

Nomadic Cattle Herders and Customary Rights For Grazing in North Gujarat, India

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Abstract

In spite of the trend towards the domiciliation of grazers and stall feeding, nomadic cattle herders still exist in some pockets of India. North Gujarat is one such place where some groups of the nomadic cattle herders from Rajasthan visit after monsoon with their cattle for grazing. After due consideration of their resources and risk management, herders make a decision on the size of herders and cattle, and select their leader and sub-leader. They move to Gujarat in November and return to Rajasthan in July. In Gujarat they stay in a particular village where they make payment for the exclusive use of the village commons and post-harvest farmlands. Earlier, they were not restricted to access to the commons of any village in the region; the customary rights for grazing the commons were open to various stakeholders. But in recent times, as competition for grazing increased among the stakeholders, some village authorities have started selling the exclusive grazing rights to the highest bidder. Accordingly, the nomadic cattle herders had to cope with the situation and buy the rights of grazing. This paper is divided into two parts. Organizational and functional aspects of the nomadic groups are explained in first part; this is useful in understanding the life and economy of nomadic people. The nomads' strategies of family resources and risk management are analyzed in view of changing society, in which competition for resources is getting tougher.

Keywords: customary rights for grazing, the commons, nomadic cattle herders, the contract village, resource use

INTRODUCTION

The author conducted a socio-economic survey on the nomadic cattle herders¹ in Gujarat and Rajasthan (western part of India) in 2009 and 2010.

¹ The term 'nomadic cattle herders' is defined in this paper as herders who rear

This paper provides insights from my field investigation undertaken in two nomadic villages in Rajasthan and two associated herders' receiving villages in North Gujarat.²

There are several publications regarding nomadic sheep herders but very little for nomadic cow herders. Kavoori (1999), Agrawal (1999) and Srivastava (1997) highlighted the relations between nomadic sheep herders and the state, and evaluated their positive roles in environmental preservation. These studies presented an outstanding combination of analytical framework and empirical evidence, which resulted in the boom of research on nomadic herders. The other contribution of these studies was its deep insight into the historical change of nomadic herders. Thus, research on the nomadic sheep herders has been an ethnographic portrait of the stage where time and space are crossing. The studies on nomadic herders did not necessarily target only the sheep; the other livestock, such as a camel, was also included in research as is seen in Ikeya and Fratkin(2005). The true subject of research was displaying relationships between nomadic herders and the local society.

Research on nomadic cattle herders was hardly conducted after Independence³ due to a considerable decrease in the case of nomadic cattle

cattle based on a seasonal migration in search of fodder during the dry season while they stay at their native village during the monsoon season. A 'nomadic cattle herding group' refers to the group of nomadic cattle herders formed with two or more households for common benefits such as security, negotiation and mutual help.

² The author started a socio-economic survey on cattle rearing patterns in the Sabarkantha district of Gujarat in 2009. The survey was aimed at analyzing the changes in the manner of cattle rearing related to nomadic herding, daily grazing and stall feeding. Particularly, the author was interested in the nature of resource utilization and inter-relationships amongst three patterns. For this purpose, the author selected 10 households of nomadic cattle herders, 30 households of daily grazing and 30 households of stall feeding as sample households in three villages of Sabarkantha. The survey was conducted jointly with Manav Kalyan Trust, a NGO based in Khedbrahma of Sabarkantha. This paper, which deals with nomadic cattle herders, is a part of the report of this survey(see Shinoda:2011)

³ As one the most important means of agricultural production, the issue of

herding. The breeding form of the cow began to shift to stall feeding from pasturage in a drastic socio-economic change caused by "Green Revolution"⁴ and "White Revolution"⁵ particularly after the 1960's. The other reason was that the case of nomadic cattle herding was rare and localized as compared with the case of nomadic sheep herding. As a result, the nomadic cattle herding was least studied by the researchers.

This paper has two sections. Firstly, organizational and functional aspects of the nomadic groups are analyzed, based on the case study of nomadic cattle herders who seasonally migrate from Rajasthan to Gujarat in western India. Secondly, the paper analyzes a change in north Gujarat where competition for utilization and distribution of resources for cattle rearing has become more and more intense among the three major stakeholders, i.e., nomadic cattle herders from Rajasthan, local farmers and local cowherd castes of Gujarat. In this connection, the paper illustrates an emerging new phenomenon related to the customary rights for grazing the commons, which were earlier open to various stakeholders, are now being sold to the highest bidder in some villages of north Gujarat.

1. SURVEY REGION AND SAMPLE HOUSEHOLDS

(1) *Socio-economic structure and stock rearing of a native village*

The author selected two groups of nomadic cattle herders from two

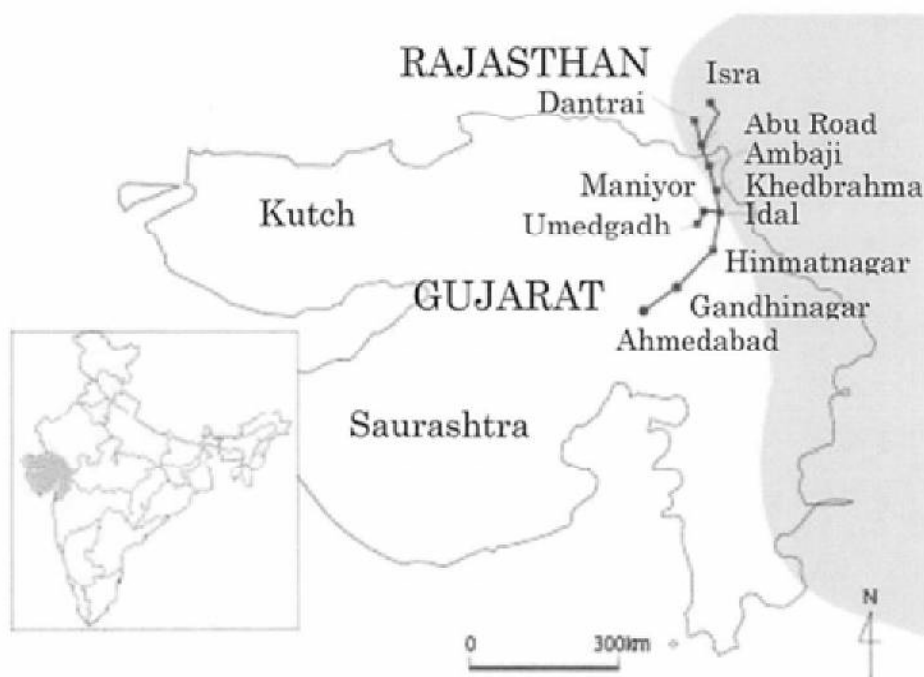
livestock, particularly its reproduction and distribution, was often analyzed in the government reports on agriculture and livestock during the period of the British rule. In recent years, Bharwada & Mahajan (2006) was an outstanding historical study about the migration of cattle.

