

Gendered Access to Resources and Livelihood Strategies among Herders in Pastoral Areas of Qinghai Province, China¹

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Abstract

This paper examines gendered access to resources and livelihood strategies among Tibetan herders in Serthang village, Qinghai Province, China, and how these processes contribute to the reconfiguration of the pastoral way of life. Drawing on qualitative data from in-depth interviews and participant observation, the study applies a combined framework of property rights and access to analyze how herders gain and maintain access to land, natural resources, and other forms of capital within changing socioeconomic contexts.

The findings show that herders' access to land and resources has undergone significant changes, shifting mainly from collective management to household-based land use. In practice, access to resources is shaped not only by formal land tenure arrangements, but also by factors such as household economic conditions, kinship relations, local traditions, and social networks. These factors contribute to variations in access to resources across gendered and household categories.

By examining the interaction between property rights arrangements and access mechanisms, this study contributes to the literature in two ways. First, it extends access theory by illustrating how formal institutions and locally embedded practices jointly shape resource access in pastoral areas. Second, it highlights the role of gendered practices in livelihood adaptation and resource governance, thereby offering a more nuanced understanding of the dynamic nature of pastoral life in Qinghai Province.

Keywords: Herders, Gendered Access, Livelihood Strategies

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Introduction

Since the 1980s, rural reforms in China, particularly the introduction of the household responsibility system and rangeland contracting system, have transformed pastoral areas by shifting from collective management to household-based production. These reforms have facilitated the development of market-oriented economies and reshaped pastoral livelihoods. Local medicinal herbs like caterpillar fungus became commercial products and later formed the primary economy for herders. The caterpillar fungus economy boom has engaged herders in the market economy and has also created various conflicts between households and within and between communities throughout pastoral areas of Qinghai Province (Winkler, 2009). In 2000, the 'Open Up the West' campaign was launched as an economic strategy to help China's western regions catch up with coastal cities, with regions such as Qinghai Province, which remain less developed than eastern coastal areas. A core component of the strategy is ecological construction aimed at addressing land degradation. Since the 2000s, the government has implemented a set of grassland management policies, including grazing bans, grazing suspension, and rotational grazing, as well as ecological resettlement programs, to protect rangelands and support herders' livelihoods. In 2017, the Rural Revitalization Strategy was introduced to promote rural economies and improve living standards. In pastoral areas, herders have adjusted their livelihoods in response to evolving economic, environmental, and policy conditions.

Existing studies have examined the commercialization of pastoral resources, such as caterpillar fungus, and the role of local knowledge in ecological governance on the Qinghai-Tibetan Plateau and related areas (e.g., Banks, 2001; Nori, 2004; Miller, 2008; Xu & Grumbine, 2014; Levine, 2015; Tsering Bum, 2016; Qi & Li 2021). These studies have addressed issues such as rangeland management, property rights, and urbanization from the perspective of local herders. However, they have paid little attention to gendered access to livelihoods, particularly regarding gendered power over land and natural resources. Serthang village, located in Qinghai Province, provides a relevant context to explore these gaps and examine how men and women at the household and community level navigate changes in property relations, market integration, and ecological governance.

Objectives of the Study

1. To examine how different property regimes shape local herders' access to key productive resources, including livestock, land, and natural resources.
2. To analyze how these access dynamics shape herders' livelihood strategies and sustain their pastoral way of life.

Literature Review

1. The Concept of Property Rights

Modern views about property are based on 'political economy', and this work comes from the seventeenth and eighteenth century (Rose, 1990). According to Macpherson (1978), the meaning of property is the way people see it and the meaning that people give to it through the institution of property. Property is a man-made institution, which creates and maintains relations between people. There are three things involved in an institution: a desire for resources, the need for the capacity to prevent others from accessing those resources, and the need to allocate exclusive control of resources to individuals (Rose, 1990). In this sense, the institution of property mediates people's conflicting desires, gives people a sense of security and makes everything more valuable. Consequently, property means not things, but it means rights in the sense of enforceable claims. Whether an enforceable claim makes a legal right depends on a society's belief to let a person use and benefit from something, so property is a political relation between persons and it is also a political phenomenon (Macpherson, 1978). Based on this, Schlager and Ostrom (1992) distinguish the differences between 'rights' and 'rules'. For them, 'rights' are the product of rules and rights are not equivalent to rules, which means that property is not just about rights, but also about responsibility. Individuals, families, communities and the state may hold rights and responsibility, so property is a set of everyday practices, social relationships and rules (Vandergeest, 1997).

Generally, there are three types of property, namely common property, private property and state property (Macpherson, 1978). These three types of property were created by the state, which gives rights to individuals. Common property is created by the state so that each individual will not be excluded from the use and benefit of something, so the common property is always a right of the natural individual person. Private property is created by the state so that individuals can exclude others from the use or benefit of something; therefore, private property is a right of a natural or an artificial person. State property is a form of property rights held by the state as a legal entity within a specific institutional system. It is not common property, but an institutional form of ownership in which the state has the authority to define, allocate, and enforce exclusion rights over resources. In this sense, it is a right exercised by a legal entity rather than by individual citizens. Consequently, we can understand that common property is managed under the collective action of a certain group of people with their own customary tenure system. The customary tenure system is a traditional practice, which refers to a certain group of people who have the rights to land inherited from a kinship, linkage group and their ancestors, and customary tenure is a part of a group's culture and social structure (Eaton, 2005). Private property is managed under individual households or the private sectors based on control of access, and state property is managed under its citizens and government supervision (Hanna & Munasinghe, 1995).

