

Social inequality and risk mitigation in the era of private land: Siberian pastoralists and land use change

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This article describes the distribution of grazing and haymaking land in predominantly pastoral communities of southern Siberia, implemented in the framework of Russian post-socialist reforms. It demonstrates that post-socialist policy aimed at land privatization has resulted in its unequal distribution and consequent social stratification of rural communities. Individualization of land use allowed the owners and lessees of large plots to adapt new strategies to mitigate environmental risks; however, these strategies increase grazing pressure on common pasturage, leading to disproportional loss of livestock due to drastic environmental conditions by those who do not possess enough land.

Keywords: Post-socialist, land policy, privatization, social stratification, environmental risk, Siberia

Introduction

Land relations in the Soviet Union were characterized by the legal prohibition of private property; the state remained its sole owner (Skyner, 2003: 892). The Soviet Constitution adopted in 1977 stated: 'Land, subsurface resources, water resources and forest are the exclusive property of the state'. State property was defined as the public property of all Soviet people (Constitution of the Soviet Union, Chapter 2, Clause 11). De facto 'all rural land fell into two broad ownership categories: either it was allocated to large farms or held by departments within the central government' (Behnke et al., 2003). Members of collective and state farms could possess only small individual plots for gardening or hay cutting but held no ownership rights.

After the collapse of the Soviet Union, land privatization became the main goal (Alpatov, 2005) and a key point of rural reform in Russia (Humphrey, 2002). According to assessments by international aid agencies, private ownership of land was considered an absolute prerequisite for efficient agricultural production in Russia (Perrotta, 1995: 62). Private property was expected to serve as the basis for shaping a land market and for efficient and sustainable land use (the law of the Russian Federation 'On land reform', cited in

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Alpatov, 2005: 15). As a result, the great majority of collective and state farms throughout the country had to be reorganized, transferring their land to their former members and employees.¹

However, centrally determined policy aimed at fragmenting land into individually used plots seemed to contradict the requirements for the 'spatial and social flexibility of resource use patterns' characterizing pastoral land use (Fernandez-Gimenez, 2002: 50), which is essential in many of Siberia's territories. In such locations, livestock mobility allowing herds to access forage that varies in time and space and to allow dispersal of grazing pressure is critical for efficient production (Galvin et al., 2008). Land fragmentation in areas occupied by nomadic or transhumant herders, to the contrary, may lead to concentration of grazing pressure on common pastures, ecological degradation, conflicts and limited herders' capacity to respond to droughts and other harsh weather conditions (Williams, 1996; Hanstad and Duncan, 2001; Sneath, 1998).

This article considers the example of two predominantly pastoral communities in southern Siberia, where private land holdings as imposed by centrally planned policies and the production requirement for livestock mobility – which has enabled herders to adapt to local conditions for centuries – have coexisted for the last decade. Considering the implementation of post-socialist land policy, the article examines the effects of land individualization coupled with the privatization of other collective assets on local livelihoods and resource use. Special attention is paid to the ability of local households to cope with the severe climatic conditions of the research area. The article starts with the analysis of the distribution of collective farm assets at each of the research sites. It continues to the description of local climate and major coping strategies adapted by herders and closes with the discussion of the effects of privatization on local households' abilities to mitigate environmental conditions.

Methods and research sites

The present research is based on sixteen months of ethnographic studies carried out between 2003 and 2007 in communities practising transhumant pastoralism in the mountainous landscape of southern Siberia. The two communities under consideration – Modotoi and Khadatai² – are part of a larger research area populated by Buryats and other indigenous people. The research sites are scattered across the landscape. Winter and summer houses of local herders are concentrated along rivers anywhere from a few to almost a hundred kilometres away from the former collective farm centres. These centres were established during the sedentarization programme implemented in the early Soviet period and have served as administrative, educational and cultural centres where local schools, libraries, medical facilities, shops and post offices are located. Local collective farms, however, continuously practised transhumant herding of cattle, sheep, horses and yaks throughout the Soviet

Table 1. Semi-structured interview sample

<i>Site</i>	<i>Number of households identified</i>	<i>Number of households with no livestock</i>	<i>Household interview sample</i>
Modotoi	136	6	118
Khadatai	93	8	49

period. Today the absolute majority of the households at each research site (96 per cent at Modotoi and 91 per cent at Khadatai, see Table 1) own livestock. The composition of individual herds varies but normally one contains several or all four types of livestock. Some herders prefer a mobile lifestyle, seasonally moving between two or three locations (Table 3).

The data used for this article are collected by means of participant observation, archival research and semi-structured interviews with local households' representatives. The sample for the household interview (Table 1), held in 2006 and 2007, was based on a list of households provided by the local authorities at each of the study sites. The lists were discussed with key informants to eliminate divergence between the official records and de facto households. Furthermore, during the interviewing, each interviewee was asked to list all members of the household, in this way determining its boundaries. The list of the households and lists of members of the interviewed households were periodically compared with the help of research assistants. Necessary amendments were made based on the perception of the basic socioeconomic unit by its interviewed member. Households representing all wealth groups, identified by a wealth-ranking exercise (Goody, 1958), were interviewed according to the same proportions represented by each group in the general population. Households without livestock were not interviewed with the list of semi-structured interview questions but members of such households were asked in a more informal manner about the reasons for not owning livestock and use of agricultural land if the household owned it.

Collective farm privatization

Private ownership of land in Russia was introduced in October 1990 by adopting the law 'On land reform'. It had little impact, however, until December 1991 when the Presidential decree (no. 323) 'On immediate measures for implementation of land reform' and the subsequent government resolution (no. 86) initiated the reorganization of state and collective farms. At that time 98 per cent of agricultural land was used by these enterprises (Wegren, 1998). These policy regulations called for farms to hold a general meeting of members within a year, the purpose of which was to vote on farm reorganization.

