WOLTS Project Mongolia

Bornuur Summary

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This short Summary presents the main findings set out in full in the WOLTS Project Mongolia – Bornuur Soum Report, June 2017, available at www.mokoro.co.uk/wolts.

The WOLTS research and methodology

Mokoro's practical and action-oriented long-term strategic research project, the Women's Land Tenure Security Project (WOLTS), is piloting its methodology through a 'Study on the threats to women's land tenure security in Mongolia and Tanzania'. Working together with People Centered Conservation (PCC) in Mongolia, we have been investigating the state of women's land tenure security in pastoral areas affected by mining investments, through both participatory qualitative and quantitative research to identify the main threats to the land rights of women and vulnerable groups. The WOLTS project's aim is to assess possible means to improve gender equity in land tenure governance and secure the land rights of vulnerable people from internal threats within communities, as well as to support communities as a whole to withstand external threats to their land and natural resources (see our website: www.mokoro.co.uk/wolts).

This Summary shares our findings from our research in Bornuur soum between April and November 2016, including initial field visits, a baseline survey and a participatory fieldwork phase. We are grateful for both the overall support of the soum government and the engagement and hospitality of the people of Bornuur throughout.

Our baseline survey was conducted in August 2016 with 10% of households across Bornuur. It included 142 households, of which 111 were randomly sampled and 31 were additional female-headed households. Thus 78% of the total survey sample was randomly sampled (including 82 male- and 29 female-headed households) while 22% comprised deliberately targeted female-headed households (31 households). This was done to boost the total number of female-headed households surveyed so as to help uncover critical gender issues for vulnerable groups. Data from the 31 additional female-headed households have only been included in comparative analysis of male- and female-headed households, and not in all the general baseline analysis.

The participatory fieldwork phase took place in November 2016 and included 14 focus group discussions (FGDs) and 11 individual biographic interviews (BIs), involving over 102 people. Different types of social groups and individuals were specifically sought out for these discussions and interviews, so as to reflect different characteristics and issues that we considered worth exploring further after analysing our baseline results (e.g. widows, miners, married men and women, etc.). FGDs were structured around standard participatory exercises, including natural resource and migration mapping, seasonal labour analysis, and stakeholder analysis and institution mapping. BIs followed structured question guides that were tailored to the circumstances of the individual being interviewed in order to help us learn about people's lives and livelihoods and the ways both gender relations and access to different resources have changed since their childhoods. Our research also included interviews with different local government officials as well as with representatives of mining companies and organisations working in Bornuur.

Location and population

Bornuur soum is located in Tuv aimag, 115 km north-northwest of Ulaanbaatar. Its total land area is 114,687 ha, of which approximately 36,000 ha is forested, 68,000 ha is pastureland, and 8,100 ha is cropland. As at 3 March 2015, 18 mining licences had been granted in the soum; its main mineral resource is gold.

Bornuur is made up of four baghs, two of them more urbanised and two more rural, where most herders live. The total population of the soum as at 4 August 2016 was 5,059 people living in 1,404 households. Average population density for the soum as a whole was 0.04 people per ha.

Twenty-six per cent of the randomly sampled households in our baseline survey were female-headed. Extrapolating from this suggests that some 365 households in Bornuur were female-headed at the time of our survey. Our survey data also suggest that 37% of Bornuur's population were under

18, 5% were elderly (aged 65 or older), and 57% were working age adults (aged 19 to 64). The youthfulness of Bornuur's population is underscored by the number of younger adults (aged 19-24 and 25-34), who made up 40% of the working age population in our randomly sampled households, and by the fact that in total some 60% of people in these households were aged 35 or under. The population of Bornuur is largely Khalkh and Buddhism is the predominant religion.

Recent history of economic and population change

Under socialism, all land belonged to the state; there were no fences, and the majority of produce from herding and farming had to be given to the state authorities. The negdel (collective) ran everything, and households only possessed a few livestock to support their individual needs. Land for setting up camps was allocated or approved and movement was regulated by the soum governor, who would decide where and when every herder household went. Once herders moved away from an area, crops were planted there, so conflicts between the two land uses were minimised. The government supported the development of modern dairy farming, irrigation systems and agricultural technology to provide milk and potatoes for Ulaanbaatar. An East German gold mining company also operated in Bornuur, from approximately 1979 to 1990, but it seemed that nobody engaged in artisanal mining at that time.