According to Schlager and Ostrom (1992), property rights include operational-level property rights including access and withdrawal, and collective-choice property rights including management, exclusion and alienation in regard to common-pool resources. For access, people have the right to enter a defined physical property. For withdrawal, people have the right to obtain the 'products' of a resource. For management, people have the right to regulate internal use patterns and transform the resource by making improvements. For exclusion, people have the right to determine who will have access rights, and how those rights may be transferred. For alienation, people have the right to sell or lease either or both of the above collective choice rights. Common-pool resources are defined as: (1) property owned by a government, (2) property owned by no one, and (3) property owned and defended by a community of resource users. Within common-pool resources, collective-choice property rights include management rights, exclusion rights and alienation rights when land managers have access and withdrawal rights. Property thus can be understood as 'bundles of rights' over natural resource management (Schlager & Ostrom, 1992). This is based on Schlager and Ostrom's (1992) 'five types of property rights': the rights of access, withdrawal, management, exclusion and alienation. Sikor et al. (2017) developed another eight types of property rights: (1) use of direct benefits (use rights); (2) use of indirect benefits (use rights); (3) management (control rights); (4) exclusion (control rights); (5) transaction; (6) monitoring rights (control rights); (7) definition (authoritative rights), and (8) allocation (authoritative rights). They argue that resource governance involves multiple actors beyond local communities and the state, including international organizations, NGOs, and companies. These studies highlight how different actors exercise various forms of rights across multiple levels and scales to shape access to resources. In this process, local people may retain certain use rights, while their roles in decision-making and broader management tend to be more limited.

With the expansion of market and land privatization, more land and natural resources are being made into commodities on the global market. In this process, complex changes are involved in the property system. Property systems thus cannot be simply understood as fixed systems, as most property arrangements are mixed and involve multiple stakeholders, resulting in no purely state or purely local property (Vandergeest, 1997). As there are no clear property rights, property rights often overlap as they depend on particular circumstances including local politics, social organization, mechanisms and history to create new tenure systems in different ways in different places (Scoones, 1995). Wiber (1991) sees property and law as interacting systems, showing that property relations cannot be defined solely by laws but by the dynamic interactions between state institutions, community norms, and social practices. Li (1996) also argues that property relations are not merely legal arrangements but also reflections of social relations and power structures. In Agarwal's (1994) work on the legal recognition of land rights and social recognition of land rights in property systems in the face of land privatization

in South Asia, she argues that rights are defined as claims, which are legally recognized by legitimized bodies at different levels. Rights in land can be the form of ownership, which allows landowners to have certain freedoms to make decisions on land such as to mortgage land and to sell land to others. Rights in land have four distinctions: (1) legal recognition of a claim, (2) social recognition of a claim, (3) ownership of land, (4) effective control in land. Importantly, she argues that individuals may hold legally recognized ownership rights without necessarily having social recognition or effective control over land, which may lead to land contestations among different groups.

2. The Concept of Access

Based on Ribot and Peluso (2003), property and access are different. They argue that property and access are different in multiple ways, as 'rights' refer to property while 'ability' refers to access. They define access as 'the ability to benefit from things,' and those benefits can be redistributed when social relations are changed. Law, custom and convention acknowledge property, and people can enjoy certain kinds of social power. However, the various ambiguities involved in law, custom and convention result in actors having overlapping rights. Property alone cannot identify these specific overlapped rights and power relations, thus access analysis employs three tools: (1) identifying and mapping the flow of the particular benefit of interest; (2) identifying the mechanisms by which different actors involved gain, control and maintain the benefit flow and its distribution; and (3) an analysis of the power relations underlying the mechanisms of access involved in instances where benefits are derived (p. 161). For instance, the benefits from a resource can be identified through its production, extraction, product transformation, exchange, transport, distribution or consumption. Someone who has rights, but no access to labor or capital, may need to depend on having a certain kind of knowledge, education, etc.

Therefore, eight types of mechanisms of access, which are technology, capital, markets, labor, knowledge, authority, identities and social relations can identify how actors gain, control and maintain specific benefits. In this sense, access analysis highlights not only property relations but also production relations, entitlement structures, power relations, and historical processes. Building on this, Hall et al. (2011) emphasize that exclusion, the ways in which access is prevented or restricted, is as central to understanding property and access as inclusion. Together, Ribot and Peluso's (2003) 'access analysis' and Hall et al. (2011) 'powers of exclusion' provide complementary perspectives for analyzing how property, access, and exclusion interact in shaping resource relations.

