

Livestock Economy and Camel Pastoralism among the Raika in India

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Livestock Economy and Camel Pastoralism among the Raika in India

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INTRODUCTION

Previous studies on the one-humped camel (*Camelus dromedarius* L.) breeding among the Raika have examined some migration patterns of camel breeders and camel-herds composition (Köhler-Rollfson 1996). Notwithstanding, the relationship between camel breeding and sheep breeding within households and the meaning of camel breeding in the rural economy have hardly been addressed. This report aims to elucidate the social significance of camel pastoralism in rural villages by examining the actual conditions of pastoralism and the use of grazing areas through camel breeding by the Raika who live in Rajasthan, India.

Field investigation was carried out by three approaches in September 2001, January 2002, and December 2002 for one and a half months in total. First, we established our base in Sadri, Pali District, where there was an NGO office. By way of one-day visits, we sought villages in which the Raika who breed camels lived. Secondly, a participate observation was carried out in a village that an extensive survey revealed as the most active in camel breeding. At that village, we gained an understanding of the entire economic situation of the village. We also visited two camel camps that were several dozen kilometers distant from the village. Finally, we visited the Department of Forests and other local authorities to gather information on restrictive regulations in forest reserves in the Pali District.

Table 1 shows the research outline for understanding livestock husbandry by the Raika with a focus on the differences in the species of livestock, camels, and goats and sheep. There are three types of livestock husbandry: livestock barns, one-day grazing, and nomadic pastoralism. Livestock husbandry must be understood through its three milieux: rural villages, nomadism, and grazing areas. Regarding rural villages, we must

Table 1 Research outline: understanding livestock breeding among the Raika

A Farming Village	B Nomadic Pastoralism	C Grazing land
Complex Economy	Ecology Economy	Common grazing land Farming land after harvest

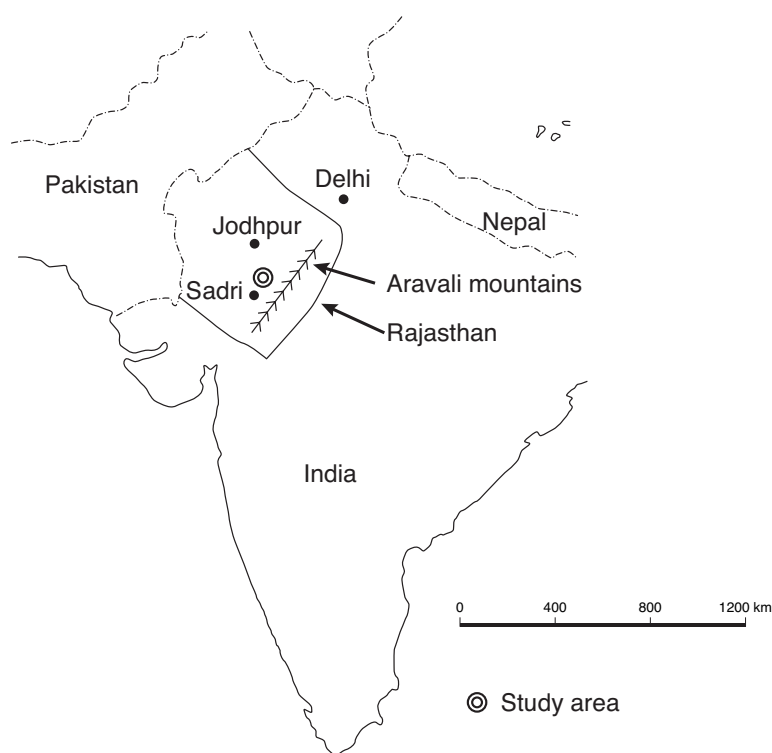


Figure 1 The study area

know aspects of economy, society, and religion. To understand nomadism, ecology, economy, politics, and history all hold importance. Finally, for grazing areas, crucial knowledge includes that of the usage of the common grazing areas of villages, farmlands after harvesting, and forest reserves.

Figure 1 illustrates a scheme to grasp the nomadism of the Raika, who practice nomadic pastoralism throughout the year. They are based in their home rural villages and migrate as groups that consist only of men. Through their migrations, they form certain relationships with farmers, brokers, and livestock dealers while utilizing forest reserves as grazing areas only in the rainy season.