⁴ It was the agricultural revolution that boosted the productivity and production of crops with a set of agricultural and technological inputs such as irrigation, chemical fertilizer, and high yielding varieties. It was introduced in India in the latter half of the 1960s. Initially, the effect was confined to some agriculturally advanced states, however, it became widespread all over India after the 1980s.

⁵ It was the revolution of milk production, circulation and processing commenced in 1970. The National Dairy Development Board initiated integrated activities of the milk cooperative movement after the Amul dairy in Anand, Gujarat. The movement gained ground quickly in Gujarat, and was initiated in some other states, too.

villages in Rajasthan as study samples. Their native villages are Dantrai and Isra in the Sirohi district of Rajasthan. Each group consists of five households; thus totally ten households are in sample. The Sirohi district is located in the Tribal⁶ area of the southern part of Rajasthan, as is shown in Fig. 1.

Fig.1: Area under Study



The hilly zone spreads southward from the southern Rajasthan to northern Gujarat, and eastward toward the eastern Madhya Pradesh. The area displayed with shading is the tribal area. Dantrai and Isra have been left out from the mainstream. The two villages have common features such as low irrigation level and extensive agriculture dependent on monsoon crops having low yield. In this area a large number of Rabaris⁷ reside together with tribes. All

⁶ The term 'tribal area' means a hilly area where tribal people are the main dwellers. They are called as the Scheduled Tribes in the administrative terms, and are scheduled as beneficiaries of various reservation policies. The tribal area of Gujarat is spread in the eastern part of the mainland Gujarat.

⁷ They are referred to as Raikas in Rajasthan. They reside in Rajasthan and

sample households are from Rabari community.

The major communities of Isra village are Tribes, Rabaris, Muslims and Scheduled Castes⁸ such as Meghvals. The village has about 6,000 persons with 1,300 households. Out of 9000 ha of village area, 6000 ha is the commons such as grazing land, and the rest 3000 ha is under agricultural use. The major crops are maize and bajri grown during kharif. There are no rabi(winter) and unalo(summer) crops. Although the access road to the village is paved; the residential areas within the vast village is unpaved. The village was electrified in 2007.

The author surveyed the village in 2010. That time a tribal woman was serving as the village head(sarpanch). There were 260 Rabari households, which were scattered in several residential blocks. The common type of Rabari house was made of bricks with two rooms and one veranda where calves were kept. Since cow dung was heaped in the garden just outside their house, flies were hovering in their rooms. The school attendance ratio among Rabaris was extremely low as compared with other castes, and nearly 90% of Rabari households of the village were engaged in nomadic cattle herding.⁹ There were no decent houses in the residential area of other castes, too. It was a poor village in the tribal area.

The caste composition of Dantrai, the other village, differed from the Isra village greatly. Jain community(called the Baniya: merchant community) covered nearly half of the village population of 4000. There were four Jain temples in the village that attracted a large number of Jain visitors from outside. Most of the Jain merchants were engaged in their business outside the village leaving a few family members behind. There were 100 Rabari households, and they were concentrated in one Rabari residential area. Access roads to residential areas in the village were well paved. The houses were single storied but well built, and better than that of Rabaris in Isra village. A cattle shed was kept apart from their house. Cow dung was not heaped in their garden.

Gujarat, and rear cattle, camels, sheep and goats. Most of them are engaged in rearing livestock based on the daily grazing, however, some of them still breed livestock as nomadic herders.

⁸ This term is mainly used for administrative purposes. Besides this term, they have been called as untouchables or harijans. Some of them prefer to call themselves as dalits. They are also the beneficiaries of reservation policies.

⁹ Information collected from the village secretary of Isra (August 13, 2010).

According to the villagers, the life and hygiene pattern of the Jain community influenced the other communities a lot, as a result the Rabaris were also careful so that the flies would not hover in their residential area.¹⁰

(2) The socio-economic structure and the feed base of the contract villages

The sample nomadic cattle herding groups signed a pasturage contract with Maniyor and Umedgadh villages respectively and stayed in these villages of Gujarat from November 2009 to May 2010. Both villages were from the Idal taluka of the Sabarkantha district. The Idal town, the headquarter of the taluka, was the largest town in the western part of the district. As is shown in Fig.1, both villages were located in the western direction from Idal.

According to the 2011 Census, the population of Maniyor was 2208 and the area of the village was 1039 ha. It was a comparatively large village in this area. The village was located along the highway toward Mehsana. The distance from Idal was 5 km only. Of the total village area, irrigated area was 350 ha and un-irrigated area was 136 ha.¹¹ The irrigation level was 40% which was the same for the whole of this area. Since the village had more un-irrigated area, the agricultural production of the village was considerably dependent on monsoon.

