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Transhumance in the Kyrgyz Pamir, Central Asia

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Abstract

Transhumance is a typical form of subsistence in the livestock industry that involves the climatic difference between lowlands and highlands. There are several types of transhumance but its most important factor is the natural difference in climate and vegetation between lowlands and mountain regions. In this paper, we will discuss the connection between mountains and human activities through transhumance (*küch* in Kyrgyz), the use of natural resources, and age-based livestock naming differences in the Alai Valley, located in the northern part of the Pamir in Central Asia. In 1920, the region called Kyrgyz was integrated into the Soviet Union. Before the Soviet era, Kyrgyz people had maintained a purely nomadic lifestyle, travelling from one pasture to another in groups. The integration into the Soviet regime caused a rapid transformation in this region from nomadic pastoralism to livestock farming. The transition period that Central Asia went through after the 1991 collapse of the Soviet Union diverged greatly from the initial optimism that surrounded it. Livestock farming became a matter of individual enterprise, or *fermer*. Today, the eastern part of the Alai valley is characterized by two types of transhumance: horizontal and ascending. In contrast with the conditions of the Soviet era, the region is now independent, so pastoralists will unavoidable need to gain autonomy in the new market economy.

Key words：The Kyrgyz Republic, Pamir-Alai Mountains, Alai Range, Alai Valley, transhumance, subsistence, adaptation

Ⅰ. Introduction

In many regions of the world, the livestock industry is the only possible kind of land use that can be sustained in severe climatic conditions. Its economic forms vary according to those conditions: in some regions have sedentary livestock industries, while others have migratory or stall-feeding livestock industries, which include keeping livestock in feedlots (Rinschede, 1988).

On the other hand, people in certain regions make use of the differences in altitudes, specifically the climatic difference between highlands and lowlands, as observed in locations worldwide, including the Alps (Rinschede, 1988) and the Andes (Onuki, 1978, 1980; Yamamoto, 1993, 2004). It is also known that hill stations were developed by the Caucasians in South and South-eastern Asia during the colonial period (Shirasaka, 1989; Saito, 1990; Crossette, 1999). In general, transhumance is a typical form of subsistence in the livestock industry that makes use of the climatic difference between lowlands

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and highlands.

Pastoralism has played a major role in Central Asia since time immemorial. Nomads had functioned as transporters and communicators between oasis settlements, and as powerful actors controlling passages and providing security to trade caravans. The Silk Road exchange over vast tracts of deserts, steppes and mountain environments made it feasible for pastoralists to cover huge distances with transport animals and valuable loads. Mountain passes functioned as thoroughfares for Inner Asia traverses, especially for the connection between the Tibetan Plateau and South Asian rim lands across the Himalaya, as well as between the Central Asian oases along the Silk Road and the trans-mountain areas beyond the Hindukush, Karakoram, Kun Lun Shan, and Pamir mountain ranges. Vital passages were controlled by herding communities that, in addition to animal husbandry and livestock breeding, engaged in transport services across difficult passages and functioned as guides and guards for trade caravans (Kreutzmann, 2011, p39–40).

In this paper, we will discuss the connection between mountains and human activities through transhumance (*küch* in Kyrgyz and Tajikistan), the use of natural resources, and age-based livestock naming differences in the Alai Valley, located in the northern part of the Pamir in Central Asia. Before these discussions, we will briefly examine transhumance in other parts of the world.

Ⅱ. What is transhumance?

There is some agreement among etymologists about the origin of the term 'transhumance', a word used in both English and French that is known as *Almwirtschaft* or *Alpwirtschaft* in German. It is derived from the Latin words 'trans' (across, over) and 'humus' (ground, soil, land). The term 'transhumance' has been used in the colloquial languages of the Mediterranean regions (France, Spain, and Italy) and was adopted into scientific literature (Vidal de la Blache, 1892) at the end of the 19th century. In today's Romance languages, it refers to migration and is rarely applied to the transport of livestock. Geography has broadened the term so that it currently characterizes an economic form of the migratory livestock industry that differs from nomadism, semi-nomadism, and migratory livestock based in alpine pastures (Yasuda, 1958; Beckinsale and Beckinsale, 1975; Rinschede, 1988). It is called *transhumanţă* by Romanian Carpathians.

Transhumance is *le genre de vie*, in which some of the members in a group of people stay in their permanent settlements, while others move with their animals to different grazing areas. It is the seasonal and periodical migration of livestock: in other words, the seasonal migration of herds, typically cattle and sheep, between two regions with different climatic conditions.

Transhumance is also a type of migratory livestock industry, in which the livestock is generally accompanied not only by hired hands but also by owners and their relatives – although rarely a whole family – on a long migration or transit between at least two seasonal ranges (summer and winter). The term 'range' in this paper means the area encompassing settlements, meadows, and pastureland. This seasonal movement is inspired by the different characteristics of ranges in their altitudinal, thermic, hydric, or agro-economic conditions.

Traditional transhumance, like nomadism, is combined with year-round grazing. Stabling or supplemental feeding is practised only if absolutely necessary during the cold season. At the location of the base ranch the settlements are permanent and cultivation can be practised, while at the alternate location the herdsmen live in tents, mobile huts, wagons, or in permanent settlements that are only seasonally used. Rarely are both settlements occupied during the same season (Beckinsale and Beckinsale, 1975, p73; Rinschede, 1988).

The kind of livestock involved in transhumance varies by area. Milk cows and a small number of sheep are common in the Alps (Shirasaka, 2004), sheep are most common in the Pyrenees and Spain, and a mixture of cows, sheep, and goats are found in the French Alps (Peattie, 1955).

The transhumance of sheep is found in Italy's Apennines (Tani, 1976; Takeuchi, 1998), in Nepal (Watanabe, K., 2009), and in Turkey and Romania (Miya, 2000; Urushibara-Yoshino, 2009; Shirasaka, 2007, 2010; Shirasaka and Urushibara-Yoshino, 2013). Transhumance of sheep and cows is practised in the Balkan Peninsula (Cevc, 1972), but in Slovenia, it is called 'the Museum of Transhumance' (Matley, 1968; Kobayashi, 1974; Mihevc, 2013). There, the transhumance of sheep has almost entirely disappeared, although according to Shirasaka's fieldwork in 2004, the transhumance of cows continues. Iwata (2009) states that large-scale transhumance of sheep is practised in the Tian-Shan Mountains. In and around the Tibetan Plateau and the Great Himalayan mountains, transhumance of yak (*Bos grunniens*) is practised (Tsukihara, 1992; Matsubara, 1993; Shirasaka, 1994; Watanabe, K., 2000; Inamura, 2004). Ikeya (1993) also reported a very interesting practise of transhumance in Nigeria. Thus, there are a great many types of transhumance pracrised around the world (Rinschede, 1988, p98–99).

First, we can distinguish between uni-stationed and dual-stationed transhumance according to the number of permanent operation stations (Fig. 1).

Second, from the viewpoint of the location of the base ranch, we can categorize uni-stationed transhumance into three types by observing whether the permanent settlement is located in the plains, foothills, or in the mountains. Ascending transhumance (transhumance of the lowland settlement) has its base ranches and winter ranges in the plains or foothills and its summer ranges in the mountains. Ascending transhumance is probably the most well-known

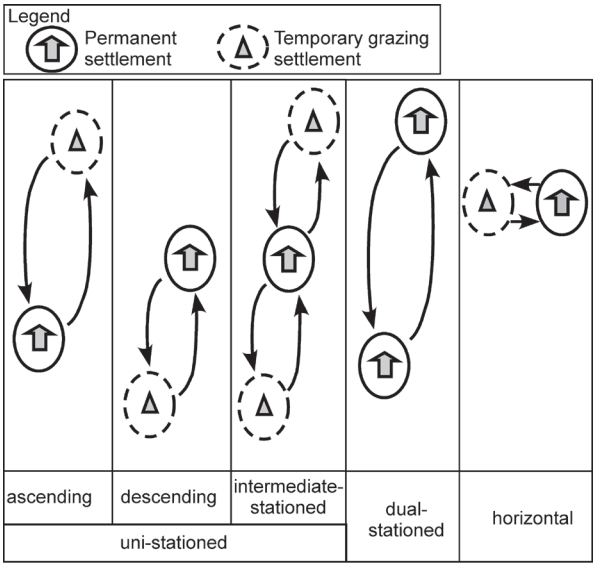

Fig. 1. Forms of transhumance (Shirasaka, modified from Rinschede, 1988 with 'horizontal type' appended)

form in the world due to the popular novel Heidi written by Johanna Spyri (1827–1901). This type is very common, constituting 88 per cent of transhumance in the French Alps (Rinschede, 1988).

