

THE EFFECTS OF LIVESTOCK PRIVATISATION ON PASTORAL LAND USE AND LAND TENURE IN POST-SOCIALIST MONGOLIA

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Introduction

Mongolian pastoralists differ from many pastoral peoples in their political, cultural and economic roles within their state. Pastoralists constitute 20–30 per cent of the total population of Mongolia (with some estimates suggesting they account for as much as 50 per cent), contribute significantly to the nation's GDP (over 30 per cent in 1996), and most belong to the dominant Khalkha Mongol cultural and ethnic group (MBDA and Tacis 1996). Mongolian pastoralists participate in a pastoral economy that has persisted, with apparent ecological and social sustainability, through several major political-economic transitions in the twentieth century. However, the shift in 1990 to a democratic form of government and the ongoing transition to a market economy once again call into question the future of herders' livelihoods and the resources on which they rely.

This paper examines how the recent privatisation of livestock and dismantling of socialist herding collectives have affected land-use patterns and property relations among Mongolia's nomadic pastoralists. Prior to privatisation, the state was an all-permeating presence in the pastoral livestock sector. By 1960, all herders were members of herding collectives (*negdels*), whose territory was contiguous with that of administrative districts (*sums*). The state, supported by massive subsidies from its Soviet neighbour, undertook a successful rural development campaign centred around the creation of district (*sum*) centres, which provided social and technical infrastructure to herders (Potkanski 1993), as well as serving as economic engines for rural development by providing consumer goods, services and secure employment to *sum* residents (Müller 1995). Herding collectives also played a key role in allocating pasture and regulating the seasonal movement of herds. In the process of privatisation, the main influence of the state on herders' livelihoods and herding patterns has been in its sudden and conspicuous absence after decades of dominating every facet of the pastoral economy.

Privatisation and the dismantling of collectives led to two major changes in the two districts studied: increasing differentiation between wealthy and poor households, and an influx of new herders to the countryside from settlements and cities. At the same time, the formal institutional structure for regulating pasture use, the collective, ceased to function. Common property theory proposes that as heterogeneity within a community of resource users increases, the likelihood of successful self-regulation of resource use declines, since the interests of community members diverge (Ostrom 1990) and opportunities for multiple

interactions that lower the transaction costs of rule-making and enforcement decrease (Mearns 1996, Runge 1992, Taylor and Singleton 1993). Theory thus suggests that the rising heterogeneity in Mongolian herding communities due to increasing wealth differentiation and the influx of herders from towns and cities may influence the capacity of rural communities to organise pasture use among their own members (Mearns 1996). This paper uses data from a household survey conducted in two herding districts in Mongolia to explore how differences in wealth and migrant status affect access to resources, nomadic mobility, and patterns of resource use. Three general hypotheses were tested: (1) Access to productive resources differs among rich and poor herding households and new and old (migrant and long-time local) herding households; (2) differential access to productive resources affects herders' seasonal nomadic movements and resource-use behaviour; (3) new and old herders differ in norms of pasture use as reflected in their resource-use practices.

The first section of the paper provides the background to the study, describing broadly the ecological contexts and pastoral production system, including typical patterns of seasonal movement and pasture use norms. The second section describes the process of livestock privatisation and its impacts on the pastoral economy. A summary of the survey methods in the third section is followed in the fourth section by the presentation of survey findings, and finally, a discussion of the results.

Background

Mongolia is a land-locked country of 1.56 million km² with a population of 2.5 million people and some 28 million head of livestock (camels, cattle, horses, sheep and goats). Most of the country is steppe grassland and half the nation's population depends directly or indirectly on the pastoral economy for its livelihood. Mongolia's climate is temperate, with cold, dry winters and warm, wet summers. Much of the country receives an average of less than 300 mm of annual precipitation. Droughts are common in the desert and desert-steppe and periodic severe winter storms (every five to eight years) impose density-independent limits on livestock populations, decimating up to a quarter of the herd in a given region. Mongolian pastoralists' nomadic strategy is a rational adaptation to these extreme seasonal and inter-annual environmental variations.

The customary pattern of pastoral land use in Mongolia involves a minimum of four seasonal movements each year among three or four distinct pasture areas. Inter-annual variation in movement patterns includes adjustment of specific pasture areas – grazed within a traditional use area, based on forage, water and social considerations – as well as occasional long-distance and longer-term variations, when herders migrate to different territories in cases of severe drought or winter storms. The distance and frequency of nomadic movements and the

scope of ecological resources accessed by herding households have decreased incrementally over the century, as a result of the changing political-economy and administrative boundaries. Whereas many herders in the study area typically migrated 200–300 km per year in pre-Revolutionary Mongolia, crossing three major ecological zones, today's herders usually confine movements to a relatively small area within a single ecological zone, relying on changes in elevation and on the use of riparian areas to access more diverse resources (Batnasan 1972, Fernández-Giménez 1997, Simukov 1935).

