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Managing Herder-Community-Based Tourism: An Institutional Framework for an Integrated Social–Ecological System

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Abstract: Improving household livelihoods through tourism, while at the same time achieving the goals of conservation, remains a challenge in high-value nature areas around the world. This paper studies a herder-community-based tourism system in Mongolia in light of these challenges. The social–ecological system (SES) framework was used as a conceptual foundation. The generic SES framework was adapted to the case of the herder-community-based tourism system. The adapted framework was then used to assess the economic, ecological, and social objectives of the herder-community-based tourism system characterised by natural resources and cultural landscapes. Primary data collection included interviews with key informants in the tourism sector: tourism researchers, representatives of donor projects, managers of tour operators, and guides. Based on their responses, the study site was selected in the buffer zone of the Hustai National Park, which is a protected area. Respondents in the second stage of interviews were herders who participate in herder-based tourism and who live in the vicinity of the protected area. Results show that the SES framework is able to diagnose the sustainability of the herder-community-tourism system, but sustainability outcomes indicate an imbalance between social, economic, and environmental performance. The herder-community-based tourism system is successful in conserving wildlife and habitats; however, the distribution of revenues gained from tourism shows that only a small and inequitable share reaches the herder community.

Keywords: common-pool resource; diversification; community-based tourism; social–ecological system; sustainability



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1. Introduction

Diversification of rural livelihoods can reduce the vulnerability of rural communities and create new opportunities for developing rural economies and conserving natural resources [1]. Although some scholars emphasise that tourism can have a key role in supporting the development of the rural economy by providing supplementary income for rural communities and supporting the preservation and sustainable management of Mongolia's valuable natural and cultural resources [2–4], the current situation is one primarily of unplanned tourism development, concentration in few destinations, and no redistribution of tax revenue to rural areas [5]. One of the main tourist attractions in Mongolia is the traditional connection between herders as nomads and pristine nature [4,5].

Herders' basic livelihoods are predominantly based on pastoral livestock husbandry, which is the foundation for providing the population with food, the industry with raw materials, and people with jobs in Mongolia [6]. The number of livestock, however, has increased to 67 million over the past 20 years, and herders intensively use the pastures leading to ecological deterioration and the degradation of pastureland [7]. The unsustainable development of this pastoral herding system leads to the deterioration of livelihoods and an increase in poverty, unemployment, and migration to Central Mongolia [6,8,9]. Over

the last two decades, international donors have implemented many community-based resource management projects, particularly focused on rangeland management, with the aim of opening up sustainable pasturing for rural development. Although there is a general understanding that the concept of community-based rangeland management is crucial for encouraging the self-governance of user groups [10], there is inadequate attention for how to balance economic, social, and ecological benefits. Furthermore, the implications of conserving natural resources, in addition to cultural resources, and of diversifying livelihoods based on existing nomadic pasturing and traditional activities, are still unclear for many local communities.

Community-based tourism (CBT) can be a practical and theoretical tool that aims to diversify a livelihood and to conserve the natural resource and cultural landscape [11]. This concept, however, is not clearly defined, and there is no common understanding about CBT in Mongolia [12]. Since 2004, international projects have piloted many CBT projects in different places in Mongolia, with an aim of income diversification for herder families. However, most initiatives have failed, and few communities are still involved in tourism services or contribute to the conservation of protected areas [13]. The following questions remain: Why do these CBT projects fail? What constraints have to be overcome to make CBT successful in Mongolia? This paper will provide new insights that help to answer these questions.

Scholars on tourism have found that tourism commons may experience the problem of overuse and emphasise the need for a common pool approach to crowding and degradation problems [14–18]. In recent years, there has been a move in the common pool resources literature away from a focus on resource users and their interactions in a resource system to a broader approach based on the analysis of the social–ecological system (SES) framework. The SES framework is used across social and ecological disciplines to analyse action situations [19], and its variables describe the conditions affecting the likelihood of users of common pool resources engaging in collective action to self-organise themselves for the sustainability of systems. The objective of the SES framework is to help diagnose why some SESs are sustainable whereas others collapse, by identifying and analysing the relationships among multiple levels of complex systems [20]. This framework is used in tourism cases to provide the enabling conditions for analysing wildlife tourism [21], to apply the framework to successful voluntary environmental initiatives in nature-based tourism destinations [22], and to contribute to the institutional development of a self-regulatory tourism regime [23].

The novelty of the paper lies in the application of the framework originally developed by Ostrom (2009) for the analysis of SES to the case of CBT. We demonstrate how the SES framework can be applied to combine natural resource conservation, livelihood improvement, and tourism development. Our SES framework focuses on herder-community-based rangeland management through tourism development. The study site was selected in the buffer zone of the Hustai National Park, where wild horses known as *takhi* (Przewalski's horse) have been re-introduced. The Hustai National Park is located about 100 km away from Ulaanbaatar, the capital city of Mongolia, and aims to integrate wildlife conservation, buffer zone development, and tourism through sustainable natural resource use in and around the protected area. The social–ecological system in the buffer zone of the Hustai National Park was selected in order to improve knowledge about the interactions between rangeland conservation, wildlife preservation, and tourism development, especially in close proximity to the city of Ulaanbaatar, Central Mongolia.

The remainder of the paper is organised as follows: the next section presents the SES framework and its sub-systems; Section 3 introduces the context of rural livelihoods, conservation, and tourism in Mongolia; Section 4 introduces the research region and the case-study for this research; Section 5 draws out issues of multiple-use and multiple-user commons research [24], applying the SES framework to describe the main components of the herder–CBT system in the Hustai National Park and identifies the likelihood variables for the sustainability of the complex system; Section 6 contains a discussion and the conclusions.

2. Conceptual Framework

Common pool resources—such as fishing grounds, irrigation systems, or pastureland—are natural or human-made resources for which it is difficult to exclude potential users and which can be exhausted through over-harvest [25,26]. The conservation and governance of common pool resources has received extensive attention in the literature; for example, for pastureland [27], irrigation systems [28,29], and forestry and fishery systems [30,31]. A “General framework for analysing the sustainability of socio-ecological systems” was developed by Ostrom on the basis of the Institutional Analysis Development (IAD) framework [32]. Ostrom’s framework can be used to analyse the ability of groups of resource users to successfully manage common pool resources [20,33].