Land and other assets used by the farm had to be divided into shares. Each member of a farm, including pensioners living on the farm, had a right to a share of farm land and assets. The share could then be withdrawn from the collective to start an individual farm; it could be invested into a reorganized enterprise; or it could be sold to other former members of the collective. Land shares, however, could not exceed a district-set size. If a farm had more land than could be distributed among its members without exceeding the district limit, extra land had to be either transferred to a district redistribution fund or auctioned. Lands of the district redistribution fund could be leased or sold. According to the decision reached at the general meeting, state and collective farms could allow those farm residents who were not involved in agricultural production – notably teachers, medical staff, postal workers, etc. – to receive farm shares. Only in 1995 did Government resolution 96 recommend that all state or collective farm employees be allocated land shares. This included those fired from the farm since 1992, serving in the Soviet army, women on child-care leave, etc., pensioners residing within the farm's territory, heirs of state farm members, and others not directly involved in agricultural production.

Former members of the collectives who established a legal entity known as 'peasant farm' – a production unit legally determined as market-oriented and comprised of one or several related households – were eligible for the lease of additional land from the state. The commercial orientation of peasant farm³ production, which presumably gave grounds for its legal right to larger land plots, distinguishes it from 'personal subsidiary holdings' (Rus. *lychnoe-podsobnoe khozyaistvo*). The latter production unit, as defined by policy makers, is meant to undertake household-based agricultural production as a subsidiary activity, mostly oriented towards internal consumption. All households independent from a collective farm but not establishing peasant farms are determined for the purpose of this research as such entities, hereafter referred to as 'smallholder'.

As was prescribed by the presidential decree 'On immediate measures for implementation of land reform' mentioned above, the local collective farms held their members' meeting to vote on the future of the farm. According to the decisions of the meetings, the farms were preserved as collective property but split into smaller units; the privatization of these started subsequently, as certain members applied for their shares to establish individual farms.

The two collective farms under consideration were privatized exceptionally fast. Although 700 million hectares of land in the Russian Federation were privatized in the decade after the fall of the Soviet Union (Allina-Pisano, 2008: 3), the de facto land allocation process has been extremely slow (Hivon, 1995; Wegren, 1998; Stammler and Ventsel, 2003; Allina-Pisano, 2008). An overwhelming number of farm members in Russia leased their land shares back to the collective (Wegren, 2000: 250–251): 'Farms that are truly privately operated account for only 6 to 7 per cent of agricultural land (with household plots making up another 6 per cent)' (Deininger, 2003: 140). Both farms under

consideration, however, were liquidated as early as 1995–1996 through actual distribution of land and other assets to collective members.

At Khadatai, the general shortage of pastures stimulated collective members to establish the first peasant farms as early as 1992. 'Everybody flung himself on the land' – the informants at this site often noted. At Modotoi, the first four peasant farms separated from the collective in autumn 1993, all established by large households at the latter stage of their development. At this research site, individual shares of assets other than land were determined by the member's salary for the preceding five years and the length of his or her service to the collective. A land share, each comprising one hectare of haymaking land, was allocated to all members of the collective, including pensioners.

Shares allocated in this way to the larger households were the most significant. Middle-aged couples who had worked for the farm for many years were eligible for the largest property shares. Each of their children 18 years and older working for the collective had a right to at least a share of land. Pooling together the shares of all household members allowed such households to build up large herds, obtain houses located on various seasonal pastures and, most importantly, to secure haymaking meadows sufficient for sustaining during winter the livestock they received from the collective as part of their shares. I stress the ability to secure natural hay lands due to their substantial shortage in the area. The newly established peasant farms could lease grazing resources from the state.

Following the example of these 'peasants' or 'farmers', as they are often referred to in the area, more and more people applied for the allocation of their shares, leaving the collective as either peasant farms or smallholders. Unlike the peasant farms, smallholders were not allocated individual grazing plots but, as stated above, received one hectare of hay land and a share of other collective property per member or pensioner of the collective farm. Already in 1996, just one year later than in Khadatai, the last 34 members of the collective operating at Modotoi held a meeting voting for the farm's final dissolution.

The process of allocating land and other assets in Khadatai was highly opaque, with little written evidence on how the distribution was accomplished. However, interviews with local informants and the current land distribution in the community suggest that the allocation was extremely unequal, benefiting collective managers and specialists. Furthermore, other policy regulations were contravened; for example, land was not given to the collective farm pensioners.

Distribution of collective farm property has become one of the important factors determining social stratification in both communities. Such stratification is based on access to land and other assets such as livestock, herding facilities and agricultural machinery (for current distribution of livestock in each community see Table 2). Unequal access to these resources is based partly on embezzlement by local elites – a violation of central provisions as

Table 2. Livestock ownership distribution, 2006⁴

Number of livestock units	Modotoi		Khadatai	
	No. of households	%	No. of households	%
1–9	41	34.7	7	14.3
10–29	53	44.9	29	59.2
30–49	6	5.1	4	8.2
50–99	13	11	7	14.3
100–149	3	2.5	1	2
150–249	1	0.8	1	2
250 and higher	1	0.8	0	0

mentioned above. The centrally developed policies themselves also created the foundation for such stratification. Two major policy prescriptions contributed to such an outcome. First, policy regulations allowed the exclusion of certain rural populations, notably people residing on the farms but not directly involved in agricultural production, from the lists of beneficiaries. Second, households establishing peasant farms were eligible for larger land plots.