Despite the long-term decline in nomadic mobility, seasonal movement and nomadic flexibility remain the basic strategies of Mongolian herders, who readily articulate the ecological rationales for their mobile lifestyles (Fernández-Giménez forthcoming). Herders adhere to two basic norms of pasture use. First, herders set aside pasture for use in the harsh, non-growing seasons, winter and spring. Grazing of these reserve pasture areas out of season (i.e. in summer or autumn) by the customary users or by other herders is thoroughly discouraged. Second, in case of a climatic disaster such as a drought or severe winter storm, herders in a less affected area invariably allow outsiders from the disaster-struck locale access to local pastures, including reserves, with the expectation that they would receive the same privilege from others if circumstances were reversed.

Between 1924 and 1990 Mongolia operated under a Soviet-influenced socialist government with a centrally planned economy. By 1960, all herders in the nation were organised into herding collectives where they tended state-owned livestock for a regular salary under the close supervision of the collective administration. Education and health care for herders improved greatly during the socialist period, poverty was non-existent (Griffin 1995), and livestock production was increasingly professionalised and specialised. The basic tenets of seasonal movement of herds among different pasture areas were perpetuated during the collective era, although movements were confined to a much smaller territorial unit than was common in pre-socialist times. The state, through the local livestock collectives, provided enormous subsidies to livestock production, including labour and transportation assistance in making seasonal movements, veterinary care, and low-cost emergency fodder. Settlements were established in each district, which served as the headquarters for the local collective, and rural residents not employed as herders were encouraged to settle in these centres.

Privatisation

National-level structural changes in Mongolia began immediately following the democratic elections in 1990. Privatisation of collective assets took place in two stages. All Mongolian citizens received two types of privatisation vouchers: a 'big privatisation' voucher worth 7,000 Tugriks (in 1994, 400 Tugriks = US\$1) and three 'small privatisation' vouchers worth 1,000 Tugriks each. The small vouchers

were used to purchase livestock, equipment, vehicles and other collective assets, such as winter shelters for animals. The large voucher was used primarily to purchase shares of large state companies that were privatised, or shares in the newly constituted limited companies that inherited a portion of collective assets. In some areas large vouchers were also applied towards livestock acquisition. The exact manner in which distribution of collective property took place was conducted differently across the country. The number of livestock a household received was sometimes based on the number of household members, sometimes on the number of years of service to the collective, or whether a herder was a founding member of the collective, or on some combination of these criteria (Cooper 1995, Goldstein and Beall 1994). *Sum* residents who were not collective members were also entitled to receive a share of privatised livestock (Cooper and Narangerel 1993). In addition to the distribution of livestock to herders and the new levels of responsibility and risk thus acquired by herders, the dismantling of collectives also meant the loss of the formal institution responsible in collective times for organising and regulating pasture use.

The opportunity to acquire livestock through privatisation, combined with increasing unemployment and inflation in urban areas led many urban inhabitants to leave towns and cities and return to their home *sums* to claim a share of collective livestock. Even some people who had no claim to collective livestock, but had no means of support in the city left their homes, purchased livestock, and began herding. Collective members who were employed as administrators or in other non-herding occupations also received livestock through privatisation. This resulted in an increase in the number of herding households in the countryside, especially in *sums* close to *aimag* centres and cities. In Bayankhongor Aimag, unemployment increased from two per cent to twenty per cent (calculated as a percentage of the total population) and the number of rural households increased from 8,510 in 1989 to 14,9903 in 1993 (Bayankhongor Statistical Office). Bayan-Ovoo Sum's third *bag*, located within 30 km of the *aimag* centre and 14 km from the *sum* centre, experienced a large influx of 'new' herders (45 per cent of surveyed households, while relatively fewer new herders (17 per cent of surveyed households) were found in Jinst Sum's second *bag*, located some 100 km south of the *aimag* centre.

