rise in animal ownership. Lacking other means to generate cash income, most villagers relied on livestock. Not only did cash income encourage the villagers to expand their herds, but customary common pasture practices also provided incentive to increase their stock. While animals were privatized to households, internalizing profits, grassland still remained

common pool property, externalizing costs. Households did not feel costs to the pasture of increasing their livestock. While private households were beneficiaries of livestock income, environmental costs were being shared by all members of the community. Viewing this situation, the government came to believe that overgrazing was the major factor behind grassland degradation and desertification—they saw a classic ‘tragedy of the commons.’ The government failed to see, however, that their own policy had created this ‘tragedy.’ They tried to solve the problem with pasture contracting—privatizing the pasturelands.

The government studiously ignored impacts of the market, because promoting market economy was the official discourse and policy at that time. The high price of cashmere on the international market, however, contributed to an increase in the number of goats. According to the villagers, there were no goats in the area prior to 1990. In the 1990s, as a result of an increase in cashmere price, more traders came to villages to purchase cashmere. Because of the comparatively high benefit potential from goats, villagers raised more goats and reduced the number of sheep.⁵ A fourth factor was the villagers’ demand for cash income. As the cost of living in the 1990s increased rapidly due to rising costs for education, health care, fertilizer, and rising taxes,⁶ the villagers had to increase their incomes. The only way to do that in this area was to expand livestock.

Compared to agriculture, herding is a cheap way of generating cash income. In winter, all sheep stay at home. They are fed with crop stalks or led to graze for short periods of time by individual household members. Grazing in summer was almost costless. The grazing period is from late spring to late autumn. During this time, some households (consisting of approximately four to seven members, depending on the number of sheep), would hire a shepherd to herd their animals. Each shepherd can herd between 300 and 400 animals, all coming from different households. Owners of a flock of sheep herded by the same shepherd would build a special pen for all the sheep. The animals would leave the village in the morning, and would stay in grassland areas for half a day, and then return to the village for drinking, since no water is available in these areas. After quenching their thirst, the sheep would return to pastures again for grazing. In the early evening, the sheep would return to the village to spend the night in their pens. The shepherd would be paid for taking full responsibility for herding the flock.

The village is located in the agricultural-herding area, with each villager possessing approximately half a hectare of farmland. Straw and bran could be used to feed cattle during the winter. Owners who did not have enough fodder for their animals in the winter could graze their animals for a few hours every day to save on fodder. Livestock feeding is

⁵ There are serious disagreements as to the impact of goats on desertification. Some argues that the goats were the major destroyers of the environment, because they destroy bushes, while others disagree (Liu, 2004). To protect the grassland, local government required special regulation for goats raising. Under threat of heavy fines, most herders sold their goats in 2003. In my own research, I found that goats were destroyers of sandy grassland because they destroyed the bushes, which was the main vegetation that protects sandy grassland from desertification. In normal grassland, the situation is different. Local governments failed to realize the differential impacts on various environmental conditions. Local government applied strict measures to stop goat breeding in the late 1990s.

⁶ Since the reform in rural education and health care, the cost for education and health care increased, and became a heavy burden for villagers. Taxation also increased in the 1990s.

not labor intensive, but the income is relatively good for villagers, who are not well off.

The rapid increase in the number of goats in the mid 1990s had profoundly negative impacts on the environment. Grassland vegetation became sparse, especially in sandy grassland areas. About half the area of Zhongfahao was in the Hunshandake (Otindag) Sandland, where all vegetation had been destroyed by goat grazing. According to the villagers, prior to the mid 1990s, the desert was covered with grass and bush, green in the summer and black in the winter and spring. After the expansion of the population of goats, grass and bush disappeared and the desert became white. A similar situation occurred in Pifang, the NV in the Hunshandake (Otindag) Sandland, where sandy grassland could not support the livestock anymore after the area turned into white desert. Grazing in the white sandy pasture became almost impossible.

The situation appears to be a typical ‘tragedy of the commons’ where pasture is held collectively and animals privately. Every villager naturally wishes to expand his livestock, which results in overgrazing. Because the cost of grazing is externalized, the problem cannot be solved so long as pasturelands remain common pool property. The Inner Mongolia Autonomous Region government tried to address this problem by grassland property reform.