In both research communities, people who were not members of the collective at the time of its reorganization received no shares. In the early 1990s, construction of the road that made the district accessible for motor transport, geological exploration of the region and district electrification provided some employment opportunities to local people. At the time, such employment had been quite attractive due to the financial difficulties of the collective farms, which had not been paying salaries to their members for months. Those members of the farm who had left for outside jobs were not included in the list of the beneficiaries, nor were staff members of the local schools, medical centres, cultural centres, post offices, etc. Many of those who lost their jobs thereafter, as well as the low-educated and poorly paid support staff of the state institutions, found themselves with limited means of survival. Retired people who used to work for all these organizations were not given property shares either but at Modotoi they were allocated one hectare of haymaking land. At Khadatai, even those whose jobs were cut from the downsized collective after its initial reorganization were not allocated a share. Landlessness (or having insufficient land) became an acute problem for these categories of the population, further enhanced by the fact that no land redistribution fund was established in the research district. Although the district is short of land, the maximum size of peasant farm plots in the district was determined to be as high as 500 hectares, resulting in the distribution of all available agricultural land.⁵

Collective members who retired from the farm before its reorganization should also be mentioned as disadvantaged. At Modotoi, each pensioner received in kind no more than one hectare of hay land, a house and a few animals. All such informants complained bitterly that the distribution of shares

was unfair due to the fact that their younger counterparts received much larger shares of livestock and other property such as houses located on seasonal pastures, tractors or large herds of livestock. However, in comparison with Khadatai, where despite their legal rights, people who had retired from the collective before 1992 were not allocated any land at all, Modotoi pensioners appeared to be in a better position.

Policy distinction between peasant farms and smallholders is one more important factor that allowed the unequal allocation of land. In addition to land shares allocated to the farm members, the newly established peasant farms were eligible for the long-term individual lease of land from the state. Subsequently, peasant farms were granted a legal right to privatize this land. According to the local decision at Modotoi, peasant farms could lease up to 70 ha of grazing land in addition to their land shares that comprised hay-making fields. At Modotoi today, the local peasant farms lease from 5–70 ha of grazing land. All categories of land were additionally allocated to peasant farms at Khadatai. Currently, the plots range from 13–235 ha. The largest plot at this site equals 235 ha of land comprising both pasture and haymaking fields (217 and 28 ha respectively).

Collective farm managers' manipulation of the resources at Khadatai further enhanced the inequality in resource distribution. If at Modotoi peasant farms' grazing reserves are distant from the main settlement, separated by a forest zone land which belongs to the state and unofficially used by local herders for common seasonal grazing of their livestock, at Khadatai, individual reserves, associated with the former collective farm elites, lie in the immediate vicinity of the settlement. As a result, the village is squeezed between large individually used lands, leaving only a narrow forested belt of land for common grazing. Half of the households interviewed at this site do not possess rights to individual grazing reserves and rely on these commons to graze their livestock round the year.

The following citation from an interview with a Khadatai resident who has to rely on common grazing and possesses one hectare of haymaking land illustrates well the inequality of land allocation at this site:

We cut hay in Z [location]. If you leave the village at 8 a.m., you will get there at 1 a.m. at night [the trip will take 17 hours]. We cut 1 ha. We were not given any more. We bring hay from there by a tractor in winter. We move there for cutting and come back only when we finish. Last year we let the cows with calves go grazing untended [in the village vicinity] and went to cut hay.⁶ I worked for the collective for ten years but received nothing. X took the entire A area. If people leave something uncut, for example along the gullies, we cut it.

The local elite's manipulation of resources is often considered the main factor determining inequality in land distribution. Allina-Pisano (2008) argues that farm directors and officials in Black Earth Russia barred others from establishing peasant farms while obtaining large holdings for themselves or

their acquaintances. Crate (2003) sees the establishment of peasant farms as a mechanism for acquiring land and other assets by those in power. She demonstrates that local officials in Sakha transferred state farm resources first to those holding upper-level positions in the state farms, ostensibly to form peasant farms, and then divided the remainder among other households (Crate, 2003: 872). Although this research provides evidence to support this point of view, the example of Modotoi also suggests the important role state policy plays in forming such social disparity. While the privatization process at this site did not diverge significantly from the prescribed procedures, it nonetheless resulted in significant variations in allocation of resources, especially land. The disadvantaged position of pensioners, exclusion of residents not directly involved in the collective farm production, and additional allocation of land to peasant farms are three important variables determining local inequality at this research site. The latter two were determined by the central policy.

Climatic conditions and risk mitigating strategies

The research area is characterized by an extremely continental climate with a broad range in temperature. Four seasons are normally determined by the local population as winter, spring, summer and autumn. Winter is the coldest season, when night temperatures occasionally may fall below -50°C . The mean January temperature is -22 – -28°C (Atlas Zabaikal'a, 1994). Snow remains on the ground for seven months, from November to May. However, occasional snowfalls are possible all year round. Spring is cold, windy and usually dry. In summer, day temperatures rise to 30°C but can fall below freezing at night. Night frost is more often experienced at the higher altitude, where summer is shorter in general. Five metres below the surface of the ground remains permafrost (Atlas Zabaikal'a, 1994).

Annual precipitation varies from 300 mm in valleys to 1,200 mm in the high mountains (Atlas Zabaikal'a, 1994). In the region in general, rainfall variability between years is not significant (Humphrey and Sneath, 1999: 272). However, local informants stress the significant impact of dry weather conditions on vegetation biomass at both research sites. Besides, the impact of weather variability on pastoral economy is marked not only in terms of variability of annual precipitation. Variations in temperature, rainfall, snowfall and wind over the four seasons determine vegetational yield, the possibility of preserving fodder for the cold season and livestock survival. Precipitation may have both positive and negative impacts, depending on the time of year. Rainfall in early summer, for example, is necessary for vegetation growth. However, intense rainfall in August and September – the time when hay is prepared to feed cattle and sheep in winter – results in low quality and/or little hay. Snowfall in cold seasons is good for the following summer's grass yield; however, heavy snowfall prevents livestock from grazing. Low temperatures and

wind in winter and spring also decrease the survival rate of the livestock. The combined impact of certain negative variables – for example, early summer drought, a rainy hay season and a long, cold, windy and/or snowy winter – may lead to a loss of livestock. Such negative effects accumulate towards the spring, when significant livestock loss may occur.