Poverty, which was virtually unknown in Mongolia during the collective era, rose dramatically following privatisation. Twenty-seven percent of the nation's population fell below the officially designated poverty line in March 1994 (Griffin 1995). Although Mongolia has arguably never been a highly stratified society, certainly not during the Socialist era, growing disparities in household well-being between wealthy and poor herders have been documented since privatisation (Agriteam Canada 1997, Cooper 1995). The increase in poverty has been accompanied by declines in the health and educational status of herders, with fewer children attending school and an increase in rates of illness and mortality (Griffin 1995, Horstman and Tsetsegee 1995). At the same time, the loss of outside funding to the Mongolian government

and the dismantling of collectives sharply diminished the capacity of the government to supply rural residents with social services, particularly health care and education. Basic support in the form of pensions and disability payments for herders were often months late in arriving and could not begin to keep pace with the rate of inflation. Terms of trade for herders also declined, largely due to the timing of economic reforms, which included an early lifting of price controls on consumer goods while the government continued to control livestock prices (Agriteam Canada 1997, Cooper 1995, Edström 1993, Goldstein and Beall 1994, Griffin 1995). In Jinst and Bayan-Ovoo Sums, the trend of increasing wealth differentiation was apparent in the decline in the mean number of livestock per person per household in the poorest households over two years, compared to increasing livestock per person in other households. For example, in Bayan-Ovoo Sum the mean number of *bod* per person increased from 6.8 to 8.1 in the wealthiest group of households between 1993 and 1994, but decreased from 6.2 to 4.1 in the poorest group during the same interval (the *bod* is a traditional unit of equivalence for livestock equal to 1 horse or bovine, 7 sheep, 10 goats or .67 camels.) In both *sums*, the coefficient of variation in *bods* per person per household increased between years, from .61 to .73 in Bayan-Ovoo and from .51 to .60 in Jinst, suggesting increasing differentiation.

These changes in the number and well-being of herding households suggest several potential impacts on pastoral land-use patterns and land tenure. Changes in household wealth affected the size and composition of herds, in turn affecting the demand for pasture, the types of resources needed, and herders' ability to access pasture, transport and labour. Both the need to move and access to the means of mobility were thus potentially affected by changes in household wealth. The increase in new herding households placed additional pressure on the available resources, especially the resources of space and campsites. This was especially true near to *sum* and *aimag* centres, roadways and water sources and occurred despite the fact that in Jinst and Bayan-Ovoo Sums overall livestock populations in 1994 were at or well below their peak values for the thirty years preceding privatisation. New herders may differ from old herders in their access to productive resources, in turn influencing mobility and resource use. New herders, if they are not part of an established local community and have little history of engaging in collective activities with other local herders, may have less incentive to adopt or abide by local norms of pasture use. And new herders may lack ecological knowledge and skills, leading to inappropriate pasture use and a lack of understanding of the ecological rationale for pasture use norms.

Common property theory predicts that the increasing heterogeneity within the studied communities should lead to increasingly different interests among herders and a breakdown in the ability to self-regulate pasture use (Ostrom 1990). In line with common property theorists, I expected that new and old herders would differ in their norms of pasture use as reflected in their resource use behaviour. I also hypothesised that access to key productive resources – i.e. those related to mobility as well as shelter and forage – would differ among rich and poor herding households

and new and old herding households. I expected that differential access to these resources would in turn affect herders' mobility and resource use behaviour. The remainder of this paper will report some of my survey findings, focussing first on access to transport and determinants of mobility; second on access to shelter and forage resources; and finally on the relationships among mobility, resource access and resource use. In the survey, 'new' herders (I sometimes also refer to them as 'migrants') were defined as those who had not herded for the collective. 'Old' herders were those that had herded collective livestock. Although this was an imperfect way of distinguishing urban-rural migrants from long-time local herders, because some of those who had not herded for the collective were newly married young herders who had indeed lived in the district all their lives, it was effective in separating experienced from inexperienced herders, since young herders in newly established households had generally spent most of their years in school.

Survey Methods and Study Sites

Research was carried out over seventeen months (in 1994–1995) in Jinst and Bayan-Ovoo Sums, Bayankhongor Aimag (province), Mongolia (Figure 1). Jinst lies in the desert-steppe ecological zone and Bayan-Ovoo includes both steppe and mountain-steppe ecological zones. Participant observation, interviews with herders and local officials, and a household survey of a stratified, random sample of herding households were used to assess the effects of economic transition on the land-use patterns and property relations among local herders. The survey sample in each *sum* (a total of 102 households) was drawn from the official list of households in each *bag*, or subdistrict. Jinst Sum's second *bag* included 113 households, while Bayan-Ovoo's third *bag* contained 224 households. The lists of households were stratified by household wealth and well-being, based on local herders' independent rankings of all the households in their *bag* (Fernández-Giménez 1997, Grandin 1988). The households in each *bag* were then subjectively divided into four wealth strata based on the averaged scores of the informants' rankings in that *bag*. Random selection of households from each wealth category in each *bag* resulted in good geographic distribution of surveyed households, including households camped in remote areas as well as those near settlements.