Several authors [34–36] conclude that there are distinct similarities in successful common pool resource management approaches and highlight four key areas: (i) resource system characteristics; (ii) user group characteristics; (iii) institutional arrangements; and (iv) the external environment. A set of enabling conditions for facilitating and sustaining commons institutions has been identified through the analysis of their work on the commons [33]. This provides a viable starting point for the diagnosis of the sustainability of institutions for common pool resource management. A large number of variables has been identified by researchers as affecting the patterns of interactions and outcomes observed in empirical studies. For example, Agrawal [36] determined 30 variables as being important in analysing the attributes of a resource system and enabling conditions for the sustainability of common pool resources. An extension of the SES framework developed by Ostrom [32] incorporates the conceptual variables necessary to identify the SES operating at a particular location, as well as the reasons for sustainable or unsustainable outcomes.

To explore the enabling conditions of the self-governing CBT, we consider a complex system which combines pastoralism with conservationism and tourist activities based on natural and cultural commons, which we call the Herder-Community-Based Tourism Social–Ecological System (Herder-CBT SES). From the institutional perspective, CBT is not envisaged only as a form of tourism, but also as a strategy to protect and promote communities’ sustainable use of common pool resources. Therefore, the conditions affecting the likelihood of users of common pool resources engaging in collective action to self-organise for a more sustainable use of their shared resources have to be explored as part of the process of planning CBT. We focus on the interactions within the integrated complex system (pastoralism–conservation–tourism), and especially on the connection between the ecological and social systems (Figure 1).

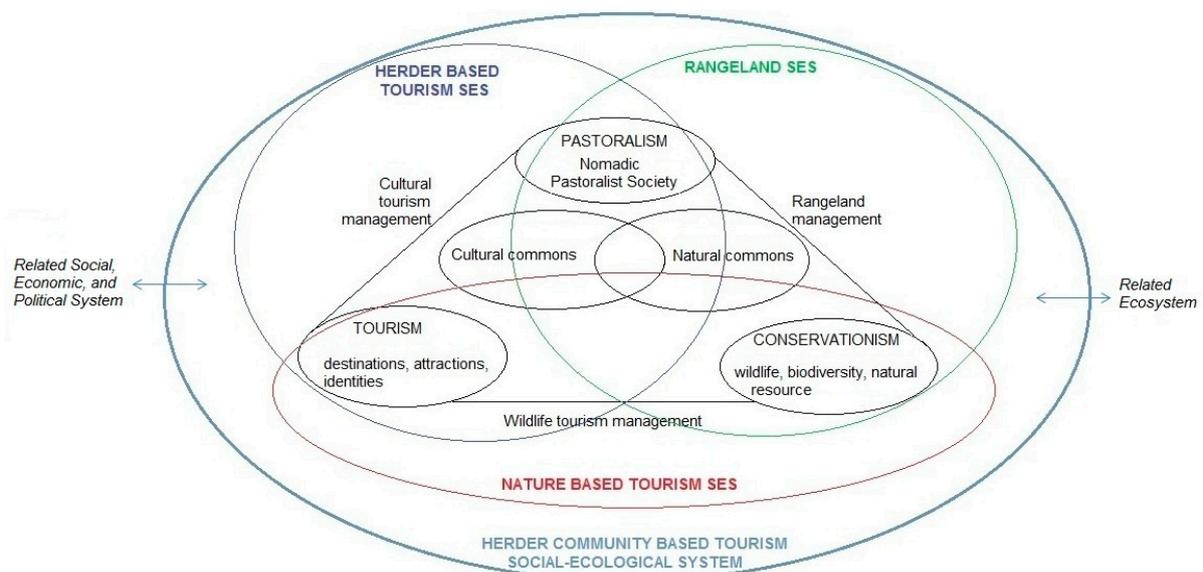


Figure 1. Conceptual framework of the Herder-Community-Based Tourism Social–Ecological System (SES).

2.1. Rangeland Social–Ecological System

In a rangeland social–ecological system, nomadic herders strongly depend upon animal husbandry, which is highly dependent upon the pastureland as a forage resource. If herders make a decision based only on the maximisation of benefits to their husbandry (growth of animal numbers or higher animal stocking rates) in the short run, grassland is degraded, and the tragedy of the natural commons appears through the over-utilisation of natural resources. In the case of pastureland, the main reasons for degradation are human impacts, such as the desire to increase herd size and reduction in nomadic movements which directly lead to overgrazing [2]. Therefore, overgrazing has more influence on the degradation of the rangeland ecosystem than climatic change [37]. Over the last decade, many international projects have implemented initiatives for community-based rangeland management in Mongolia, aiming to strengthen traditional pastoral networks for enhancing nature conservation [38]. “Herder groups” or “pasture user groups” are established and organised on the basis of kinships, shared use of pasture, and a common interest in joint activities for the sustainability of the ecosystem [8].

Conserving natural resources and preserving biodiversity are integrated into rangeland SES for the sustainable use of resources. However, it is difficult to liaise between livelihood improvement and sustainable management at the same time because there is a strong relationship between poverty and conservation. Poverty generally limits the success of conservation [39]. If conservation depends on restraint in the number of animals, this could directly influence the livelihood of herder families, and livelihood diversification may be required [2].

2.2. Natural (Nature-Based) Tourism Social–Ecological System

It is generally recognised that natural ecosystems have an important recreational value as places where people can come for rest, tourism, and travel. The land, water, and air environments all provide possibilities for recreational activities, including tourism-specific activities. Recreational resources as a focus among tourism resources are natural, socio-cultural, or human-made resources [40], which may be tangible or intangible [17]. When nature tourism depends on common pool resources, tourism resources are often subject to the problem of overuse [14] and mismanagement [17]. In an attempt to find tourism principles which are sustainable for the environment, concepts such as nature-based tourism, eco-tourism, and green tourism have been promoted [41]. These types of tourism imply a specific concept motivated by concern about the environmental impacts of tourism through recognition, education, research, and environmentalism, all of which aim not only to support the protection of wildlife, but also to generate income for local residents [42,43].

The main approach to wildlife protection or the conservation of biodiversity is by establishing protected areas [44], such as national parks; these become primary attractions for eco-tourists. Therefore, it is argued that nature-based tourism can provide diversification in the livelihoods of communities in and around protected areas [11]. However, protected areas also create restricted access to natural resource exploitation for local communities; specifically, pasturing inside protected areas is strictly limited.