The pasture contracting started out in the early 1980s as a component of rural reform in herding areas. It was, however, only implemented in a limited number of territories.⁷ Because of the seriousness of environmental problems, the Inner Mongolia Autonomous Region government emphasized pasture contracting out once again, issuing a new directive to this effect in 1996.⁸ The new policy ‘Dual Rights, One System’ transfers pasture ownership to the AV and gives user rights to individual households (dual rights) while the AV operates a contracting system for grassland areas (one system). But, the new policy was not well implemented. In 2002, the Inner Mongolia Autonomous Region refreshed this policy, issuing a new order calling for full implementation of the ‘Dual Rights, One System’ initiative and putting more pressure on the villagers to comply with the policy, even in agriculture areas.⁹ The policy had variable impacts in different areas. In the village of this case study, it was very easy to contract out the mowing of pasture to villager households, but grazing pasture remained in common use.

Every household requires mowing land on which to harvest forage for the winter. Zhongfahao lacked special pasture land for mowing,¹⁰ so villagers harvested forage grass in grassland areas around their farmland. During the agricultural growing season, shepherds would bring their sheep to pastures far from the farms. Free from grazing for several months, grass around farmland could be harvested as fodder for the winter. Prior to

⁷ Small pasture area, water supply and pasture using of powerful outsiders were the major obstacles for pasture contracting out.

⁸ ‘Regulation on further implementation and finalization of “Dual Right, One System” of grassland in IMAR’ issued by IMAR government in 1996.

⁹ ‘IMAR government announcement on implementation of the “Dual Right, One System” of grassland in agriculture area,’ issued in 2002.

¹⁰ In pure herding areas, herders started to build mowing pastures in the 1970s, but in agri-herding areas, villagers did not build them due to limited pasture and stalks available.

the 1990s, mowing pasture was the commons. Although farmland had already been contracted out to village households, villagers could harvest forage everywhere. All grass before harvest was part of the commons, and every villager had the right to cut grass anywhere. In the 1980s, a few years after farmland had been contracted out to village households, mowing pasture was also contracted out to the villagers. The areas of mowing pastures for each household were different, some small, and some large, but villagers were not interested in owning the mowing pasture when there were few animals requiring little quantities of forage grass to survive the winter.

As livestock increased, the villagers required increasing access to mowing pasture. Conflicts between households with unequal mowing pasture became rampant. In the late 1990s, in an effort to solve these conflicts, the government redistributed mowing pasturelands. Depending on the quality of mowing pasture, each household received a plot—some were around their own farmland, while others were not. The policy of redistribution resulted in most households having equal mowing pasture land areas. But, contracting out mowing pasture to households did not improve the situation. Over the last few years, mowing pasture has degraded, with limited grass growth making grass harvesting difficult.¹¹ Most villagers believed that the decrease in grass output was due to climate change. During personal interviews, they complained that the weather had become drier than before resulting in the sparseness of grass. Up until recently, most villagers did not pay attention to the mowing pasture. Most of them stopped harvesting forage grass from mowing pasture areas. With the exception of a handful of villagers who own large fenced pastures, most villagers ended up using more stalks in the winter to feed their animals.

The mowing pasture was small, only two or three *mu* (about 0.2 hectare) for each villager; the herding pasture was almost thirty times larger. To avoid the increase of livestock herding in common pasture areas, from the mid-1990s, the government sought to fully implement the policy of pasture contract. In line with this initiative, all pasture, including the herding pasture, was contracted out to households. Each household was assigned a piece of pasture for thirty years. As a guarantee of villagers' grassland user rights, a certificate to this effect was supposed to be issued to them. In reality, the certificates failed to reach the households—at least until the time this research was conducted.¹² This was a result of the complications involved in assigning grassland contracts to grassland areas.

In the village, nobody knew precisely the scale of grassland areas and locations of pasture although the local officials maintained that all grassland had been contracted out to villagers. In practice, all grazing pasture continued to be used as common pasture. What are the reasons behind the failure in practice to allocate grazing pasture to each household after

¹¹ Villagers did not invest in mowing pasture, although it was their own. The farmland was in the same situation. Farmers applied more chemical fertilizers than manure in their farmland, although they could cultivate the farmland for at least thirty years.