In order to examine local herders' property relations and their gendered access to land and natural resources, I also draw on the concept of the 'pastoral way of life' introduced by Adriansen (2006). In her research

in Ferlo, Senegal, Adriansen uses this concept to understand pastoralism from herders' own perspectives. She suggests that the 'pastoral way of life' can be grasped by examining how herders explain mobility from their own viewpoints, how they use market opportunities to sustain pastoral practices, and how they engage in diverse livelihood forms such as agro-pastoralism, Tabaski-pastoralism, commercial pastoralism, and non-herding pastoralism. Following this approach, this paper explores how local herders interpret pastoralism and how they draw on livelihood diversity to maintain the pastoral way of life.

Research Methodology

This research employs qualitative methods for data collection. Data were gathered through in-depth interviews and participant observation. I stayed at the field site for 8 months and participated in household and community activities to have a better understanding of the local herders' pastoral way of life. From my participant observation, herders are mobile groups; they are not only mobile to their seasonal rangeland, but also mobile to nearby urban areas such as county seats and Xining (the capital city of Qinghai Province) for personal businesses. Therefore, in order to understand herders' seasonal mobility, I visited herders' summer rangelands in July and August, Fall rangelands in September and October, and winter rangelands in December and January in the years of 2017, 2019, and 2020. I also visited herders who are living in the county seat. I conducted in-depth interviews with 20 male and 10 female herders aged between 25 and 77, including semi-herders, retired herders, village leaders, construction workers, and vendors.

These case studies were selected based on herders facing labor and land shortages, as well as those dealing with land use rights through various social strategies, including those from divorced, widowed, and single-parent families. Specifically, the in-depth interviews focus on herders past memories, life stories, and their perspectives on changes in property relations, environmental governance, and livelihoods. The study also explores how herders seek alternative livelihoods, such as participation in pastoral cooperatives. Participant observation focuses on herding activities across different seasonal rangelands and examines how herders with different backgrounds access land and resources. All interviewees were selected based on their active involvement in community issues, their participation in environmental protection activities, and their strategies for developing pastoral livelihoods. The individual herders are divided into better-off herders, middle-income herders, lower-income herders, and landless herders according to the researcher. Better-off herders have adequate land for rental and relatively stable income from caterpillar fungus, so they have the option of continuing or abandoning pastoral livelihoods. For middle-income herders, they have enough land, but the income from caterpillar fungus is not stable, so they have to maintain their herding life. For lower-income herders, they have little land with limited fungus resources, so they need to work as hired herders for better-off and middle-income

families to augment their income. For landless herders, they have no livestock, so they need to work as hired herders, fungus collectors, or migrant workers. However, they can access fungus resources on village common land, which depends on their identity, negotiation skills, and social relations.

Furthermore, the data analysis draws on Ostrom and Schlager's (1992) 'bundle of rights' framework to examine herders' rights under different land use regimes over time. It also considers herders' practices in exercising both *de facto* and *de jure* rights over land and resources at the household, kinship, and community levels. In addition, the analysis draws on the concept of the pastoral way of life (Adriansen, 2006) to understand how local herders sustain pastoral livelihoods and cultural continuity under social and environmental changes. The concept of access is understood in terms of herders' ability to gain, control, and maintain land and natural resources, as well as their capacity to exclude others (Ribot & Peluso, 2003).

In terms of data analysis procedures, all interview data were transcribed and analyzed together with field notes from participant observation. The analysis followed a process of coding and thematic analysis. First, key themes such as land access, mobility, livelihood strategies, and exclusion were identified from the data. These themes were then grouped and compared across different types of herders (better-off, middle-income, lower-income, and landless) to understand patterns of differentiation and exclusions. The analysis also moved back and forth between empirical data and theoretical concepts, especially different types of land use rights, in order to interpret how herders negotiate and practice these rights in everyday life. To ensure credibility, the researcher stayed in the field for a relatively long period (8 months), which helped to build trust and gain a deeper understanding of local contexts. Repeated interactions with interviewees also allowed for informal checking of interpretations. Detailed descriptions of herders' daily practices and social relations are provided in this study. Furthermore, the researcher shares the same ethnic background as the interviewees and is a native Tibetan speaker. This facilitated direct communication without the need for translation and helped build trust with participants, allowing them to speak more openly. It also contributed to the depth and quality of the data.

In doing this research, the researcher introduced the research background and purposes to the interviewees and obtained their permission with full respect. Interviewees could choose a comfortable place for the interview and were free to decline participation. They could read the questionnaire themselves or have it read by the researcher. During the interview process, interviewees had the right to refuse to answer any questions they felt uncomfortable with. All personal information is kept confidential, and the names of interviewees are anonymized.

Results

1. Local herders' perceptions of pastoralism and their access to key productive resources, including livestock, land, and natural resources

In May 1955, the livestock sector in Qinghai Province invested 98,200 yuan to establish the Serthang State-Owned Farm, which was administered under the leadership of the Hainan Prefectural People's Committee. The Serthang State-Owned Farm had five production teams, namely the horse team, sheep team, yak team, deer team, and agricultural team. At that time, the farm employed herders and farmers from both within and outside Xinghai County. According to local government data, there were 102 workers and 12,900 head of livestock in 1956. In 1960, there were 1,095 workers and 56,500 head of livestock at the state-owned farm, and 38,800 head of livestock in 1971. In 1982, the household contract responsibility system was implemented. By 1984, the farm fully adopted this production responsibility system (Local Records Committee of Xinghai County, 2000).