2.3. Cultural (Herder-Based) Tourism Social–Ecological System

According to the definition by the UNESCO World Heritage Convention (2005), cultural landscapes are cultural properties and represent the combined work of nature and humans. The complex of seasonal pastures, long distance movement, hay-making land, and reserve pastures represents a cultural landscape in the Mongolian context [3]; thus, the Mongolian steppes and their nomads, herds, horses, and *ger* (traditional accommodation) form the cultural landscape [4].

The nomadic existence, reliant on nature’s resources, represents cultural and traditional knowledge and forms a primary attraction for cultural tourism. It provides the opportunity for the indigenous community to share their traditional knowledge with

international tourists [45]. However, there are many areas where the cultural landscapes have been lost because of human and external environmental impacts [3]. To preserve and develop traditional knowledge as part of cultural commons, the cultural landscape has to be open access, and communities should participate in tourism activities by sharing their valuable knowledge. The initiative developed by community engagement promotes the activation of synergies among environmental and cultural heritage and destination attractiveness [46]. Tourism could thus play a key role both in providing additional income for local communities and supporting the preservation of valuable natural and cultural resources.

2.4. Herder-Community-Based Tourism Social–Ecological System

Why do these systems need to be integrated? Most resource conservation policies have focused on objectives of environmental sustainability. Natural resource management refers to a balance between conservation needs and local economic development, but less attention has been paid to social objectives. Many international projects on rural development, nature conservation, poverty reduction, or pastoral institutions in Mongolia have only considered parts of the overall situation. The pastoral society needs more coupling of systems to support complex decision-making, not only in terms of pastureland conservation, but also for livelihood diversification and cultural commons preservation.

Over the last three decades, alternative forms of tourism such as pro-poor, sustainable, eco-tourism, or community-based tourism have become more central in the tourism sector. This follows from the negative economic, ecological, and socio-cultural impacts of conventional tourism [47]. CBT has been promoted as a means of development whereby the social, environmental, and economic needs of local communities are met through the offering of a tourism product. International experience, however, shows conflicting views about the role of tourism, such as CBT, in rural development. On the one hand, it is an important way of diversifying the rural economy, minimising risk, and supporting environmental conservation. On the other hand, international organisations and donors have been trying to build effective CBT systems around the world with the objective of local economic diversification, but critical reviews of CBT cite problems such as the non-engagement of communities in decision-making [48], poor market access, poor governance [48,49], and a high level of project investment but very low occupancy [11]. Moreover, the financial profits do not always stay in the countryside; they often benefit large-scale tourism entrepreneurs, or flow back to foreign countries. Furthermore, the tourism sector is often small in size, and hence provides benefits to only a few local communities.

Herder-Community-Based Tourism (Herder-CBT) can help to achieve the objectives of the three pillars of sustainability, namely social, ecological and economic. We will study the integrated complex system based on the SES framework [50]. To promote the sustainability of pastoralism, conservation and tourism, each of the three SES is integrated in the Herder-CBT SES, and the conditions of these systems relate directly to the livelihoods of herder communities and their resource management.

3. Rural Livelihoods, Conservation and Tourism in Mongolia

The Mongolian traditional local community structure is shaped by the pastoral society system. Pastoral community systems constitute the inter-relationship between the nomad people, their livestock, and pastureland [9]. Since the country transitioned to a market economy, livestock collectives disappeared and the number of herders increased dramatically as a result of livestock privatisation [37,51]. Pastureland, however, remained under state ownership [52]. As a result, rangeland management institutions became unclear, and incentives for increasing livestock numbers were provided by new and unexperienced herder families. In order to increase herder families' income, livestock numbers increased from 22 million in 1990 to 41 million in 2012 [7]. This led to poor practices and the degradation of rangeland resources [52], a clear example of the tragedy of the commons [53].

Herders and their livestock were faced with disastrous climatic events between 1999 and 2002. Nationwide, 190,000 herder families lost 12 million animals in this period. More than half of the herders are considered poor, with fewer than 100 animals per household. These poor herders typically live near the cities, and the correlation between environmental degradation and poverty is notable [38]: as local people become more impoverished, conservation becomes unfeasible. This is especially problematic in situations where herder communities exist in close proximity to nature areas, where the protection of natural resources is crucial for the survival of unique ecosystems.

Although poverty alleviation and conservation are two distinct objectives, there is a strong relationship between them because poverty limits the success of conservation, and the attempt to conserve biodiversity may fail if it does not address poverty issues adequately [39]. In order for herders' livelihoods and the exploitation of natural resources to be sustainable, the economic incentives have to be adequate. Therefore, the sustainable livelihoods view recognises the need to diversify and address the capacities of the rural poor through various strategies including non-agricultural activities [54,55]. A diversified livelihood approach increases livelihood security and sustainability. International and domestic practices show that it is essential to involve local communities and ensure that they receive social and economic benefits from the sustainable use of local resources [1,56,57].

The concern for sustainability has led to attempts to create alternative forms of tourism that have fewer negative impacts on the environment and communities than mass or uncontrolled tourism [41]. The link between conservation and livelihood improvement goals through tourism is still an open debate for some, but certain protected areas in Mongolia already receive support from donors to facilitate multi-sectoral policies that promote the integration of natural resource conservation, rural development, and tourism [13,58]. Tourism as a source of livelihood diversification can be based on attractions and destinations associated with natural heritage (e.g., steppes, wildlife, and natural formations) and cultural heritage (e.g., tradition, culture, and nomadic life).

The main potentials of Mongolia for the successful development of international tourism are the beauty of its unspoiled landscapes as well as its cultural heritage, particularly the pastoral nomadic tradition. Eighty-five percent of Western tourists are attracted by the traditions and customs of Mongolian herders and their daily life activities [12]. A survey of international tourists who were travelling around Mongolia indicated that the tourism products that were most in-demand were those that involved wonderful nature (61%), nomadic tradition and culture (43%), adventure tourism (13%), and the history of Great Mongolia and Chinggis Khaan (11%) [13].

International donors have implemented several projects to improve the incentives for tourism developers and communities and have also been involved in various strategic planning initiatives. These include the development of eco-tourism in the protected areas of Gobi Gurvansaikhan, Gorhi Terelj and Khan Khentii by the German Technical Cooperation in 1997–1998, International Tourism Surveys in 2002 and 2005 by the United States Agency for International Development, and an Eco-Tourism Workshop in 2002 and the Strategic Tourism Plan 2006–2010, also by the German Technical Cooperation. In the popular tourism destinations, several CBT projects have been implemented by donors: "Ger to Ger-CBT" by the Swiss Agency for Development and Cooperation in 2001–2009; the CBT project by the Sustainable Tourism Development Centre in 2008–2010; CBT by the Hustai Buffer Zone project in Hustai National Park; and a Visitor Centre by the Itgel Foundation NGO. These projects have aimed at supporting livelihoods in rural communities and contributing to their tourism service. As a consequence of these projects, herder families have participated in training on tourism and community management and have received financial support for providing tour accommodation in their *ger*.