Descending transhumance (transhumance of the mountain settlement) sends livestock from the high-elevated private summer ranges close to the base ranch to the temperate lowlands, where animals graze during the winter. The transhumance in the Pyrenees used to be entirely of this type, but descending transhumance tends to be changed to ascending transhumance. Nonetheless, the practise of descending transhumance is still maintained in the Alps-Maritimes.

Intermediate-stationed transhumance involves a base ranch in the region of transitional ranges in the foothills: livestock is transferred over equally long distances to the ranges in the mountains in the summer and to the ranges in the lowlands in the winter. Intermediate-stationed transhumance is sometimes called double transhumance or oscillating transhumance, particularly in the Southern Carpathians of Romania (Shirasaka, 2007, 2010; Balteanu et al., 2013; Shirasaka and Urushibara-Yoshino, 2013).

In contrast to the so-called uni-stationed form, which has only one permanent operation station (fixed station), dual-stationed transhumance has two equivalent permanent stations (base ranches): one in the mountains and another in the lowlands. This form combines ascending and descending transhumance by obtaining a second, mostly abandoned, ranch close to the seasonal ranges (Rinschede, 1988). This form is found in the Alps and the Pyrenees and also in the western United States (Rinschede, 1988).

Generally speaking, after passing the winter in stables in the valleys, livestock in the Alps are transferred from their base ranch, the principal settlement situated in the mountain valley, to the lower pastures (known as *Voralp*) early in the spring. Farmers keep cows there and make hay for winter-feed. In mid-summer, they send their cows higher up to their mountain pastures, the so-called *Alp* or *Alm*, which are located over the forest limit (about 2,000 m in the Alps). Their summer villages are located in these areas. While grazing their cows there, the people collect milk and make cheese. Their cows are driven from the highest mountain pastures to their principal settlement at the end of summer.

Meanwhile, the village people carry on various activities: climbing to harvest a crop of hay in the alpine meadows, descending to take care of the grain and vegetables planted in the valleys, and ascending again to make cheese at the settlements on the *Alp*. Mid-summer is a busy season in their principal settlement, as it involves farming and making hay for the winter.

The 'migratory livestock industry based on alpine pastures' (*Almwirtschaft*) is a special form of mountain pasture farming in which farmers drive their livestock from a base ranch, situated in a mountain valley or foreland, partly over the mayen (intermediate pastures) and still farther up to the highest mountain pastures. The livestock industry based in alpine pastures is generally characterized by feeding hay to the animals in stables during the winter and grazing them in the mountain pastures (*Alps*) during the summer (Penz, 1988; Rinschede, 1988).

Transhumance is a widespread phenomenon and is found on all of the continents situated between the equator and latitudes 50°north and south. It is found in nearly all of the lower mid-latitude mountain regions of the world.

The existence of transhumance is connected with special natural, economic, and environmental conditions. The most important factor is the natural difference in climate and vegetation between lowlands and highlands.

Tropical transhumance is found in Colombia, southern Ethiopia, Kenya, and Rwanda, and in the Andes below 27°S (Rinschede, 1988). In tropical transhumance, the most important factor of seasonal transference is the wet season. The dry and rainy seasons stimulate the movement of livestock because the temperature is much the same throughout the year in the tropics. In savannah climatic zones, cattle stay in savannahs in the wet season and move up to the humid mountain regions during the winter. They leave the lowlands at the time of heavy rainfall and flooding in favour of the drier, more elevated regions and descend again during the next dry season (Yamamoto, 2005).

In extra-tropical transhumance (i.e., transhumance in the subtropical and temperate zones) seasonal movements occur primarily according to the thermal rhythm of the year. Rinschede (1988) describes this phenomenon as follows: 'this extra-tropic transhumance is to be found in nearly all regions of the young fold mountain belt of Eurasia and North Africa, the Atlas, the Pyrenees, all the mountains of Spain and Portugal (Cordillera Cantabrica, Sierra Nevada, etc.), Cevennes in south-eastern France, the French, Italian and Swiss Alps, Dinara Planina (the Dinaric Alps), the Carpathians, Balkan Mountains, Pindhos Oros in Greece, Pontic and Tauros, Zagros in Persia, Hindukush, Baluchistan, Kashmir, Himalaya, and

Tien-Shan. In the Asian mountains the transhumant types are closely associated with, or have developed, from semi-nomadism'.

On the North American continent, transhumance is found in nearly all of the mountains of the West, especially in the Rocky Mountains, in the Sierra Nevada, on the Colorado Plateau, in the Cascade Range, and in the Great Basin Ranges (Rinschede, 1988). In the Andes, it is widespread in the Argentinian province of Neuquen and in the Chilean province of Cautin. Transhumance-related forms of migratory livestock industry are also to be found in South Africa (Drakensberg), Australia (Great Dividing Mountains), and New Zealand (Alps).

About Japan, James (1959) states that there was little or no pastoral utilization of the mountain slopes to supplement the intensive agricultural use of the valleys and coastal lowlands. However, we do not agree with James' observations. We have found evidence of the use of Japanese mountain slopes for cattle and cow breeding here and there (except for Hokkaido, the northernmost island of Japan). For example, farmers keep cattle and cows – and have in the past kept horses – in the cottages of their principal settlements, and they used to send cattle to pastures on the mountain slopes near those settlements. Based on this information, we can state that a form of transhumance does exist in Japan.

Intermediate-stationed transhumance does not appear in the Alps and the Pyrenees because, in contrast to the western United States, there are no foothill ranges that serve as transitional ranges. In contrast to the European mountains, the mountains of the western United States are only sparsely populated; therefore, the ascending and intermediate-stationed types of transhumance predominate there. Both are traditional forms that developed in the first decades of settlement. Descending and dual-stationed transhumance developed later, when rural exodus and changes in land use began in the high mountain valleys (Rinschede, 1988).

Although Rinschede (1988) classified transhumance into four types (Fig. 1), we encountered another type in the Kyrgyz Pamir: the 'horizontal type,' which will be discussed later. Kerven et al. (2006) described 'south-north-south transhumance' with a travelling distance of 200 to 2,000 km in Kazakhstan. However, 'south-north-south transhumance' makes use of differences in air temperature (namely, vegetation growth). In this context, the 'horizontal transhumance' observed in the Alai Valley of the Kyrgyz Pamir is different because it involves movement across short distance.

Some scholars believe that transhumance will decline with the development of agricultural production and urban economy in the 'lowlands and plains', although it seems to embody excellent ecological balance in such areas (Takeuchi, 1988). Nevertheless, by adapting to both natural and socio-political changes, transhumance continues to exist in many regions of the world.

Ⅲ. Geographical areas and natural environments

There are various ways of defining the area known as the Pamir. In general, the Pamir comprises the eastern half of the Republic of Tajikistan. This paper follows the research of Iwata (2008) in defining the Pamir as the Alai valley and the Za-Alai Range in the southern area of the Kyrgyz Republic. Accordingly, the geographical focus of the research detailed here is the southern part of the Kyrgyz Republic (hereafter referred to as the Alai Valley), which is within the limits of the Pamir from a historical perspective (Fig. 2).