From 1982 to 1984, the local government introduced the Household Responsibility System (HRS) and fully implemented it within the farm system. Under this system, livestock was distributed to individual herders, who were granted management rights over the livestock, while land remained under the administrative management of the farm. Herders were required to fulfill quota-based procurement obligations to the state-owned farm, including sheep wool, yak fur, lamb skins, barley, and cooking oil, and to follow farm regulations. All land in Serthang village remained under the administrative management of the farm until the implementation of subsequent land reforms.

Based on interview data, in 1998, the local government implemented the first stage of land allocation for some herders in Serthang village as an experimental policy, while the majority of herders still grazed their livestock on common land. In 2002, the second stage of land allocation was carried out under the rangeland contracting system, through which winter and autumn pastures, along with agricultural land, were allocated to herder and farming households. In this way, herders could continue to specialize in pastoral production, while farmers concentrated on agricultural activities. The second stage of allocation was based on household composition and livestock holdings. When land was officially allocated to a household, the head of the family was required to register the land contract under their name. Since most household heads were men, men tended to have greater influence in decision-making regarding land use at both the household and community levels.

However, over time, many herders became less engaged in agricultural activities, while some farmers began to perceive herding as labor-intensive and relatively less rewarding economically. As a result, an increasing number of farmers preferred to seek wage employment as migrant workers in towns and cities rather than engaging in livestock production. Many herders also described themselves as 'stupid' and 'illiterate' in comparison to farmers and urban residents, and they believed that non-herding activities such as construction work or wage labor required skills that

they did not possess. After land was formally allocated to households in Serthang, some herders who maintained good relations with farmers began to lease pastoral land from them. Since these farmers owned relatively few livestock and had limited interest in herding, land transfer through informal rental arrangements gradually emerged. In this process, herders and farmers developed a pragmatic, mutually beneficial arrangement, whereby herders paid annual land rental fees to farmers for access to grazing land.

Table 1 Land Size and Number of Livestock

Name	Gender	Winter Rangeland	Fall Rangeland	Yaks	Sheep	Goats	Horses
Sonam	M	988	494	60	0	0	0
Tsering	M	400	200	0	50	0	1
Apo	M	1427	713	60	400	10	4
Dape	M	1380	690	60	1000	0	10
Gonpo	M	450	450	50	170	0	1
Rinchen	M	1500	750	120	400	1	3
Nangchak	M	1200	600	0	400	0	0
Pema	M	1200	600	70	0	0	0
Chiwang	M	800	400	150	120	0	0
Dorje	M	580	290	0	0	0	0
Tsedol	F	370	185	50	0	0	0
Tsema	F	400	200	54	0	0	0
Chotso	F	200	0	0	0	0	0
Drolmatso	F	400	200	20	0	0	0
Drolpe	F	500	400	9	0	0	0
Dungkhar	F	400	200	0	100	0	0
Drolmakyi	F	400	200	110	0	0	0
Yangmo	F	400	200	80	200	0	0
Wangtso	F	250	0	0	15	0	0

Note Data are from 19 households in Serthang village and land size reported in mu, 1 mu $\approx$ 0.067 hectares.

After the winter and autumn rangelands were allocated to families, households began to fence their rangelands. When rangelands are fenced, access to water tends to become more household-based. Herders who do not have a water source on their rangelands have to go elsewhere to fetch water, which brings additional work, especially for women who are mainly responsible for water collection. Generally, herders need to water their livestock once per day. However, when there is no nearby water source, they may have to water their livestock only once every

two or three days. Some herders pointed out that they needed to drill wells on their rangelands, but such solutions are costly (about 50,000 yuan) and not sustainable in the long term. In the winter season, when there is snow, both herders and livestock rely on melted snow for drinking water. The local government provided financial support for tap water projects for individual households in 2016, 2018, and 2020, which improved access to water for the majority of households. However, some families with existing spring water on their rangelands were concerned that the project might affect their rangeland use, and were therefore less willing to participate. As a result, not all households have been able to access tap water and clean water.

Since 2002, the herders' lives became engaged with caterpillar fungus. When the caterpillar fungus gained a high value on the market, it became the herders' main economic source. One informant explained that "when I was 16 years' old, I collected 300 caterpillar fungi, but I could sell out them for only 15 yuan, as caterpillar fungus had no market value at the beginning of its emergence. However, from 2008, caterpillar fungus gained a high value on the market, with one fungus selling for 20-30 yuan." Therefore, the majority of the herders' livelihoods are now engaged with the caterpillar fungus trade, which means that land has become more commercialized and resource conflicts have increased. When herders' livelihoods become deeply connected to the market, land conflicts inevitably arise among neighbors and kinship groups, with women facing greater challenges than men. Market expansion not only increases competition over resources but also reinforced existing power imbalances, often putting powerless male herders and women at a disadvantage.