The high risk of livestock loss in the harsh climatic conditions encourages herders to prepare hay for cattle and sheep, which are the most vulnerable to the described weather conditions. To improve the livestock survival rate, herders also aim at fattening their animals in summer, preferring to move them to areas with low grazing pressure and good pasture quality. Looking for a balance between the improved conditions of the herds and such variables as household labour availability, employment opportunities, living conditions on seasonal pastures, possible additional benefits of being in some remote areas (e.g. hunting or trading with geological parties and mines), access to education, medical care and other services, local herders adapt a variety of herding strategies. A household may seasonally move with a herd between two or more locations, only part of a household may move with the herd, or livestock may be incorporated into herds of relatives, friends or hired herders to be moved and grazed; some livestock (especially horses) may be moved to a comparatively safe location and left to graze untended (Table 3 presents herding strategies adapted in the two research communities).

Some of the local population, however, do not seasonally move their livestock, especially cattle and sheep. Some herders, in contrast, move to the village, the area of high grazing pressure, in summer. At Khadatai, such a pattern is practised by 12.3 per cent of the households (Table 3). These are owners of large herds grazing cattle in autumn, winter and spring at individual reserves located not far from the village. The primary goals of moving out of the individually used locations, according to interviews with the owners of larger herds, are to preserve the hay meadows and individual grazing plots for colder seasons. Another reason for this arrangement has to do with the shortage of labour in summer – the main milking season. Moving cattle to the village allows for a variety of strategies that increase labour resources. Hiring poor villagers, relying on relatives, and using the labour of household members who permanently reside in the village for formal employment help to overcome the ‘seasonal labour bottleneck’ (Netting, 1993: 63). However, this moving pattern further increases the grazing pressure on the common pasture around the village during the short vegetative period. Local informants at this site often commented about village common pasturage conditions, ‘It is shorn clean here already in August! In winter we rely only on hay’, ‘It is bare as a table here in autumn!’

At Modotoi, where peasant farms’ grazing reserves are distant from the main settlement but common pasturage is conveniently located at a comparatively short distance from the settlement, the pattern of moving to the village is utilized to a much lesser extent (1.7 per cent of households, see Table 3). These households bring a few cattle to the village. The herds are

Table 3. Livestock grazing patterns, 2006

Grazing pattern	Cattle %		Sheep %		Yaks %		Horses %	
	Modotoi n = 118	Khadatai n = 49						
	Not mobile	30.5	55.1	1.7	4.1	0	2	0.8
Grazed on village common pastures year round	1.7	4.1	1.7	6.1	0	0	0	0
Grazed in one location year round but away from the settlement								
Mobile	39.8	22.4	21.2	20.4	25.4	4.1	21.2	12.2
Seasonally moved by owners	1.7	0	0	0	1.7	0	8.5	12.2
Seasonally moved to graze untended	17.8	0	28.8	42.9	2.5	2	1.7	0
Seasonally moved given to a herd of others	4.2	0	8.5	0	5.9	0	11	6.1
Permanently stay and moved within a herd of others	1.7*	8.2+4.1*	0	0	0	0	0	2
Moved in summer to the village from other locations	0	0	0	0	0	0	5.9	0
Graze untended and move freely	1.7	6.1	0	0	0	0	0	0
Moved from the village only in autumn to a hay field	0.9	0	38.1	26.5	64.4	91.8	27.1+23.7**	38.8+18.4**

* only milch cows moved to the village, non-milking cattle are given to a herd of others

** households having only working/riding horses

limited by the availability of haymaking land, which was more equally distributed in the 1990s. The shortage of hay land not only limits the number of livestock which can be fed in winter, but also encourages herders to feed animals as well as possible in summer so they gain more fat and build up strength to survive the following winter. Even the few households that move to the village in summer prefer to leave their non-milking cattle with relatives or friends grazing their own livestock on seasonal pasture.

Modotoi herders, who reside in the settlement in winter, unofficially use forest zone land as common grazing in summer. Having no individual grazing plots, they built small houses in the common area or use the shelters from the former collective that were either abandoned or allocated to them as part of their share. On the common summer pasture the owners of smaller herds tend to concentrate closer to the village. The low number of livestock in each herd, however, allows for comparatively low grazing pressure. Individual ownership of the houses at the summer grazing, though unofficial, secures the right of the owner to use the pasture together with his or her neighbours. The main reason for this mobility, according to village residents, is the shortage of grazing in the village, which prevents cattle from properly fattening up and growing strong for the colder seasons. The owners of large herds, possessing rights to individual grazing lands, also utilize common grazing areas in the forest zone, depending on the seasonal suitability of individual plots. As in Khadatai, they move to preserve haymaking lands and winter grazing. However, the necessity of improving their livestock condition in summer encourages the large herd owners to stay away from the popular areas, thus providing better grazing conditions for their livestock. If for any reason a household possessing a large herd moves to an area of high grazing pressure, they prefer to separate yaks and horses (normally dominating the large herds at this research site) and move them to other locations.

In contrast, the owners of the large herds at Khadatai admit that due to high grazing pressure on the commons, their animals grazing in summer in the village do not fatten up. The owners, however, rely on their feed being good in other seasons. One of the informants who uses common pastures in summer and moves his herd to an individual reserve in the colder seasons said during an interview: 'There are too many livestock here [in the village]; there is not enough grazing. The livestock has not fattened up properly. But autumn is long; they will gain weight when we move to the winter location'.