On the other hand, the rapid and unplanned proliferation of tourist camps has led to overcrowding in some of the most popular sites, which has diminished their appeal for some visitors [59]. Furthermore, many of the country's key natural and cultural sites are under threat from unmanaged development, which leads to a concentration of human and

vehicle presence in certain spots while many other attractive areas remain inaccessible and underdeveloped. Moreover, the economic benefits from tourism are currently concentrated in the capital city. Even though most of the tourist activities occur outside of Ulaanbaatar, the majority of the tourism-related revenue is collected by service providers in the city and tourism-related tax revenue is not redistributed back to the regions or places where tourism activities take place [13,59]. At the core of the problem is a lack of development planning, limited visitor infrastructure to manage visitor flows, the concentrated distribution of economic activities, and the spread of negative impacts. To overcome these problems, the tourism sector should be complementary to local development, rather than substitutive. This will require the tourist sector playing a key role in supporting the development of the local economy by providing additional income for local communities, while at the same time supporting the preservation and sustainable management of valuable natural and cultural resources.

4. Research Region and Case Study

4.1. The Hustai National Park

The case study area is Hustai National Park. The Mongolian Government declared the Hustai National Park as a Special Protected Area in 1993, one year after the initiation of the reintroduction project of the *takhi* (Przewalski's horses) to the Hustai. The Hustai National Park is located in the central region of Mongolia (Figure 2), about 100 km to the west of the capital city Ulaanbaatar, and lies at the boundaries of Altanbulag, Argalant and Bayankhangai *soums* (sub-provinces) of Tuv *aimag* (province). In 2002, UNESCO's "Man and the Biosphere Reserves" organisation certified the Hustai National Park as a member of the world biosphere network of natural reserves.

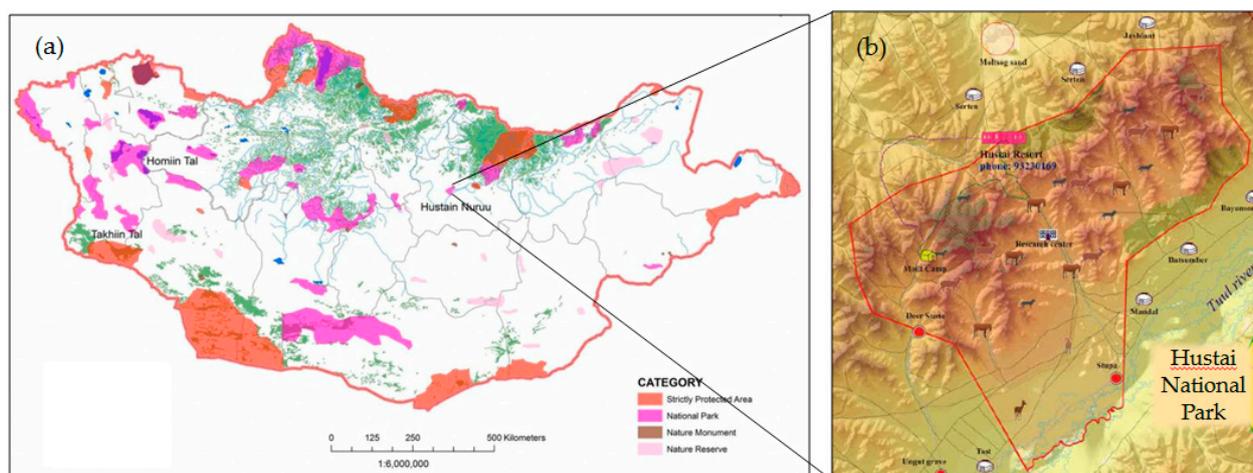


Figure 2. Location of study area. (a) Protected areas of Mongolia, with Hustai National Park, and (b) the study area, with herder groups live in the vicinity of the park in their community-based tourism initiatives.

The actual zoning plan distinguishes core areas within the park: buffer zones for tourism, and limited use zones as development zones. When the Hustai National Park initiative was being implemented, local people lost their rights to use the land inside the buffer zones of the protected area. Steadily, the herders and their livestock had to leave the buffer zone of the national park and now live and move around in the area surrounding the buffer zone of the protected area. At present, the area is totally free from livestock, and hunting and poaching are forbidden.

The Hustai National Park is managed by the Hustai National Park Trust NGO, an independent Mongolian trust that cooperates with many international organisations for conservation and researching the Hustai National Park and operates fully independently from financial backing from the Mongolian Government. The Hustai National Park Trust was established in 2003, and signed a contract with the Mongolian Government which

delegated the management of the Hustai National Park to the new NGO. Before the establishment of the NGO, from 1993 to 2003, the park was managed by the Mongolian Association for the Conservation of Nature and the Environment. The main aim of the Hustai National Park Trust is to conserve the *takhi*. The reintroduction of the *takhi* is essential for sustainable ecosystem management in the context of the Hustai National Park. The Hustai National Park was the first park in Mongolia to be managed by an NGO specialising in nature and environmental conservation.

4.2. Community-Based Tourism in the Hustai National Park

The Hustai National Park Trust supports the herder families who live in the vicinity of the park in their community-based tourism initiatives, with the aim of providing visitors with an insight into nomadic life in Mongolia. The herder families established herder groups that participate in the conservation of nature in the Buffer Zone of Hustai National Park and supply tourism services. Some herder groups provide horse riding; some groups provide accommodation in their own *gers* and allow tourists to participate in daily routines such as cooking, milking animals, and herding.

Like most nomads throughout Mongolia, the residents of the park have a history of making as many items as possible for their *gers* themselves. These include furnishings, cooking equipment, clothing, games, and animal husbandry tools. In this way, the tourist is immersed in experiencing the real culture of the nomadic people. Activities such as these allow a greater amount of money to flow directly into the hands of the herders and will cause little environmental impact. Some herder groups can produce a variety of different products and services for tourists as souvenirs. The Hustai National Park Trust administration has now embarked on a project to set up a tourism souvenir cooperative based on other similar projects working successfully elsewhere in the country. This form of income generation is of particular interest to some herders, because little training is required, and the items can be made during the quieter winter months.