Some gendered land issues have emerged in Serthang village, where women have faced long-term challenges in securing their land use rights. In practice, these women experience various forms of land-related contestation due to their relatively weak social position. Although some hold formal legal rights to land, these rights are not always fully recognized in practice following the death of a husband or father. As women-headed households or single mothers, their claims to land are often subject to negotiation within kinship networks and local social relations. In some cases, access to land becomes constrained through informal reallocations or instances of *de facto* occupation by neighbors, kin groups, or other locally influential individuals, resulting in differentiated access to land and related resources.

Overall, property rights in pastoral areas are not fixed but involve multiple dimensions beyond formal land tenure alone. As Schlager and Ostrom (1992) argue, property rights include access, withdrawal, management, exclusion, and alienation, which may be distributed differently across institutional arrangements. From this perspective, property relations in Serthang village should be understood as an interplay of *de jure* and *de facto* rights over land, livestock and resources under changing property regimes. Under the state-owned farm system, herders were granted conditional grazing rights through administrative allocation of seasonal pastures and livestock

categories. With the introduction of the Household Responsibility System (HRS), livestock ownership was transferred to households, while land remained under administrative management, creating a separation between livestock ownership and land use rights. Later, under the rangeland contracting system, households obtained land use rights through contracts. Importantly, de jure rights alone cannot fully explain actual access to land and resources. With the commercialization of caterpillar fungus, land has become an important livelihood asset, and access is increasingly influenced by kinship relations, social networks, and household negotiations. In this process, some households, particularly divorced women and women-headed households, face constraints in both the recognition and practical exercise of their land-related rights.

This case shows that property rights should be understood as the combination of formal institutional arrangements and everyday practices of access and use. Under conditions of market expansion, it is necessary to consider both de jure rights and de facto access in understanding pastoral resource governance.

Table 2 Property Rights Changes and Livelihood Types in Serthang Village

Time	Land types	Herders' property and access rights	Land holders	Livelihood types
1955–1981	State-owned land	Grazing rights and conditional access rights, determined by livestock type and seasonal pasture allocation	State-owned farm	Collectivization (production teams)
1982–1997	Household Responsibility System	Grazing rights over land and livestock ownership rights	State-owned farm	Herding-based livelihoods
1998–present	Rangeland Contracting System	Use rights over land and livestock ownership rights	The state, local community, and local herders	Agro-pastoralism, commercial pastoralism and non-herding pastoralism

2. Local Herders' Livelihood Strategies and the Sustaining of Pastoral Life

2.1 Environmental Protection Group in Serthang village

Under the current environmental conservation and cultural preservation initiatives, from 2007 to 2014, the Serthang herders made efforts to set up an environmental protection group in the village. Herders realized that environmental pollution was a severe problem in their everyday life. Prior to 2014, 13 Serthang herders had already established the 'lu gar tsok pa' in Tibetan, the village's ethnic minority singing and dancing group. Lu gar tsok pa

functioned as both a cultural preservation and environmental protection group, and its members wanted to preserve the local traditional culture including its traditional songs and dances. The group also wanted to find an alternative livelihood besides herding, through performing songs and dances to a wider audience in Xinghai County. Since 2017, the lu gar tsok pa group received support from the local Culture Bureau, which invited the lu gar tsok pa group to give performances to local people during Tibetan cultural festivals and national holidays including National Day, Children's Day and Women's Day.

The lu gar tsok pa was founded by Mr. Gyaltso, a senior herder in Serthang village. He explained, "I really like traditional songs, and my mom liked the flute when she was young." He was influenced by his mom and when he found that a few herders still played the flute, he started the group'. The lu gar tsok pa has 83 members including young herders, educated herders, school students and monks, and all of the lu gar tsok pa's members are from Serthang village. The members' ages range from 18 to 50 years. Since 2007, the lu gar tsok pa members have not only wanted to preserve their traditional culture but have also wanted to protect the environment. In 2014, the senior members in the lu gar tsok pa learned that the Central Government was paying more attention to environmental protection, and encouraged rural communities to organize their own environmental protection activities. With this legal support, the herders in the lu gar tsok pa contacted the local Civil Affairs Bureau. In their letter, they stated that garbage pollution was a major problem in Serthang village and its pastoral areas. Garbage pollution has affected the rangeland ecosystem, water sources, livestock and wild animals. There had been many cases where livestock and wild animals had consumed plastic products, and water sources had been polluted by garbage. Therefore, the herders established their own Environmental Protection Association, which was under the supervision of Wen Quan Township, which has 7 villages and 621 members.

The Environmental Protection Association sends motorbikes to collect garbage from the rangeland 4 times per month. However, the group had no budget to cover the members' food and gas fees, so they asked the local government to support their activities by covering these costs. The association has 4 main responsibilities, which are environmental education, garbage treatment, cleaning public areas, and protecting public equipment. Environmental education activities aim to educate herders to have good hygiene habits. The association also promotes new environmental policies to herders. They try to prevent people from dumping garbage in public areas and prohibit illegal digging in the rangelands. The association's second responsibility is garbage treatment. Garbage should be put in public garbage cans every week. The third activity is cleaning public areas and public equipment. This includes telegraph poles, bridge handrails and walls. The association's fourth activity is to educate people to protect public equipment. It encourages herders to use and to take care of garbage cans.