Survey results were entered into EXCEL and imported into SYSTATW5 (Wilkinson 1992) for statistical analysis. Due to the small sample size, all surveys were used in the analyses, including some that were incomplete, leading to slightly varied sample sizes on some questions. Because of the small sample size, surveys from both *sums* were pooled for most analyses, except where a strong ecological or demographic effect was likely. Fisher's Exact Test was used to test for independence among categorical variables in 2*2 tables and Pearson's Chi Square Test was used for r*c tables. Regressions, t-tests and ANOVA were used on continuous and continuous and categorical variables respectively. The number of

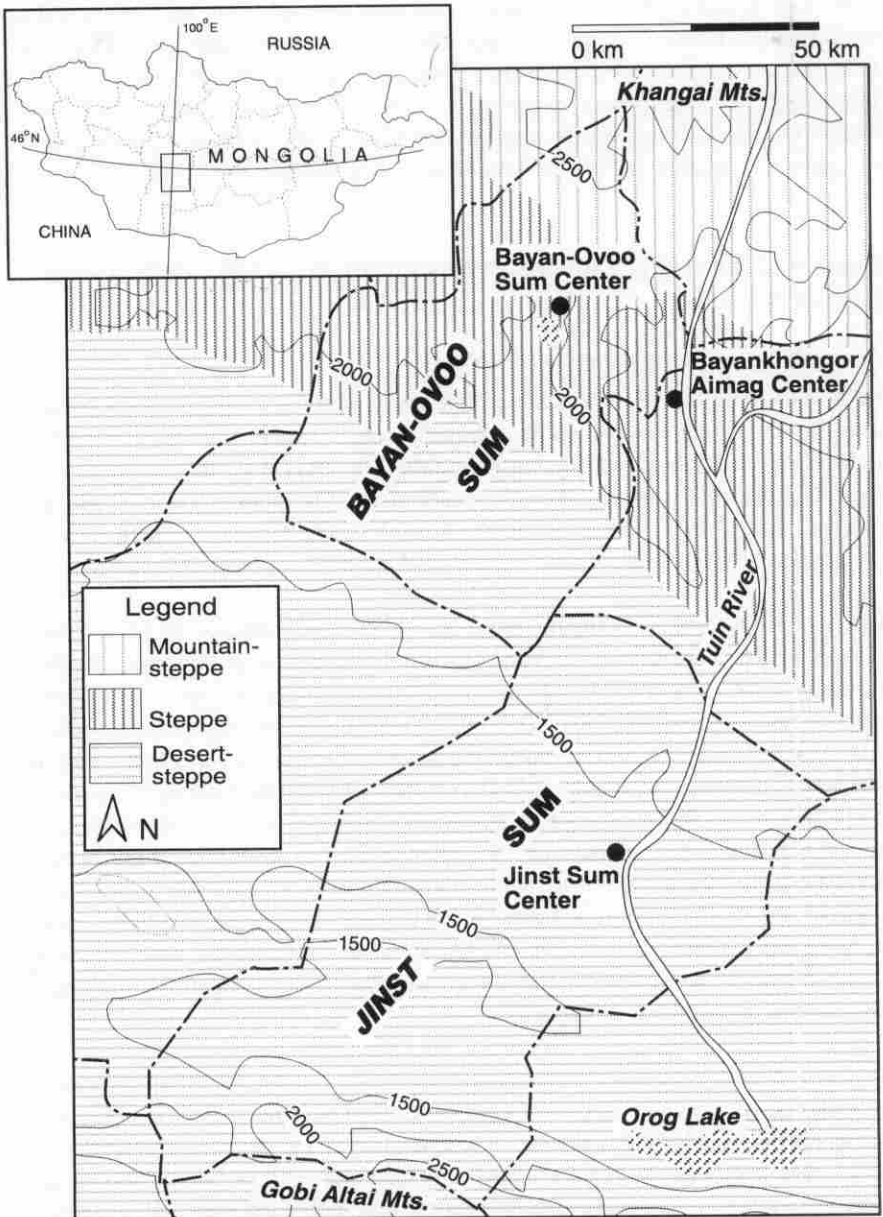


Figure 1: Map of the study sites

cells with frequencies of less than 5 was high in some Chi Square analyses, making significance values suspect. When response categories with low frequencies were dropped from these analyses, significance levels increased, indicating that significant differences existed for the important response categories. The original results are reported here, since the range of responses is of interest. A p -value of $P < 0.10$ was considered significant for all tests.

Survey of Household Access to Resources, Nomadic Mobility and Resource Use

Access to Resources and Nomadic Mobility

LIVESTOCK: The size of livestock holdings was one of the primary criteria herders used in classifying themselves into wealth groups, and is clearly an important indicator of household well being (see Table 1). Thus it is not surprising that wealthy households own significantly more animals than poor households (Bayan-Ovoo $F=5.503$, $df=3$, $P=0.003$; Jinst $F=12.602$, $df=3$, $P < 0.001$). There were no differences between new and old herders in the number of livestock owned.