¹² In the AV committee office, all certificates were filled with the name of households, the location and area of herding pasture. Although the policy on pasture contracting had been implemented for more than five years, the certificates were still kept in the office, not delivered to villagers. All villagers did not know they had such certificates. The village head said that he stopped delivering the certificates because a new order came from higher levels of government.

it had been contracted out to each household on paper¹³? I observed that the peculiarities of the area of pasture, the water supply and the herding mode were the major obstacles to allocating grazing pasture to each household.

In the agro-herding area, grazing pasture lands covered small areas. In Zhongfahao, the NV where I conducted my research, it was only eighty *mu* (about five hectares) for each person. It is normal for a household to have 240 *mu* (15 hectares) grazing pastures. But this figure is only in the contract. After large areas in the NV were enclosed by local government,¹⁴ only 3,000 to 4,000 *mu* (200-260 hectares) of pasture in the village became available for grazing, with each household possessing only ten hectares of grazing pasture.¹⁵ The pasture villagers were allocated was too small for herding. According to the villagers, herding requires pastures that are large enough to allow sheep to graze. If the area is not large enough, the pasture must be used as common pool property, and not as private pasture.

Animals must drink water and yet in the NV, there is no river or well in grazing pasture, which means that animals must go back home to find water. That means there must be paths for the animals. If all grazing pasture would be parceled out and enclosed by each household, there would be no such paths. Also, in this particular area there was no tradition of grazing by individual households. Sheep would graze across households and the practice was for a number of households to hire one herdsman to graze their sheep, thereby saving on manpower. This tradition relied on common grazing pasture.

The purpose of the policy of pasture contracting out was to protect grassland by imposing clear ownership rights. There was an assumption that villagers would prefer to have private grassland and protect their pastures. In reality, the pasture contracting failed to encourage the households to protect the pasture they owned, while reducing the role of the village (NV as well as AV) in grassland management.

Since pasture had been contracted out to households on paper, the AV villager committee, as well as the NV leader did not take responsibility for grassland management. In Zhongfahao, a large area of pasture has been designated as a Program Area—a fenced-off area in which grazing is banned—by the state, and the forestry bureau has appointed a guard to protect it. Another large area has been sold to an individual owner, who is prohibiting trespassing by outsiders. Meanwhile, the common pasture, which had been

¹³ The licenses for grassland contracting were in the AV committee office. Each household was allocated a piece of grassland. But the pasture possessed by the household was only on paper.

¹⁴ From 2002, the Beijing-Tianjin sandstorm conservation project was implemented. Hunshandake sandy land was considered to be the source of sandstorms affecting Beijing and Tianjin. Many methods of control were applied in the sandy land, including grassland closure.

¹⁵ In Zhongfahao, there were three categories of pastures for grazing: the first one was in the desert, which was enclosed by the government program. It is forbidden to bring animals for grazing there. A few thousands *mu* of pasture were deducted from the total grassland area after the program was implemented. The second category is farmland and forestry, but most of forestry was protected as ecological conservation forestry, where grazing was also forbidden. Only the mountain slope, which was only 3,000 to 4,000 *mu*, was left for grazing. Even the mountain slope was smaller than before because of land erosion. Many ravines eroded by rainwater appeared on the mountain slope. It was believed that decreasing of vegetation in the slope caused the erosion.

nominally contracted out to individual households, remained open to free grazing.

The common pasturelands underwent rapid degradation. While desertification and land erosion became major threats to the survival of their livestock, the community could not play any role in the protection of their environment because of ostensible privatization. As it became clear that pasture contracting out failed to encourage conservation, the government tried to intervene to enforce environmental protection directly by issuing new regulations and oversight.

Policy failure in pasture conservation

In order to protect grassland, the government came up with a whole package of policies concerning the environment. The first group of policies was on grassland and forest management. Since pasture contracting out did not work in grassland conservation, the government issued more strict regulations. In the late 1990s, local governments started to eliminate goats because the idea that goats were the cause of desertification and sand storm became a very strong part of the discourse at that time. The local government decided to get rid of all goats from grassland by imposing high penalties on villagers who continued to raise goats. If the villagers insisted on keeping goats, they were to be kept in pens, and could not graze. Faced with a very high penalty, which could be up to ten percent of the price of one goat, most villagers chose to sell their goats at low prices. The villagers I interviewed confided that most goats were sold because of the strict sanctions. At the same time, the sheep that they acquired in place of goats were much more expensive due to rapidly increasing demand for sheep, with four goats buying only one sheep.