The Pamir is usually referred to in Japan as the 'Pamir Plateau'; however, as the features of this region include valleys and steep mountains in addition to plateaus, English descriptions of the region use the phrase 'basins and mountains'.

The Alai Range in the north and the Za-

Alai Range in the south are collectively called the Pamir-Alai Mountains. The Alai Range is a western extension of the Tian Shan Mountains in China.

The wide swath of land running east and west sandwiched between the Za-Alai and Alai ranges is the Alai Valley (Fig. 2). This valley has been used since BC as an east-west route for nomadic tribes and other travellers, while also functioning as one end of the Silk Road.

The eastern half of the Pamir is cut off from most precipitation by the western and eastern mountains, making it a remarkably dry region. The annual rainfall is around 100–400 mm (Watanabe, 2007). The Pamir chiefly experiences precipitation in the winter due to low-pressure turbulence moving in from the west, resulting in heavier rainfall in western areas. Consequently, the snowline altitude hovers around 4,400 m in the western Pamir and can reach upwards of 5,200 m in the eastern mountains (Iwata, 2008). The geography of the eastern half of the Pamir

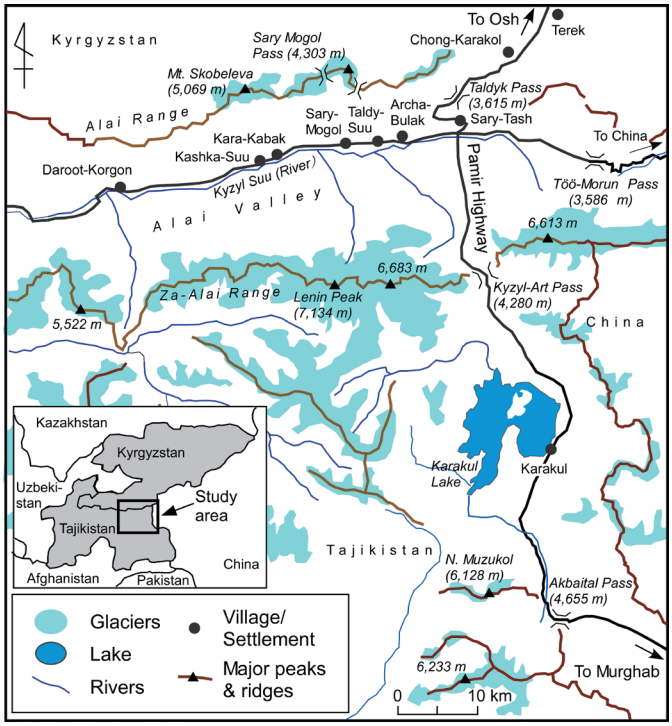

Fig. 2. Study area

Fig. 3. Landscape of Sary-Tash in the Alai Valley
The green area on this side are the fields of *arpa* or rye (Photo: S. Shirasaka, August 2011).

Fig. 4. Pasture in the Alai Valley, 3,200 m a.s.l. (Photo: S. Shirasaka, August 2011)

consists of high plateaus around 4,000 m a.s.l., while the southern part of the Kyrgyz Republic has peaks that rise over 7,000 m with the highest summit being Lenin Peak at 7,134 m.

The Pamir region is essentially comprised of high arid plains containing plateau vegetation (Watanabe, 2007). However, the Alai Valley, bordered to the north and south by the Pamir-Alai Mountains, is relatively verdant grassland in comparison to elsewhere in the Pamirs (Fig. 3) as Iwata (2008) claims. In particular, the south-facing slopes of the Alai Range have abundant rainfall that transforms vegetation in the summer (Fig. 4).

Even for farmland in the proximity of large rivers, agriculture is impossible without extensive irrigation. As a result, the procurement of water is a constant concern for the people of this area. It should be noted, however, that significant agricultural output, such as that seen in Am Darya and Syr Darya during the Soviet era, is attainable with sufficient distribution of water by rivers and irrigation engineering. Flatlands like these, which are blessed with ample water resources, are particularly few in number. Within any significant distance from rivers and waterways, there is virtually no surface water at all.

In the eastern area of the Alai Valley surface water is still used as a source of drinking water. Wells are not found anywhere in that area.

The difficulties surrounding water procurement within the valley substantially limit agricultural production. Furthermore, the longstanding winter snow and the low summer temperature prevent crop cultivation even in level areas, such as among the 3,500 m mountains of the eastern Pamir. Our fieldwork suggests that any altitudes above 3,200 m in the Alai Valley are beyond the cultivation limit, which itself only exists thanks to significant irrigation infrastructure from rivers and streams.

In this natural environment inconducive to agriculture — recent forays into ecotourism notwithstanding (Watanabe, 2008; Watanabe et al., 2009) — the fundamental industry that supports the population remains animal husbandry.

Ⅵ. Transhumance in the Kyrgyz Pamir

1. From nomadic pastoralism to transhumance

> 'The history and culture of Central Asia are thought to have arisen from the interactions of two utterly divergent populations: those who tended crops in the vicinity of oases and those who nomadically roamed grasslands. Consequently, in order to understand Central Asia, it is necessary to know the nature of an oasis and at the same time the lifestyles of the nomadic peoples of the plains. Incidentally, there is room for comparison between the society of farmers around a Central Asian oasis and the society of small Japanese farming villages. Although oases are certainly marked by particular characteristics, crop cultivation, on a basic level, is a uniform activity where generalizations can be made. This is, however, not the case for nomadism. There may be those who would argue that nomadism is a variety of livestock farming. However, nomadism cannot be conceptualized from the understanding of livestock farming as it exists in Japan, Europe, and the Americas' (Iwamura, 1967, p45–47).

There is virtually no doubt that the origins of animal husbandry lie in Central Asia, perhaps in West Turkistan. The roots of agriculture in Central Asia stretch deep into antiquity. Its exact origins stretch perhaps as far back as several thousand years BC. In comparison, nomadism is not nearly as ancient. Its origins are likely to be more recent than 1,000 BC (Iwamura, 1967, p50–51).

Animal husbandry is the prerequisite for nomadism whereas domesticated plants are the prerequisite for agriculture. A substantial amount of time is required to breed and domesticate wild animals. One may conjecture that the growth of

a system for domesticating wild animals would never have occurred without the measure of leisure time afforded by oasis farming practises. Iwamura (1967) states that the domestication of wild animals first occurred in the fixed societies grouped around these oases. As the number of animals grew, sections of these communities distanced themselves from the oasis and dedicated their time solely to livestock farming.

In other words, nomadism resulted from the division of labour. Consequently, a mutually dependent relationship can be argued to have existed from the very beginning between nomadic people and the fixed farming communities near oases.

It is certainly the case that although some groups were nomads, they could not survive on meat and milk alone. Livestock for them were, as the name implies, material assets. Assets are not to be devoured as food. Indeed, the staple foods for these nomadic populations were wheat and dairy products. Consumption of meat was extremely limited and typically only occurred during celebrations or when an animal was injured. In areas where conditions were suitable for agriculture, which included the Alai Valley up to an elevation of about 3,000 m, some wheat cultivation took place — and we conjecture that potatoes were added after the 18th century — but this was nowhere near sufficient for total consumption needs, so livestock were sold to the oasis farming communities in exchange for wheat. Similarly, other daily necessities, such as cloth, thread, needles, blades, bowls, utensils and saddles, were traded in oasis bazaars. Thus, the economy of the nomadic populations was not self-sufficient and relied at least to some degree on the fixed oasis societies.

Likewise, the oasis societies relied on the products of the nomadic populations as well. The wool and fur of the nomads were important items for the lifestyles of those living near the oases. It is likely that there were domesticated animals to some extent in the oasis communities as well. However, their number was probably not sufficient to meet the group's needs. This is the nature of the mutually dependent relationship between nomadic people and the fixed farming communities near oases (Kreutzmann, 2011).