After Mongolia's transition to democracy in 1990, privatisation took place very suddenly. The state-owned assets of the negdel crop farm and two dairy farms were allocated to different negdel workers as private individuals. People were left free to work together or separately, but lack of management led to bankruptcy and production collapsed as equipment was run down. Loss of jobs and price increases led to widespread poverty. While many Bornuur citizens moved to Ulaanbaatar to try to find employment, people from the Gobi Desert and from Mongolia's western aimags started to move to Bornuur to engage in mining and herding, including those seeking to benefit from the good pastures and closeness to the huge meat and milk markets in Ulaanbaatar.

Many unemployed Bornuur citizens started to engage in (illegal) artisanal mining in the former East German mine. While it was mainly men who blasted big holes in the rocks and went down into them to extract the ore, women also took part in washing the ore and cooking for the miners, and some women went underground with the men. People were attracted from other soums to try their luck, leading to an increase in prostitution and violence. Some people also lost their lives as mines collapsed. The use of mercury and cyanide and the washing of gold in the mountain streams polluted Bornuur's rivers; this and mining itself had important long-term health consequences.

The mining boom nevertheless led to the rapid development of the local economy. More recently, wealthy people from the capital have also been attracted to Bornuur to engage in intensive livestock farming, commercial crop farming and tourism, or simply for retirement. The continuing high levels of immigration have contributed to increased land scarcity and land-related disputes.

Livelihoods and gender relations

Marriage and family situation

Our baseline survey suggests that the majority of adults in Bornuur were legally married, but that there were also high numbers of female-headed households: 26% of the randomly sampled households were female-headed with 67% of them headed by widows, almost one fifth of all the randomly sampled households. Conversely, divorce rates appeared to be quite low.

Thirty-three per cent of the randomly sampled households reported that they included members who often lived elsewhere (temporarily for the year), and some households reported including school children and students who usually lived elsewhere in the medium to longer term, as well as

parents (usually mothers) staying in soum or aimag centres while their children were at school. Very few households reported including members who lived elsewhere for work.

Our FGDs and BIs confirmed that traditional nomadic patterns of seasonal movement for grazing livestock were much reduced and now relatively uncommon. Whereas in socialist times (and before) many herders moved as families between four seasonal camps, the main movements of herders were nowadays between summer and winter camps; some people have become semi-intensive and intensive livestock farmers and many people also reported giving their livestock to relatives to pasture, rather than moving with them themselves.

Education

There was clear evidence of gender disparities in education, with a significantly higher proportion of surveyed households containing women than men who were either a 'post school vocational training graduate' or had completed undergraduate education (42% compared to 29%). There were generally more adults with lower education levels in the rural baghs of Bornuur, and more adults with higher education levels in the more urbanised baghs.

Relative wealth and poverty

Thirty-four per cent of the randomly sampled households had a ger (traditional tent), 33% had a house, and 30% had both. Timber was the most common building material for houses. Female-headed households were slightly more likely to have a house than a ger as their main residence. The vast majority of randomly sampled households had access to electricity, with those in the rural baghs more reliant on portable solar panels than mains electricity.

Throughout the year, the most common source of water was from open deep wells nearby, by means of payment. This was followed by communal or shared access to open deep wells nearby. Kiosks, private wells and river water were used by fewer households, with river water more likely to be used by male-headed households in the rural baghs. Most households had access to sanitation, but female-headed households were slightly more likely to rely on public toilets.

There were significant gender differences in access to all modes of transport, with male-headed households much more likely to have access to any form of transport than female-headed households, including lorries, cars, motorcycles, bicycles and horses. However, there were very few gender disparities between the possessions of female- and male-headed households; the vast majority of all surveyed households had televisions, refrigerators and washing machines, and 100% had mobile phones. The notable exception was silver cups, which were held by herders as a traditional form of wealth and were much more common among male-headed households.

Overall, our baseline survey data on housing type and materials, access to electricity, water, sanitation and transportation, and ownership of certain possessions provided some indications of relatively higher poverty rates among female-headed households, and suggestions of potential areas of vulnerability, particularly for female-headed herder households. This was supported by the findings from our FGDs and BIs, which revealed the dangers of slipping into poverty, particularly for widowed women with young children.