The association's members said that herders' lives have changed dramatically. In the past, herders never used plastic products, and all of their living supplies were made from livestock products. Now, modern products are part of herders' lives. Herders like to buy plastic products and bring them to pastoral areas, but they have no idea how to deal with plastic waste. Furthermore, Serthang village's ecosystem has also changed. Herders lose livestock because wolves frequently kill their domestic sheep. Deer also come to the winter rangeland to attack the sheep. Foxes and eagles take lambs away from the grassland. In addition, the herders found that the feral dog population has increased. This is a serious issue now as feral dogs often attack livestock and people. The community is becoming unsafe, and herders cannot travel alone in remote areas such as their summer and fall rangelands, as feral dogs are everywhere and can attack people at any time.

The engagement of the cultural preservation and environmental protection groups illustrates how Serthang herders actively diversify and adapt their livelihood strategies. Through these forms of collective organization, herders not only seek alternative income sources, but also increasingly take on the role of 'environmental protectors.' This is similar to what Santasombat (2004) observed among Karen communities in Thailand, where people emphasize their role in protecting biodiversity and the environment. By framing their identity around the term 'pga k'nyau' (children of the forest), they express a moral and cultural understanding of their relationship with the forest landscape. A comparable pattern can also be found in Tsering Bum (2016), who shows that local Tibetan herders draw on the notion of 'local deities' to regulate human-environment relations, and are often described as 'guardians of nature'. This role is reflected through a combination of spiritual beliefs, traditional ecological knowledge, and, increasingly, participation in organized conservation initiatives.

In the case of Serthang village, such practices can be understood not only as herders' engagement in environmental conservation and cultural preservation, but also as an adaptive response to changing socio-environmental contexts.

2.2 The Pastoral Cooperatives in Serthang Village

Due to external factors, including labor and land shortages, some herders have chosen to leave their rangelands. However, the majority still view pastoralism as a relatively stable and suitable way of life compared to other livelihood options, and they continue to sustain their pastoral practices. Herders I spoke with told me "We don't have other skills besides herding sheep and yaks, so pastoral life is still the best choice for us." To sustain their pastoral way of life, many herders in Serthang village have increasingly engaged in mutual help and cooperation. These strong bonds of mutual support are especially evident among neighbors and kinship groups.

Since 2008, the government of Qinghai Province has encouraged herders to set up animal husbandry cooperatives to improve local livelihoods and the environment (Yuan & Luo, 2022). Two different types of pastoral

cooperatives were established in Serthang village with local government support, each serving different roles and goals. While both support herders, they operate in distinct ways to meet the community's needs. The 'Serthang Shareholding Economic Cooperative' was established at the village level in 2018 and includes 324 households with 1,296 herders, organized into ten different groups, with each group consisting of 30 herders, and each group taking on different roles and tasks. So far, the cooperative owns about 6000 mu of common grazing land and 3700 mu of agricultural land in Serthang village. To ensure the effective operation and development of the cooperative, it is managed by a chairman, a board director, a cashier, an accountant, and two custodians, totaling six members. Herders hold these managerial positions, each of whom receives an annual salary of 20,000 yuan. Herders who join the cooperative contribute 2.48 mu of agricultural land at the individual level and receive around 200 yuan annually in return for its use. As mentioned earlier, Serthang herders have both agricultural and grazing land, but most show little interest in farming and are even unwilling to cultivate their land. The main reason is the lack of water and irrigation, making crops entirely dependent on natural weather conditions. Herders are also busy with livestock management and have limited time for farming. Additionally, crops have low market value, so herders are unwilling to invest their time and money in agriculture. As a result, many herders have largely abandoned their agricultural land. Therefore, members of the cooperative believe that reusing agricultural land is the best way for herders to gain economic benefits, especially when livestock need more forage to produce milk. Additionally, each household in the cooperative has either invested 5,000 yuan or contributed a certain number of yaks.

Consequently, the cooperative primarily focuses on cultivating oats for livestock forage and milk production. The oats provide essential feed for the animals during the winter months when the livestock are kept in pens. Oat hay serves as the best forage, eliminating the need for herders to purchase additional feed from other sources. For milk production, there are 170 female yaks, all managed by 32 female herders. Each woman cares for 8 yaks, with each representing a different family. In the summer, the milk price is 4 yuan per jin (pound) and 6 yuan per jin (pound) in the winter. Herders spend only two hours milking their yaks, and each woman earns around 30,000 yuan per year. The money is transferred directly to their bank accounts by the managers of the cooperative. Cooperative manager Mr. Sonam explains:

"In the past, women had to depend on their husbands economically. Even when women earned some money by collecting commercial plants like caterpillar fungus and wild mushrooms, that money belonged to the family, limiting their control over their own finances. Most women did not have their own bank accounts, so they were not familiar with managing their money. However, after joining the village cooperative, these women were given their own bank accounts and began managing their income independently. With a stable income and the ability to contribute to their families, their position within the family also improved."