LABOUR: Household size, and the number of household members of working age (16–59 years) were used to indicate household access to labour, since herders virtually never hire outside labour for real wages. Wealthy households were significantly larger ($F=6.259$, $df=3$, $P=0.001$) and had more members of working age ($F=4.434$, $df=3$, $P=0.006$), implying better access to labour. There were no differences between new and old herders in household size. Although household size is a useful indicator, it is not an absolute indicator of labour availability, since households also access labour through shared tasks with other households in their herding camp (*khot ail*) (Bold 1996) and other social ties in the community (Fernández-Giménez 1999). In addition, the correlation between wealth measured in livestock numbers and household size is somewhat spurious, since in many *sums* livestock were distributed on a per capita basis, resulting in larger households receiving more livestock.

TRANSPORTATION: Access to transportation was measured by ownership of drought animals and vehicles and the type of transport used in nomadic moves. In both *sums*, herders in the wealthiest group were more likely to own motorcycles than herders in other wealth groups. In Bayan-Ovoo Sum forty per cent of households in the wealthiest group owned motorcycles, as compared with eight per cent in the next wealthiest group and none in the two poorest groups ($X^2=11.071$, $df=3$, $P=0.011$). In Jinst Sum 63 per cent of the households in the wealthiest group owned motorcycles, 27 per cent and 21 per cent in the next two groups respectively, and eight per cent of the households in the poorest group ($X^2=12.545$, $df=6$, $P=0.051$). Only wealthy households owned trucks, tractors or jeeps. There were no differences between new

and old herders, except that the few trucks, tractors and jeeps owned by herders were all possessed by new herders – in all cases these were former collective employees who purchased collective assets with their privatisation vouchers.

In terms of the type of transportation used, the poor made the fewest moves using vehicles. Camels were used more often by the wealthiest groups in both *sums*, while vehicles were used most by middle two groups. Yak-use increased with increasing poverty in Bayan-Ovoo *sum*. New herders used vehicles more often, while old herders used camels more often.

Table 1: *Livestock Holdings in bod Units by Wealth Group in Two Mongolian sums for a Stratified, Random Sample of Households. One bod equals 1 Horse or Bovine, 7 Sheep or 10 Goats. A Camel is equivalent to 1.5 bod. Data on Livestock Ownership were obtained from Official sum Records.*

	Wealthiest Group 1	Group 2	Group 3	Poorest Group 4	Total Sample
Jinst Sum	n=16	n=15	n=14	n=13	n=58
1992					
Mean	45	22	13	9	23
Maximum	93	39	22	19	93
Minimum	23	4	6	0	0
SE	4.9	2.9	1.2	1.7	2.5
1993					
Mean	76	43	28	21	44
Maximum	169	70	47	40	169
Minimum	41	10	12	7	7
SE	8.1	4.5	2.6	2.7	3.9
1994					
Mean	90	43	29	20	48
Maximum	227	81	44	43	227
Minimum	39	9	10	5	5
SE	11.1	5.7	2.6	3.3	5.0
Bayan-Ovoo Sum	n=10	n=12	n=10	n=12	n=44
1993					
Mean	42	35	23	20	30
Maximum	57	64	36	36	64
Minimum	19	17	7	5	5
SE	4.2	4.6	3.2	3.1	2.3
1994					
Mean	47	35	26	16	31
Maximum	83	82	66	34	83
Minimum	17	13	4	2	2
SE	7.2	5.2	5.4	3.4	3.1

NOMADIC MOBILITY: The most environmentally significant measure of mobility was the average distance moved between seasonal camps, since large distances among camps indicate well separated seasonal grazing areas, making out-of-season grazing unlikely. As hypothesised, the wealthiest households moved significantly farther, on average, than the poorest households ($F=6.148$, $df=3$, $p=0.001$) (see Table 2). Average distances per move ranged from 0 to 49 km in Jinst Sum (desert-

Table 2: Measures of Mobility by Wealth Group for the Pooled Sample of Jinst and Bayan-Ovoo Sums. All Measures refer to a 24-Month Period from 1993–1994.

	Wealthiest Group 1 n=26†	Group 2 n=26	Group 3 n=24	Poorest Group 4 n=25	Total Sample n=101
Average Distance (km)*					
Mean	20	12	14	9	14
Minimum	0	0	2	0	0
Maximum	51	32	43	25	51
SE	2.8	1.7	1.9	1.4	1.1
Total Distance (km)**					
Mean	137	78	92	60	94
Minimum	0	0	6	0	0
Maximum	390	192	228	152	390
SE	17.2	10.9	12.5	9.1	7.2
No. of Camps					
Mean	4.9	4.2	3.8	4.1	4.3
Minimum	1	1	2	1	1
Maximum	10	8	7	8	10
SE	.4	.4	.3	.3	.2
Total Moves					
Mean	7.3	6	7.1	6.6	6.8
Minimum	0	0	1	0	0
Maximum	14	12	16	9	16
SE	.6	.6	.6	.4	.3
Average No. of Moves					
Mean	3.6	3.1	3.5	3.2	3.3
Minimum	0	0	.5	0	0
Maximum	7	6	8	4.5	8
SE	.3	.3	.3	.3	.1

† Samples sizes varied slightly with each measure of mobility.