Main livelihoods

Due to rapid urbanisation in the soum centre, land privatisation and perceived degradation of pastureland, some people had given up traditional nomadic herding and become intensive or semi-intensive livestock farmers, and sometimes also crop farmers, cultivating medium-sized fodder plantations as well as vegetable plots. Unlike the intensive (modern) livestock farmers, who kept their animals within their khashaa (housing plot) and therefore relied totally on fodder, traditional herders relied mainly on pasture in summer and hay in winter to feed their animals. While fodder

was planted on plots held under possession or use rights, hay was made in the autumn from the natural vegetation occurring on common pastureland. However, there seemed to be a lack of good quality haymaking areas, which were increasingly being fenced off, leading to numerous disputes over these valuable resources. Further, many young people were no longer interested in herding, but little employment was available for them in Bornuur; some have moved to Ulaanbaatar in the hope of finding work, others have engaged in (illegal) artisanal gold mining in the soum.

There seemed to be quite high levels of livelihood diversification in Bornuur; many households engaged in both herding and crop farming and/or had a household member in formal employment. There seemed to be generally low levels of casual labour and a strong reliance on family labour (and/or labour in kind) within agriculture, and there were both male- and female-headed households reporting commercial crop farming among the activities of their members. A large majority of all surveyed households had relied on two or more sources of cash income in the previous 12 months, with no large differences between male- and female-headed households. However, female-headed households were generally less reliant on both crop farming and herding for their main livelihood activity, linking to prevalent notions that these are both traditionally male activities, and women were instead more often involved in government and other types of formal employment, which can be linked to their higher education level as compared to men.

As noted above, since Mongolia's transition to democracy, artisanal gold mining has helped to offset high unemployment in Bornuur, so that it seemed during our fieldwork that almost every household in the soum had at least one member who had engaged or was still engaging in artisanal mining. There was very low reporting of mining as a top source of cash income in our baseline survey, but in our FGDs and BIs we detected much evidence of significant initial under-reporting of household involvement in artisanal mining because of its history of illegality.

Gender relations

While it seemed that women in Bornuur were mostly in charge of housekeeping, looking after the children and milking livestock, men did most of the more physically challenging and outdoor work of herding, slaughtering animals, haymaking, collecting firewood, fixing fences and undertaking any mechanised farm work. However, our FGDs and BIs also revealed a strong sense of complementarity as many activities were reportedly undertaken by household members together, e.g. men cut the hay, women and children make bundles, and men load them onto the truck; women milk, while men clean the dung. Both women and men appeared to work hard, but women's time and work burdens tended to be greater than men's because of childcare and household chores. Women also tended to deal with bank loans and land certification, which was very time-consuming and tedious.

Even though men were regarded traditionally as the heads of their household, women seemed to have a strong role in household decision-making, with either the woman taking most decisions or the couple doing so together – except in relation to slaughtering and sale of livestock, where decisions tended to be taken just by men. Women generally managed household funds.

Women (especially married women) also tended to be the ones who attended bagh and soum citizen khurals (parliaments), and several bagh leaders and khural representatives were women at the time of our fieldwork, even though the most powerful political positions were occupied by men. Female household heads who had children, however, found it difficult to attend bagh meetings because of time constraints, indicating a lower level of political participation by these women.

Evidence from our FGDs and BIs suggests that widowhood is a time when women become particularly vulnerable to poverty and land tenure insecurity, with several widows reporting that they had to sell crop farms and/or livestock, as well as housing plots and winter camps.

Domestic and gender-based violence was not openly discussed during any of our fieldwork, making it difficult to assess the extent to which this poses problems for gender relations in Bornuur today.

Mining companies and artisanal mining

After the closure of the former East German mining operation, the high levels of gold deposits in Bornuur attracted other investments, and by the time of our fieldwork there had been 18 mining licences issued, 12 of which were for exploration and 6 for mining operation/production; no new licences had been issued since 2012 following endorsement of the 2011 Law on Prohibiting Mineral Exploration and Extraction near Water Sources, Protected Areas and Forests (the Long Name Law).

One company (Gun Bilegt) had operated between 1998 and 2012 and another (Centerra Gold) between 2003 and 2016; it was unclear whether they would ever resume these operations or whether other companies with licences would start new exploration or production. However, in both of the formerly operational sites, security guards had been hired to protect the mines from artisanal miners, who nevertheless seemed to find ways to carry on mining, often at night.

