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Kharka of the Ghunsa Valley in the Kanchenjunga Conservation Area in Eastern Nepal Himalaya: Diverse Locations of Campsites Used by Yak/Yak- cattle Hybrid Herders

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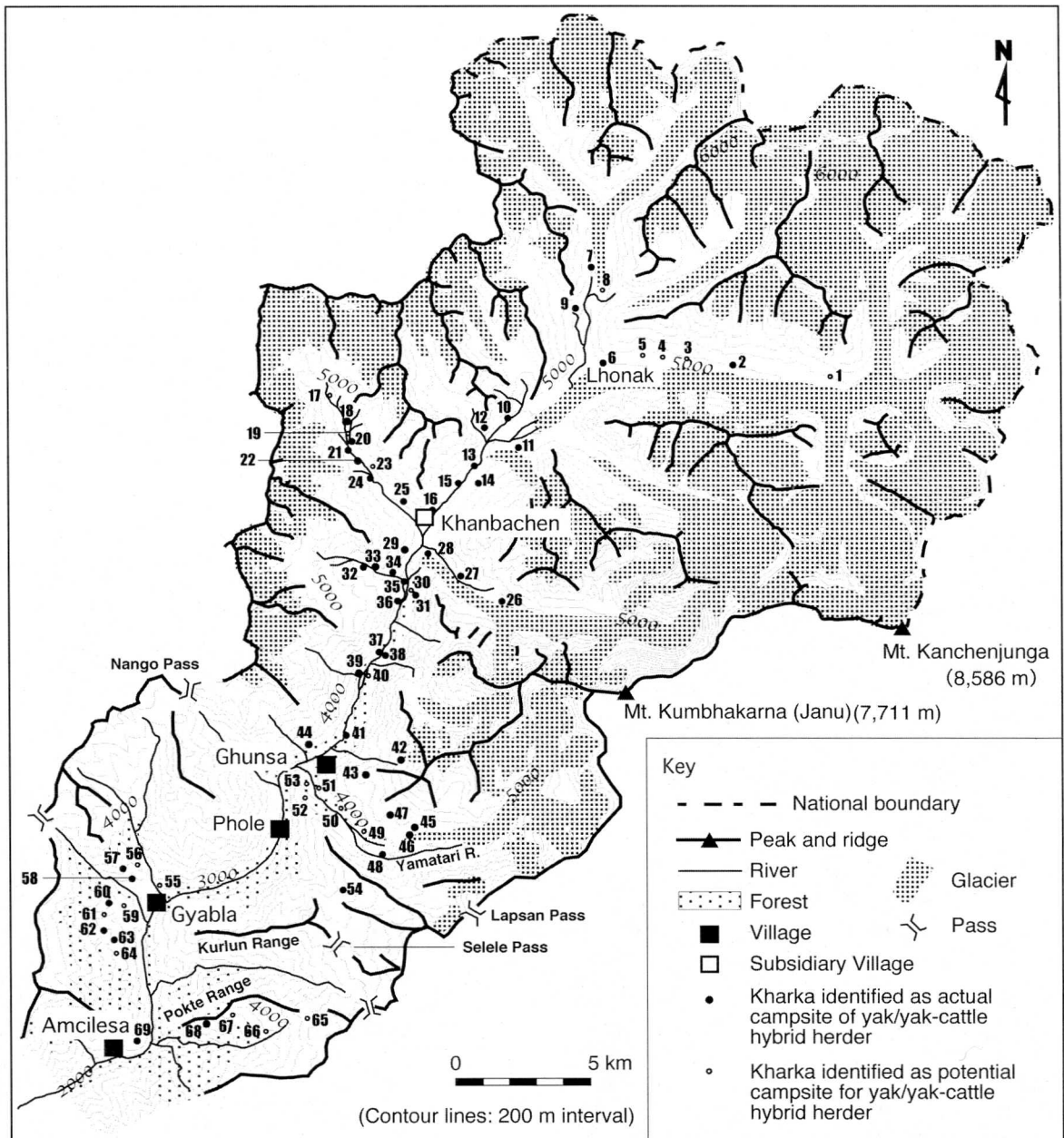


FIGURE 1 LOCATIONS OF KHARKA (CAMPSITE) USED BY YAK/YAK-CATTLE HYBRID HERDERS IN THE GHUNSA VALLEY

The locations of kharka indicated have been identified by the author's surveys in 1998, 2000 and 2001. Topographical map of 1: 50,000 scale (Survey Department, His Majesty's Government of Nepal based on aerial photography of 1992) was used as the base map. Distribution of glaciers was corrected according to Asahi and Watanabe (2000). Distribution of forests was partly corrected by the author's field observation. The location of both Kurlun and Pokte Ranges were based on local perceptions, which were different from the locations indicated in the base map. The numbers given to kharka (1-69) correspond to those in Table 1.