STUDY AREA

The study area is located in the east side of the Aravali mountains, which cross the eastern area of Rajasthan from northeast to southwest. The government of India designates most of the mountainous land as forest reserves. Thereby, use by humans is restricted, except in tribal areas.

The Raika are professional breeders of camels, goats, and sheep. They are Hindu and belong to a pastoralist caste. Raika can be categorized into Maru Raika, who live

near Jojawar, and the Godwar Raika, who live in other areas. Many Raika men, especially older ones, wear red, yellow, or white turbans on their heads.

The study area is a village called Anji Ki Dhani in Pali District, Rajasthan, India. This village is located southeast from Pali, the center of Pali District. Anji Ki Dhani is approximately 4 km from the town of Jojawar. The village forms a concentrated settlement, with houses aligned close together. In some cases, only one household occupies each dwelling; in other cases, several households share one dwelling. In the latter case, rooms are assigned to the parents and to their married son. Most of the villagers are Raika people, who belong to a pastoralist caste (Photo 1). Nevertheless, there is a section where four Mina tribe households reside. Approximately 120 households occupy the village at present.

An overview of the history of the village is as follows. From about 1850–1950, it was a part of the British colony. The Raika in this village are said to have immigrated from Jaisalmer, near the border between India and Pakistan, around 1850. At the time of immigration, the village is presumed to have had 25 houses and ca. 5000 camels; no cultivation was performed at all. After liberation around 1950, several Raika people dug wells, thereby making irrigated cultivation possible even in the dry season. The government provided a water tank in 1975 for livestock. Some villagers have been taking jobs as migrant workers since the 1980s.

Therefore, camel breeding is the only activity that has continued since the establishment of the village. It is said that once there were about 5000 camels in the village, but there are only 700 at present.



Photo 1 Raika elders

REGIONAL DIFFERENCES IN LIVESTOCK HUSBANDRY OF THE RAIKA

1) Number of head of livestock per household and their use

Table 2 shows the number of head of livestock per Raika household. The survey covered nine villages near Sadri in the southern area of Pali District: Radawa, Dantiwara, Anji Ki Dhani, Sewari, Bijapur, Malari, Beelya, Latada, and Bhadras.

The residents' ethnic composition is complex; the Raika often account for only a fraction of the residents. Anji Ki Dhani is the only village in which almost all residents are Raika. In addition, a comparison of Raika households clarifies their diversity in their combinations of occupations, methods of livestock husbandry, and so on. Regarding their occupations, few households subsist only by livestock husbandry; combinations with cultivation or other occupations are common.

Table 2 lists two combinations – “camel and buffalo” and “camel and goat/sheep”

Table 2 The number of livestock per Raika household

Household	Village Name	Camels	Goats	Sheeps	Cattle	Buffaloes	
①	Radawa	15	50	15	0	0	
②	Radawa	10	0	0	0	0	
③	Radawa	10	0	0	0	0	
④	Dantiwara 25	0	0	0	0		
⑤	Anji Ki Dhani	30	0	0	0	3	transhumance
⑥	Andi Ki Dhani	40	0	0	0	2	transhumance
⑦	Andi Ki Dhani	17	0	0	0	2	transhumance
⑧	Andi Ki Dhani	45	0	0	0	4	transhumance
⑨	Andi Ki Dhani	25	0	0	0	4	transhumance
⑩	Andi Ki Dhani	40	30	10	0	5	transhumance
⑪	Sewari	21	1	0	1	0	
⑫	Sewari	4	2	0	0	0	
⑬	Bijapur	16	2	0	0	2	
⑭	Bijapur	3	0	0	0	0	
⑮	Malari	35	0	0	0	2	
⑯	Beelya	9	0	0	0	2	
⑰	Latada	15	40	50	3	0	
⑱	Latada	8	2	0	0	0	
⑲	Latada	25	50	200	0	0	transhumance
⑳	Latada	12	0	0	0	0	
㉑	Bhadras	9	10	60	1	0	

Source: author's interviews

Table 3 Daily variation of cow milk production by a Raika

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Liter	2.0	2.5	2.4	2.0	2.8	1.9	2.0	3.0	2.0	2.0	2.8	1.9	2.9	2.4

Source: Raika herder's memo

Table 4 Multipurpose use of respective species of livestock

	milk	meat	hair	manure	transportation
Camel	○ ×	×	○	○	○
Goat	○	○	○	○	×
Sheep	○	○	○	○	×
Cattle	○	×	×	○	○
Buffalo	○	×	×	○	×

Table 5 Selling price of milk per liter

camel, goat, sheep	Rs3–5
cattle	Rs7–10
buffalo	Rs12–15

– for livestock species. Specific counts of the animal species show that the number of camels ranged from 4 to 45; apparently, camel flocks of households in Anji Ki Dhani tended to be large. For sheep, 200 sheep were kept in Latada, but most households had none. The case for cattle was similar, but many households kept 2–5 water buffaloes.