The main crops of the Idal taluka were wheat, rice, jowar, bajri and maize. The crop composition of Maniyor in recent years was cotton, sesame, jowar and wheat.¹² Among these, sesame, jowar and wheat were crops with high feed value. The village was very attractive for nomadic cattle herders because it had an extensive cultivated land with fodder crops.

The village had two types of caste groups. One was a high ranked landlord group such as Patidar and Rajput. The other was a low caste group such as Vankar and Chanua. There was no Rabaris in the village. The striking feature of the village was that Patidars, as a dominant caste, possessed the most of the agricultural land, and that farmers relied heavily upon the tribal workers (coming from outside) and the Scheduled Castes from within village.

¹⁰ Information collected from the village secretary of Dantrai (August 13, 2010).

¹¹ Information collected from the village secretary of Maniyor (September 7, 2010).

¹² Information collected from the village secretary of Maniyor (September 7, 2010).

The tribal workers were employed as agricultural workers, tenant or contract workers. They generally stayed in a temporary huts near work place during the contracted period; they were not usually counted in the population census. According to the 2001 census, the share of cultivators(241 persons) out of the main male workers(621 persons) was 34%, which was lower considerably than that of the neighbouring villages. Contrarily, the share of agricultural labourers(164 persons) was 26%, which was higher than that of the neighbouring villages. The Scheduled Castes, accounted for 23% of the village population, were the major source of daily agricultural labourers.¹³

According to the 2011 Census, the population of Maniyor was 2248 and the area of the village was 761 ha. The village was located along the highway 14 km westward from Idal toward Mehsana. Of the total village area, irrigated area was 324 ha while un-irrigated area was 283 ha.¹⁴ The irrigation level of 53% was above the average in this area. Grazing land was 32 ha and barren land was 109 ha.

The main crops of the village were cotton, sesame, wheat, and maize. This crop composition was similar with that of the Maniyor village, and there were many crops with high feed value.

The main land ownership groups were Patidar, Thakkarda, Brahman, Koli and Vankar. The village had only one Rabari household. The Patidar was the most powerful land owning caste which employed handsome number of tribal labourers from outside as contract workers and the Scheduled Castes of the village as daily labourers.

According to the 2001 census, the cultivators(195 persons) shared 35% and agricultural laborers(135 persons) shared 24% of the total male main workers(559 persons). The Scheduled Castes, who shared 22% of the village population, were the major source of daily agricultural labourers.¹⁵ Thus, the pattern of farm management was very similar to that of Umedgadh.

(3) The circumstances of the contract in a receiving village

Maniyor has been receiving a nomadic cattle herding group from

¹³ The author computed from the data of the Maniyor village available in the Village Directorate, Sabarkantha District, Census of Gujarat (2001).

¹⁴ Information collected from the village head of Umedgadh (September 7, 2010).

¹⁵ The author computed from the data of the Umedgadh village available in the Village Directorate, Sabarkantha District, Census of Gujarat (2001).

Rajasthan on contract basis for about 20 years. The contract money was nominal initially, but recently it rose steeply. For example, the contract money jumped from Rs.40,000 to Rs. 100,000 in five years between 2004 and 2009.

Cowherd castes did not reside in the village at all. Therefore, there was no objection to a contract with an external nomadic cattle herding group from the beginning. Since the village continued a contract with the nomadic cattle herding group of the same family composition, the human relations of villagers and a nomadic cattle herding group were good. The village had 200 cross-bred cows, 800 buffaloes, 250 bullocks and 200 goats at the time of my survey. The main owners of large-sized livestock were Patidars, the dominant caste of the village.¹⁶

Umedgadh began to make a contract with the nomadic cattle herding group from 2004. Till then, the sheep breeders from Rajasthan used to visit the village for grazing for a short period. Since the livestock breeders of the village grazed their animals daily on the grazing land and on the cultivated land after harvest, there was no room for signing a contract with a nomadic cattle herding group from outside. But, after 2004, most of the livestock breeders of the village shifted to stall feeding, and thus stopped daily grazing. The remaining one Rabari daily grazing household agreed that the village would make a contract with the cattle herding group from outside. At the time of the survey, the village had 50 cross-bred cows, 10 local cows(all possessed by Rabaris only), 250 buffaloes, 50 bullocks, 10 camels and 60 goats. The main owners of large-sized animals were Patidars, the dominant castes, in this village, too. The amount of grazing contract was nominal initially. But, as the amount of grazing contract in this area went up sharply, the contact money of the village was also raised to Rs.8000 in 2009. The village head told me that the amount of contract came to be often revised on the basis of availability of fodder.¹⁷

It was the village head who had contracted on behalf of villagers in both the villages, but the contract had not been registered in a village account book. A half of the amount was paid at the time of contract immediately before the diwali(New Year's Eve), and the balance was paid at the end of contract. The contract amount was used in the public interest such as on meals at a time

¹⁶ Information collected from the village head of Maniyor (September 7,2010).

¹⁷ Information collected from the village head of Umedgadh (September 7,2010).