4.3. Methodology for Data Collection in the Study Area

Various secondary data sources, including reports by international projects and an analysis of the tourism sector, are used to provide an overall picture of recent tourism management. As a first step, primary data collection included interviews with key informants in the tourism sector: tourism researchers, representatives of donor projects, managers of tour operators, and guides. Informants were asked about CBT development in Mongolia, evidence of successful (and failed) initiatives, features of CBT, and outcomes of CBT projects. Key informants emphasised many points which can be summarised as follows: (i) CBT helps to improve the livelihoods of local communities and to preserve nomadic cultural resources; (ii) in the history of Mongolian CBT, many projects failed because CBT could not develop without the support of donors and external coordinators; (iii) when local communities participate in the tourism industry, their shared income is lower than that of other tourism stakeholders; (iv) recently, the best case of CBT is among the herder groups of Hustai National Park. They are still promoted by the Hustai National Park Trust NGO and donors, but after this project finishes, herders' participation in tourism may also stop; and (v) CBT is a crucial form of tourism because most of the tourists arrive with the purpose of visiting nomadic families.

Based on these responses, community-level interviews were planned with the herder communities in the Hustai National Park. In-depth community-level interviews were carried out in Altanbulag, Argalant and Bayankhangai *soums* of Tuv *aimag*. Respondents were herders who participate in herder-based tourism and who live in the vicinity of the protected area. Herders were asked about their participation and the importance of herder-based tourism, their family members in the herder groups, the tourism activities in which they are involved, the features of collective action, and the factors they believe to contribute to the presence (or absence) of their tourism activities (see the Appendix A for an overview of the interview questions). Interviews were conducted face-to-face, were

digitally recorded, and notes were taken. There are 40 herder groups within the buffer zone of the Hustai National Park, 30 of which participate in activities of the Hustai National Park Trust NGO, although only six of them work regularly with tourists. The leaders of these herder groups and 15 herder families who participate in tourism were interviewed. The reason for selecting these specific herder families was that they offer services to tourists either directly (accommodation, cooking and guiding) or indirectly (preparing horses for tours, helping each other, etc.).

5. Application of the SES Framework

The SES framework was applied to analyse the combination of variables of the resource system, resource units, governance system and actors (resource users) of Herder-CBT-SES in the Hustai National Park. The aim of applying the SES framework is twofold. First, we wanted to see how the generic SES framework can be adapted to the case of Herder-CBT. The second objective was to understand the collective action that takes place in this particular location and to find an answer to the question, “Can this SES work sustainably?”. When applying the SES framework to the Hustai National Park, we defined the variables and the conditions within the Rangeland SES, the Nature-based Tourism SES, and the Cultural Tourism SES, and the inter-relations between these systems (Table 1), and action situations for Herder-CBT (Table 2). These variables are based on Ostrom [24]. We defined action situations by “interactions” and “outcomes” of the general SES framework. Adapting the SES framework enabled us to identify the variables and key indicators of outcomes for an understanding of the communities’ self-governance.

Table 1. Comparison of social–ecological system (SES) variables for the systems in the case of the Hustai National Park.

Variables	Rangeland SES	Natural Tourism SES	Cultural Tourism SES	Herder-Community-Based Tourism SES
<i>Ecosystems (ECO)</i>				
ECO1—Climate change ECO2—Biophysical conditions				
<i>Resource System (RS)</i>	<i>Pastureland</i>	<i>Wildlife</i>	<i>Customs</i>	<i>Pastureland</i>
RS1—Sector	Livestock husbandry	Tourism	Tourism	Livestock husbandry and Tourism
RS2—Clarity of system boundaries	Well-defined	Defined	Undefined	Moderately defined
RS3—Size of resource system	Small	Small	Richness	Small tangible and rich intangible resources
RS4—Productivity of system	Feasible improvements to the resources	Mature destinations	Unknown	Improvement and development under conservation
<i>Resource Units (RU)</i>	<i>grass and herds</i>	<i>wild animals and natural landscapes</i>	<i>cultural landscapes and heritages</i>	<i>Grass and animals/wild animals</i>
RU1—Resource unit mobility	Stationary units: grass and forage Highly mobile units: herds	Stationary units: natural landscapes Highly mobile units: Takhi (wild horse)	Stationary units: cultural heritages Highly mobile units: herds and horses	Stationary and high mobile units
RU2—Interaction among resource units	Symbiotic interaction between grass and animals	Symbiotic interaction between grass and takhi	Symbiosis between customs and herds	Symbiotic and competitive interactions
RU3—Change of units size	Improving	Increasing	Changeless	Changing units under regulation

Table 1. Cont.

Variables	Rangeland SES	Natural Tourism SES	Cultural Tourism SES	Herder-Community-Based Tourism SES
<i>Actors (A)</i>	<i>Herders and Herder groups</i>	<i>Tour operators and Tourists</i>	<i>Herders and Tourists</i>	<i>Herder groups, Tourists and TOs</i>
A1—Boundaries	Clearly defined	Defined	Defined	Moderately defined
A2—Duration of loading	Past experience and traditionally	Short period	Short period	Experienced in short period
A3—Leadership/ entrepreneurship	Local leader (groups) External leader	Tour operators (privates)	Experienced locals (individuals)	Local leader and External leader
A4—Trust and reciprocity	Moderate level	Lacking	Lacking	Lacking
A5—Shared local knowledge	High levels	Lacking	Moderate levels	Lacking mental models
A6—Dependence on resource	High	High	High	High
<i>Governance system (GS)</i>				
Rules:				
GS1—Operational	Present	Absent	Mostly absent	Unclear
GS2—Collective choice	Mostly present	Absent	Absent	Mostly absent
GS3—Constitutional	MEGD, PAA	MSCT, MNTC, PAA	MSCT, MNTC	MEGD, MSCT, MNTC, PAA
GS4—Property rights regimes	Common property	Public property and NGO management	Private ownership	Mixed property rights
GS5—Network structure	Herder groups	Absent	Herder families	Herder groups/Hustai community
GS6—Matches on harvest to regeneration of resources	to hold the number of herds in surroundings of the PA	to restrict a buffer zone of the park for grazing	an open access of custom and tradition	Diversified livelihood
<i>Social, Economic and Political Settings (S)</i>				
S1—Economic development		S3—Government resource policy		
S2—Demographic trend		S4—Market incentives		

Table 2. Action situation for the “Hustai” Herder-Community-Based Tourism.