Moreover, methods of livestock husbandry can be categorized into two types: one-day grazing from a village base, and wide nomadic pastoralism involving distant migration from a village base. Camels are kept in yards in front of the houses or outside the villages in one-day grazing situations. In nomadic situations, camps are often made on farmlands after harvesting. Changes in livestock species are apparent for short periods. For example, household 21 stopped breeding camels between September 2001 and January 2002 to specialize in sheep breeding. In this case, they had bartered seven of their camels for 32 sheep.

On the other hand, Table 3 illustrates the daily variation in milk production by a Raika household. It has only recently begun to keep a cow in the yard and sell milk: 1.9–3.0 liters of milk are produced daily. The case is interesting because it involves a camel keeper who began keeping a cow.

Table 4 shows the multipurpose uses of the different species of livestock. The research covers five species: camels, goats, sheep, cattle, and buffaloes. Primarily, milk is obtained from all, except from some camels. The utilization for meat is limited to goats and sheep. Hair from three species is utilized: camels, goats, and sheep. The

manures of all five are used. Only camels and cattle are used as pack animals.

Table 5 indicates selling prices of milk per liter. The highest price of 12–15 rupees is for buffalo milk. Cow milk comes next, followed by camel and then by goat milk.

2) Nomadism and livestock administration

Raika livestock keepers can be classified into two types: camel herders and sheep herders. In addition, in the keeping of camels, sheep and goats, respectively, there is a difference in whether the herders work by nomadic pastoralism or one-day grazing. From Table 3, for the case of Household 19, when they have two hundred sheep, they perform nomadic pastoralism because of the large number of animals they must care for. However, in the case of camels, almost all households carry out nomadism regardless of the herd size.

The distance migrated throughout the year is longer for sheep and goats than for camels. Sheep herders migrate outside the state, to destinations such as Uttar Pradesh (UP) and Madhya Pradesh (MP). On the other hand, the nomadism of camel herders is confined to the Pali District. Moreover, there are seasonal changes in grazing areas, mainly in forest reserves in the rainy season and farmlands after harvesting in the dry season.

The herders use voice commands for the camels in livestock herd coordination; close vocal communication is done between herders and sheep and goats, such as calling individuals.

When sold at a market or similar venue, the meat and hair of both the sheep and goats is sold, whereas such sales are limited to the market in Pushkar in the case of camels.

3) Utilization of grazing areas and problems that arise

Grazing areas in the rainy season are limited spaces. Nature preserves are actively utilized as grazing areas. Our research in this section is on a forest reserve named the Kumbhalgarh Sanctuary, which adjoins the study area. This reserve is oblong: it is over one hundred kilometers long and several dozen kilometers wide. Wild animals, including monkeys and bears live there; Ranakpur has temples and other structures and artifacts built by the Jain caste.

Once, people who were unrelated to the nearest forest reserve could graze their animals in the forest reserve (Photo 2). However, now only the part of the forest reserve that adjoins each village can be used. Therefore, it has become impossible to migrate within a forest reserve. In September 2001, there was a village that utilized a common grazing area inside the village and another inside a forest reserve which was administrated by the government and frequently used.

A rule allows the use of forest reserves for grazing by paying cash according to the species and number of livestock. However, grazing in the central areas of reserves where young trees are raised is completely prohibited. Occasional conflicts arise over grazing between herders and the Department of Forests that administer the reserves. Herds cannot graze in the central areas in the rainy season. Sometimes the herders ask

foresters for permission to graze in the forest areas. The author encountered such a situation in September 2001, and observed with an NGO staff member who acted as an intermediary (Photo 3).