Therefore, the village-based cooperative encourages herders to reuse their agricultural land with minimal input through collective efforts, allowing them to grow as much forage as possible for their yaks to produce high-quality milk to sell to others. In 2022, the cooperative started planning to establish its own milk production station in the local town. Once operational, the milk will be transported to the county's milk station. Before delivery, staff at the village milk station will play a crucial role in ensuring milk quality by thoroughly inspecting it and checking whether the transportation tools are properly sanitized and clean. If these checks are not done carefully and the milk spoils, the herders themselves will bear the loss. The fresh milk will be processed into milk powder, which will be supplied to local monasteries and other markets. In this way, herders can apply their traditional skills to produce modern products and generate income beyond their communities.

However, generally herders who have their own land and livestock are eligible to join the cooperative. Membership requires contributing land, livestock, and labor in exchange for certain benefits. In contrast, herders without land and livestock are generally not eligible to join, even if they can contribute labor. This exclusion particularly affects landless individuals, such as divorced women and men, who lack the necessary qualifications.

The second cooperative, called 'Xia Ge Livestock Breeding Cooperative,' was established in 2016 by five households, all of whom are relatives. Based on this kinship, these herders believe that running a cooperative can help reduce their heavy herding workload. Initially, each family invested 250,000 yuan for a total of 1.25 million yuan. The five families have a total of 17 members, and only 8 members could contribute labor to the cooperative (4 women and 3 men). Before establishing this cooperative, the herders recognized that labor shortages had become a serious challenge, especially as their children now attend school. Another important reason is that herders have limited land as families grow. When their sons start their own families, the parents must divide the land within the family, which results in the land held by nuclear families becoming much smaller. Cooperative member Mr. Chos Byams explains:

"I realized that, as our family expanded, it became increasingly difficult to sustain our livelihood on our limited rangeland resources. We needed to find ways to improve our living conditions. In 2015, we started selling fresh yak milk, cheese, and butter to individuals and shops in town. We soon discovered that many people wanted to buy our products, so we continued selling them. Later, some government officials encouraged me to set up a cooperative. They explained that having a cooperative would enable us to receive government support. At the same time, they emphasized the importance of cooperating with the government and adhering to relevant regulations. For instance, the local government supports poor people through poverty reduction projects by providing jobs, subsidies, and introducing other sustainable income sources for poor herders. Now, our cooperative also helps eight poor families earn extra income, and each family gets 6,400 yuan per year."

In 2017, Xia Ge Livestock Breeding Cooperative opened its first shop, selling fresh milk, cheese, and butter. The shop is run by Mr. Chos Byams's brother's daughter, Dungdkar. Dungdkar is divorced and had claimed her right to land, but her husband did not give her anything, leaving her landless. Later, her family asked her to take on the role of shopkeeper, and she accepted. Now, she has a stable income. Dungdkar explains:

"I worked for my husband's family for 16 years and have one son and one daughter. My husband was not good to me as he often drank alcohol and beat me, so I decided to divorce. In 2023, I claimed my property rights, including land, compensation, and dowry (I had brought 100 sheep to his family), but my husband's family didn't give me anything. After that, I sued my husband, and eventually, I received 21 yaks and 30 sheep. In reality, this was just my dowry—I didn't get my land or any other compensation. In 2024, I officially divorced and moved to town to run this shop with a monthly salary of 2,000 yuan."

In 2024, the second shop was opened, managed by Mr. Chos Byams's wife, Klumo, who is 48 years old. She explains, *"I am a traditional woman and used to feel shy speaking in the village. Like many women, I felt that I knew nothing. Now, I have learned many things, such as communication skills and self-confidence, and I am satisfied with my life"*.

In general, the pastoral cooperatives are a new livelihood strategy for herders, but they are still in the experimental stage. In the cooperatives, men are mainly involved in marketing, while women focus on processing the milk products. Women apply their traditional knowledge to make these products, while they also need to graze livestock. Men, on the other hand, often go to local towns to expand their market networks. Even though the pastoral cooperatives mainly focus on raising livestock and milk production, herders are reluctant to sell livestock to middlemen. This is because they believe that selling large numbers of livestock is not consistent with local customs and cultural practices. As a result, the cooperatives focus only on animal forage and milk production. Herders claim there is high demand for yak meat in the market, but since they are unwilling to sell yaks, this poses a challenge for expanding their business. They must constantly balance their religious beliefs with economic development, which means internal factors often prevent them from fully engaging in large-scale markets.