After the villagers disposed of the goats in the area, local government officials sought to maintain a balance between livestock and household grassland areas. In 2003, the ratio of sheep to pasture areas was one to ten, which means a household with ten *mu* (2/3 hectare) was allowed to support one sheep. In 2004, the ratio was changed to one to eight. Local government functionaries examined sheep numbers every year, though the locals found ingenious ways to hide their sheep from the inspectors. For example, villagers would borrow sheep quotas from other villagers. In addition, because of the complexity of household relationships, it is not easy to identify the real owners of sheep. Some villagers with large flocks of sheep could therefore conceal their sheep under other villagers' names. Some villagers transported their sheep to other villages, even to remote areas. Finally, sheep counting was not easy without the help of AV and NV leaders. These leaders had a tendency to protect the villagers, even those with large sheep flocks.

Sheep quota allocation was a complex process involving a formula based on pasture and forage available to each household. But, while it is possible to calculate how much grazing pasture the households possess, it is impossible to calculate how much forage grass the household could have via planting and purchasing. A few years into the process, the local government stopped examining the sheep possessed by households, and the idea of 'balancing of livestock and pasture' turned into a mere slogan.

The most significant measure carried out to protect grassland was the grazing ban. In some villages a full year grazing ban was applied. All grazing activities became illegal and

villagers had to keep their livestock in stalls. The government also imposed extremely high fines for illegal grazing. If the policy were to be fully implemented, the tradition of herding would have had to be replaced by stall-feeding. In Zhongfahao and other villages, a seasonal grazing ban was to be implemented. The grazing period was set between June and November, during which time all the sheep from various households would be organized such that selected flocks would go to selected pastures. Grazing between December and May was forbidden.

Aside from the grazing period, some lands were also designated as non-grazing zones. The first one covered the desert and was called Program Area,¹⁶ enclosed in a state built wire fence. Although the desert was owned by the village, the village did not have decision-making rights over desert use. Forest areas likewise became subject to a full grazing ban. In the desert or sandy grasslands, there were no natural forests with high trees. The so-called “natural forest” was actually comprised of bushes in such areas. Bushes could stop sand moving and prevent sand storms from effect large cities. Natural bush areas were designated off limits for herding, although some areas were located on the path to pastures. The government introduced special regulations to manage eco-forestry, which is different from commercial forestry. The regulations issued by the ministry of forestry forbade both cutting and grazing in natural forests. For the losses that villagers suffered from the grazing ban on so-called “natural forest,” the central government delivered compensation funds to the relevant areas. In practice, however, these funds did not reach villagers. They were instead used by the forestry bureau to hire people to monitor the herding activities of local villagers.¹⁷

Although the government tried to protect grassland territories via the grazing ban, illegal grazing became common. Some villagers grazed their sheep at night to avoid the watchful eye of state-appointed guards. So, why did the villagers continue to graze their livestock at the risk of being fined? One answer is that for some villagers, grazing, even with the fines, was cheaper than stall-feeding. As grasslands degraded, villagers could not harvest sufficient amounts of forage grass for their livestock to survive the winter. Most forage grass was from agricultural by-products. If the households didn't save enough stalks, they had to graze their livestock. Many factors could cause a shortage of agricultural by-products, such as low rainfall, lack of farmland or labor, or insufficient money to buy seeds or fertilizer. Buying forage grass to feed livestock was too expensive. Only a few households possessed enough forage grass because they bought large plots in the Program Area so they could harvest grass.¹⁸

After a winter of stall-feeding, most villagers lacked sufficient forage grass for their

¹⁶ The state launched a special program to enclose large areas of deserts and sandy grassland to the north of Beijing to protect the capital from sand storms. At least 4,000 *mu* of sandy grassland was included in the program in Zhongfahao. The program area was enclosed with wire fences and villagers were not allowed to have their livestock graze there.