* indicates a significant difference between wealth groups found when a two-way ANOVA was performed with Wealth Group, Study Site and Site

**Wealth Group as Factors. (No significant interaction effects were detected for any of the measures)

steppe) and 0.25 to 51 km in Bayan-Ovoo (mountain-steppe). Differences remained significant when sedentary households – those that did not move during the period covered – were dropped from the analysis. Overall, Jinst herders moved farther on average (16 km) than Bayan-Ovoo herders (12 km). There were no differences in average distance moved between new and old herders.

In multiple regressions, variables related to access to transport (ownership of camels and percentage of moves by vehicle or camel) were significant determinants of average distance moved between camps. For the pooled sample ($R^2=.43$, $P=0.000$, $N=97$) and the Bayan-Ovoo sample ($R^2=.65$, $P=0.000$, $N=40$), wealth rank was also a significant determinant. In the Jinst sample ($R^2=.66$, $P=0.000$, $N=54$) the total number of working household members was a significant determinant of average distance moved.

Resource Tenure and Land-Use Patterns

As in many pastoral societies, tenure regimes in Mongolia today involve a number of nested or overlapping rights to resources (Bruce et al. 1993, Lane and Moorehead 1995). Some of these resources are discrete and easily identifiable (campsites, wells), others have indistinct boundaries (summer and winter grazing areas). Rights to some resources are more clearly specified than rights to others. And the groups or entities that hold rights to resources (households, herding camps, neighbourhood assemblages of encampments) are also often ill-defined, with shifting memberships and varying strengths to their claims.

There have been four major changes in land tenure since privatisation: (1) the privatisation of livestock shelters and corrals; (2) changing institutions of resource access, namely multiple and indirect sources of rights to pasture; (3) the loss of any formal allocating and enforcing institutions; and (4) the weakening (during the collective period) of customary and informal regulatory institutions.

Private ownership of animal shelters and corrals is an important development in post-privatisation Mongolia. Most herders either purchased shelters with their privatisation vouchers, or built their own new shelters with purchased or scavenged materials. Increasingly, herders rely on *de jure* ownership of shelters to claim *de facto* rights to the underlying campsites and surrounding pasture. While ownership of a shelter strengthens claims to these other resources, a shelter can also be a liability, vulnerable to vandalism and theft, and a disincentive to mobility, as some herders prefer to remain within monitoring distance of their shelter year-round to discourage vandalism.

ACCESS TO SHELTERS AND CORRALS: Sixty-five percent of the surveyed households possessed a winter shelter and thirty-one per cent a spring shelter. More wealthy households possessed spring shelters ($X^2=10.239$, $df=3$, $P=0.017$), and more old herders (non-migrants) possessed shelters than new herders (migrants) (Fisher's Exact Test, $P=0.06$).

SOURCE OF RIGHTS: Sources of pasture rights included inheritance from parent(s), inheritance through in-laws, access through association with friends or kin, use during the collective period, and appropriation by the herder (see Tables 3a and 3b). Many households gain access to key resources indirectly, through affiliation via kinship, or friendship with more senior households that have well-established rights. Appropriation without any express permission or inheritance rights was common and was usually expressed by herders as 'I chose it myself', implying that birth or official residence in the *sum* was sufficient grounds for claiming an open site. The frequency of this justification for occupying sites conforms with the often articulated ethic of access to pasture among Mongolian herders (Mearns 1996). Although tenure approximating private and common property exists for specific resources, this ethic of access pervades herding culture, making it morally difficult for groups to exclude potential users from some pasture resources and small-scale water resources such as springs and hand wells.