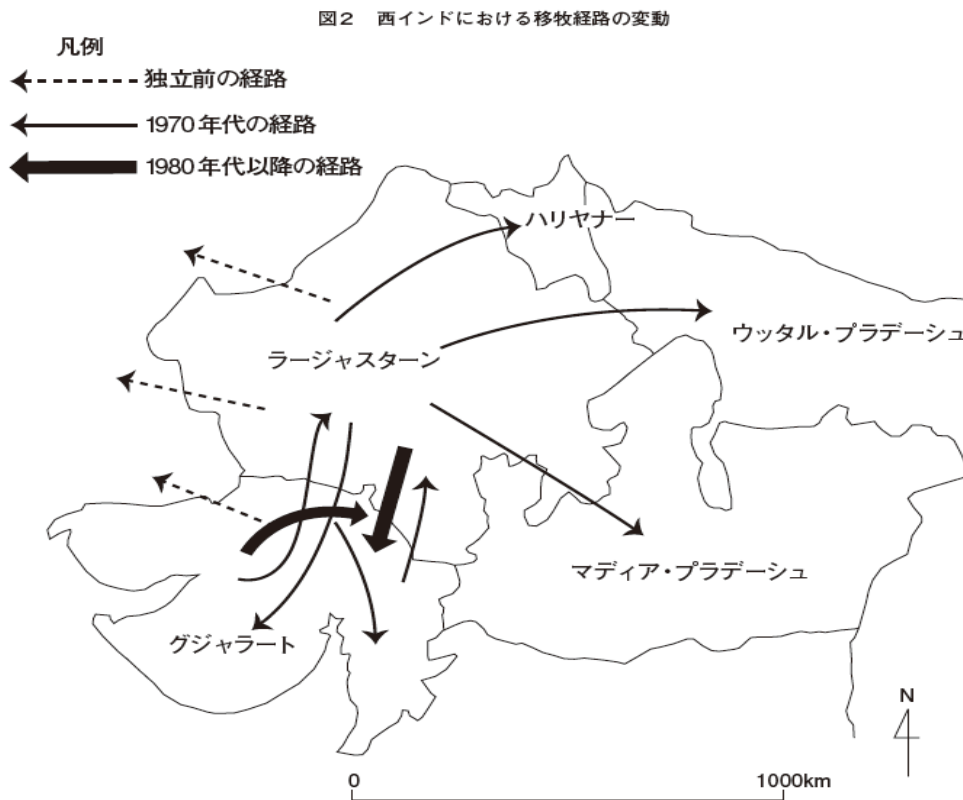
of festivals, and repairs of the temple in both the villages.

2. MIGRATION ROUTES

(1) *Routes before the Green Revolution*

The routes of nomadic cattle herders in western India, as is shown in Fig.2, have changed drastically during a century. The major factors that influenced the routes and patterns of migration were a national border blockade due to the partition, changes in the land holding and land utilization patterns, and increase in environmental burden on vegetation due to increasing number of livestock in the region.

Fig.2: Historical Change in Migration Routes



(出所) Kavoori (1999: 28) の Map II .1 を参考に筆者作成

Before the partition, there was a movement of nomadic livestock(cattle, sheep and goats) herders from Gujarat to Sind, and also from Rajasthan to the rich pasturage area along the Indus(Kavoori:1999, Agrawal:1999, Bharwada & Mahajan: 2006). These migration routes were once cut off due to the partition, but the migration of nomadic livestock herders from Gujarat to Sind actually

continued till the early 1970s.

After the partition, change of migration route took place caused by environmental variation. For example, variation and quantity of grass and trees available as fodder declined in Rajasthan, resulting in a change of migration route within Rajasthan(Kavoori:1999). Degradation of the vegetation occurred in the Banni of Gujarat, too. The Banni, a part of Kutch, was once a centre of reproduction of livestock in Gujarat with rich fodder availability. But environment for animal rearing deteriorated due to the vegetation degradation and rampant growth of harmful alien shrubbery.

Regarding nomadic sheep herding, there were three migration routes starting from Rajasthan in the 1970s (Kavoori:1999, 27-29). The first route was in a northeast direction leading to Haryana and Uttar Pradesh. The second route was towards Madhya Pradesh from the central and the southern parts of Rajasthan. The third route was from the central and the southern part of Rajasthan to Saurashtra(peninsula part of Gujarat), and the central part of Gujarat via Palanpur. There was also a reverse movement of nomadic sheep herders from Saurashtra to the southern part of Rajasthan.

Research of nomadic migration has mainly been confined to sheep herders so far; record of nomadic cattle herders hardly remains. The author collected information about the routes of migration from sample households, their major points of views are shown below.

Firstly, since the southern part of Rajasthan including Udaipur was a rich forest area from the pre-Independence period to the 1950's (after Independence), nomadic cattle herders used to visit there not only from Sirohi district but also from Gujarat. The area was rich in fodder materials such as undergrowth, flowers and other forest products. However, as deforestation continued in a massive scale in this area after Independence, the flow of nomadic herders toward this area stopped.

Secondly, there had been a route toward Haryana via Jodhpur. Since the agriculture of Haryana was well developed, Haryana was a very attractive destination for them with rich fodder availability. However, they stopped moving to Haryana in recent years partly because they felt difficulties to move such a long distance to Haryana, and partly because Gujarat emerged as a new attractive destination.

Thirdly, there were some nomadic sheep herders who still continued seasonal migration to Madhya Pradesh from their native villages.

Lastly, the respondents started seasonal migration to Gujarat since the middle of the 1980s. There had been a movement of nomadic cattle herders from Gujarat to Rajasthan before the middle of the 1980s. This change of migration destination was caused by the development of agriculture in Gujarat while the agriculture in Rajasthan remained stagnant with poor fodder availability.¹⁸

(2) *Present seasonal migration routes in Gujarat*

There are three seasonal migration routes in Gujarat. They are, (1) a route of cattle herders to Junagadh within Saurashtra, (2) a route of nomadic sheep herders from the east of Kutch to Sabarkantha (a district of north Gujarat), and (3) a route of nomadic cattle herders from Rajasthan to Sabarkantha. Though temporally, there was a wave of migration of cattle herders from Kutch and Saurashtra to Kheda (a district of central Gujarat) and further towards Madhya Pradesh in search of fodder during the scarcity years between 1985 and 1987. There is hardly any significant movement of nomadic herders in the southern part and eastern hilly area (tribal area) of Gujarat. Thus, Sabarkantha is one of the important destinations for nomadic livestock herders in Gujarat and neighboring states. There are several reasons why Sabarkantha attracts nomadic livestock herders; these are development of irrigated agriculture, relatively large scale of land ownership, rich fodder availability, establishment of milk sales network and a fairly stable milk prices. Though there are some other pockets such as Mehsana and Banaskantha where both agriculture and milk sales network are well developed, they have other problems like relatively small scale of land ownership and the existence of powerful cowherd castes. As a result of increasing inflow of nomadic livestock herders from within and outside Gujarat, a contract money for grazing in the contracted villages charged by the village authorities under study has risen sharply in recent years; this will be analyzed later.