> 'The history of Central Asia has been described in terms of conflict and opposition between the fixed oasis communities and the nomadic tribes of the steppe lands. However, this is a serious error. Ancient history recorded only abnormal events, so a summary of only such sources left the impression that the oasis-states and nomadic tribes were constantly at odds or at battle. The facts are different and suggest that, for the majority of history, the oasis residents and nomadic populations complemented each other's needs in a relationship of symbiosis' (Iwamura, 1967, p50).

Livestock breeding has been a major form of subsistence for the Kyrgyz people throughout many centuries. The Tien-Shan Mountains have pro-

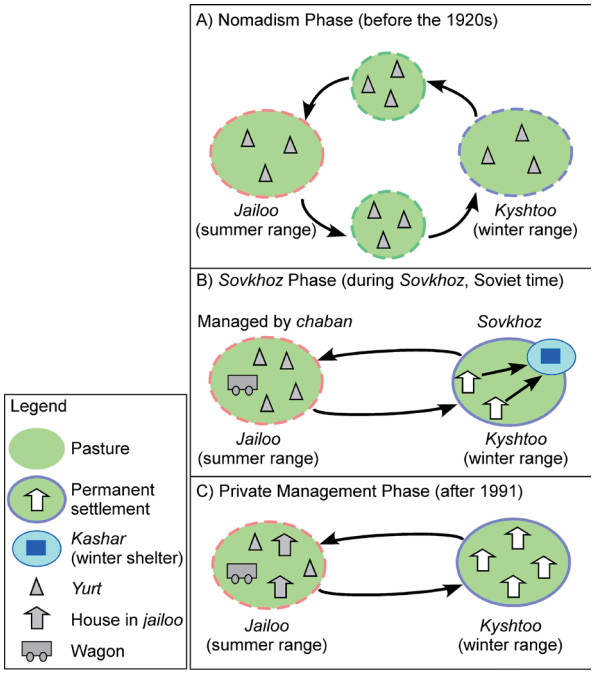

Fig. 5. Phases of the transformation of pastoralism (prepared from the fieldwork in 2011, 2012, and 2013)

vided natural, favourable conditions for nomadic pastoralism, particularly the breeding of sheep, goats, cows, and yaks in pastures the whole year round.

In 1920, the region called Kyrgyz was integrated into the Soviet Union. Before the Soviet era, Kyrgyz people had maintained a purely nomadic lifestyle and had travelled from one pasture to another in a group. In summer, they stayed in mountain 'summer pastures' (*jailoo* or *djailoo*) and moved to the lower pastures (*kyshtoo*) in autumn. *Kish* means 'winter' and *too* means 'to live' in Kyrgyz. *Kyshtoo* means 'a destination of winter migration' and the concept includes the surrounding pasturelands. We call this period of immigration the Nomadism Phase (Fig. 5).

According to one of our interviewees — a woman born in 1933 and currently living in Sary-Tash — a rapid transformation from the nomadic pastoralism to livestock farming occurred under the Soviet regime. This woman came to Sary-Tash as a bride from Gulcho, 100 km away, and in the process crossed over the Tasshtyn-Bashy Mountains, a spur of the Alai Range. She was 16 at the time of her marriage in 1949.

According to her stories, her family had spent their winters in Sary-Tash during those times: 30–40 families had migrated to Sary-Tash during the winters.

Their summers, on the other hand, were spent to the east in Kok-Suu *Jailoo*, near the present day border with China, approximately 100 km from Sary-Tash. During the migration, her father set out ahead of the family with their livestock. The family followed the father, carrying their *yurt*. It took three days to reach Kok-Suu *Jailoo* and several families banded together for the migration.

After her marriage, the woman's lifestyle shifted from nomadic to fixed residence. Nomadism was what her parents' generation had encompassed. The name for that entire process of migrating with livestock was called *küch*.

So-called nomadic pastoralism continued in this area until about 1940, according to this woman's recollections. She continued to live in Sary-Tash during World War II and reported that the same trend occurred for most residents in the villages around that area. Her information suggests that the residents' lifestyles were completely nomadic in Sary-Tash until around 1930, at which time habits of fixed residence began. The types of livestock tended at that time included sheep, goats, dairy cows, horses, and camels, although camels are almost entirely absent from that list at present.

As previously mentioned, the Central Asian region was integrated into the Soviet Union in 1920. In 1924, ethnic and national delimitation was carried out. This was the first time that the fiction of a homogeneous nation-state had been imposed on Central Asia. However, the drawing of national boundaries through highly ethnically diverse areas was problematic, as exemplified by the Fergana region. It was inevitable, to differing degrees, that each new republic became a multi-ethnic nation-state (Nakami et al., 2010). For example, Kyrgyzstan included Kyrgyz, Uzbeks, and Tajiks, while Tajikistan similarly included Tajiks and Uzbeks.

The delimitations of 1924 led to Kyrgyzstan becoming Soviet's Kara-Kyrgyz Autonomous Province, whose name was changed to the Kyrgyz Autonomous Province in 1925. In 1936, the province was promoted to full status as the Kirghiz Soviet Socialist Republic.

During the process of Soviet republic creation in the latter half of the 1920s, land and water infrastructure reformation took place, and the fixed settlement of the nomadic tribes ensued. This fixed settlement brought about the large-scale downsizing of livestock herds, which meant a 41 per cent reduction in the number of cows and a 23 per cent reduction in sheep and goats in Kyrgyzstan from 1923 to 1934. During the Soviet era, the industries and societies of the Central

Asian republics were intricately incorporated into a centrally planned economic system, from which all traces of market economic factors were summarily eliminated.

From our interviews in August 2011, it is clear that all of the pastoralists in the Alai Valley were incorporated into *sovkhoz* during the Soviet Union's hegemony.

Many informants reported that one *sovkhoz* had raised approximately 50,000 to 75,000 sheep. Five *sovkhoz* (Alai, Sary-Mogol, Lenin, Pravda, and Socialism) functioned in the eastern Alai Valley. In each *sovkhoz*, *chaban* (herdsmen) were designated as the people in charge of work related to grazing animals. Further, two *sovkhoz* took 100,000 sheep from Fergana and Andizhan in Uzbekistan during that time.

A *chaban* was assigned to each type of livestock maintained by each *sovkhoz*. Sheep were carefully separated into male and female groups for shepherding, while goats, which had essentially been private property before, were managed largely without any such practise.

In the case of sheep and goats, one *chaban* typically tended 300–500 head. Our local informants said that there were about 100 *chaban* in each *sovkhoz*. Hence, there were about 30,000–50,000 head of sheep in each *sovkhoz* in the eastern Alai Valley if the number of *chaban* is considered accurate.

The number of yaks (*topos* in Kyrgyz) was generally small. Yaks were not herded in gender-differentiated groups and were moved to *jailoo* in summer for tending, milking, and producing butter and cheese. Cows were separated based on gender, tended year-round in stalls, and grazed in the land around the *sovkhoz*.

Livestock sheds were called *kashar*, and were located a slight distance away from each village. One *kashar* was able to hold about 400 head of livestock.

Our interviewees in Sary-Tash and other areas said that during the Soviet regime, the number of livestock was predetermined and restricted to that fixed amount. One local source reported that this was a policy to restrict the number of livestock. All of the residents were integrated into the *sovkhoz* and drew salaries from it.

The nearly 70-year Soviet reign crushed the pastoral culture of Central Asia and there was no way for the local residents to avoid livestock farming in fixed settlements. Figure 5-B presents a schematic illustration of *sovkhoz* animal husbandry.

2. Livestock farming after 1991

The period of transformation that Central Asia went through after the 1991 collapse of the Soviet Union diverged greatly from the initial optimism that surrounded it. GDP shrank in many countries, unemployment increased, and inflation ensued. Production from agricultural industries, including livestock farming, in the Kyrgyz Republic and the Republic of Tajikistan shrank during the 1990s.