Action Situation	
Monitoring processes - Environmental - Social	Sanctioning and conflict resolution Involvement of Hustai National Park Trust NGO to enforce rules
<i>Interactions</i>	<i>Outcomes</i>
I1—Aggregate pressures	O1—Ecological performance
I2—Information sharing among users	Human impacts, habitat rehabilitation
I3—Deliberation processes	O2—Economic performance
I4—Conflicts among users	Benefit, benefit sharing equity, market expansion
I5—Mutually agreed	O3—Social performance
I6—Cooperation	Community cohesion, sovereignty, commitment
I7—Self-organising activities	
I8—Networking activities	

Note: MEGD-Ministry of Environment and Green Development of Mongolia, PAA-Protected Areas Administration, MSCT-Ministry of Sport, Culture and Tourism, MNTC-Mongolian National Tourism Centre.

The Hustai SES consists of coupling an ecological system and a social system and then integrating pastoralism–conservation–tourism. The ecological system has been described as forest steppe, which comprises steppes, meadows, grasslands, and forest [60]. The Hustai

National Park covers a buffer zone of 49,804 ha, as well as a core zone of 350,000 ha with a small mountain and river valley. The social system includes the three *soums*: Altanbulag, Argalant and Bayankhangai, and has 6500 inhabitants who are members of 350 herder families, 150 of whom are from elsewhere in Mongolia. Some 100 herder families feed their livestock in the immediate vicinity of the Hustai National Park.

The *Resource system* of pastoral–tourism is pastureland. Overall, the “Hustai” SES framework implies human–wildlife conflicts. Herders are the primary users of grassland, on which the endangered wild *takhi* also feed. On the other hand, the *takhi* carry the identity of Hustai National Park as a tourist destination. Thus, tourists could be seen as indirect users of grassland because they visit the area to see wild animals, i.e., *takhi*, and are interested in nomadic customs and traditions. Therefore, pastureland, with its dynamics of food competition between *takhi* and livestock, is a resource system and a pastoral system in the buffer zone, and needs adaptation in order to avoid degradation from overgrazing and over-utilisation. Pastoral livestock husbandry and tourism are determined as the resource sectors (RS1) that are most developed. The system boundaries (RS2) seem to be particularly clear in the sense that boundaries for ecological, economic, and institutional management meet at the level of the three *soums* that contribute land to the Hustai National Park (Figure 2). Although the Hustai National Park is relatively small, it contains extensive historical and cultural heritage (RS3). The size of the resource is directly related to the habitats of the reintroduced *takhi* population. Increasing the efficiency of pasture resource management will benefit both the livestock and the *takhi*. The nature of the areas surrounding the Hustai National Park, coupled with the presence of historic heritage and nomadic customs, promote the Hustai National Park as a more mature tourism destination if feasible improvements are made to its resources (RS4).

Resource units are determined as stationary, such as grass and forage and mobile units, such as *takhi* and cattle (RU1). There is a symbiotic interaction between units: grass and cattle, grass and wild animals, and cattle and customs (RU2). However, interaction between *takhi* and cattle is defined as competitive because livestock competes with wild animals for feeding. The staff of the protected area and herders agree that the number of livestock must not expand, but on the other hand, increasing *takhi* stock is better in the Hustai National Park (RU3). The staff of the protected area and the herders are able to negotiate among themselves about where to graze cattle and wild animals in an ever-changing landscape because there is a common understanding of pastureland in the buffer zone, depending on forage availability and the outcomes of negotiations.

In relation to the *actors*, the primary appropriators of the resource are small communities. There is a strong overlap between the herders’ location and the resource location, and herders are highly dependent on the resource (A6). Therefore, herders know that this is not only of vital importance for them, but also contributes to the preservation of the steppe ecosystem and the Hustai National Park. There are thirty-four herder groups in the buffer zone that immediately surrounds the Hustai National Park. Fifteen of those groups are highly active. About 60 percent of the herder families in the buffer zone have only 200 head of livestock, which denotes poverty. The protected area itself provides a clear delineation of the primary appropriators of the Hustai National Park.

As a consequence of the reintroduction of *takhi* and the commencement of herder-based tourism, an average of 8000 international and 5000 domestic tourists visit the Hustai National Park every year, although not all tourists visit herder families. To find tourists, the Hustai National Park contracts with over 110 tourist companies and operators. As key actors in tourism, the tour operators are intermediaries and represent the primary channel for access to international markets. Thus, herder families as tourism service providers relate with tour operators to attract customers.

In order to develop CBT, herders have established groups based on relatives and neighbours and make decisions to select their leaders (A3). Six herder groups (A1) who live in the buffer zone participate in herder-based tourism on a regular basis. Since 2008, experienced local herders (who usually lead herder groups) work in tourism and offer

specific nomadic tourism activities (A2). In the case of Hustai, social capital, with trust as a key dimension, has been highlighted as integral to improving park management (A4), often enacted via the administration and staff of the Hustai National Park Trust NGO as external leaders (A3). The external leader plays the central role as facilitator in the formation of social capital and collaboration between formalised herder groups. This potentially contributes to the further strengthening of social capital. A lack of trust and other barriers between herder families or herder groups may stand in the way of developing CBT.

Governance System. The national policy for natural resource management and tourism sector management was developed by the Ministry of Environment and Green Development of Mongolia (MEGD) and the Ministry of Sport, Culture and Tourism (MSCT), and is implemented by the Protected Areas Administration (PAA), the Mongolian National Tourism Centre (MNTC), and administrative units. Some rules and laws related to community-based natural resource management, such as the 1995 Mongolian Law on Environmental Protection, the 1994 Mongolian Law on Protected Areas, and the 1997 Mongolian Law on Protected Area Buffer Zones, are renewed and approved by the Mongolian Government (GS3). The central administration of Protected Areas in Mongolia has drawn up guidelines for tourism development in the Protected Areas, and the involvement of local people is emphasised as important at all levels of nature protection.

The buffer zone is being promoted as a mechanism to store resources within the protected area. When implementation of the Hustai National Park initiative began, local people lost their rights to use land inside the buffer zones of the protected area (GS4). The actual zoning plan distinguishes between the park's core areas, tourism areas as buffer zones, and limited-use zones designated for development. The herders and their livestock therefore had to leave the buffer zone of the national park and now live and move around in the area surrounding the buffer zone of the protected area. At present, the buffer zone is completely free from livestock, and hunting and poaching are forbidden (GS6). However, the herders are in possession of winter and spring pastureland outside the protected area (GS4).