(3) *Migration routes of sample households*

1) *The case of the Maniyor Group*

Let us examine the actual migration routes of the sample household groups. First of all, we examine the route of Maniyor group. The group left

¹⁸ Information collected from Mr. Unaji of Isra (August 13, 2010).

Dantrai (their native village) for Maniyor(their contract village) in the middle of November. All the five households of the group moved together and reached the first place hard to pass in the southern part of Rajasthan on the 3rd day. They crossed the state border on the 4th day, and reached Ambaji¹⁹ on the 5th day. After taking some rest, they took a downward way with their animals for six days until they reached Khedbrahma, a small town in north Sabarkantha. The road passed through the tribal hilly area. There were heavy traffic during the daytime, but its volume decreased drastically at night. They made camp at the road side at night. No grazing ground was available along the road, and they were alert at night to protect their animals from the gang of thieves. This area was unsafe for nomad cattle herders. Therefore, they sometimes assembled a larger group by recruiting other nomad cattle herders at Ambaji just to make their journey safer in the tribal area. From Khedbrahma it took only two days for them to reach Maniyor via Idar. After all it took 13 days to reach Maniyor after starting from their native village.

They stayed at Maniyor for five months from the end of November to the middle of May. The detail of their life at Maniyor will be explained later. So, let us examine here their route after Maniyor.

The Maniyor group went back to Dantrai in the end of July. They visited various villages for daily grazing during the period of three months before reaching Dantrai. The route after Maniyor was not pre-planned. The leader of the group had certain information regarding crop composition, irrigation situation, land holding patterns, availability of grazing grounds, caste compositions such as farming castes and cowherd castes in the northern and central parts of Gujarat from their own experience in the past. However, these were not sufficient for final decision making. Since the crucial information was whether sufficient area of open-up land would be available for grazing on the day when they stayed at the village, they tried to collect the accurate information directly from the concerned villagers. The most important work of the leader was to collect this information and make a decision on the final grazing course.

¹⁹ Ambaji is a pilgrim centre where the Ambaji temple is located. The altitude is 500 meters above sea level and is located on the top of the hills in this tribal area. Ambaji attracts a large number of pilgrims from all over Gujarat. Ambaji is a religious town with various markets.

The leader of the Maniyor group made a decision to take a route towards the northern part of Banaskantha via Mehsana district. Both Mehsana and Banaskantha districts were well developed in intensive agriculture and milk production. The group stayed at Disachokdi village of Banaskantha for 25 days since they could enjoy stable grazing. Finally, they returned their native village via Abu Road; this return route was different from the outward journey route.

2)The case of the Umedgadh group

The three households of the Umedgadh group left Isra, their native village, in the middle of November. They also needed 13 days to reach Umedgadh. On the way, at Ambaji another two households who were their relatives joined them. Other nomadic cattle herders also joined them. Thus, they moved together as a large-sized group.

The Umedgadh group has been repeating a migration journey for more than ten years. They stayed at Umedgadh for six months, and then moved to various villages in Gujarat for three months. Finally, they went back to their native village as soon as the monsoon started. This time, they stayed at Umedgadh till the first week of May. Then, they took up a route around the Sabarkantha district. They stayed at the Aminpur village for one month as they could well access to the open-up lands. They moved around the non-tribal area of Sabarkantha. Finally, they returned Isra in the first week of August via Khedbrahma and Ambaji.

3.CATTLE REARING IN THE CONTRACT VILLAGE

(1) The hut and corral in a camping ground

In the Maniyor village, the nomadic herders from Rajasthan were allowed to camp at the corner of the farmland. Since the land was non-irrigated, no crops were planted during the winter and summer seasons. In the Umedgadh village, the nomadic herders stayed at the corner of the grazing land near a bridge along the state highway. Although a riverbed was nearby the camp, it had no water during the winter and summer seasons. While, the fence for livestock was prepared individually by each household in Maniyor, the corral was common in Umedgadh. The hut was built near the gate of cattle fence of each household in Maniyor, while the hut was built at equal intervals around the corral in the camping ground in Umedgadh. The structure of the hut was similar between the two villages. The hut had a cooking stove inside, and small

branches were used for pillars. The side and the roof were thatched, and the floor was plastered with cow dung. Since there was no rainfall during their camping period, they generally slept in open on a thin mattress.

The camping ground was selected in such a place where the nomadic herders could enjoy easy access to the national highway and the source of water. Also, they preferred an open ground for security reason. Easy access to and from the national highway was particularly important for them to traffic with their cattle through the highway and to visit markets and other facilities. It was also convenient for a private milk merchant to visit daily their camp to buy milk. Access to the water source was a very important factor for the selection of the camping ground. In both the villages, the water source for human and animals was located within 200 meters from their camp.

(2) The composition of nomadic groups

Of the five households from Dantrai to Maniyor, three households were brothers and the rest two were relatives. Since group has been composed with the same households in the past ten years, they have maintained good relations among the members. The five households from Isra to Umedgadh were also relatives. Two of them have been based at Ambaji for the past three years. They joined the rest three families at Ambaji and moved together to Umedgadh.

A nomadic herders' group was an aggregate of individual five households and had common interests as a group. Let us examine how both aspects were associated. As is shown in Table 1, it was necessary for each household to secure the labour force for grazing and rearing cattle. The common feature of household labour force composition was as follows. Firstly, every household had at least one adult male and one adult female worker. Secondly, the number of cattle was broadly correlated with the number of household labour force particularly with that of the adult male workers. Adult male workers were engaged in grazing, while adult female workers were engaged in milking, collecting cow dung, and cleaning the fence/corral, in addition to their household works including shopping daily necessities from the market. Obviously, both grazing and other cattle related works were essential for rearing animals. This was why nine sample households out of ten were nuclear families centering on a husband and a wife. The rest one household was a joint family with two married couples.