The better-off population at this site mitigates the risk of losing their livestock in winter by preserving their grazing reserves for individual use in cold seasons and preparing large amounts of hay. This way of risk mitigation became possible with the privatization of large land plots and access to haymaking machinery. Therefore, the better-off population loses interest in caring about the grazing pressure on the common pastures. It is important to note that the grazing area furthest from the settlement (located in the forest zone), which had been seasonally used in the Soviet period by the Khadatai

collective farm for grazing horses and non-milking cattle, remains unused. In turn, the poorer population, with no grazing reserves and limited hay land, bears the highest risk of losing animals in cold seasons, as high pressure on the common pastures in summer leaves little grazing in the colder seasons. The inability to graze livestock in the cold seasons increases the village herd's demand for hay. To manage this risk the landless or almost landless people have to cut hay for large plot owners for a share of the hay, invest in purchasing hay from the richer people or buy feed from local shops.

Spring 2004 is remembered in the entire research area as a traumatic season that affected the livelihoods of many herding households. A severe and snowy winter had weakened the livestock, followed by a cold spring that prevented the thick snow covering from melting. Many households, meanwhile, found themselves with no hay to feed their animals. People recall that the previous summer of 2003 had been too dry to provide hay yields sufficient for the long winter. Some recall a caterpillar outbreak that, in their opinion, decreased the yield. The cumulative effect of these natural conditions was particularly acute for Khadatai. An elderly informant shared her experience: 'Everybody in the village lost half of their herd. We did too. My son left for the city after that. He said that he did not want to deal with livestock any longer'.

The village residents blame the loss on the owners of large herds and land lots for moving to the village in summer, trampling down the pasture: 'They do not care that it will leave no winter forage for our cattle here', noted a young man who lost eight out of fifteen cattle in 2004. Another villager who also experienced a significant loss said:

The Xs have a house in A location and a house in B location, but for some reason they move here for the summer. If I had such an estate, I would stay behind the river. The grazing area is very small here. Livestock should be moved out, why do they move in? A village cow already has nothing to graze! Nobody will let it in [to his/her land]. They will shoot [it if it gets in].

A local teacher explained her position in the following way:

We have 2 ha of hay land, actually 3, but one is flooded every year. Teachers were not given any land [during collective farm privatization]. Some have none at all. Farmers move their herds here [to the village] in summer. So our livestock never builds up strength. It has nothing to eat. The hay is never enough either. If there were more hay land, we would keep more livestock. We used to lease hay land, paying one cow per year for it and kept 40 cattle. Then in 2004, 14 of them died. It threw cold water on us. We have only 20 now.

The couple quoted below have four children, including their own and those adopted from the wife's deceased sister. Their herd consists of seven cattle: three cows, two calves and two bullocks. The husband, who moved to

the area in the 1980s, is unemployed, and his spouse is on maternity leave. The main source of family income is state welfare for the children and the wife. This household may be considered an example of one of the poorer families; they are unlikely to be able to obtain more land and thus increase their herd:

[They] allocated 0.5 ha of haymaking land and 0.5 ha of arable land for the whole family. There is nothing to catch there [no yield]. My sister died, and we use her one hectare. Somehow, we manage. Every year we purchase hay. Half a lorry costs from 10 to 15 hundred [Russian Roubles = \$400–600].⁷ There is not enough pasture and hay land. We would like to have more livestock but there is not enough land. In 2004, seven cattle of ours died.

It seems that only salaried jobs may improve this family's situation. The wage jobs that are normally available at rural settlements in the region, however, are limited to professional jobs established by the state, such as teachers, librarians, medical staff and administrators, as well as low paid jobs for support staff in the same state-established institutions. These jobs are highly competitive and can often be acquired only through personal connections. Looking for diversification of income, the owners of larger herds also compete for these jobs. For example, two members of the household possessing rights to the largest lot of land in the area work as members of the support staff at the local state institutions. Such employment provides a work record, resulting in a higher state pension upon retirement and a monthly cash payment. The latter prevents the household from having to sell their livestock to cover everyday cash expenses.

Some poorer people are hired by the better-off households to take care of their herds. These labourers are normally poorly paid and their livelihood is perceived as being 'hand to mouth' survival. The population of the district under consideration also has the opportunity to seek employment with the mining companies and with mineral exploration crews. This job normally requires long absences from home and often leads to minimizing or liquidating the herd, altering the entire lifestyle of the household. Furthermore, an application for a job associated with mining represents for some local residents a choice between the immediate needs of a family and a possible penalty on the part of the spiritual world for breaking into the earth, which is considered to be a sin.⁸ However, limited opportunities for other jobs and the land shortage that prevents an increase in herds force some local people seek such employment or out-migrate.

High grazing pressure in the village is gradually pushing smaller herd owners to utilize their hay land for livestock grazing after the hay cutting season (6.1 per cent in Khadatai and 1.7 per cent in Modotoi, Table 3). The vegetation which appears after the hay cutting is high in easily digestible protein (Tohmetov and Garmaev, 1998: 102) and thus allows for comparatively quick fattening and strengthening of livestock grazed on hay lands.