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I deeply thank the many herders in the Ghunsa Valley, who accepted my visits to and stay in kharka and often assisted me in traveling from kharka to kharka. N.I.

NAHO IKEDA

KHARKA OF THE GHUNSA VALLEY IN THE KANCHENJUNGA CONSERVATION AREA IN EASTERN NEPAL HIMALAYA: DIVERSE LOCATIONS OF CAMPSITES USED BY YAK/YAK-CATTLE HYBRID HERDERS

Introduction

Mobile pastoralists of yak/yak-cattle hybrids in the Himalaya migrate from pasture to pasture within their territory, which often stretches along valleys surrounded by mountain ridges higher than four or five thousand m a.s.l. This short research note provides a view of the natural setting of the pastures used by yak/yak-cattle hybrid herders by describing locations of "kharka". *Kharka* is a local term for mobile pastoralism in Nepal. The word indicates specific sites in pasture, which herders repeatedly use as temporary accommodations. *Kharka* are the base for herders' daily activities including grazing. Livestock are kept near *kharka* during the night and milked there in the morning¹.

Data on locations of *kharka* were collected as part of the author's research conducted in the Kanchenjunga Conservation Area (KCA) in eastern Nepal, which focuses on migration patterns in mobile pastoralism and the factors affecting the patterns². The Ghunsa Valley (Fig. 1), one of the major areas for yak/yak-cattle hybrid rearing in the KCA, is located at the northeast corner of Nepal. The author conducted the field survey in the Ghunsa Valley for a total of eight and a half months in 1998 (October to November), 2000 (July to October), and 2001 (May to September). This research note describes and analyzes the distribution of *kharka* used by yak/yak-cattle hybrid herders in relation to altitude and general vegetation. In addition, this discussion examines some of the *kharka* locations in terms of the surrounding terrain.

Vertical distribution of kharka

In the Ghunsa Valley, there are four villages and one subsidiary village (Fig. 1). Khanbachen (4,100 m)- the subsidiary village- is located directly above the timberline (4,000 m). It is used for temporary stays during crop-growing seasons by some of the households who have their main houses in one

of the lower four villages. The inhabitants of the four villages share the area in the valley above Amcilesa (2,500 m) in terms of the territory of grazing³. There, the author identified 69 locations of *kharka* used for stays by yak/yak-cattle hybrid herders, among which 46 were confirmed by direct observation and interviews with the herders regarding their actual stays. The other 23 *kharka* had local names known among yak/yak-cattle hybrid herders, but did not appear on the routes of their actual migrations. These *kharka* were identified as potential campsites (Figure 1 and Table 1). Nevertheless, there are some other *kharka*, whose exact locations haven't been identified yet, especially in the areas along the route from Gyabla to Nango Pass and around the Kurlun and Pokte Ranges.⁴

The vertical distribution of *kharka* is described as the following. Thirty-seven *kharka*, that is more than half of the 69 *kharka* identified, are located in the altitudinal zone above 4,000 and below 5,000 m, where alpine grasslands with short shrubs (less than 0.5 m) are scattered in between rock walls, talus slopes and moraines (Photo 1). The shrubs are *Rhododendron anthopogon*, *R. setosum*, *R. lepidotum*, *Potentilla fruticosa*, *Juniperus indica*, *Hippophae tibetana*, *Lonicera myrtillus*, *L. sp.*, *Berberis sp.*, *Spraea arcuata* and so on.⁵ Major summer *kharka* including Lhonak (4,760 m. No. 6 in Fig. 1) and Ramtang (4,590 m. No. 10) are included in this zone. Among the other 32 *kharka*, twenty-four are located in the altitudinal zone above 3,000 and below 4,000 m, which is basically covered by forests. The forests are mostly coniferous forests, which stand on the bottom of the U-shaped valley above the Ghunsa Village (3,400 m). Their dominant species are *Abies spectabilis*, *Larix griffithiana*, *Betula utilis* and *Juniperus indica* (Shrestha and Ghimire 1996). Forests below the Phole Village (3,200 m) are a mixture of coniferous trees mainly *Abies spectabilis* and *Tsuga dumosa* and some broadleaf trees including *Rhododendron arboreum* and *Acer spp.* Many of the grasslands in this

zone seem to have been transformed from forests by burning or clearing trees. *Kharka* in this zone are generally situated at such grasslands and used from autumn through spring. Thus, sixty-one out of the 69 *kharka* identified are located within the altitudinal range between 3,000 and 5,000 m.