Table 3a: *Sources of Rights to Winter Pasture by Wealth Group for the Pooled Sample of Jinst and Bayan-Ovoo Sums.*

	Wealthiest Group 1 n=26		Group 2 n=26		Group 3 n=23		Poorest Group 4 n=24	
	No.	%	No.	%	No.	%	No.	%
inherited								
from parents	8	31	7	27	4	17	5	21
spouse inherited	0	0	1	4	3	13	3	12.5
other kin, friends	1	4	5	19	3	13	8	33
used during								
collective	3	11.5	4	15	6	26	5	21
chose own (self)	11	42	9	35	5	22	3	12.5
other	3	11.5	0	0	2	9	0	0

Table 3b: *Source of Rights to Winter Pasture by Migrant Status for the Pooled Sample of Jinst and Bayan-Ovoo Sums. Old Herders are those who Herded Livestock for the Collective. New Herders did not Herd Collective Livestock, and many Recently Moved from Towns and Cities to become Herders*

	New Herders n=30		Old Herders n=69	
	No.	%	No.	%
inherited from parents	5	17	19	27
spouse inherited	2	7	5	7
other kin, friends	9	30	8	12
used during collective	1	3	17	25
chose own (self)	11	37	17	25
other	2	6	3	4

Herders differed in sources of rights to winter pastures by wealth group, and to winter and spring pastures by migrant status. Wealthy households more often claimed rights through direct inheritance or self-selection, while poorer households relied more often on rights acquired through in-laws, by association with other kin and acquaintances, or by use during the collective period ($X^2=33.405$, $df=15$, $P=0.015$). New herders more often claimed rights through distant kin and acquaintances, or self-selection, while old herders more often inherited rights directly or claimed rights based on use during the collective period (spring: $X^2=12.509$, $df=6$, $P=0.052$; winter: $X^2=11.824$, $df=6$, $P=0.066$).

These results strongly suggest that poorer and newer herders have weaker claims to key resources, such as winter and spring pastures. New and poor herders rely disproportionately on access through more tenuous social connections rather than direct inheritance. Wealthy herders who lack direct hereditary rights are more willing to assert rights based on territorial birthright (ethic of access).

Patterns of Resource Use

What do these changes in resource access mean for patterns of resource use? The major changes in land use since privatisation have been: (1) increasing out-of-season grazing of reserve pastures and year-round grazing of key resources (such as desert riparian areas) previously used in only one or two seasons; (2) concentrations of livestock near roads and towns; (3) high rates of trespassing; and (4) overall declines in mobility. The following analyses explore how wealth and migrant status influenced some of these behaviours.

RESERVE PASTURES: Poor herders were less likely to reserve winter pastures ($X^2=6.809$, $df=3$, $P=0.078$) and emergency pastures ($X^2=9.557$, $df=3$, $P=0.023$) than were wealthy herders. But there were no differences between new and old herders or between study sites in the frequency with which herders reserved pasture for winter or spring.

OUT-OF-SEASON GRAZING: There were no differences between wealth groups or new and old herders in rates of out of season grazing – that is grazing one's own reserve pastures out of season. This suggests that, contrary to my hypothesis, the customary norms of pasture use do not differ between old and new herders. However, out-of-season grazing was significantly more common in Bayan-Ovoo, where there are more new herders, than in Jinst (winter: Fisher's Exact Test $P=0.005$; spring: Fisher's Exact Test $P=0.025$). In Bayan-Ovoo fifty-two per cent of surveyed households grazed winter pastures out of season compared to twenty-three per cent of Jinst households, and 68 per cent reported that their spring pastures were grazed out of season in contrast to 44 per cent of Jinst households. This suggests that the increase in new herding households affects land use and land tenure, primarily by placing increased demand on limited existing pasture resources, pressuring all categories of herders to graze out of season. This

contrasts with the hypothesised scenario in which new and old herders differ with respect to pasture use norms, leading to differing grazing strategies.

TRESPASSING: Trespass here refers to camping in *another* group's campsite or grazing another's reserved pasture, without seeking permission. Wealth apparently had little direct influence on herders' experience of trespass, but migrant status and study site did. Again, significantly more Bayan-Ovoo households (34 per cent) reported that their winter or spring campsite had been used by other herders compared to Jinst (17 per cent) (Fisher's Exact Test $P=0.061$), and that their reserve winter or spring pasture had been grazed by another camp's livestock (73 per cent compared to 28 per cent in Jinst) (Fisher's Exact Test $P<0.001$). New herders were more likely to have used another household's campsite than old herders (48 per cent vs. 28 per cent) (Fisher's Exact Test $P=0.065$).

Interaction of Resource Access, Mobility and Resource Use

What is the picture that emerges from this complex set of relationships? Simplified, it reduces to a vicious circle of declining mobility and increasing out-of-season grazing and trespassing. Herders who moved the shortest distances were more likely to graze their own reserve pastures out-of-season ($T=1.955$, $df=90$, $P=0.054$), as well as being more likely to suffer trespassers grazing their reserves ($T=-2.320$, $df=92$, $P=0.023$). There was also a significant association between herders who were trespassed upon and those who grazed out of season ($X^2=8.791$, $df=1$, $P=0.005$). Participant observations and interviews indicated that when pastures were trespassed, herders responded by further decreasing their mobility, in order to remain close to their reserve pastures and to defend them from trespassers, even if this meant grazing them out of season themselves.