Using haymaking land for grazing in the cold seasons allows the owners to increase the herds and/or improve their conditions. This pattern is, however, constrained by a shortage of resources to build living facilities for the smaller herd owners.⁹ Those herders who can afford to construct barns for livestock and winter-proof houses continue using hay meadows as pastures through winter. Grazing on haymaking fields during the cold season in addition allows herders to save on hay transportation. The number of households utilizing hay land for cold season grazing tends to grow as people accumulate the resources needed to build facilities. Several informants at both sites shared their plans to build a house on their hay plots in order to improve their herds' conditions or to increase their size. However, at Khadatai, apart from the commons in the settlement and the remote forest zone area, no other summer grazing is available. Therefore, this pattern is likely to further build up the grazing pressure on the Khadatai common land in summer. One such informant said: 'I work but as soon as I retire I will move to the hay plot. I have started to build a house there. For the summer, I will move here [to the village]. What else can we do if we have no pasture?'

The number of households whose access to seasonal grazing is facilitated by social networks is also limited at Khadatai. At Modotoi, these networks allow access to seasonal grazing for households short in labour, financial resources or established rights to land. For example, 23.7 per cent of households at this site do not seasonally move; instead, they leave all or part of their cattle in the care of relatives or friends moving to the summer locations. Owners of both large and small herds normally accept this responsibility. At Khadatai, however, this scheme is utilized only by 4.1 per cent of interviewed households. Only close relatives, notably children, parents or siblings, rely on each other's help. However, it should be noted that households with sheep in Khadatai were more likely to leave them with the herds of others. But nearly all the flocks were given to the next of kin or the same few households who shepherd sheep for a reasonable charge. It is also important to note that sheep owners making such arrangements are not so much concerned with their flocks' condition but with their immediate safety. The high number of wolves and hunting dogs that prey on sheep require constant monitoring of the flocks. In addition, economic instability in the post-Soviet period has led to an increase in the theft of domestic animals; sheep, being easy to carry away, became the primary target of thieves. If herding families are either short of labour or consider investing manpower into guarding a small flock of sheep to be inefficient, many prefer to incorporate them into larger flocks either seasonally or permanently for a fee.

Although further research is needed to focus on the effect of land fragmentation on social relations in order to make any firm conclusions, I would like to emphasize a few points distinguishing Khadatai. Firstly, all seasonal grazing lands currently in use at Khadatai are considered the individual property of the households utilizing them. Secondly, a few large landowners use hired labour to care for their herds on owners' seasonal pastures at Khadatai, while

there are no examples of this at Modotoi. This difference can be explained by the allocation of herds and land to local collective farm elites in the 1990s at Khadatai, who prefer hired labour to personal involvement in herding. The decline in trust among members of the community as a result of extremely unfair collective farm privatization may be suggested as one more factor influencing the low reliance of local herders on others for seasonal grazing of livestock.

Discussion and conclusion

Privatization of collective and state farms in Russia resulted in social inequality of rural communities based on stratified access to land and machinery. As mentioned above, the inequality of land distribution is often seen as the result of the local distortion of government policies (Allina-Pisano, 2008; Crate, 2003: 887). This article shows the inequality of land distribution as determined not only by local implementation but also by central policy. The case study of Modotoi, where the privatization process did not significantly diverge from centrally set rules, suggests that unequal land distribution resulted from the policies themselves.

At Modotoi distribution of land and assets resulted in increased social stratification, as it did in Khadatai. However, as stated above, those who benefited the most at this site were not households associated with collective managers but large households of herders comprised of middle-aged couples and their adult children. Accumulating several shares, they received large herds of livestock, hay land and lodging facilities on seasonal pastures. The disproportion in the allocation of land at this site differentiates between smallholders and peasant farms due to the fact that the latter were granted the right to lease and subsequently privatize grazing land.

Furthermore, at both sites the staff of the local schools, medical centres, post offices, etc. as well as pensioners retired from these institutions and the members of the collective farm who had left before the reorganization were the most disadvantaged in the farm privatization process. Many of them received neither land nor other assets. According to reform regulations, collective members could decide whether other members of the community would be allocated shares. Accordingly, if we look at rural communities as a whole (not only at collective farm membership), it becomes apparent that the allocation was not egalitarian by nature, as it is often argued by the scholars of post-socialist reforms (e.g. see Wegren, 2000). The unequal distribution of assets was not a mere local bending of central policy; its foundation was established by the reform provisions. It resulted in the appearance of a stratum of poor and landless (or almost landless) people who have little hope for improving their economic situation unless they seek non-pastoral employment. In those communities, where all land is already divided, however, such employment is not likely to enable a return to a

pastoral occupation, especially in the research area, where religious beliefs render the local population uncomfortable about selling land. In this way, land privatization institutionalizes inequality among herders.

Unequal allocation of land altered the strategies aimed at mitigating environmental risks, further limiting opportunities for landless herders or those with insufficient land to improve their livelihoods. At Khadatai, where certain individuals secured large patches of land in close proximity to the village, those who were not allocated land have little or no opportunity to undertake transhumance, as long moves impose unfavourable cost/benefit ratios on the owners of small herds, while nearby pastures have been allocated to others. When the cumulative effect of certain natural conditions, such as a dry summer, rainy hay-cutting season and a cold, snowy and long winter strikes, individual reserves saved for winter grazing and larger amounts of hay minimize the risk of livestock loss for large land owners. For such households, this became possible not only due to the extremely unequal distribution of hay-making land but also due to the acquisition of large herds and agricultural machinery, which in turn allows them to mechanize the haymaking process and to use hired labour. The large amount of hay available to them lifted the limitation that a hay shortage would impose on herd growth. These large herds, which are moved to the village in summer further increase the number of animals on common pasture. Those who possess little hay land and rely on the commons bear the highest risks, resulting in dramatic livestock losses. In this way, the privatization at Khadatai, where land is scarce, enhanced the stratification of the population and led to localized high grazing pressure.