There are only five *kharka* identified in the altitudinal zone below 3,000 m. One of the possible reasons for the small number is the author's surveys, which are biased to summer and autumn. Some unidentified *kharka* may exist, especially in the Kurlun and Pokte Ranges as well as the area around the Amcilesa village. However, it should be noted that the herders who stay in *kharka* located below 3,000 m are generally only those who have herds of yak-cattle hybrid.⁶ In actuality, all of the four *kharka* located below 3,000 m and identified as herders' actual campsites (No. 58, 62, 63, and 69 in Fig. 1) are the campsites of hybrid herders from the villages of Gyabla (2,800 m) and Amcilesa (2,500 m). Including the area around the two villages, the altitudinal zone below 3,000 m is covered by evergreen broadleaf forests, which are mainly composed of *Quercus semecarpifolia* and *Rhododendron arboreum*. *Quercus semecarpifolia* is commonly known as a good fodder tree species and is fed to yak-cattle hybrids as well as other kinds of livestock (e.g. Tsuchiya 1996).⁷ It is deduced that the leaves of fodder trees available in this zone are fed to yak-cattle hybrids in the Ghunsa Valley too, especially in winter and early spring when grass is insufficient. On the other hand, yak herders generally do not camp in *kharka* lower than 3,000 m in the Ghunsa Valley even in winter.

Only three *kharka* are identified in the altitudinal zone above 5,000 m, fewer than the number in the altitudinal zone below 3,000 m mentioned above. In spite of the fact that grasslands are found at altitudes up to 5,400 m, yak/yak-cattle hybrid herders rarely camp in the zone above 5,000 m. The author's field observations and interviews with the local herders suggest two major reasons for such decisions by herders. One of the reasons is related to the availability of fuel resources necessary for herders to cook, to warm their tents/huts and to process the milk gathered from their livestock. They rely on trunks cut from shrubs as fuel resources. The major species the herders cut is *Juniperus indica*, whose upper limit of distribution is approximately 5,000 m. The herders say that they can collect sufficient wood from *Juniperus indica* without much difficulties when they stay in Ramtang (4,590 m. No. 10 in Fig. 1) and that the collection becomes difficult after they move to Lhonak (4,760 m. No. 6). Therefore, the herders bring some fuel wood to Lhonak from lower areas prior to their stay in Lhonak, in order to guarantee the necessary amounts of fuel wood for the period of their stay in Lhonak. Alternatively, some herders prepare dried livestock dung as a part of their fuel resources. Herders staying in *kharka* located above 5,000 m, such as Zorkyu (5,020 m. No. 2 in Fig. 1) and

No.	Name	Approximate altitude (m)
1	Pangpema	5,200
2	Zorkyu	5,020
3	Thanakpo	4,980
4	Tankonma	4,940
5	Shamzo	4,900
6	Lhonak	4,760
7	Teyon	5,050
8	Zimbu-bari	4,880
9	Shyakanba	4,860
10	Ramtang	4,590
11	Anidesa	4,500
12	Rangyongdelsha	4,750
13	Randam	4,280
14	Mela	4,300
15	Lunbachemo	4,240
16	Ramdangshe	4,180
17	Lunbasamba	4,790
18	Midu	4,650
19	Thagakadeel	4,600
20	Thanakpo	4,550
21	Ponmarko	4,540
22	Thanakke	4,460
23	Sanyakoksa	4,400
24	Umbutanga	4,355
25	Puitinga	4,300
26	Singinamchyong	4,530
27	Tsersa	4,350
28	Chushar	4,100
29	Lumitinga	4,280
30	Tonshonpuppa	3,880
31	Daaga	3,970
32	Thangalimo	4,460
33	Hrepal	4,360
34	Doksaho	4,220
35	Lanphuk (upper)	3,900

No.	Name	Approximate altitude (m)
36	Lanphuk (lower)	3,820
37	Nyukla	3,720
38	Tsermalung	3,750
39	Hombu	3,600
40	Sombra	3,620
41	Cherukthanga	3,480
42	Tsangatapla	4,820
43	Ghunsadaaga	4,520
44	Molangma	3,800
45	Tserpuk	4,360
46	Chudang	4,330
47	Doksaho	4,380
48	Lunbasamba	4,080
49	Lapka	3,940
50	Nyetanjung	3,800
51	Kuyaksa	3,600
52	Tanparma	3,720
53	Yamatari	3,510
54	Motenpuk (Selele)	4,230
55	Gyablashar	2,900
56	Anibhuditse	3,250
57	Sumdo	3,280
58	Pokpagyalang	2,980
59	Kazala	3,040
60	Rigasamba	3,260
61	Nantering	3,100
62	Zongrithanga	3,020
63	Zongridelsha	2,980
64	Thangachemo	2,940
65	Surke	4,300
66	Barshe	3,780
67	Mulchok	3,620
68	Puppa	3,300
69	Pangling	2,640