¹⁷ More than 1,000 forestry guards were hired in the county. Local residents complained that they suffered double losses: they could not use the conservation area for grazing, which reduced their income; at the same time, they suffered penalties and had to pay fines to forestry guards.

¹⁸ When the program area was enclosed, the local government sold part of the area to some households. Although grazing in the area is forbidden, they can plant trees and harvest grass.

livestock. Although new grass starts to grow in May, pastures would not be open until June. The villagers believed that in early spring (late April to May), when new grass begins to grow, the sheep stop to eat dry forage grass because they smell green grass. Without the new grass, the sheep would therefore perish of starvation. In addition, the villagers wanted the sheep to eat green grass for reproduction purposes because they wanted the animals to be strong in the spring. Spring was the time to give birth of lambs. Grazing would give farmers bigger lambs and thus better income. Almost all villagers therefore started grazing their sheep in May, well before the June legal grazing time—a fact known to almost everyone, including local officials. Only officials from higher agencies believed that the grazing ban policy was being fully applied.

In parallel to the widespread illegal grazing during the grazing ban, some villagers also grazed in forest and bush areas. I met several such illegal herders in the forests, mostly old men and women. They complained that the grazing ban reduced their income, that they did not have labor power to harvest forage grass and were too old to make cash income from other sources. The only way for them to generate cash was through grazing.

Illegal grazing in the bush areas was also very common in Pifang, where all pasture was in desert areas. Villagers had to go through bush areas on the path to the pastures, and they found it odd that they could legally graze sheep in pasture areas but had to pass illegally through the bush areas. The lack of a legal access route led to conflicts between illegal herders and the agency monitoring the forest.

Although the government issued a bunch of policies to change local herding behavior and protect grassland from degradation, they were not effective. A second group of policies was related to the strengthening of conservation agencies. In order to implement the grazing ban policies, a special grassland-ecology monitoring team was established at the County level, and a branch office thereof at the Township level. The office was directly accountable to the agriculture bureau, an agency of the ministry of agriculture. Its responsibility was to monitor the situation of grassland and punish villagers engaging in illegal grazing. The government covered staff costs, while revenues from penalties were also used to cover part of administration expenses.

The eco-conservation policy served to substantially strengthen the Forestry Bureau. As soon as the policy of eco-conservation in forestry took effect, the entire subsidy for natural forestry was captured by the Forestry Bureau. The bureau also obtained large funds from the central government for ecological revival programs and forestry monitoring. The increased funds allowed the hiring of more staff and renovation of their premises and equipment, such as vehicles and motorbikes used to pursue herders. With more funds, more staff, and support from the central government and forestry law, the power of the Forestry Bureau grew.

The responsibility of forestry station staff was to protect wooded and bush areas, while the eco-conservation station took the responsibility for protecting grassland.¹⁹ The whole logic

¹⁹ Villagers complain that the state provided the subsidy for their loss in natural forestry conservation, but the forestry bureau used the money to hire somebody to fine them.

of the conservation agenda discouraged the line-ministry staff from caring about villager livelihoods. In the discourse of ecological conservation, natural resource management was recentralized. In the recentralization process, the local branches of central ministries gained more power. The more policies and regulations came from central government, the less flexibility was left for villagers to eke out their livelihoods.

Because of the conflict between the villager livelihoods and the environment advocates, villagers used illegal grazing as a ‘weapon of the weak’ against environment policies (see Scott, 1985). They employed various strategies to keep grazing, such as bribery, nighttime grazing, and sending somebody to stand on watch against forestry guards while animals grazed. As a result, the cost of grazing became high for villagers. At the same time, the forestry guards also faced formidable challenges in their efforts to stop the villagers from grazing.