From a historical perspective, the economies of Central Asian nations had been fully integrated into the Soviet system after the 1920s, and their populations had significantly increased. The Soviet economic system had supported the population increase. Consequently, after political independence in 1991, it was easy to foresee that Central Asian nations would be beset with extreme problems surrounding economic independence and development.

The following three pillars underpin the efforts to transition to a market-based economy of agriculture and livestock farming in the newly independent Central Asian nations: privatization of collective farms, privatization of farmland, and introduction of a market-based economy. When the independence was achieved in 1991, livestock farming became a matter of individual enterprise, or *fermer*.

Only livestock farming on a subsistence level can now be found in the Alai Valley. The extent

Table 1. The number of livestock and domestic fowl in the Kyrgyz Republic

(in thousand)

Livestock	1991	1995	2000	2005	2010
Cows	518.6	470.8	523.8	565.1	666.5
Yaks	671.4	398.2	423.2	509.7	632.3
Sheep and goats	9524.9	4274.9	3799.2	3876.0	5037.7
Swine	357.8	113.9	101.1	77.8	59.8
Horses	320.2	308.2	353.9	345.2	378.4
Domestic fowls	13571.2	2031.8	3063.7	4279.0	4747.9

(Compiled from the data obtained at the Department of Statistics, The Kyrgyz Republic)

to which the privatization of farms and farmland mentioned above has progressed in our study area is not yet clearly understood, so we will not discuss it here.

It is known that the livestock held by the *sovkhoz* were distributed to each family in these regions from 1991 to 1993, and some privatization of land ownership has occurred since then. The result has been subsistence livestock farming for individual families that have each been forced to devise their own survival strategies. Some families sent members to Russia to work, through which they saved money and financed their livestock breeding efforts.

Figure 5-C shows a schematic illustration of this current market-economy adaptation of livestock farming (Private Management Phase). This leads to the natural question of how the livestock number has changed since the achievement of political independence.

The total number of domestic animals decreased in the Kyrgyz Republic after 1991 (Table 1). The number of swine and domestic fowl particularly decreased and has not yet recovered. The number of sheep and goats, which are the most important source of cash income, has not returned to its pre-1991 number. The number of horses, cows, and yaks decreased after 1991, but had returned to its former number by 2010.

Many interviewees reported that the number of livestock has decreased in comparison to the *sovkhoz* period of the Soviet era. Some claimed that the pre-1991 numbers of livestock tended by the *sovkhoz* were 5–10 times larger than the numbers in 2011, although other interviewees were more conservative, saying that they were only 2–3 times larger. In either case, it is clear that there have been great reductions since the *sovkhoz* era, as stated earlier.

Many local residents claim that the reason for the reduction in livestock is the impoverishment that occurred after the breakup of the *sovkhoz*. Some residents even had to sell a portion of their allotted livestock to cover their daily expenses.

3. Livestock and their care

The livestock raised in the Alai Valley are milk cows, yaks, sheep, goats, horses, and some donkeys. Our research has found that there are places of less severe dryness, such as locations near rivers and waterways, where cows are raised, although the majority of the area is generally arid. As vegetation decreases, cows are replaced with sheep and goats. Our fieldwork also shows that areas subject to the most extreme arid conditions are only used for goat herding. In addition, as the condition of the pasturelands becomes more extreme, the proportion of animals shifts markedly toward goats.

Our research in the Alai Valley, however, produced no reports of stock farmers who raise only goats. Our surveys show that sheep and goats are the most essential livestock in the northern Pamir.

The residents of the eastern portion of the Alai Valley practise transhumance with all of their

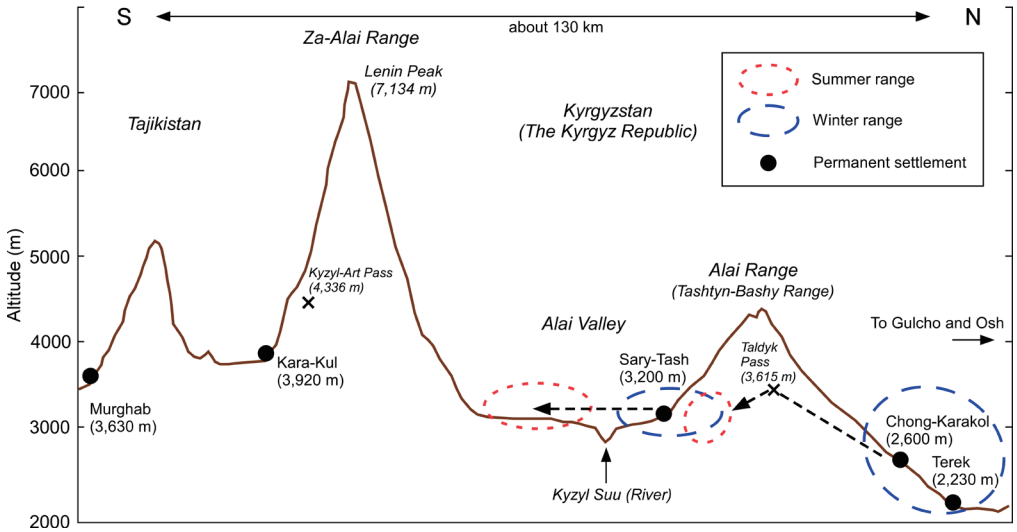

Fig. 6. Transhumance in the Kyrgyz Pamir (prepared from the fieldwork in 2011, 2012, and 2013)

livestock. A basic schematic representation of this is provided in Fig. 6.

Spanish merino sheep were brought into the study area during the *sovkhoz* era in order for people to take advantage of their wool. However, since 1991, they seem to have been largely replaced by the native Central Asian jaidar breed of sheep. Jaidar sheep generally have black wool and have a characteristic fatty area on their hindquarters. Their meat is regarded to be of high quality.

Our interview sources noted that sheep and goats are generally tended in mixed herds at present. Mixed herds of sheep and goats are common all across the area spanning Central Asia to Turkey (Matsui, 2001; Matsubara, 2004).

Goats take the lead in the mixed herds in the Alai Valley. Pastoralists in the area reported that goats are included because they lead the herds. One of our group members (Shirasaka) has researched transhumance among shepherds in Romania. Their practise involves the shepherd teaching a lead female called a *fruntaşa* to assume the lead position in the flock. The shepherd is then able to call out the lead female's name (all of the leaders are female in this case) and give signals as to which direction to head (Tani, 1987, p190; Shirasaka, 2010).

Our interviews around Sary-Mogol in the eastern Alai Valley showed that female sheep were used for breeding over a period of six to seven years. Male sheep are sometimes sold as lamb meat, but are generally raised for four to five years before being sold.

Interview sources in Sary-Tash said that families returning from *jailoo* to Sary-Tash in late September often borrow other families' male sheep to mate with their female sheep. It appears to be common in the Alai Valley to mutually exchange male sheep in this way.

Both sheep and goats are kept in stables during the winter months, but are left in the mountains until snow depth reaches about 10 cm.

Dairy cows in Sary-Tash are raised at family homes year-round, but the males are taken to *jailoo* during summer. Females are also taken to *jailoo* if they have not borne offspring.

Dairy cows that are producing milk are allowed outside the barns, but remain on the premises, even at night. Nursing calves, however, are kept inside. Dairy cows are not let outside when winter snow has accumulated.

Crossbred yaks and dairy cows – both males and females – are called *argin*. In general, the offspring (*argin*) of male yaks and female dairy cows appear to yield thick and high quality milk. Consequently, there are few crossbred offspring

of female yaks and male cows.

Interviewees in Sary-Tash reported that dairy cows produce 10 litres of milk per day, except in the winter when they are pregnant and milking is avoided. Dairy cows generally produce more milk than the yaks.