Photo 2 A man takes camels to graze in the forest reserve



Photo 3 Herders ask a forester for permission to graze in the forest reserve

4) Decrease in the demand for camels

It is said that camels were used in battles once in Rajasthan. Camels were produced for supply to Rajput armies and leaders in Delhi (Köhler-Rollfson 1992b: 118). Since 1955, camels have been widely used to carry carts for transportation. These carts were invented using airplane tires after they become unuseful for service on the planes, taking cattle carts as a model. Today camels are also used for transportation in cities and in rural villages. In cities such as Jodhpur and Jaipur, one might encounter camels pulling a cart. In addition, camels are used to carry baggage in rural areas.

CAMEL BREEDING IN THE RURAL ECONOMY

1) Overall job situation

Table 6 indicates the job situation and the number of livestock owned in Anji Ki Dhani. Many households combine camel breeding with the breeding of buffaloes or goats, cultivation of commercial crops including cotton, and migrant work away from home toward Mumbai. Some young people run shops in a neighboring town (Jojawar).

From the viewpoint of household income, the percentages of buffalo breeding, cultivation, and migrant jobs are high, whereas income from camel breeding is so small

Table 6 The job situation and the number of livestock in Andi Ki Dhani

Name	Age	Occupation	Camels	Buffaloes	Goats
①	70	camel herder, hired herder	60	1(1)	
②	37	farmer, former hired herder		1(1)	
③	35	migrant worker		1(1)	2
④	25	migrant worker		0	2
⑤	70	camel herder, hired herder	20		
⑥	37	migrant worker		1	2
⑦	35	shop keeper		1	1
⑧	55	camel herder, hired herder	35		
⑨	25	shop keeper		2	
⑩	30	goat breeder, farmer		2	35
⑪	60	none			
⑫	30	camel herder	20	1	2
⑬	35	migrant worker		1	2
⑭	70	none			
⑮	30	farmer		1	2
⑯	40	camel herder	15	0	2
⑰	75	none			
⑱	40	camel herder	15	1	2
⑲	40	hired herder	15		

Source: author's interviews

as to almost equal the sales in the market in Pushkar once a year. In some cases, deficits arise from hiring herders and paying for medicine.

We strove to understand the village employment situation to comprehend the position of camel breeding in the context of the village economy. As for jobs in the village, camel breeding and other jobs are combined. Regarding the village economy, various jobs exist aside from camel breeding, including goat breeding, buffalo breeding, cultivation, shop operation, and migrant jobs.

2) The real situation of camel breeding

Camel breeding takes the form of nomadic pastoralism, not that of one-day grazing from the village. In annual migration patterns, each of eight herds of camels in the village has a different migratory direction. For example, for the camel herd including Abudi in 2001, we checked out the migration route that extended southward from the village to near Sadri, then westward across the arterial railroad, then northward from around Sumerpur back to near the village. The route in 2002 was similar in direction, but not identical. Observations in December 2002 showed that they had a camp near the village Nadol; the group was with other people in the village, one of whom a sister of one camel owner had married. Another group had a camp at a distance of several kilometers from Nadol. Moreover, observation of a camel camp in September 2001 showed a relationship with farming people because the campsite was located on farmland.

Grazing areas for camels change each season. In the rainy season, farmlands are awaiting harvest and are therefore inaccessible. In the rainy season (September) in 2001, they used a forest reserve as a grazing area. On the other hand, grazing on farmlands was possible in the dry season (Photo 4). Observations in the dry season



Photo 4 A temporary camel camp on farmland

Table 7 The names of camels owned by Abudi and their characteristics

Camel's name	Age	Meaning of name
DADAM	4	fruit name
BHAMAR	10	beans
SUNTI	5–6	parrot
SANNAN	15	?
BHOLI	9–10	not wise
SAWRI	12	?
KALU	6	black
LATİYAL	6	long hair
SANKI	6	?
MALLI	3	dirty
LALDI	7	red
DINGRI	5	tall
SANYO	3	?
HODI	4	brown, black
PONKIYA	15	feather
KOLIYA	12	black

Source: author's interview, Note: Original name in Marwari

(December) in 2002 showed that, they used a farm area, after harvesting, as their campsite. Although the fields were barren, the camels ate the leaves of acacia trees bordering the fields.