Effects of mining

In our FGDs and BIs, many people claimed that mining had not brought any benefits or work opportunities to Bornuur, but instead had just reduced and polluted water in the rivers and destroyed the local environment. This was a particular worry for herder households, who depended on rivers to water their livestock and could only keep livestock if they had access to clean water. The only positive aspect of mining mentioned was that people could get cash income from artisanal mining. However, for many people the costs they paid in terms of their health (especially lung diseases) and the risks incurred to engage in (illegal) artisanal mining outweighed the benefits. Conversely, representatives of Centerra Gold expressed pride in the company's environmental reclamation policies and contributions to the communities around its Boroo Gold Mine.

Legalisation of artisanal miners

As part of efforts to find solutions for the growing social and environmental problems attributable to mining in its earlier boom years, the Swiss Development Agency (SDC) Sustainable Artisanal Mining Project helped to establish the first umbrella organisation of artisanal miners in Mongolia in Bornuur, in 2008, and the Minerals Law of Mongolia was amended in 2009 to allow artisanal miners to mine legally if they created an association and entered into a tripartite agreement with the soum government and a mining company. Under the SDC project each artisanal miner joined a nukhurlul (a small group of miners who pay an annual subscription), who together formed an artisanal miners' association that included more than 800 people. This association entered into a multi-stakeholder agreement with the soum government, Centerra Gold and SDC, whereby Centerra Gold provided some land out of their licence areas in Bornuur to the association and an environmentally friendly gold processing unit was established with financial support from SDC and the soum government.

Some artisanal miners claimed that the leaders of the umbrella association, who set up the processing unit and registered it as a private company (Khamo) without consulting all the nukhurluls, made large profits and did not distribute money in line with agreements made. In addition, while the use of harmful chemicals has reduced and artisanal mining has become more organised and less violent, many people expressed worries about continuing groundwater contamination and dust.

Back to illegality

As noted above, no big mining companies were operational in Bornuur during our fieldwork, and the proportion of gold in the soil was perceived to be reducing, making artisanal mining less profitable than it had been. Some participants in our FGDs and BIs said that the land that had been allocated to the artisanal miners' association from the Boroo Gold site was sold to another company (Gun Bilegt) without the artisanal miners' knowledge or consent. We were told that even though the new mine owner was not yet operating in that area, it had put in place heavy security to try to prevent

artisanal miners from entering. As a result, many people who had been mining had stopped, and those that continued were doing so illegally again. Meanwhile, Khamo was reported to be processing the 'illegal gold', and despite their complaints about Khamo, artisanal miners thus depended very much on the company for their livelihoods. However, whereas previously both men and women had engaged in artisanal mining, it was now mostly unemployed young men doing it out of necessity, with any cash income more likely to be spent on alcohol than when men and women engaged in artisanal mining together; only a few women from female-headed households continued to mine illegally. Apart from growing alcoholism among male miners, health problems were reported to be more prevalent among both current and former miners, including deaths from lung diseases.

While artisanal miners therefore seemed to be suffering (again) from their illegal status and lack of social protection – and despite the efforts of the SDC project to have brokered a long-term solution to this – mining companies also seemed fearful of becoming liable for any accidents and/or environmental damage that might occur in artisanal mining operations in their licensed areas.

Land scarcity, land concentration and environmental degradation

The overall picture to emerge from our fieldwork was one of increasing land scarcity, land concentration and environmental degradation. The need that unemployed young men felt to engage in artisanal mining was exacerbated by their difficulties in getting access to land for housing, crop farming and haymaking. We were told that there were no more housing plots available for allocation in the soum centre and no more vegetable plots in the irrigated farm area. However, a land market seemed to have been rapidly developing, so that people with money could now purchase or rent land for different purposes, including for the tourist camps that were being developed by outsiders

Increasing land scarcity and the development of a land market have led to a rise in land certification. Property ownership titles and possession licences could be obtained for housing plots, as well as vegetable and fodder plots, but access to pasture continued to be regulated mainly through customary arrangements and haymaking areas had only recently been allocated to households on the soum's cadaster map without the issuance of possession licences or use contracts.

Formal land ownership was widely perceived to be highly unequal, with a few rich individuals said to be holding (possessing or renting) very large tracts of land for tourism camps, mining sites, haymaking and crop farming, and with poorer people unable to obtain any property titles, possession certificates or use contracts. Some doubt was expressed as to whether soum citizens were given preference when applying for land, as required by law, with resentment towards wealthy outsiders and foreigners clearly visible. However, soum officials explained that when land certification started from 2003, many local people were too focused on artisanal mining as a source of cash income to see any significance in having land; it was only much later that they noticed outsiders using and benefiting from having land that more and more local people started to apply. There has also been an increase in fencing as a result of increasing awareness of the growing monetary value of land.