At present, all of the livestock in the Alai Valley are kept indoors in the winter. Yaks and cows graze outdoors in the winter, but are brought indoors at night.

There is little poultry in the Alai Valley. Local residents claim that the winters are too cold for poultry to survive.

Ⅴ. Transhumance in the Alai Valley

1. Relationship between natural environment and the livestock farming

(1) Seasonal pattern of transhumance

Residents in Sary-Mogol and Sary-Tash in the eastern Alai Valley divide the year into four seasons: spring, summer, autumn, and winter. Generally speaking, green grass returns to this area every year in April. Livestock are allowed to graze in the spring pasturelands near the villages until the end of May. When June comes, the animals are led to the summer ranges where they stay until around the end of September. They are then taken to the autumn pasturelands to prepare for winter. Some families remain in the summer ranges with their livestock until snow starts to fall (Fig. 6).

Snow cover begins in November or December with snow packs of 50–100 cm, which then disappear in April. Local residents say that the summer grasses grow in proportion to the amount of winter snow.

(2) Transhumance without difference of altitude

The people of the Alai Valley were originally nomadic as stated earlier. As seen with the majority of nomadic populations, they are thought to have used relatively fixed stations for winter and summer ranges and to have spent the intervening seasons migrating long distances.

We believe that the eastern part of the Alai Valley was one of those summer ranges during the period of nomadic pastoralism about 100 years ago. Their winter ranges were located mainly in Kashgar (1,300 m) to the east and Samarkand (670 m) to the north in the lower altitudes, as well as in the northern slopes of the Alai Range.

As mentioned earlier, the people in this area were forced into fixed settlements without exception during the Soviet era. Even in the case of subsistence livestock farming in an area over 3,000 m a.s.l., livestock were likely transferred to higher areas around their villages during the summertime (the ascending or intermediate-stationed transhumance shown in Fig. 1).

We believe that horizontal transhumance was established by two conditions in this area: (1) the people had settled in the valley along the *Kyzyl-Suu* River and there were huge pasturelands around their villages; and (2) there are no pasturelands in the surrounding high mountains, the Alai and Za-Alai ranges, which are occupied by rocks and glaciers.

When Soviet hegemony dominated in the 1920s, the fixed settlements that residents were forced into were located in the foothills of the Alai Range. Our local interviewees show that the present locations of the fixed settlements are within the summer ranges (*jailoo*) of the Nomadic Phase.

It is clear that livestock farmers in the Alai Valley still move their animals in summer and winter in the present day. However, there is almost no altitudinal difference between the summer and winter ranges. The residents have simply taken a large, expansive space that was given to them.

It can therefore be concluded that the current form of transhumance practised by the local residents in the eastern part of the Alai Valley can be categorized as horizontal transhumance (Fig. 1).

The people of Chong-Karakol and Terek (2,600 and 2,230 m a.s.l., respectively), who live on the

north side of the Alai Range, also use the Alai Valley as their summer grazing land (*jailoo*). The people of Nura, which is located near the Chinese border, use the eastern part of the Alai Valley equally, and practise ascending transhumance. Thus, the eastern part of the Alai Valley is shared by two types of transhumance: horizontal and ascending.

2. Winter mountains (*kyshtoo*) and summer mountains (*jailoo*)

Residents of the Alai Valley still refer to a place of winter residence as *kyshtoo*. The present concept of *kyshtoo* includes the family's main residence, the stables for their animals (those that are on the same property as the house are called *sarai*, a Turkish word), and the small plots of land (*agarod*) that were allotted during the Soviet regime.

Crop fields for rye, which is used as winter-feed, are scattered around the areas where the pastures touch the borders of the village (Fig. 7). In general, these fields are irrigated by springs from the foot of a mountain. Rye is locally called *arpa*, meaning animal feed in Kyrgyz. Residents refer to meadows as *chabyk*.

Crop fields are called *ülüsh jer*. *Ülüsh* means 'something that can be received' and *jer* means 'land'. Villages that are low enough in elevation use their *ülüsh jer* for the cultivation of potatoes, garlic, and other foods, while villages that are above the agriculture elevation limit, such as Sary-Tash, cultivate rye and use it for animal feed in the winter.

The areas outside the *ülüsh jer* are wide-open pasturelands. Pasturelands in the proximity of the villages include the spring and autumn range used before leaving for and after coming back from the *jailoo*. Figure 8 shows how these are conceptualized.

Some hay is produced in *jailoo* in the Alai Valley. Some areas of the *jailoo* have particularly abundant grass (Fig. 9). Residents of the valley harvest the best natural grasses (called *chöp*) and use them as hay. During summer, areas of deep green natural meadow dot the otherwise red-

Fig. 7. Rye (*arpa*) cultivation in Sary-Mogol, Alai Valley (Photo: S. Shirasaka, August 2011)

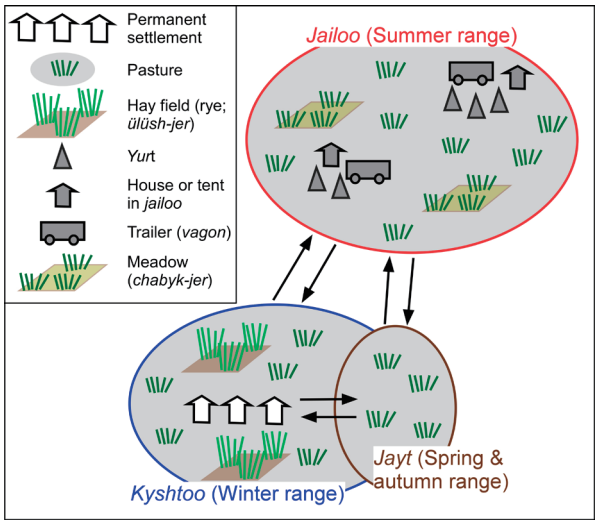

Fig. 8. Concept of livestock farming in the Alai Valley (prepared from the fieldwork in 2011, 2012, and 2013)

Fig. 9. Landscape of *tabigyi* (Photo: S. Shirasaka, August 2011)

dish-brown expanses of the pasturelands. Hence, natural grass of healthy growth is harvested in the area. *Tabigyi* is the word for these natural grasslands used for haymaking. Harvested grass itself is called *tabigyi chöp* and is only harvested once during the summer.

In our modern urban society, the words 'meadow' and 'pasture' have become somewhat synonymous. The fundamental difference is that livestock are allowed to graze in pastures, but not in meadows, from which hay is cut. 'As the famous nursery rhyme admonishes, "sheep's in the meadow" was a state of affairs to be corrected' (Jordan, 1973). In traditional livestock breeding societies, livestock are never allowed to graze in meadows before hay is made.

The local residents whom we interviewed asserted that the amount of hay needed for one winter is three tons per head, or about the load of a small commercial truck. Above-average stock farmers face clear difficulties in supplying this amount of hay themselves, so they must purchase hay from families that have extra. The one to two tons of hay that can be carried in a car cost Kyrgyz Som 5,000–6,000 (USD 103–123 as of August 2011), and three tons cost Kyrgyz Som 10,000 (USD 205). This type of purchase even happens in the area across the Alai Range towards Osh (184 km from Sary-Tash) in the north. Indian corn can also be fed to livestock during the winter.

Since the latter half of the 1980s, families have been allowed to build fixed houses in the *jailoo* of the Alai Valley, as opposed to portable *yurts*. These houses are called *uei*, which means 'house' in Kyrgyz. A place with several *yurts* is called a *jurt*, which means 'people'. *Jurts* are generally enclosed with fences for the purpose of corralling the animals at night. These fences are called *koroo* and some are made of stones.