There was no camel enclosure, but each camel had a rope tied to its leg, and the herd was always near the camp. Additionally, male herders cooked for themselves and there were no women or children. They baked and ate chapatti before setting out for morning grazing. At that time they used pans, plates and utensils.

Table 7 shows the names of the camels of Abudi in Group 1 and their characteristics. We confirmed that 16 camels had names in Marwari. Those camels were named in connection with colors such as black, brown, and red, and the names of parrots, beans, fruit, and so on.

Herds of camels with a plurality of owners are grazed (Table 8). In this study, we identified eight grazing groups in the village. They respectively consisted of: 1) five, 2) four, 3) seven, 4) three, 5) four, 6) four, 7) two, and 8) three households. In addition, relationships by marriage and birth affect the grazing group formation. Moreover, the combination of grazing groups changes over time. Observations in December 2002 indicated the integration of camel Groups 1 and 2.

Table 9 lists hired herders. Some people (7–8 households) hire herders to do the grazing. Not only villagers, but also men from outside the village, become workers. They receive 10,000 rupees (approximately 25,000 yen) per year.

Table 8 Grazing land and grazing group composition in the village

Grazing land	Grazing group's name
1. Desuri	A, R, G, M, A
2. Nadol	An, S, Mg, J, B
3. Desuri	Ji, Ga, Mo, Ans, K, Go, Ba
4. Nadol	D, Game, Dama
5. ?	Su, Ha, Ama, Pa
6. ?	Ze, Za, Zo, Kopa
7. ?	Bi, Zak
8. ?	Bad, Papu, San

Table 9 Lists of hired herders

Name	Age	Employer
1	51	A
2	47	A, Ge
3	40	A, Ge
4	52	Su
5	35	Ja
6	40	(A)
7	50	?

Table 10 Kinds of camels and prices of camels sold in Phushkar in 1996

Owner's name	Sex	Age	Price (rupees)
Adoji	male	3	5500
Adoji	male	1	3300
Adoji	male	1	1100
Adoji	male	3	3700
Adoji	male	1	1100
Amonji	male	10	6500
Amonji	male	1	1750
Amonji	male	1	2000
Amonji	male	1	1750
Amonji	female	2	2200
Amonji	female	2	2300

Source: documents of Lokhit Pashu Palak Sanshtan

Over 32 households in the village own camels. Let us examine the relationship in the herder workforce. One camel owner hires three herders. Hired herders can be classified as those from inside or outside the village. A hired herder may or may not be a camel owner.

Table 10 gives descriptions and prices of camels that were sold in Pushkar in 1996. In the case of Adodi, he sold three one-year-old males and two three-year-old males. Their prices were 1100–5500 rupees. In the case of Amondi, he sold six in all: three 1-year-old males, two 2-year-old males, and a 10-year-old male.

3) Buffalo breeding and distribution of milk from villages to towns

Many households keep one or two buffaloes. This breeding of buffaloes is important for household accounts in the village: they can gain cash from sales of milk and butter. At the same time, manure can be used as fuel or fertilizer. Milk and butter from buffaloes are reliable sources of cash income.

Women care for the buffaloes. They inject buffalo with a drug every day to promote milk production. Eight liters of milk can be obtained daily from one buffalo: five liters in the morning and three liters in the evening. The price for this milk is 11 rupees (approximately 27.5 yen) per liter, yielding 88 rupees (approximately 220 yen) in total.

Various sources provide feed for buffaloes. In addition to rajika and jowar raised in their own fields, grain and cottonseed sold in shops are used as feed. As for goats, just one or two goats per household are kept except at one household, which had thirty-five goats. As feed for goats, people climb tall trees on the farmlands to cut branches to give to the goats.

Milk is sold at a price of 8 rupees per liter in the village, but the price rises to 10 rupees in the town of Jojavar. One buffalo can give 5–6 liters of milk daily.

The production of milk in the village intended for sale began around 1980. Milk production and distribution routes have been established for the two decades since around 1980. Before that, only buttermilk was sold. Buffalo milk was sold to persons who lived in the village and commuted to the town every day (Table 11). Four milk gathering routes can be seen in the village because four brokers gather the milk from 15–20 households. Men aged 25–30 are responsible for the system. They transport milk every day using bicycles or motorcycles to the town, 4 km away.