Table.1: Labour Force & Cattle by Household

group	Sl No. of Household	Persons	Male		Female		Male		Female		Cattle		Leader/ Sub-leader
			Adult	Child	Adult	Child	Main Worker	Sub Worker	Main Worker	Sub Worker	Cows	She- buffaloes	
Maniyor group	1	6	4	0	2	0	4	0	2	0	100	0	Leader
	2	3	1	1	1	0	1	0	1	0	30	0	
	3	3	2	0	1	0	2	0	1	0	100	0	Sub-leader
	4	3	1	1	1	0	1	1	1	0	40	3	
	5	5	1	1	1	2	1	1	1	1	60	0	
sub total		20	9	3	6	2	9	2	6	1	330	3	
Umedgad group	6	5	1	2	1	1	1	0	1	1	40	2	
	7	4	1	1	1	1	1	0	1	1	45	2	
	8	4	1	1	1	1	1	0	2	0	50	0	Leader
	9	2	1	0	1	0	1	0	1	0	40	1	Sub-leader
	10	4	2	1	1	0	3	0	1	0	60	1	
sub total		19	6	5	5	3	7	0	6	2	235	6	
total		39	15	8	11	5	16	2	12	3	565	9	

(source) The author's survey(2009-2010)

In this survey, people over the age of 20 were referred to adults. But, actually, many children were engaged in labour. For example, male children over the age of 15 joined grazing, and female children over the age of 10 helped looking after cattle and household works as supplement workers. Also, these girls were looking after their small brothers and sisters. Those children who were nothing to do with labour were six only(4 male and 2 female children). Notably, all of their ages were less than seven.

Among the four sample households some family members remained in their native village of Rajasthan. For example, in No.1 household three members remained in the native village. They were a married couple of elder son and the wife of second son. The elder son, who studied up to the 12th standard, was handicapped and engaged in running a grocery shop. In No.6 household, a son of 17 year old remained in the native village to continue his study in the 12th standard. In No.8 household, two sons remained behind for schooling. In No.10 household, one son remained behind for schooling. Those unmarried students who remained behind were looked after by their relatives in their native village.

Those who joined the nomadic groups under study were all illiterates. Literates were confined to five persons who remained in their native village for

schooling and other purposes. Notably, literates were all males without any exceptions.

The leader and sub-leader were chosen by the participants of the group before leaving for the contract village. To cope up with a big risk in a nomadic cattle herding life in respect of the maintenance of safety and fodder, the leader was asked for such abilities as information-gathering, bargaining, and dispute settlement. The responsibility of the leader was so heavy since his decisions affected the very existence of the group. The sub-leader was expected to support the leader.

The eldest son (35 year old) of No.1 household, which had a large number of cattle, acted as a leader, and the head(55 year old) of No.3 household supported the leader as a sub-leader in the Maniyor group. A difference of the number of cattle among the households was small, the head(50 year old) of No.8 household acted as a leader and the head(30 year old) of No.9 household supported the leader as a sub-leader.

(3) Labour pattern by sex

1) Male labour

Main labour of the male workers was grazing and milking during their stay in the contract village. There was no difference in the type of work between the two groups. Their general labour schedule was following. They waked at around 5:30 a.m. After defecation they took tea and started milking at around 7 a.m. It took nearly 10 minutes to milk per head. Since each household had 10 to 15 cattle in milk, it took one to one and half hours to complete milking task. They had rotlo(a thick bread made of wheat or bajri) and milk as a breakfast at around 9 a.m. At around 10 a.m. they opened the gate of the fence/corral. Hungry cattle got out of the fence immediately. Milking was done individually by household, but grazing was organized jointly as follows.

All the cattle of the nomadic group was divided into four groups such as (1)cows(three years and above), (2)she-buffaloes(three years and above), (3)calves and buffalo-calves(one to two years of both sexes), and (4) calves and buffalo-calves(less than one year of both sexes). Cattle of the 4th group(less than one year) remained in the fence/corral of each household because they were too young to graze. Grazing was organized for the rest three groups separately. The reason of separation between the 1st group(cows) and the 2nd group(she-buffaloes) was that she-buffaloes walked much slower than

cows. The 3rd group(one to two years) was also separated from the adult cattle to avoid suckling during the time of grazing in addition that they walked slower than the adult cattle. A setup of different grazing course by group was effective in preventing over-grazing in specific grazing yard and maximizing the intake of fodder of their cattle as a whole. Notably, economic consideration worked for the setup of grazing course by group, and the grazing yard with rich fodder basis was allotted for cows and she-buffaloes in milk. Labor for grazing was arranged group-wise so that an adult male and a few assistant could graze together.

It was the responsibility of the leader to finalize the grazing course by cattle group. The leader visited the residential area of the villagers daily at seven in the morning to collect information on whose farmland would be open up that day and next coming day. Based on this information, the leader decided the rough plan of grazing. When the leader could not get information in the morning, he used to direct the grazing course to the workers on a mobile phone as he collected the information later. They introduced use of the mobile phone as a means of communication three years ago.

They had lunch at around one to two p.m. in the afternoon. They carried with them lunch, coarse sugar(gur), refined sugar, tea leaf wrapped in a small cloth, drinking water in a water bottle, and sticks for grazing work. Their lunch was so simple with a thick bread(rotlo) oiled with ghee and a piece of onion only.

They watered their cattle at a drinking fountain of the village at around 3 p.m. Then, they prepared tea and took some rest while their cattle relaxed besides them under the shade of trees.