Table 1. Names and approximate altitudes of Kharka (campsite) used by yak/yak-cattle hybrid herders in the Ghunsa Valley.

Kharka listed were identified by the author's surveys in 1998, 2000 and 2001. Spellings of kharka names were decided by the author according to the sounds pronounced by the local herders. Kharka expressed in boldface have been confirmed as the campsites actually used by yak/yak-cattle hybrid herders. Other kharka are their potential campsites. The numbers (1-69) correspond to those in Figure 1.

Teyon (5,050 m. No. 7) must put more effort into preparation of fuel resources. In this regard, the distribution of shrubs, especially *Juniperus indica*, is one of the important factors influencing the herders' decisions regarding which *kharka* they stay in. The negative impacts of low air temperature against the process of dairy production is another interesting influence suggested by a yak herder who stayed in Teyon, the highest *kharka* in the Ghunsa Valley actually used by yak/yak-cattle hybrid herders. The herder said that he wouldn't camp at places higher than Teyon because dairy products would be damaged. Daily minimum air temperature at Teyon during August, when he stayed there, is estimated to be about 1 or



PHOTO 1 EXAMPLE OF KHARKA IN THE ALPINE AREA.

Anidesa Kharka (4,500 m No. 11 in Fig. 1) is situated in the small grassland in the center of this photo. The photo is taken from upstream of the Ghunsa Valley. There is a moraine on the right-hand side and a talus slope on the left-hand side. On the steep slope of the valley wall across the valley floor from the Anidesa Kharka, Rangyongdelsha Kharka (4,750 m No. 12) is seen near the waterfall. (June 2001)

1.5 degrees C, on the basis of air temperature data observed at Lhonak once an hour using a self-recording thermometer placed in a ventilated small shelter.⁸ Although the author could not verify the influence of air temperature against the process of dairy production, it seems to be one of the possible factors limiting the altitudinal location of *kharka*. Thus, it has been noted that there are some factors limiting upward migration of yak/yak-cattle hybrid herders above the altitude of 5,000 m in the Ghunsa Valley and that those factors seem to be related more to human survival rather than the animals they graze. It should also be noted that herders who attempt to make use of the *kharka* located at the altitudes close to 5,000 m (No. 2, 7, 9, and 42 in Fig. 1) are all yak herders. In contrast, hybrid herders do not stay in *kharka* higher than Lhonak (4,760 m. No. 6).

Landforms around kharka

Kharka with flat grasslands, such as the one seen in Ramtang (No. 10 in Fig. 1) (Photo 2), are limited to specific sites in the Ghunsa Valley. Instead, most *kharka* are situated in narrow grasslands on rough terrain, such as moraines, talus slopes, and rock walls. Some of those *kharka* have the potential of being affected by

natural hazards. For example, Rangyongdelsha (No. 12) is situated on a steep valley wall, where rockfalls are possible and, according to the local herders, actually occurred in the past (Photo 1). Sometimes, a herder prefers to stay alone in a *kharka* like Rangyongdelsha near his household rather than stay with many other households in a *kharka* like Ramtang⁹. This allows the herder exclusive use of the grasslands around the *kharka*. For that reason, herders sometimes take risks of being affected by natural hazards.

Trails between one *kharka* and another in the alpine area are often difficult and dangerous especially in summer seasons, when herders stay in the area. Rivers rise with melt-water from glaciers and monsoon rains. This increases the danger and difficulties of the migration routes the herders use when moving from the Khanbachen Village to *kharka* located at the opposite bank of the main valley (No. 11, 14, 26, 27, and 28 in Fig. 1). There are also frequent rockfalls on the talus slope along the trail between Ramtang (No. 10) and Randam (No. 13). Similarly, the trail between the Khanbachen Village and Lanphuk (No. 35) often serves debris flows after rainfalls (Photo 3). Severe terrain combined with a rainy climate often causes herders physical hardships



PHOTO 2 KHARKA WITH RELATIVELY LARGE AND FLAT GRASSLAND.