Mining, increasing farming activities, as well as a general rise in the soum's livestock population that was exacerbated by outsiders coming to Bornuur with their animals, were all perceived to have contributed to the degradation of pastureland and water sources. Water resources were also shrinking, creating a precarious situation for traditional herders. These problems were perceived as being aggravated by the digging of deep wells by large landholders, which increased water scarcity, and by tourist camps creating litter and water pollution.

Forests

Rapid deforestation and degradation of the forested areas in Bornuur, due to much uncontrolled and illegal logging, came up as a further issue in our FGDs and BIs. The introduction of Forest User

Groups (FUGs) with contracts to protect, use and rehabilitate forests since 2012 was seen to have partly offset these problems, and by the time of our fieldwork 10 FUGs had been established with 214 members (approximately 40% women, but most FUG leaders were men), with 22,000 ha of the soum's 36,000 ha of forested areas under their management.

Concerns relating to FUGs included that many members came from the soum centre rather than living near the forest. It was suggested that information about the establishment of FUGs had not been shared widely enough and that the benefits of membership should be more widely distributed; a few concerns were also raised that illegal logging might not have completely stopped. We were told that FUG members generally saw potential to make money from non-timber forest products, but they were not yet making much profit and instead were using their own money to protect the forest. Members of FUGs drew particular attention to conflicts with herders, who they accused of letting their animals graze in the forest and eat small trees. As a result, some FUGs had fenced their forest management areas and others were hoping to do the same. This, in turn, was resented by local herders, who would lose access to pasture.

Land allocation processes

Growing perceptions of land concentration and scarcity have led many people to start applying for formal certification of housing plots and of vegetable and fodder plots. However, there appeared to be some unresolved issues around formal land allocation processes, with the process of applying for different types of registered land seen as cumbersome, time-consuming and difficult to understand. It seemed to be mainly women who engaged in this process, even though land certificates were often issued in men's names. Having the certificate in the (male) household head's name was not generally identified as a problem since the use of and the cash income from the plots were seen to benefit the whole household, but problems could arise for women's tenure security over land upon divorce or widowhood, not least because commercial crop farming tended to be a male-led activity.

While it was claimed that both poor people and newcomers to the soum (including poor newcomers) were discriminated against when it came to land applications, most participants in our FGDs and BIs did not perceive there to be any discrimination by gender with regard to the actual registration and certification of land. However, women from female-headed households were more likely to identify gender-based discrimination and sexual harassment as issues in land allocation and the process of applying for land seemed to be particularly burdensome for them. We were also told that female-headed households found it very difficult to get access to pastureland and haymaking areas, and that the rights of widows were often not respected because of the perception of herding as a traditionally male-led activity.

Practical issues relating to land certification included the costs of the cadastral surveys to produce the necessary maps and questions about their validity, and overlapping claims on land. It was also felt by many people that outsiders and companies held much larger tracts of land than individual local households were able to access because they had greater resources with which to bid for land at government auctions, and that it was therefore difficult in practice for local people to get more than 2 ha for crop farming even though they were entitled to apply for up to 5 ha.

Land disputes more often involved female- than male-headed households. Typical disputes included delays in applications for housing plot certification and issues in the land allocation process for vegetable plots and hay fields including the incorrect recording of land boundaries or household ownership details on the soum cadaster map. A handful of disputes had involved violence or physical fights. The allocation of pastureland for vegetable farms and fodder plantations was also a cause of conflicts between herders and farmers, as livestock trespassed onto the allocated land. Almost half of all male and female respondents in our survey felt that it was difficult to get a just resolution to land disputes. However, it was not always appreciated that soum officials were constrained by the requirements of Mongolian law.

There was a reasonable understanding of relevant Mongolian laws among our surveyed households, but with some areas in which people had misperceptions. For example, significant numbers of both women and men wrongly thought that men's rights took precedence over women's, and that rights to land included rights to minerals under it. Improved awareness of the law and more information sharing about land allocation processes would help towards better understanding all round.