Table 11 Types of transport of buffalo milk by the brokers

broker	age	method of transport	producing households	milk amount
No. 1	25	bicycle	about 20	70 liters
No. 2	30	bicycle	about 25	40 liters
No. 3	30	bicycle	about 15	60 liters
No. 4	25	motorcycle	about 20	50 liters

Source: author's interviews

4) Reality in cultivation

Crops in farmlands are cultivated depending on the season. Corn, bajra, tiru, munga, urada, and soora are crops limited to the rainy season (July–October). Mustard, dill, jowar and so on are winter crops (November–February). Exceptionally, rajika is raised through the year to be the feed of buffaloes.

In utilizing farmlands, when a father lives with his sons, the fields are divided such that one section belongs to the eldest son. Weeding is done cooperatively on farmlands, but benefits from the farmlands belong to the owners.

5) Role of camel breeding from an analysis of household finances

The R household owns the largest number of camels in the village; moreover, it comprises many nuclear families including the parents, a married eldest son, and a married second son. Its incomes derive from: cultivation of cotton, dill, and so on; livestock husbandry of buffaloes and camels; and other migrant jobs. The annual income comprises: 28,000 rupees from cotton, 64,000 rupees from dill, and 120,000 rupees from migrant jobs. Only 8,000 rupees are earned from camels. Among the income sources, buffalo milk sales yield a daily income of 88 rupees, which amounts to 32,120 rupees over one year. The budget amounts to 232,000 rupees altogether.

On the other hand, expenses consist of tea and sugar (18,000 rupees per year), feed, medicine and so on for buffaloes, and gifts for relatives such as clothes and shoes (2,000 rupees), the cost of hiring herders (10,000 rupees per person; 20,000 rupees for two) and medicines, etc. In one year, these amount to some 40,000 rupees.

The figures described above clarify that the household has income of approximately 190,000 rupees by comparison of the total of incomes and expenses, and subtracting the expenses for medicine and buffalo feed. The table illustrates how small the benefit from camels actually is.

CONCLUSION

This report describes the Raika who live in Pali District, Rajasthan, India. It aims at understanding their livestock husbandry from three aspects of villages, nomadic pastoralism, and grazing areas. Thereby, we explored the importance of camel pastoralism in rural villages. Consequently, the following matters were clarified.

(1) Raika people perform nomadic pastoralism based on their home rural villages. In this regard, methods of livestock husbandry differ depending on the species of livestock: camels or sheep and goats. In addition, the range of travel might involve crossing the state border in the cases of sheep and goats. Moreover, few households subsisted only on livestock husbandry. Combinations with cultivating or migrant jobs were often seen. As for combinations of livestock species, two types, “camels and buffaloes” and “camels and goats and sheep” were found.

(2) Viewing the village economy at the level of households, many combine breeding of buffaloes or goats, cultivation of commercial crop including cotton, dill, and so on, and migrant jobs toward Mumbai and Indore, other than camel breeding. Some people

operate shops in a neighboring town.

Buffalo raising is done especially when one or more animals is owned by each household and women are engaged in that. Cash income is obtained by selling milk and butter. Manure is also used as fuel or fertilizer. Buffalo milk is sold to persons who live in the village and is transferred to the town every day. Four assembly routes, which consist of 15–20 households, are apparent in the village.

From the viewpoint of household income, the percentages of buffalo raising, cultivation, and migrant jobs are high, whereas income from camel breeding is as small as to approximate the sales in the market in Pushkar once a year. In some cases, it shows a deficit because of hiring herders and the cost of medicine.

In the village, although there is a range of variance from 10–60 among owners, camels are divided into eight groups, constituting a plurality of owners for grazing. Annual grazing of camels is nomadic pastoralism within the district, unlike the transhumance of sheep traveling to UP and MP. In addition, seasonal changes are apparent in grazing areas, mainly in forest reserves in the rainy season and in farmlands after harvesting in the dry season. Some people (7–8 households) hire herders for grazing tasks. Not only villagers, but also men from outside the village, become workers and receive 25,000 yen (10,000 rupees) per year.

(3) Difficulties for the Raika to secure grazing areas for camels do exist, but herders and hired herders maintain camel herds. In the studied village, the job of a herder is a job for poorer villagers. Only a few people subsist mainly on camel breeding. Notwithstanding, its long tradition as a camel-producing village is considered to be one reason that camel breeding has not ceased.

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