3. Village of Sary-Tash and daily grazing (*kezuu*) of sheep and goats

The villagers in the Alai Valley had no choice but to live in fixed settlements during the Soviet regime. Among those settlements, the village of Sary-Tash has a particularly unusual origin. Sary-Tash was not a village during nomadic times because it lies at an altitude above the agriculture limit: instead, it was a place of summer residence for pasturing. The village of Sary-Tash was constructed in 1950 in order to build up the area's infrastructure. Sary-Tash was used as a centre for engineers directing transportation and electrical infrastructure projects, and at that time had an asphalt factory and a weather station. There were a few Russians among the residents, but the majority were Kyrgyz. Sary-Tash was the only village in the area that had a regional communist party committee. At present, the village even has a passport agency and immigration officers.

This all serves to illustrate that the people of Sary-Tash were engaged in a variety of occupations that had nothing to do with livestock farming during the Soviet era. In 1970, the settlement came under the direct jurisdiction of Moscow and received its present name of Sary-Tash.

Nearly all of the interviewees in Sary-Tash claimed that they had been livestock farmers since the Soviet era, which means that they kept dairy cows, sheep, and goats as a side occupation during that time. Individual families kept dairy cows at home, but the care of sheep and goats was entrusted to the *chaban* of the *sovkhoz*, who surreptitiously tended the sheep and goats of Sary-Tash alongside the *sovkhoz* sheep. After the fall of the Soviet Union, the number of livestock in Sary-Tash dramatically shrank and then gradually grew.

In recent years, the population of Sary-Tash has been growing: in 2011, it reached 2,150 people, or 450 families. In the same year, the number of families surviving on livestock farming

alone was 120–130, or about 30 per cent of the population. Nearly 70 per cent of families (about 300) have members who are employed as civil servants, including electricians, road construction workers, telephone company workers, school employees, kindergarten employees, police officers, and hospital employees, as well as 14 city officials. Some workers in Sary-Tash leave for Russia, Kazakhstan, Bishkek, or elsewhere, for seasonal employment during the spring.

Local people report that families in Sary-Tash with an above-average number of dairy cows currently have eight head (up to 10 in some cases), while other families have as few as two head. Similarly, some families have up to 300 head of sheep and goats, while others have as few as 50 head.

Residents of Sary-Tash tend sheep and goats within the village and tend their dairy cows independently year-round. Sheep and goats are tended in the form of a daily cooperative grazing system, except in the winter, when each family keeps its livestock in *tits* hut. Families with only a few domestic animals, families who have lost fathers, and families with side businesses gathered into groups for their daily pasturing – a kind of joint pasturing called *kezuu* (*kezu, kezüü*).

There are four *kezuu* groups in Sary-Tash (Table 2). From March to November, the sheep and goats are gathered on the village outskirts every morning and are grazed collectively. Exclusive *jailoo* are set for each *kezuu*. The use rate is Kyrgyz Som 12 (USD 0.5) per head per year. *Kezuu* is carried out from December to February in these settlements. The largest number of sheep and goats per family is 100 and the smallest number is eight. Each family takes turns in the job of *chaban*: one adult or two children work as *chaban* for a day. Children are given priority as *chaban* even on school days. Usually families who live along the same road form one collective group, each of which contains 13–21 families.

We also found *kezuu* in each of the other villages in the eastern Alai Valley. For example, Taldy-Suu has more than 10 *kezuu* (a maximum of 15 *kezuu* depending on the season), which have no names because they are seasonally flexible. The total number of families and sheep/goats participating in the *kezuu* varies. Each *kezuu* is composed of five to 20 families, which vary in their timing because they go to the *jailoo* and return to the village separately, on different days.

Archa-Bulak has two *kezuu*: Jashtar *Kezuu* and Yntymak *Kezuu*. Jashtar *Kezuu* is composed of about 10 families and 300–400 sheep/goats. Yntymak *Kezuu* is composed of about 20 families and 500 sheep/goats. Yntymak uses the western half of the valley and Jashtar uses the eastern half of the valley. One family belonging to Jashtar *Kezuu* uses Güdür *Jailoo* and has 30 sheep/goats. Another family belonging to Yntymak *Kezuu* uses Tal Bulung *Jailoo* and has 50 sheep/goats. They all move to the *jailoo* in early June (on 3–8 June in 2013).

Table 2. Group pasturing (*Kezuu*) in Sary-Tash (2012)

Name of *Kezuu*	Number of families	Number of sheep/goats (smallest–largest)	Departure time in the morning	Number of *chaban* per day	Agreement for *Kezuu*
Kamchatka	16	347 (10–45)	6:50	1	Two boys below 18 years old can act as an substitute of one adult *chaban*.
Ortonku	21	609 (10–60)	6:45	1	The family of the turn decides the number of *chaban*.
Ödönku	13	300 (8–35)	7:00	1	One adult or two boys can act as *chaban*.
Erkeshtam	14	710 (15–100)	7:30	2	Two adults or two children (over primary school) act as *chaban*.

(Source: the fieldwork conducted in 2012)

The *kezuu* in Sary-Tash were organized in the 1960s, during the *sovkhoz* era. At that time, each family was allowed to have up to 30 sheep/goats and two horses. They, therefore, developed the *kezuu* system for efficiency purposes.

4. Age-based livestock naming differences

In the Pamir, those engaged in livestock farming have an intricate knowledge of animals and use different names for animals of different ages. This creates advantages in the process of livestock management and trade as well. An examination of the entry for 'lamb' in an English dictionary shows that the word refers to both young sheep and the meat of sheep. Technically, however, a lamb is a male sheep less than one year of age: these are called *toktu* in the northern Pamir (Table 3). Age-differentiated nomenclature also exists for goats (Table 4), yaks (Table 5), and horses (Table 6). In general, the local people use horses for around 20 years after their birth, i.e., until 17-*asyi*.

Ⅵ. Case studies of livestock farmers

We interviewed tens of farmers in August of 2012 and 2013. The following sections summarize two of the cases that we uncovered in our interviews.

1. Case study of Mr JI

Mr JI's *jailoo* (Tura-Bulak *Jailoo*) is located only 5 km east of Taldy-Suu, where he was born. From 2001 to 2004, the family's *jailoo* was located in Kashka-Suu village. Tura-Bulak *Jailoo* has been used since 2005.

The composition of Mr JI's family is as follows: Mr. JI (56 years old), his wife (52 years old), and four children: their elder daughter (31 years old, moved to a different village after marriage); their elder son (29 years old), his wife (27 years old), and their daughter (2 years old); their younger son (27 years old; unmarried, lives with parents); and their younger daughter (24 years old; unmarried, lives with parents).

Mr JI worked as an engineer in Taldy-Suu *AÖ* (*Ayil-Ökmötü*) until 2000. During his career, the country achieved independence in 1991, and after the breakdown of the *sovkhoz* system, Mr JI received an allotment of livestock that allowed him to begin livestock farming.

The 1991 allotment included just one cow and

Table 3. Names for sheep by age in the southern part of the Kyrgyz Republic

Age	Name			*nota bene*
	Female	Male castrated	Male not castrated	
under one year	*toktu*	*toktu*		Male and female are the same names.
one year	*jusak*	*shishek*	*shishek kochkor*	
two years	*jusak*	*shishek*	*shishek*	
more than three years	*sooluk*	*chaary*	*chaary kochkor*	

Note: If it is past six months after the birth, *toktu* (♂) is castrated. (Source: the fieldwork conducted in August 2010)

Table 4. names for goats by age in the southern part of the Kyrgyz Republic

Age	Name		
	Female	Male castrated	Male not castrated
under six months	*urgachy-ulak*	-	*erkek-ulak*
under one year	*chebich*	*bychmal*	*teke*
over one year	*echki*	*serke (sarka)*	*teke*

(Source: the fieldwork conducted in August 2012)

one horse. Later, Mr JI gradually increased his animals through breeding and entrusted them to a *chaban* from 1991 to 2000.

As of 2011, Mr JI possessed 20 head of yaks, 30 head of cows, 200 head of sheep and goats (including 80–90 males), 30 head of horses, and 1 donkey.