According to the Hustai National Park's conservation needs, Buffer Zone Committees have been established in every *soum*. Herders, women, local authorities, and the staff of Hustai National Park are represented in each of the local committees and in the Buffer Zone Council that meets twice a year. In 2004, the Buffer Zone Council initiated CBT for herder communities, and herders organised themselves into groups and collectives (GS2). Herder groups have been formed by relatives and neighbours (GS5). On the initiative of the Hustai National Park Trust, the Ministry of Transport and Tourism approved the standard of the accommodation service offered by local communities and people who are interested in receiving tourists (GS1). Herder groups have been implementing the standard when they receive tourists. The members of the group organise their labour, and make felt and animal skin products, souvenirs, and handicrafts to sell to tourists over the winter when there are few other activities (GS1). Member families also help each other out with most of the recurring tasks such as pasturing, shearing sheep and goats, and making hay, and it is organised in informal ways.

Action situations. As mentioned before, there are many different resource units in a pastoral–tourism system, and these are invariably interrelated; for instance, as grass stocks decline, there is greater interaction and conflict between protected species and herders. Conservation of the protected area, however, could not be successful without the support of the local communities. Herders undertake responsibilities such as supporting the conservation of the protected area, restraining the number of livestock, and educating visitors about pollution or frictions. Therefore, local herder families partake in tourism activities in return for receiving benefits from the protected area as an attractive destination; this is, in a sense, an example of livelihood diversification compensating for lost opportunities. This necessitates a balance between resource users. In the case of Hustai National Park, the NGO is attempting to bridge the missing links between actors. The Hustai National Park is managed by the Hustai National Park Trust NGO, an independent Mongolian trust (and

the only independent national park of Mongolia) that cooperates with many international organisations for the conservation and research of the protected area, and operates entirely without financial backing from the Mongolian Government. The Hustai National Park provides a good example of an NGO managing a protected area and overseeing the interaction between wildlife conservation, pastoral livestock husbandry and tourism management [61] (Table 2).

Interactions. It is important to understand the information flows, the conflicts that exist, and the conflict resolution mechanisms in place to resolve them (Table 2). At the herder level, respondents perceive that tourism can bring benefits in terms of their livelihoods, and there is sharing of know-how between communities (I2), deliberation processes (I3), reaching mutual agreements (I5), and the movement towards independent settings (I7). When the land first became a protected area, herder families regretted that they no longer had access to the pastures of Hustai National Park and had conflicts and frictions over grazing in the park. However, the staff of the Hustai National Park Trust run training programmes in mutual co-operation and consultation, organisation building, conflict management, and market efficiency. Herder-community-based initiatives run by the Hustai National Park Trust have positive effects in terms of learning about collective action, raising awareness, acceptance of environmental issues, cooperation, and product improvement.

The analysis of the *outcomes* is related to ecological, economic, and social performance. The analysis of resource conditions relies mainly on secondary data, i.e., the results of analyses by biologists who have studied the case of Hustai National Park; on the other hand, the community's livelihood and social situation is investigated based on information gained through the interviews and unpublished reports.

Ecological performance (O1). The activities and innovative approaches for conservation supported by the local community have created significant improvements in resource conditions. Protected area management and shifting land use statuses from pastures to protected areas have contributed to land cover changes in the Hustai National Park [61]. Over the last two decades, the administration of the Hustai National Park has put a lot of effort in moving local herders from the protected area. Bayarsaikhan et al. [60] have investigated the result of the collective action to implement conservation and preservation activities, and found that the area of degraded land has decreased. As a consequence of protecting the area, the number of species is increasing or is maintained; for example, the number of red deer has dramatically increased, reaching numbers eight-fold greater than the original population size in only the first few years of state protection. Resting plants on pastureland in a planned sequence gives the more desirable plants a chance to regrow, compete, and multiply. The improved pasture condition reduces soil erosion and helps to conserve water. Additionally, the water resources for livestock have been repaired and are now being maintained by the herder groups themselves. As a consequence of local communities' contributions towards conservation, the number of breaches such as illegal hunting and grazing of cattle inside the core zone has decreased.

Economic performance (O2). In the Hustai National Park, not only plants and animals are important, but also the economic interests of those people who depend on natural resources and institutions for their livelihoods. The Hustai National Park creates a tourism product that integrates watching wild animals and visiting nomadic herder families, and tour operators cooperate with herder groups. This contributes to herders' livelihoods and can form a compensation for reducing the number of livestock. However, the main question is whether herders take a fair share of the income gained from providing services to tourists. According to the Hustai National Park Trust, the earnings generated by herder groups are between USD 2500 and 10,000 annually, and 10–15 member families divide this amount for their participation.

The analysis of the value chain in the Mongolian tourism industry is based on the estimated average spending in the country. The survey conducted by the National Tourism Centre showed that foreign tourists stay in the country for 13.4–16.7 days on average, spending around USD 1500 during their stay [5]. Gansukh et al. [13] found that tourists spend an

average of USD 726–1121 per trip, depending on the purpose of their visit. According to surveys of the Mongolian tourism industry, local communities such as herders receive a much lower amount than this, amounting to 2.5–12% of the total tourist expenditure [13]. The result of these surveys indicates that local communities' involvement in the value chain is very poor, at around 4.2–6.3% of the value created overall. Thus, local communities such as herders are unable to participate in making decisions about the management of the chain, or have any significant degree of control in the value chain.

Considering that herder families or herder groups are main actors in the tourism sector, they currently receive insufficient benefits from tourism and the economic benefits are concentrated in the capital city. Even though most of the tourist activities occur outside of Ulaanbaatar, the majority of the tourism-related revenue is collected by service providers in the city, and tourism-related tax revenue is not redistributed back to the regions or places where tourism activities take place [13,59].