The case study of Khadatai is extremely pronounced and fits well with the argument summarized by Behnke (2003: 104–105) on the basis of worldwide research on land privatization in pastoral communities. The shortage of land at this site encouraged competition over land and resulted in an extremely unequal allocation of the resource. Nearly all the agricultural land was allocated for individual access, while part of the population of the site was left with no grazing plots and thus denied the possibility of transhumance. While some remote forest zone lands are available for summer grazing, moving to these areas would impose costs that are too high for owners of small herds. These herds in turn are limited by the scarcity of those grazing and haymaking resources to which their owners currently have access.

At Modotoi, where individual grazing plots are located in remote areas and occupy a relatively small proportion of land available for grazing, and where natural haymaking fields are comparatively equally distributed, privatization has not had such a profound effect. The limited amount of hay for winter encourages both large and small herd owners to fatten their livestock up in summer to survive the cold season, which is an essential pattern of Inner Asian pastoralism (Batbuyan, 1996: 202; Cincotta, et al., 1992: 9; Humphrey and Sneath, 1999: 228). At the same time, local households at this site still have some flexibility in deciding whether or not to undertake transhumance, based on their evaluation of local grazing pressure. They try to avoid areas

where, in their opinion, livestock are too heavily concentrated. In doing so, large herd owners move to less popular locations. Informal common use of forest zone land located a relatively short distance from the settlement provides such opportunities for smaller herds. Such land use pattern at Modotoi is mainly ensured by the unofficial access of its population to this conveniently located grazing. However, *de jure*, this land can also be individually used, when leased from the state (The Forest Code of the Russian Federation, 2006). If further fragmentation of land through individualization of forest zone use is practically implemented at Modotoi, it is likely to jeopardize the livelihoods of the increased number of households currently depending on this resource for seasonal grazing, repeating the Khadatai scenario.

Disproportional suffering of the poor from harsh environmental conditions is a previously acknowledged tendency. Larger herd owners are more likely to have enough animals to form a breeding nucleus for re-establishing their herds after a disaster. In addition, chances are high that they mitigate risks through diversification (Toulmin, 1985). Land privatization allows the preservation of individual grazing reserves to become one more way of mitigating risk for those who hold individual rights to land; those who do not possess enough land lose their livestock disproportionately due to environmental conditions. Individualization of grazing also makes it harder for the landless to return to pastoral production in the event of losing livestock.

Although one of the goals of agrarian reform in Russia, and thus of land privatization – the main component of the reform – was to improve land use efficiency and its ecological conditions (Alpatov, 2005), land privatization in areas with predominantly pastoral production resulted in an alteration of land use patterns that leads to overgrazing of common pastures, especially in locations characterized by a shortage of land. Furthermore, privatization resulted in the hardening of social stratification in rural communities. In conditions of individual land use, the landless can hardly improve their conditions unless they involve themselves in wage labour or out-migrate. Such outcomes of the reform should not be seen as a mere local bending of the central policy, which aimed at an egalitarian distribution of land, but a result of the policy itself.

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Notes

1. Only research farms, seed and breed rearing farms, fur farms, vinicultural farms, and a few of the larger production units were excluded from the list of state and collective farms to be privatized (Perechen', 1992).
2. Pseudonyms are used here to protect the privacy of the informants.
3. Russian legislation and the population in the research area apply the term to these productive units without regard to their agricultural or pastoral occupation.
4. The table provides livestock unit numbers taking into consideration animals six months and older. A simplified version of animal unit coefficient is applied for the calculation. A coefficient 1.0 is used for cattle and yaks. A coefficient 0.2 is used for sheep. Horses are not included in the calculation due to the fact that data on the number of horses provided by the informants are incomplete. Given the fact that horses often graze untended in remote locations, making data on horses difficult to verify, herders often felt reluctant to discuss the number of these animals in their herds. However, it is worth mentioning that with a few exceptions of herders specializing in horses, owners of small cattle herds have no or few horses in contrast to owners of large cattle and yak herds, who normally possess a significant number of horses.
5. Russia inherited from the land legislation of the Soviet Union the concept of land zoning: assigning land use limitations according to a zone or a category of designated purpose (Rus. *kategorija tselevogo naznachenia*). The basic implication of zoning is to impose the proposed use of the land on owners and other users. The category of agricultural land comprising mainly arable lands, natural hay fields and pastures was available for privatization within the framework of post-socialist rural reform. This article is concerned with the tenure and de facto use patterns of two land categories – agricultural land and forest zone land. The latter belongs to the Russian Federation; it can be leased from the state for a fee but cannot be privatized.
6. It is important to stress that, as the informant describes it, the household wasted part of the milking season when normally butter is prepared for winter consumption and risked the safety of their livestock.
7. At the time of the field research \$1 could be exchanged approximately for 25 Russian Roubles.
8. Local religious beliefs incorporate Shaman and Buddhist theologies as well as beliefs in the spirits of nature, including mother earth.
9. Smallholders have no legal right to build permanent structures on their agricultural land (Federal Law 112, 2003). However, few local residents are aware of this limitation.

References

- Allina-Pisano, J. (2008) *The Post-Soviet Potemkin Village: Politics And Property Rights in the Black Earth*, Cambridge University Press, Cambridge.
- Alpatov, A. (2005) *Zemel'naya Reforma v Rossii*, AKDI: Economica i zhizn', Moscow.
- Federal'naiia sluzhba geodezii i kartografii Rossii (1994) *Atlas Zabaikal'a* Roskatografia, Moscow.
- Batbuyan, B. (1996) 'Proposal for the adoption of ecologically appropriate regions for herding in Inner Asia', in C. Humphrey and D. Sneath (eds), *Culture and Environment in Inner Asia: The Pastoral Economy and the Environment*, vol. 1, pp. 198–208, The White House Press, Cambridge.