Mobility, out-of-season grazing, and trespassing were each affected, directly or indirectly, by wealth and/or migrant status. As we have seen, herder mobility, as measured by the average distance moved between camps, was directly affected by wealth and access to transport. Access to shelters and the source of rights to pasture, which were determined by both wealth and migrant status, also affected herders' resource-use behaviour. For example, wealthy and 'old' herders were more likely to own shelters for their animals. Herders who owned winter shelters were more likely to reserve winter pasture ($X^2=5.5$, $df=1$, $P=0.023$) and those who reserved pasture were less likely to graze out-of-season ($X^2=6.4$, $df=1$, $P=0.017$). Similarly, wealthy and 'old' herders were more likely claim rights to pastures and campsites through direct inheritance. In turn, herders with claims based on direct inheritance were least likely to trespass ($X^2=12.902$, $df=6$, $P=0.045$) or be trespassed upon ($X^2=14.149$, $df=6$, $P=0.028$), while those who relied on a territorial birthright were most likely to trespass or be trespassed upon. In general, any type of kinship claim (close or distant) reduced the likelihood of trespass on reserve pastures ($X^2=14.906$, $df=6$, $P=0.021$). We have also seen that rates of trespassing were strongly influenced by study site, with far higher rates observed in Bayan-Ovoo Sum, where

nearly half of the surveyed households were 'new' herders, suggesting that the overall increase in households in relation to resources has pressured herders of all categories to trespass and graze out of season.

Conclusions

I hypothesised that the increasing heterogeneity within each of the study sites would lead to different norms and differential resource access among herders and a consequent breakdown in the ability to self-regulate pasture use. The results of the survey suggest that herders remain fairly homogeneous in their norms of pasture use or at least that these norms, as reflected in rates of out of season grazing, are not directly influenced by increasing wealth differentiation and the influx of new herders. More important appear to be the basic material constraints to nomadic mobility – access to livestock, transport, labour and pasture resources – and the increasing imbalance between population and resources in localised areas, where there are many new herding households. The background to these changes is the loss of both the material assistance provided by the collective, and the strong regulatory role that collectives played both in allocating pastures and campsites and directing seasonal movements.

The final conclusion that emerges from this fieldwork is that the institutions of access to resources, especially campsites and pastures, are changing. During the collective era, campsites and pasture were allocated by the collective, often respecting pre-existing customary rights. The movement of herders between districts or sub-districts was tightly controlled. Today, although some herders are still able to claim rights based on continuous customary use, many, especially poor and new herders, must rely on alternative strategies, namely associations with kin and friends, or making claims based on a territorial birthright. These avenues of resource access are qualitatively different from customary hereditary rights, and are associated with undesirable patterns of resource use.

I have dealt at length with property and resources, but have not said much about the role of the state, beyond its implicit role in initiating national-scale economic change. As I suggested in the introduction, the state's main role in the current local situation is its overwhelming absence, in contrast to its all-permeating presence during the collective era. What its future role should be is a matter of debate. The Land Use Law of 1994 provides for a formal pasture leasing scheme, with great latitude for local implementation and governance. Formal regulation of pasture use has a useful role to play in Mongolia, but a formalised tenure regime may not be the best way to approach this, considering the degree of flexibility in movement and social organisation that Mongolian herders display. As an alternative, policy makers might consider a form of land-use regulation, such as local regulation of the timing and location of seasonal migrations. This approach has historical precedents in Mongolia, as well as other pastoral societies; it preserves the social and spatial

flexibility essential to a nomadic or semi-nomadic strategy; and avoids cementing existing inequalities in access to resources.

Acknowledgements

This research was supported in part by grants from IREX, the National Geographic Society, the University of California and a National Science Foundation graduate fellowship. B. Batbuyan of the Institute of Geo-ecology of the Mongolian Academy of Sciences provided assistance in survey preparation and administration. Dr. B. Erdenebaatar of the Research and Teaching Institute of Animal Husbandry commented on an early version of the survey.

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Résumé

Les effets de la privatisation du cheptel sur l'aménagement des pâturages et sur les relations foncières dans la Mongolie post-socialiste

Cet article analyse les effets de la récente privatisation du cheptel et du démembrement des coopératives pastorales socialistes sur les relations foncières existantes chez les pasteurs nomades mongoles. La privatisation a mené à deux changements majeurs dans les deux départements étudiés: d'une part, à une différence croissante entre les familles pauvres et celles plus aisées; d'autre part, à la migration vers la campagne des pasteurs habitant autrefois dans des agglomérations et des localités à caractère urbain. En même temps, la