Building on the access framework, the development of pastoral cooperatives in Serthang village shows how herders' access to key resources is shaped by differentiated mechanisms of inclusion and exclusion within families and the wider community. Access to cooperatives is closely linked to access to land, livestock, and social relations, with land functioning as a key mechanism through which other forms of access are enabled. Herders with land and livestock can convert these assets into cooperative membership and benefit from collective production, wage income, and market participation. In contrast, landless herders, particularly divorced women and other socially disadvantaged individuals, are often excluded from key livelihood opportunities, including access to caterpillar fungi,

participation in environmental protection activities that facilitate the expansion of social networks, and cooperative membership at the community level. This indicates that access depends not only on formal land use rights, but also on informal mechanisms such as the ability to build and extend social relations, and the application of knowledge and skills, among other capacities. Furthermore, kinship and household relations may partially mediate exclusion by enabling some women with strong family support to gain indirect access to cooperative activities and income opportunities. These differentiated access patterns shape diverse pastoral livelihoods. While some households combine herding with cooperative and market-based activities, others remain dependent on limited pastoral resources or wage labor, reflecting a broader process in which access is shaped by individuals' capacity to mobilize resources under conditions of ongoing socio-economic transformation.

Conclusion and Discussion

This study examines how herders in Serthang village, Qinghai Province, seek alternative livelihood strategies and experience gendered access to resources such as land, caterpillar fungi, and cooperatives in the context of property rights systems and market integration. Using the concept of property rights and access as the main analytical framework, it also draws on the notion of the pastoral way of life (Adriansen, 2006) to understand how herders sustain their livelihoods, values, and identities within these changes. The research reveals that herders' ability to sustain their pastoral way of life depends not only on the subsistence economy but also on commercial pastoralism and non-herding activities. Herders also believe that even if they no longer directly engage in herding or follow the traditional pastoral way of life, they still consider themselves 'Droga' (herders), showing that their identities are more static than fluid and cannot be separated from their pastoral livelihoods. This finding echoes Adriansen's (2002) work, which shows that Fulani herders' identity is linked with cattle but not necessarily with mobility.

According to Schlager and Ostrom (1992), within common-pool resources, collective-choice property rights include management rights, exclusion rights, and alienation rights, while land managers hold access and withdrawal rights. Property can thus be understood as a 'bundle of rights' over natural resource management. Over the past several decades, this 'bundle of rights' can be observed in the transformation of property relations in Serthang village, which has shifted from state management to community and household-based arrangements of land use. Land is now jointly managed by the community and households. For instance, summer rangeland are managed at the community level under collective arrangements, while winter and autumn rangelands are allocated to and managed by individual households.

Under the state-owned farm system, which operated under a collectivized mode of production, herders were granted conditional grazing rights through the administrative allocation of seasonal pastures and livestock

categories within production teams. With the introduction of the Household Responsibility System (HRS), livestock ownership was transferred to households, while land remained under administrative management, creating a separation between livestock ownership and land use rights within the farm system. Later, under the rangeland contracting system, households were granted land use rights through contracts.

Within the context of institutional change and market development, as well as environmental conservation initiatives and shifting demographic conditions (including labor constraints and land pressures as families expanded and younger members attended school), herders have actively adapted to changing economic and ecological environments. The formation of environmental groups such as *lu gar tsok pa* and pastoral cooperatives has also reshaped herders' identities as 'environmental protectors' and 'cultural bearers', which has helped sustain their access to different forms of capital. In this process, herders draw on multiple mechanisms—including knowledge, identity, labor, market participation, capital, and social relations—to adjust their livelihood strategies.

Knowledge: Herders seek to combine traditional pastoral knowledge with new livelihood opportunities such as producing pastoral products and engaging in cultural performances. **Identities:** Herders reconstruct their identity as 'modern herders' to become environmentalists, cultural preservationists, and members or managers of cooperatives. **Labor:** Herders operate their cooperatives based on a gendered division of labor; for instance, women are involved in herding and processing pastoral products, while men are involved in herding, transporting pastoral products, and marketing. **Market:** Herders build their own networks to sell their products on the local market. **Capital:** Herders who have land and livestock are eligible to become members of cooperatives. **Authority:** Cooperatives are supported by local governments, and herders can access various resources provided by relevant authorities. They also have more opportunities to work together with different authorities to gain legitimacy and recognition. **Social relations:** Members of cooperatives come from kinship groups, friends, and herders who have strong motivation to join. While cooperatives create new spaces of inclusion, they also produce new forms of exclusion. In this sense, collective organization both expands and limits access, depending on herders' ability to participate in and benefit from cooperative arrangements.

Overall, this study suggests that sustainable pastoral development requires co-management among different stakeholders, as well as the further enhancement of equitable resource management. Variations in land use at the village level are associated with household resources, demographic composition, access to local social networks, and different forms of capital, indicating the importance of continued attention to rangeland governance. For example, legal assistance mechanisms at the local level may play an important role in addressing rangeland-related disputes involving gendered resource access. In addition, women's federations and related social organizations can play a role in providing training and capacity-building programs to raise

awareness of gender equality among herders, thereby contributing to more equitable access to rangeland resources.

This study is based on fieldwork conducted in a single village and primarily focuses on local herders' perspectives, which may limit the generalizability of the findings and the inclusion of diverse stakeholders. It relies mainly on qualitative interview data; future research could adopt mixed-methods approaches and comparative case studies to further examine rangeland management, environmental governance, and gendered access to resources across different contexts.

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