Pastureland management

Only 33% of randomly sampled households in our baseline survey reported herding as their top source of cash income in the previous 12 months. Twenty per cent of all female-headed households and 38% of all male-headed households identified herding as their top source of cash income, reflecting a clear gender difference. However, there was strong agreement that herding was important to the survival of the majority of people. This can partly be explained by the fact that most households seemed to own at least some livestock, even if it was not their main source of cash income – or providing any cash income – and because herding still seemed to provide a very strong sense of cultural identity for many people. The loss of pastureland was therefore a major worry.

Access to winter and summer camps and grazing areas

Participants in our FGDs and BIs claimed that it was very difficult to acquire new winter camps, as there were no more unallocated areas available, leading to many young married couples having to stay in their parents' winter camps. It also appeared that while most older people had winter campsites that were recorded in the soum cadaster map, many did not actually have a possession certificate. This was seen as problematic because without formal documentation of their rights, their winter camps could be potentially officially reallocated.

The distances covered during movement between summer and winter camps were reported to be small compared to the past. Transport was also no longer provided by the soum government to help people move, as had been the case in socialist times. Summer camps were not recorded on the soum cadaster map and there were no possession certificates issued for them at all. Instead, we were told that most people set up their summer camp in the same place each year, so that they had a customary use right in that area. Neighbouring households usually shared pastureland, with any newcomers needing to negotiate with those already there in order to set up a new summer camp.

We were also told that many herders no longer moved the animals to pasture themselves; instead some hired paid assistants to do this but more often they left some of their livestock with relatives to be grazed in either Bornuur or other soums. Generally, the herders who did not move with their livestock were those who had the fewest animals, as it was more cost-effective for them to give their livestock to relatives or friends, sometimes for a cash payment, but more commonly for reciprocal favours, such as letting a child stay with them in the soum centre to go to school.

The low level of reported intensive livestock farming (zero-grazing) tallies with other evidence that intensive livestock farming, although promoted by government policy, was still very small-scale compared to traditional herding; semi-intensive livestock farming, however, appeared to be more common. Increasing sedentarisation and reduced mobility of herders in Bornuur was thus a definite issue that emerged during our fieldwork, linked to both the adoption of semi-intensive livestock farming practices and the 'farming-out' of animals to other households for grazing just noted above. It was also linked to changing family arrangements and livelihoods. The diversity in household livelihoods militated against seasonal household movement, even for herders. At the same time, in order to facilitate children's education, it seemed that many Bornuur herders – or at least members of herding households – lived in houses in the soum centre throughout the school year and only moved to their summer camp during school holidays. On the other hand, semi-intensive and intensive livestock farmers tended to stay in their winter camps the whole year round, keeping their livestock within their khashaa and feeding them fodder and hay.

Haymaking areas

Hay is of crucial importance to herders in order to feed their animals in winter. Increases in both human and livestock populations, as well as the perceived degradation of pasture, have put pressures on the soum's haymaking areas that have led to the increased privatisation of hay fields. Despite the soum government's efforts to resolve conflicts over haymaking areas through the 2009 allocation of designated areas to different Bornuur herder households (without certificates as the law does not allow the certification of pastureland), there were reports of continuing disputes. Solutions to these problems were usually negotiated between individual families, and one of our FGDs revealed that female-headed households who had no male support were particularly likely to lose their hay fields, as women were often not taken seriously in discussions with male herders. The fact that many haymaking areas were not fenced also created problems with conflicting claims to hay fields, and theft of fresh hay was a further concern. As a result of these various issues, some people were starting to fence their hay fields, putting yet more pressure on the remaining common pastureland in the soum, particularly if people fenced a larger area than they had been allocated.

Difficulties faced by female-headed herder households

The fact that traditional herding was perceived as a male activity tended to make it difficult for widowed, divorced, separated or single women to continue herding on their own. Winter camp maintenance was also seen as a man's job, with herding in winter generally much more difficult as all the outside work was done in extreme sub-zero temperatures. Because of this, access to pasture and haymaking areas was generally discussed by men and disputes over pasture were resolved between them, and female-headed households reported that they found it difficult to negotiate in this male-dominated environment. Most of the female household heads we spoke with also mentioned that they could not cope with the heavy workload involved in herding animals alone and had therefore ended up selling all their animals, and often their farmland too. In contrast to the situation with regards to the certification of housing plots and crop farms, we therefore found that women did face real discrimination with regards to access to land for pasture and summer camps, for which certification was not available. Instead, pastureland, summer camps and haymaking areas remained governed by longstanding tenure practices and largely under the control of male herders.