They went back to their camping ground and kept their cattle in the fence/corral at 5 p.m. in the evening. They gave concentrated feeds to cows and she-buffaloes in milk. The amount of concentrated feeds given to each cattle varied according to their milk yield. At 5:30 p.m. they milked again, and the work was completed by 6:30 p.m. The yield of milk in the evening was much lower than that of the morning. Then, they took some rest and relaxed their bodies that were so exhausted physically and mentally during grazing.

They had dinner at around 8 p.m. at night. Generally, they ate a thin bread, ghee and milk. Occasionally, a potato curry was prepared. They started sleeping outside near the gate of their cattle fence at around 9 p.m. at night.

The labour pattern during the return way to their native village was

different from the labour pattern during their stay at the contract village as follows.

Firstly, they had to start keeping night watch particularly because there was no facility of fence/corral available for them during their return way. Therefore, keeping night watch was imperative for them to safeguard their cattle from stealing and to prevent their cattle from eating standing crops around their camping corner. Adult male members, who grazed in the day time, were so exhausted that they were allowed to take a nap till midnight. It was the task for those women and elderly male members who did not take part in grazing to keep night watch at night but till the midnight only. After the midnight till 5 a.m. in the morning, adult male members kept night watch by rotation. One rotation was for about two hours. All the five household members positioned at night at regular intervals around their cattle that were put in the centre of the camping ground.

Secondly, the number of milking was reduced from two times(morning and evening) to one time(morning only) a day. Though concentrated feeds have been given continuously to the cattle in milk, the intake of fodder through grazing decreased drastically, resulting in a decline of milk yield. The same milk merchant kept on visiting their temporary camp to pick up milk daily in the morning. They kept in touch with the milk merchant on the mobile phone and reported their whereabouts every day.

Thirdly, the grouping for grazing was reorganized, and the number of cattle groups was reduced to two only. One group was composed of adult cows and buffaloes. The other group consisted calves and buffalo-calves. In this reorganization, calves and buffalo calves at the age of two years were included in the former group.

2) Female labour

Women got up at 5 a.m. in the morning. They soon prepared tea. They occasionally helped the work of milking from 7 a.m.; however, the most important work for them was to prepare breakfast and lunch for adult male members during this morning time. The main food item was thick bread for both breakfast and lunch, sometimes supplemented with a vegetable curry in the lunch of female members. They also prepared ghee every third day in the morning. They were present when the private milk merchant visited their camp to pick up milk at 8 a.m. At 10 a.m., their cattle left for grazing. Soon, the female

members started collecting cow dung from inside their fence/corral. They scraped off cow dung from the ground and put them in a tagara(a bowl-shaped iron container). They carried it on the head and dumped at a common storage place outside. Almost all the adult female members and some female children were engaged in this work. It took nearly three hours to complete the work when the number of cattle in the fence exceeded 100. It was a tough work for female members as this needed physical power and tested patience. Villagers visited the storage site with a tractor to buy cow dung twice a week. One tractor of cow dung fetched between Rs.800 and Rs.1000, and the receipt was distributed among the households in proportion to the number of cattle owned by each household.

At 1 p.m. in the afternoon they gave their calves fodder and water. After this work, they had lunch. Without relaxing after lunch, they started carrying water in a plastic container from the nearest water source. It took 15 minutes for one return trip. They worked for one hour for fetching water. They washed clothes near the water source. Then they started preparing papdi(one kind of concentrated feed made of cotton seeds) mixed with water at around 3 p.m. in the afternoon. At 5 p.m., as soon as their cattle returned to the camp, they helped pushing their cattle into the fence and fed the concentrated feeds to the milking cows and she buffaloes. While the adult male members were milking, the female members prepared tea for them. Then, they started preparation of dinner and provided thick bread and milk to their family at 8 p.m. After dishwashing, they put their children to sleep. At 10 p.m., all the adult members went to sleep outside on a thin mattress. Thus, all the female tasks including cattle related works were organized basically for the individual benefits of each household while they stayed in the contract village.

The labour pattern of women was also different on the return way to their native village. For example, they did not collect cow dung from their camp. Another difference was that women also took part in keeping night watch as explained earlier.

4. CUSTOMARY RIGHTS FOR GRAZING

In the socio-economic change of recent years, the nature of customary rights for grazing has also changed a lot. Since pasturage has been performed both on the common land and the private post-harvest farmland, let us examine the change one by one.

The most important visible change of the commons is its declining in size. The commons includes barren land, and areas around tanks, railway tracks, roads and canals. Due to the influence of commercialization and urbanization, commercial complex, factories and residential area have been developed in rural areas, too. This change resulted in an absolute decrease in the area and quantity of available resources for grazing. Moreover, the common property land resources within the village also decreased overtime due to illegal encroachment of grazing land and farm roads (Jodha 2001; Iyengar 1989). The commons are on the brink of deterioration by excessive grazing due to increase in human and livestock population.

On the other hand, the post-harvest farmland increases its value as a source of fodder owing to the development of intensive agriculture, rising irrigation level, land productivity, and land utilization ratio. Moreover, many farmers are shifting the mode of cattle rearing from daily grazing to stall feeding. This trend also heightens the value of post-harvest farmland as a source of fodder particularly for those who depend on grazing.

In the midst of the above mentioned socio-economic change, some villages of the study area (North Gujarat) started leasing-out the exclusive right of grazing both in the commons and post-harvest farmlands to the nomadic livestock herders from outside. Umedgad and Maniyor are two such villages. Common features of the two villages are the following. Firstly, the dominant farming caste (Patidars in both villages) had strong political power. Secondly, the mode of rearing cattle among farmers has already shifted to stall feeding. Thirdly, the village authority could easily obtain concurrence from the cowherd castes (Rabaris) in the village mainly because they were in minority with less negotiation power. It would have been difficult for the village authority to obtain consensus from the cowherd castes if a large number of cowherd castes was engaged in grazing in the village. In the long run, the lease-out contract of grazing land will be more common in the area under study because the stall feeding will continue to be a dominant form of cattle rearing among farmers in many villages.