To reduce the cost of grazing and monitoring in 2005, the villagers and the eco-conservation station entered into an informal agreement. The villagers in one NV paid the station about five RMB for each sheep as a fine, while station staff pledged not to go to the village to monitor grazing in May. This informal tax bought villagers the opportunity to graze their livestock at a relatively low price, while the grassland-monitoring agency received a decent amount of money without having to engage in monitoring activities. This deal appeared to have settled the conflicts between the two parties. The situation was different with regard to relations between the Forestry Bureau and villagers, although here too a potential for mutual understanding existed. Villagers who paid a large fine could graze for a few days without the risk of being caught. So-called ‘private collusion’ between local officers and local residents was prevalent in most herding areas and was considered to pose a risk for the implementation of environmental policies by some middle level officers.²⁰

A third group of policies was to encourage villagers to change their customary grazing styles. The government believed that stall-feeding could achieve the double goals of environmental conservation and income generation. It allocated substantial funding to assist villagers in building pens, introducing new sheep breeds, and planting forage grass. The result, however, was ambiguous. After the pens were built and forage grass was prepared, grazing in winter was reduced to only a handful of villagers. During the other seasons, however, illegal grazing continued to be popular. The central government funds for encouraging villagers to change their herding practices were channeled through the agriculture bureau, making the agriculture bureau more powerful than ever.

The above case demonstrates that when the central government turned its attention to the environment, decision-making was centralized while funding and power were transferred to branches of central ministries, including the forestry bureau, agriculture bureau and the eco-conservation stations. These agencies were overriding the authority of local governments and villager organizations. Rather than promoting decentralization to enhance local decision-making, these policies were a form of deconcentration²¹ of

²⁰ Interview by the author with a retired head of agriculture bureau in Inner Mongolia, 2006.

²¹ Jesse Ribot defines deconcentration as such: ‘Decentralization comes in two primary forms: democratic

authority and had the effect of the strengthening of line ministries.

Promoters of the new conservation agenda saw villagers as destroyers of the environment who should be subjected to supervision by authorities. The community was no longer trusted to play a role in conservation and was deprived of a voice and initiative in the process. Even the local government, such as that at the township level, was deprived of influence in policy making. Its role was reduced to that of policy implementer and fundraiser for new central government projects.

Although grassland was contracted out to villagers, their ownership and user rights were diminished. Conservation policies therefore failed to encourage the villagers to use their grassland reasonably. Simplified and standardized, the new policies were bound to be inadequate for addressing the challenge of environmental conservation and maintenance of villager incomes. Inevitably, villager livelihoods suffered. Deprived of the right to modify or otherwise influence the faulty policies, the villagers sabotaged the policies by finding ways to avoid them. Illegal grazing became the norm, rather than the exception.

CONCLUSION

This research shows that the policies adopted to protect grassland ecology by central government undermined grassland management. Grassland privatization through 'contracting out' did not promote grassland conservation. Indeed, privatization was not even implemented because it conflicted with local grazing practice and undermined the capacity of communities in governing common pool resources.

As the government prioritized environmental management, it increasingly resorted to direct intervention, issuing a series of new eco-policies, employing new staff and allocating substantial resources. Because, however, these policies were channeled through line ministries in a top-down fashion, they had the effect of disempowering local governments and the local communities.

Because the simplified centralized policies could not take into account the diversity of local societies and contexts, their implementation was stymied. Because the local communities could not influence policies and bargain with line-ministry bodies, their response was to meet their own ignored needs by violating the new regulations.

In the game of fine collection, the goal of conservation was somehow forgotten, languishing on the sidelines. The central government had the best intentions in seeking to improve the environment with top-down design and implementation, but central government could not foresee the final results.

In the end, overall grassland quality did not change substantially since the implementation

decentralization (also called political decentralization or devolution), which involves transfers of power to elected local authorities, and deconcentration (also known as administrative decentralization), which involves transfers of power to local officers of central government agencies, such as to appointed district officers or local offices of line ministries.' (Ribot, 2004)

of conservation policies. The situation in the fenced off and heavily guarded Program Areas did improve, but the conditions in the large area beyond it has only become worse.

As policies were imposed by the government, undermining local livelihoods, violations became common. Most officers in local government, and ultimately in the branches of central ministries, knew of rampant violations, but they made no effort to adjust their policies. First, under recentralized policy-making, the role of local branches of central ministries was to implement policy, not to make policy. Second, central government and its local line-ministry branches benefited from this system of deconcentration; they became more powerful.

This study shows that conservation goals would be best served by sacrificing top-down policy making and implementation and shifting toward greater decentralization. Community and villager organizations could play a greater role in making conservation efforts more relevant and adapted to local social and ecological conditions.

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