Socio-cultural performance (O3). All of the herders and group leaders who were interviewed expressed appreciation for the support of the NGO and were very proud of their relationship with the staff of the Hustai National Park Trust. As tourist service providers, the herders emphasised that member families of herder tourism groups can preserve ancient nomadic culture through offering shows to their guests such as the national festival and other cultural performances, or by producing traditional goods. In terms of the productivity of being involved with tourism, herder groups cooperate with the Hustai National Park Trust NGO or tour operators, but only in very few cases do they liaise directly with tourists, and therefore offer their services for pre-negotiated prices. Herder groups discuss price levels with the NGO, and in some cases supply tourists and tour operators for a mutually agreed price. This is because herders agree to cooperate with the intermediaries in the tourism chain. There is a good relationship between the member families of herder groups, but the relationships between herder groups are imperfect, meaning that herder groups do not work together to expand the market or attract customers, thus missing the opportunity of developing a unified identity for the Hustai community or of participating in decision-making about the management of the tourism chain. Furthermore, the administration of the Hustai National Park Trust pointed out problems pertaining to the livestock numbers. The Buffer Zone Council and the Hustai National Park Trust NGO adhere to a policy designed to maintain the number of cattle at a steady rate, but herders do not adhere to this policy, especially families who are not members of herder groups.

6. Discussion and Conclusions

The resource base of many human populations is currently under heavy stress. In Mongolia, pasture is a common pool resource which, while in state ownership, is in fact managed as a common property. Self-governed common-pool resource systems have coped for long periods of time with diverse rules for organising within communities, and some have failed [62]. Community-based natural resource management covers all aspects of local economic development, natural resource conservation, and poverty reduction.

This paper documents the application of the social–ecological system (SES) framework in a pastoralism–conservation–tourism integrated system. The SES framework can be used to diagnose and describe environmental systems with a strong element of human intervention. It is the basis for theoretical and empirical research on why some governance systems lead to improved performance of SESs, while others fail [34,63]. The SES framework presents an all-inclusive list of likelihood variables and enabling conditions for sustainability on the commons [33,36]. It would, however, be impossible to fit standardised conditions to all cases. Balancing scientifically driven objectives and the development of institutions for the management of natural resources is a difficult process [33].

After changes to the market economy in Mongolia, livestock numbers have increased, grasslands are being overused, and land degradation is common. There remains a need to balance conservation objectives with local development requirements. Herders cannot abandon their animals, but they may be persuaded to carry out livestock husbandry

alongside other activities; tourism, for instance. The SES framework was applied to Herder-Community-Based Tourism (CBT), presenting CBT innovatively from an integrated pastoralism–conservationism–tourism perspective. The SES framework was created to enable the analysis of different systems such as fishery, forestry, irrigation, or pasture, but also the comparison between different resource systems [32,64]. Distinguishing the Rangeland SES, Nature-based Tourism SES, and Cultural Tourism SES enabled us to identify the key variables for an understanding of the local self-governance that is undertaken to use and manage the resource, i.e., the pastureland and the collective action process for the Herder-CBT-SES.

The implications of a particular variable of the SES framework for the analysis of pastoral–tourism management in Hustai National Park are very case-specific. Herder-CBT in Hustai is the consequence of processes operating within a social, economic, and environmental context. The ecological performance of the Herder-CBT-SES indicates that conservation and rehabilitation activities of wild animals are continuous via the management of the Hustai National Park Trust NGO. Herder families that are members of herder groups are aware of the impacts of livestock husbandry on the health of the protected area's pastureland, and of the importance of its preservation in order to protect endangered wild animals, such as the *takhi*. The most successful benefit thus far is wildlife and habitat conservation. The consequences of this conservation, with the support of the local community, are the rehabilitation of the *takhi* and the preservation of grassland for on which wild animals can graze.

Herder groups who live around the Hustai National Park are interested in diversifying their livelihoods to avoid any future problems caused by livestock. The protected area, and the rangeland in particular, is an important resource for the herders and the development of their livelihoods. However, reducing levels of livestock forage demand is vital in the protection of the *takhi*, which are increasingly being promoted as the symbol of the Hustai National Park. This has been successful for the development of tourism in the protected area, bringing about an increased demand for tourism which signals significant improvements to the livelihoods of herder families.

Tourism development can offer economic justification for the establishment of protected areas for biodiversity conservation [65,66] and provides an alternative to the exploitative use of environmental resources such as agriculture, livestock husbandry, forestry, and mining [67,68]. Tourism and conservation activities provide local communities with many opportunities for skill development and the generation of income [69]. Thus, Herder-CBT in Hustai provides economic and socio-cultural benefits through the conservation of natural and cultural resources and tourism development. Tourism is one of the most profitable options for the local community in this region because Hustai is currently the most popular destination in Mongolia. Members of herder groups receive equitable shares in the benefits of tourism, but the participation of members is diverse. However, the distribution of revenues gained from tourism shows that only a low and inequitable share reaches the herder community. Expectations of economic benefits act as incentives for group formation and membership amongst local herders, but not everyone in the community is interested in sustainable Herder-CBT through the conservation of the ecosystem, showing social non-cohesion in this respect (I4, Table 2). Moreover, the interaction between herder groups initiated by the Buffer Zone Council and the NGO shows that the existence of external leaders is an important driver for resource management (A3, Table 1). In Hustai, the formation of herder groups was guided by the NGO, although the members of the herder groups are responsible for developing collective action (I7, Table 2).

The results show that the SES framework is able to diagnose the sustainability of the pastoral–tourism system, but sustainability outcomes indicate an imbalance between social, economic, and environmental performance. While there are improvements in environmental conditions and wild animal conservation, herders only receive a low share of the economic benefits of tourism and have limited market power. As a consequence, herder groups are understood as independent units and the task of developing a unified

community collective action remains. To a certain extent, institutional reform of the Mongolian CBT can serve as an example of applying the principle of multilevel institutions to multifunctional uses of resource systems, and we recommend further study of this in the future.

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Appendix A

Semi-structured interview with heads of herder groups and herders:

1. Name
2. Age
3. How long have you been living near Hustai National Park?
4. When was the herder group established?
5. How many families are members of your group? Are they relatives or not?
6. What is the main objective of your group?
7. How many years has your group been working in tourism?
8. Which tourism activities does your group run?
9. What are the economic benefits?
10. Do all members of the group participate in tourism activities?
11. How do you (your group) share benefits?
12. How do you connect with tourists? How many tourists do you serve approximately?
13. Which approach do you use to price tourism services?
14. Do you serve the same price to all tourists?
15. Do you (your group) cooperate with other herders and herder groups?
16. Which of your (your group) activities contribute to the conservation of the protected area?
17. What is the most important aspect that leads to good results of your work? (cooperation of herders, trust between group members, supports of the NGO, initiatives of group members, etc.)
18. What has been the most difficult challenge that you (your group) have faced?
19. What kinds of conflicts, if any, has your group faced?
20. How does your group make decisions (on conflicts)?

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