Given all these factors, it seemed that female-headed households could continue to herd only if they had male relatives to help them. This also helps to explain our observations that some herder households sent their daughters to school in the soum centre while keeping their sons at home to take up herding, contributing to the gender disparities in education noted above and creating subsequent difficulties for male herders in finding wives. The social implications of these trends have yet to become fully clear; however, what did seem clear was that improvements in access to grazing land for female herders and female-headed households who want to continue to herd must be part of any efforts to support gender equality and balance this situation for the better.

Conclusions

Our 2016 fieldwork in Bornuur revealed many conflicts over land and natural resources in the soum, including a general increase in conflicts over different land uses since the former socialist times. These conflicts arose from the interplay of different changes taking place in the soum. Immigration into Bornuur was perceived to have contributed to land pressures, including land scarcity, land concentration, the development of a land market in non-residential land, and environmental degradation. The rapid socio-economic and environmental changes taking place in Bornuur against the backdrop of these pressures seemed to have had a bigger and more negative effect on poorer and more vulnerable people, including female-headed households and the young and unemployed, as they faced the most difficulties in accessing land and participating in local land management.

While mining has created new opportunities for people in the soum since the 1990s, particularly in the form of artisanal mining, it has also created problems around health and alcoholism and it remains tarnished by illegality. The interactions between local citizens and large mining companies have been very poor, with local people often seeming to be uninformed about companies' operations in the soum. Mining activities and the growing tourism industry in Bornuur have also had negative effects on water quality and quantity, which was a particular worry for herders. While for some herders, life has improved in the last decades as they have been able to establish permanent houses and become semi-intensive or intensive livestock and crop farmers, for the majority relying on traditional nomadic pastoralism, life overall has become more difficult. The increasing privatisation of different types of land has led to fences springing up all over the soum's pastureland, challenging longstanding patterns of communal and shared use, and the remaining pastureland was perceived to have become heavily degraded at the same time as human and livestock populations have increased. All of these developments, as well as the pull of urban life, have caused young people to become disillusioned with herding and seek employment in the capital city, leaving older adults behind in the countryside.

Both internal and external threats thus appear to combine to make herders' livelihoods very precarious in Bornuur today. On one hand, government policy did not seem to promote pastoralist lifestyles, preferring intensive livestock and crop farming instead, and large tracts of land appeared to have been allocated for farming, tourism and mining investments. On the other hand, the perception was that these largely outsider-driven investments have negatively affected the quality and quantity of pastureland, water and forest resources in the soum, as well as local people's health.

While in a well-functioning herder household women's and men's roles were seen to complement each other and women seemed to hold relatively important powers over household decision-making and finances, we found several cases of women descending into tenure insecurity and poverty on widowhood. Although divorce was uncommon, it might also pose problems for women, given the prevalence of land certification in the sole name of the (male) household head. Both women and men did not perceive there to be any discrimination by gender with regard to formal land allocation processes, only by wealth/poverty, and many women reported owning housing plots (and, to a lesser extent, small vegetable plots). However, access to pastureland was still traditionally negotiated by men and female-headed households often struggled to maintain their access rights to pastures, summer camps and hay fields, and often lost out in disputes with other households; the rights of widows to these types of land were notably not well-respected. Furthermore, female-headed households were unable to shoulder the heavy workload and/or were unwilling to take on 'male' tasks, such as slaughtering animals or operating machinery, in the presence of strong social norms that positioned herding as an activity for traditional male-headed family units.

All these difficulties for female-headed households were exacerbated in the current context of high male mortality and morbidity as a result of mining, as well as the increasing overall land scarcity, concentration and degradation. This begs the question of what positive options there are for female-headed households in Bornuur, given our fieldwork findings about their difficulties in gaining access to land for both herding and crop farming, the dangers of mining, and the persistence of social norms about traditional gender roles. Small businesses and formal employment stand out as important alternatives, but are unlikely to be viable for all, and we were anyway repeatedly told that formal employment options were limited in the soum. This therefore points instead to a clear need for greater participation by all people in Bornuur in decision-making about land and natural resources in general, and about pastureland in particular – including poorer people, and especially such vulnerable people as female herders and widows, as well as the sick and elderly poor – in order to protect these not insubstantial groups of Bornuur citizens from falling into long-term chronic poverty and tenure insecurity.