- Behnke, R. (2003) 'Reconfiguring property rights and land use', in C. Kerven (ed.), *Prospects for Pastoralism in Kazakstan and Turkmenistan from State Farm to Private Flocks*, pp. 75–107, RoutledgeCurzon, London.
- Behnke, R., Alimaev, I.I. and Kerven, C. (2003) 'The institutional dimensions of sustainability: the evolution of grazing systems in Kazakstan', paper presented at *MEDRAP Workshop no. 3 on Degradation and Protection of Resources in the Northern Mediterranean: Socio-economic and Political Aspects*, 16–18 January 2003, Montpellier, France, EU DC XII (INCO-DC).
- Cincotta, R.P., Yanqing, Z. and Xingmin, Z. (1992) 'Transhumant alpine pastoralism in north-eastern Quighai Province: an evaluation of livestock population response during China's agrarian economic reform', *Nomadic People*, 30: 3–25.
- Crate, S.A. (2003) 'The great divide: contested issues of post-Soviet Viliui Sakha land use', *Europe-Asia Studies*, 55: 869–888.
- Deininger, K. (2003) *Land Policies for Growth and Poverty Reduction*, The World Bank and Oxford University Press, Oxford and New York.
- Federal Law 112 (2003) 'O lichnom podsobnom khozyastve (On individual subsidiary economies),' *Federal law of the Russian Federation*, no. 112, 7 July 2003.
- Fernandez-Gimenez, M.E. (2002) 'Spatial and social boundaries and the paradox of pastoral land tenure: a case study from postsocialist Mongolia', *Human Ecology*, 30: 49–78.
- The Forest Code of the Russian Federation (2006) *Federal law of the Russian Federation*, no. 200-FZ, 4 December 2006.
- Galvin, K.A., Reid, R.S., Behnke, R. and Hobbs, N.Th. (eds) (2008) *Fragmentation in Semi-Arid and Arid Landscapes: Consequences for Human and Natural Systems*, Springer, Dordrecht.
- Goody, J. (1958) 'The fission of domestic groups among the LoDagaba,' in J. Goody (ed.), *The Developmental Cycle in Domestic Groups*, pp. 53–91, Cambridge University Press, Cambridge.
- Hanstad, T. and Duncan, J. (2001) 'Land reform in Mongolia: observations and recommendations', *RDI Reports in Foreign Aid and Development*, 109, Rural Development Institute, Seattle.
- Hivon, M. (1995) 'Local resistance to privatization in rural Russia', *Cambridge Anthropology*, 18: 13–22.
- Humphrey, C. (2002) 'Subsistence farming and the peasantry as an idea in contemporary Russia', in P. Leonard and D. Kaneff (eds), *Post-socialist Peasant?: Rural and Urban Constructions of Identity in Eastern Europe, East Asia and the Former Soviet Union*, pp. 136–159, Basingstoke, Palgrave.
- Humphrey, C. and Sneath, D. (1999) *The End of Nomadism? Society, State and the Environment in Inner Asia*, Duke University Press, Durham.
- Netting, R. (1993) *Smallholders, Householders: Farm Families and the Ecology of Intensive, Sustainable Agriculture*, Stanford University Press, Stanford.
- Perechen' sel'skokhoziaistvennykh predpriatii, ne podpadaiuschikh pod deistvie postanovleniya pravitel'stva Rossiiskoi Federatsii ot 29 dekabria 1991 goda N 86 'O poriadke reorganizatsii kolkhozov i sovkhov'*, 23 February 1992. (The list of agrarian enterprises not to be privatized in accordance with the resolution of the government of the Russian Federation)

no. 86 from 29 December 1991 'On conditions of the reorganization of collective and state farms').

Perrotta, L. (1995) 'Aid agencies, bureaucrats, and farmers: divergent perceptions of rural development in Russia', *Cambridge Anthropology*, 18: 59-71.

Skyner, L. (2003) 'Property as rhetoric: land ownership and private law in pre-Soviet and post-Soviet Russia', *Europe-Asia Studies*, 55: 889-905.

Sneath, D. (1998) 'State policy and pasture degradation in Inner Asia', *Science*, 281: 1147-1148.

Stammler, F. and Ventsel, A. (2003) 'Between neo-liberalism and dirigisme approaches to reindeer herding in Yamal and Sakha', in C. Han and the 'Property Relations' Group (eds), *The Postsocialist Agrarian Question: Property Relations and The Rural Condition*, pp. 321-361, Lit Verlag, Munster.

Tokhmetov, T.M. and Garmaev, D.Ts. (1998) 'Nekotorye aspekty kormlenia domashnikh zhivotnykh', in A.P. Popov (ed.), *Vozrozhdenie Traditsionnogo Zhivotnovodstva, Ego Sviaz' s Material'nym Bytom, Kul'turoi, Traditsiyami I Obychaiami Naselenia Baikal'skogo Regiona: Materialy Nauchno-Practicheskoi Konferentsii*, pp. 101-103, Buryatskoie knizhnoe izdatel'stvo, Ulan-Ude.

Toulmin, C. (1985) 'Livestock losses and post-drought rehabilitation in sub-Saharan Africa', *LPU Working Paper 9*, International Livestock Centre for Africa (ILCA), Addis Ababa.

Wegren, S.K. (1998) 'The conduct and impact of land reform in Russia', in S.K. Wegren (ed.), *Land Reform in the Former Soviet Union and Eastern Europe*, pp. 3-34, Routledge, New York and London.

Wegren, S.K. (2000) 'Socioeconomic transformation in Russia: where is the rural elite?' *Europe-Asia Studies*, 52: 237-271.

Williams, D.M. (1996) 'Grassland enclosures: catalyst of land degradation in Inner Mongolia', *Human Organisation*, 55: 307-313.