This new phenomenon of leasing out of grazing rights to outsiders takes place amid a drastic social change in the relations between farmers and cowherd castes in the local society. Previously, the local cowherd castes used to look after the rearing of farmers' calves until their delivery under such contract. It was also a common practice that the local cowherd castes took the

cattle of farmers for daily grazing under the Jajmani system²⁰. Farmers were also benefitted by the support of the local cowherd castes for the services of their bull and for the advice and treatment when farmers' cattle got sick. The most important compensation for the local cowherd castes was to maintain the customary rights for grazing their cattle in the commons and post-harvest farmlands. The local cowherd castes were also benefitted by selling milk and ghee to the villagers. However, the close ties and relationship between the local cowherd castes and farmers has collapsed due to development of stall feeding, the change in livestock composition towards crossbred cows and buffaloes, the diffusion of artificial insemination, and the development of a milk producers' cooperative. These changes led to trend of leasing out the grazing rights to the outsiders.

The leasing out of grazing rights for contract money resulted in serious damages to the local cow herders. Earlier, the customary rights for grazing have been open without charging money not only to the stakeholders of the village but to the local cowherd castes in the area. Although priority was generally given to the cowherd castes of the village, the grazing rights were not regarded as exclusive rights and accordingly the livestock herders from outside were also allowed to stay and graze their animals in the village if their stay was short.

The leasing out of grazing rights for contract money to outsiders gave a shock to the local cowherd castes because their customary grazing rights have been restricted without their consent. Notably, this was accompanied with a serious socio-economic change to the local society. As a part of this change,

²⁰ The jajmani system is essentially a village system of division of labor based on client-worker relationships that entail the exchange of commodities and services among the agricultural, artisan, and service castes. Certain artisan and service castes, employed on an individual and hereditary basis by farming and land-owning families received grain after the harvest and some money as reward for the commodities and services provided. The artisan and service castes called the farming families who were their patron 'jajman' and the farming families called those who performed services 'kamin'. Still in some parts of Gujarat the jajmani system continued to work between farmers and cowherd castes; the latter community graze the cattle of the farmers as a traditional right and receive a reward in the form of grain. For details, see Shinoda(2005), pp.35-36.

farmers started imposing some kind of free labour on local herders in return for allowing them to graze in the post-harvest farmlands. The typical free labour was in the form of removing cotton sticks from the field and loading agricultural products in a tractor trailer. According to the local cowherd castes, it was the herders from outside who had initially started providing this free labour just to please farmers and get their approval of grazing in their post-harvest farmlands. This trend started a few years ago. Initially, it was an isolated case. However, this free labour began to be imposed on the local cowherd castes in a very short time due to a growing competition between the local cowherd castes and the outsiders for grazing land. The amount of contract money for grazing also increased sharply in the past five years. There were some cases that the local cowherd castes protested against free labour, however, these protests were crushed completely by the local farmers by imposing a social boycott against the cowherd castes. Since the farmers jointly prohibited grazing of their post-harvest farmlands, the local cowherd castes had no other options but to surrender.

Conclusion

This paper dealt with the changing aspects of socio-economic relations among the cattle keepers in north Gujarat based on the case study of nomadic cattle herders from Rajasthan. The major findings of this paper are the following.

Firstly, the routes of migration of livestock have been changed drastically during the past century caused by the blockade of the border after the partition, deforestation, and regional disparities in agricultural development. In North Gujarat particularly, the agricultural development was the most important factor that attracted nomadic cattle migration from Rajasthan in recent years. Relatively large land holding patterns and sparsely populated cowherd castes in North Gujarat were also the pull factors for the nomadic herders for seasonal in-migration.

Secondly, the paper analyzed the labour division and organization within the nomadic cattle herding groups during their stay in the contract village as well as during their journey from and to their native village. When they stayed in the contract village, the household was a unit of labour organization for their dairy and household works except the arrangement for grazing in which three groups were formed according to the breed and age of cattle without any

consideration to the owners of animals. However, the joint work as a group emerged as the most essential and necessary work for the benefits of all the members during their round trip between their native and the contract villages. The joint work was organized to maintain the safety of participants and their cattle. Particularly, it became an imperative duty for all men to keep night watch assisted by some women members. Throughout the period of nomadic migration, the leader assumed a very strong leadership for information collection, various negotiations, and security arrangements. Each nomadic group consisted of relative households, which was a basis for strong unity and leadership.

Thirdly, in the contract villages under study, the contract money increased sharply in recent years. This was a result of increasing competition among the bidders who migrated seasonally not only from Rajasthan but also from the other parts of Gujarat such as Kutch. Interestingly, the contract villages preferred to renew the contract with the same party on the ground that there had not been any serious issues with the party in terms of the manner of grazing and the payment of the contract money. The nomadic cattle herding groups under study had accepted a hike in contract money so far; however, they reported me that this increase had put a heavy burden on their cattle rearing profession.

Lastly, the case study on nomadic cattle herders revealed that the relations among farmers, local cowherd castes and nomadic cattle herders from outside have changed drastically in the recent years. Until the 1980's, farmers were dependent for mating, daily grazing and milk supply on the local cowherd castes. However, this dependence has lost ground after the 1980's as the White Revolution, the Green Revolution, the stall feeding and modern AI technology spread. Farmers, who were the major beneficiaries of this technological change, strengthened their economic and political power in the local society. Contrary to this fact, the socio-political power of the local cowherd castes has weakened. As a result of such social change, some farmers started imposing free labour on herders in exchange for grazing. The shift towards leasing out of the customary rights for grazing to the highest bidder took place in the same context. All these made both the local cowherd castes and the nomadic cattle herders from Rajasthan feel insecure about their social position, not to mention about their cattle rearing.

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