A flat grassland as large as this is precious in the Ghunsa Valley. Every year, the use of Ramtang Kharka (4,590 m No. 10 in Fig. 1) is controlled by voluntary regulation effective among the local herders. The *kharka* was opened for herders' stay in late July and eight households were staying there at the time of the photo. (August 2000)

when they migrate from *kharka* to *kharka*.

Conclusions

This research note attempts to describe the natural setting of the grazing area of yak/yak-cattle hybrid herders in the Ghunsa Valley. Wide altitudinal range of *kharka* locations, which cover the whole valley, suggests the local herders' intend to use various fodder resources in their territory. On the other hand, dangerous settings of alpine pastures indicate the hardships of the yak/yak-cattle hybrid herder life in the Ghunsa Valley.

ENDNOTES

¹An English expression similar to "*kharka*" in meaning would be "campsite of herder".

²Some parts of the research results on migration patterns were reported in Ikeda and Ono (2004). The author is preparing another manuscript on the subject for publication with the results of comprehensive analysis of the factors affecting the patterns (Ikeda 2005).

³Most of the lands in the Ghunsa Valley are administrative-ly the lands of Lelep Village Development Committee (VDC), to which the villages of Ghunsa, Phole, Gyabla, and Amcilela belong. Exceptionally, the area covering Kurlun and Pokte Ranges administratively belongs to other VDC. According to the herders of the Ghunsa Valley, however, they had never paid fees for using the pastures in the Kurlun and Pokte Ranges at least until the time of author's survey.

⁴Birtunga is one of those unidentified *kharka*, but it is one of the important summer *kharka* located above the Gyabla Village.

⁵All of these shrub species in the alpine zone were identified at the National Herbarium and Plant Laboratories in Godawari, Kathmandu, Nepal.

⁶Compared to yak herders, hybrid herders were a minority in the Ghunsa Valley at the time of the author's survey. The number of households rearing yak-cattle hybrids was about one third of the total number of herders' households in the Ghunsa Valley. The other two thirds were the households rearing yak herds.

⁷The author also observed the utilization of the leaves of *Quercus semecarpifolia* as fodder for yak-cattle hybrids in the Bharku Village in Rasuwa District, eastern Nepal (Ikeda 1998; Ikeda, unpublished data).

⁸Daily minimum air temperature at Lhonak averaged for the month of August in 2000 and 2001 was 2.8 and 3.2 degrees C respectively. The altitudinal difference between Lhonak (4,760 m) and Teyon (5,050 m) is approximately 300 m. Therefore, the air temperature of Teyon is expected to be about 1.5 to 2.0 degrees C lower than at Lhonak.

⁹In 2000, a household of yak herder stayed in Rangyongdelsha for 16 days when other households stayed in Ramtang.



PHOTO 3 TRAIL SEVERED BY A RECENT DEBRIS FLOW

The trail between Khanbachen (4,100 m) and Lanphuk Kharka (3,900m No. 35 in Fig. 1) is one of the dangerous spots throughout the living space of the herders in the Ghunsa Valley. The trail across the slope is completely washed out by a debris flow at the end of the monsoon season. (September 2001)

REFERENCES

- Asahi, K. and Watanabe, T. 2000. Past and recent glacier fluctuations in Kanchenjunga Himal, Nepal. *Journal of Nepal Geological Society* 22: 481-90.
- Ikeda, N. 1998. Patterns of transhumance and its relation to environmental factors around Gosainkunda area, Langtang Himal, central Nepal. Master's Thesis, Hokkaido University, Japan: 30 pp.
- Ikeda, N. 2005. Mobile pastoralism of yak/yak-cattle hybrids in the Kanchenjunga Conservation Area, eastern Nepal Himalaya: Migration patterns, sustainability of fodder resource use, and their relationship to conservation policy. PhD thesis, Hokkaido University, Japan: 130 pp.
- Ikeda, N. and Ono, Y. 2004. Migration patterns in mobile pastoralism of yak/yak-cattle hybrid and mountain tourism in eastern Nepal Himalaya. *Journal of Geography* 113(2): 294-311. (in Japanese with English abstract)
- Shrestha, K. K. and Ghimire, S. K. 1996. Plant diversity inventory of the proposed Kanchenjunga Conservation Area (Ghunsa and Simbua Valleys) (WWF Nepal Program Report Series 22). Unpublished report, WWF Nepal Program, Kathmandu, Nepal: 66 pp.
- Tsuchiya, K. 1996. Comments on vegetation and cattle in Nepal Himalayas. *Tropics* 5(3): 227-242. (in Japanese with English abstract)