Tura-Bulak *Jailoo* was part of the *sovkhoz* property until 1991. Consequently, there had been *kashar* for housing the animals during the winter, but these no longer exist. The grazing lands extend all the way up to 3,300 m near the summits of the mountains behind the *jailoo*.

In a typical year, the families arrive at this *jailoo* in early May and stay until late August or early September. Of the five families that use this valley as their *jailoo*, Mr JI's family is the first to arrive.

The family produces hay from the natural grasslands (4–5 ha) conducive to haymaking within the *jailoo*. A haymaking plot in a pasture is called a *tabigyi*. There are also occasions when they buy hay, but they reported that they only did so about four times in the past 10 years. The families also grow rye (3–5 ha), which is used for winter animal feed in their native village of Taldy-Suu.

During the winter, the animals are tended in Taldy-Suu, but the daily tasks are left to the *chaban*. As already stated, the *chaban* takes responsibility for the sheep and goats of several families and oversees their grazing. Each day, one member of the family is appointed as a support person to help the *chaban* with the daily work.

A total of five families graze their animals in Tura-Bulak *Jailoo*. The number of animals tended by these five families is as follows: 50 sheep and goats, 40 cows, 20 yaks (owned only by Mr JI's family), and 55 horses.

One of these five families comes to the *jailoo*

Table 5. Names for yaks (*topos*) by age in the southern part of the Kyrgyz Republic

Age	Name		nota bene
	Female	Male	
under one year	*mamalak*	*mamalak*	The local owners do not castrate yaks.
two years	*tai-torpok*	*tai-torpok*	
more than three years	*kunajyn* (bwfore delivered) *inek* (delivered)	*ögüz*	

(Soure: the fieldwork conducted in August 2011)

Table 6. Names for horses by age in the southern part of the Kyrgyz Republic

Age	Female		Male	
	Name	Another name	Name	Another name
under one year	kulun	baital	kulun	bychmal (castrated)
1	tai (kalta)	baital	tai (kalta)	do.
2	kunan	baital	kunan	do.
3	byshty	baital	byshty	do.
4	1-asyi	bee	1-asyi	do.
5	2-asyi	do.	2-asyi	do.
6	3-asyi	do.	3-asyi	do.
7	4-asyi	do.	4-asyi	do.
8	5-asyi	do.	5-asyi	do.
9	6-asyi	do.	6-asyi	do.
10	7-asyi	do.	7-asyi	do.

Note: The local people use a horse for around 20 years after birth, that is to say, until 17-*asyi*.

(Source: the fieldwork conducted in August 2011 and 2012)

after crossing the Taldyk Pass (3,615 m a.s.l.) from the northern village of Madanyat (currently Chong-Karakol). In other words, this particular family is not native to the Alai Valley. This *jailoo* is also used by people from the Chong-Karakol region to the north.

2. Case study of Mr MT

Mr MT's grazing land is also contained within the Tura-Bulak *Jailoo*. His native village is Üch-Töbö, a part of Kichi-Karakol village, located to the north of Sary-Tash over the Taldyk Pass (Fig. 6).

The composition of Mr MT's family is as follows: Mr MT, the head of the household (45 years old), his wife (44 years old), his mother (82 years old), and his five children. His two daughters (25 and 22 years old) moved to other villages after they married. And his three sons (19, 17, and 8 years old) live at home. Mr and Mrs MT engage in livestock farming with their two oldest sons.

The MTs started using their current *jailoo* in 2003. Prior to that, they used the Bor-Döbö *Jailoo* near a border checkpoint away from Sary-Tash on the border with Tajikistan.

Mr MT owns a *kashar* that he purchased in 2003 from a *sovkhoz*. It cost him Kyrgyz Som 80,000 (approx. USD 1,400). The *kashar* was cheap because it was partially dilapidated.

Because Tura-Bulak *Jailoo*, which is used by Mr MT's family, is included in the Taldy-Suu *AÖ* for administrative purposes, so use fees for the *jailoo* are paid to the Taldy-Suu *AÖ* and taxes on livestock are paid to Uch-Töbö, the family's native village.

Mr MT's family specializes in raising yaks. In total, they possess 100 yaks, 5 cows, 60 sheep and goats (about 40 females and 20 males), and 10 horses and calves.

The 100 head of yaks are not raised in Tura-Bulak *Jailoo*, but in Güdür *Jailoo*, situated south of the *Kyzyl-Suu* River. Mr MT's two older sons take care of the yaks, so no *chaban* needs to be hired.

The family has been raising yaks since 1970. When the *sovkhoz* was discontinued, the family bought many of the yaks allotted to the residents in order to increase their lot, but the bulk of their livestock, 70 head, were purchased in 1994–1995.

In a typical year, the family is able to produce 4–5 truckloads of *tabigyi* (hay). Fifty per cent of this hay is produced in this *jailoo* and the other 50 per cent in their native village of Üch-Töbö.

The family also owns a half hectare in Üch-Töbö for rye production, and another half hectare of cropland in the *jailoo*.

They reported that the grass in the *jailoo* is 'green in some years, brown in others'. The height of the grass in a typical year is 10 cm, although it may rise as high as 50 cm during some summers.

The family said that the price of a yak sold for meat is Kyrgyz Som 25,000–50,000 (USD 425–850) as of August 2011 and that the fatter yaks are more valuable. In this area, the yaks are not gelded.

Ⅶ. Concluding remarks: Transhumance in the Kyrgyz Pamir

Many regions of the world have severe natural environments that prohibit anything other than subsistence livestock farming. The northern part of the Pamir is one such region.

Early in the 20th century, this region was wholly subsumed by the economic system of the Soviet Union. During the Soviet era, nomadic people settled in fixed locations, at which point livestock farming *sovkhoz* were established and the residents were integrated into a new economic system. The main food staples and fuel for the livestock farming *sovkhoz* were supplied by the state, which led to a much higher level of prosperity than the region has at present.

However, livestock farming became a matter of individual enterprise, or *fermer*, when the country

gained independence in 1991. The daily lifestyle needs of each family became subject to separate, individual responsibility. The system changed to one in which each disparate family had to see to its own procurement of food and fuel. As a result, compared to more abundant agricultural areas, poverty became exacerbated in this less productive livestock farming region.

The final goal of our research is to understand the processes whereby the livestock farming populations of areas such as the Pamir can escape from their poverty. The first step towards that discovery was to examine the structure and condition of the *fermer* livestock farming that has been taking place since 1991. The following findings have been clarified as a result of that examination.

It is accurate to consider the residents as erstwhile nomads. Before their forced settlement in the 1930s, they had roamed broadly over long ranges, at an even altitude, in all different directions, in search of pastures. This historical habit was altered by the restrictions placed on them, but is now become expressed in their use of indoor winter facilities and outdoor summer *jailoo* for their livestock.

The structure of livestock farming in the Alai Valley of the Kyrgyz Republic does not conform to standard models of transhumance. In other words, the fixed settlements that function as their winter ranges sit at altitudes that are basically no different from those of their *jailoo* or summer ranges. The types of transhumance practised by the people of the Alai Valley does not utilize differences in altitude, but rather takes place horizontally, thus fitting the model of a 'horizontal transhumance'.

While some people practise horizontal transhumance in the eastern Alai Valley, others who live on the north side of the Alai Range and near the Chinese border also use the eastern part of the Alai Valley as their summer grazing land (*jailoo*), thereby practising ascending transhumance. In brief, the eastern part of the Alai Valley is involved in two types of transhumance: horizontal and ascending.

The Kyrgyz people who occupy the northern Pamir live in an extreme natural environment, so subsistence livestock farming is the only option available to them. In contrast to the Soviet era, the region is now independent, so pastoralists will unavoidably need to gain autonomy within the new market economy. Policies that assist the self-sufficiency of pastoralists in this area are therefore urgently needed.

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(J: in Japanese, S: in Slovenian)

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