

The Raika represent one of the largest groups of livestock herders in India. Through their innovativeness, flexibility and specialised knowledge, they have managed to thrive in a harsh, semi-desert environment. They have developed hardy livestock breeds and a complex social web that revolves around their animals. But external factors are pushing the Raika to the limits of their resourcefulness and threatening their livelihood with extinction.

The black sheep of Rajasthan

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The Raika or Rebari are one of the largest groups of livestock herders inhabiting the western districts of Rajasthan and Gujarat in India, including the great Thar desert. Their population is estimated to be somewhere between one quarter and half a million people. The Raika were the traditional caretakers of the camel herds belonging to the Maharajahs. When the royal camel establishments were dissolved in the first half of the 20th century, many of the camels passed into ownership of the Raika, who switched to producing camels for the emerging market in draught animals¹. Nowadays, camels are kept by a relatively small number of Raika families, while sheep and goat husbandry is practiced by the vast

majority to service a growing meat market. Rajasthan hosts 20-30% of India's sheep and goat population, and the region produces 40% of the country's mutton and 42% of its wool. About 70% of India's camels are found in Rajasthan, the vast majority of which are kept by the Raika. Although the Raika derive their main income from selling (male) lambs and kids for slaughter, they also sell or exchange dung and wool. Surplus milk is used to make tea or ghee.

The Raika began keeping sheep about 200 to 250 years ago. During this time they have influenced and developed the traits of their sheep by selective breeding and recently by cross-breeding with other breeds. In this way they have developed

¹ Ilse Köhler-Rollefson, "From royal camel tenders to dairymen: occupational changes within the Raikas". In Eds. H Rakish and J Rajendra: *Desert, Drought and Development: Studies in resource management and sustainability*, Institute of Rajasthan Studies, Jaipur, 1999.





The Raika live in the western parts of the Indian states of Rajasthan and Gujarat

hardy breeds that are drought resistant, capable of walking long distances and able to produce lambs for slaughter. The Raika have developed their own system of animal healthcare making use of plant, animal and mineral based remedies, conventional drugs and traditional healers.

Sheep husbandry and specifically breeding are generally regarded as men's domain, but it is really a system dependent on the labour of all members of the household. Often overlooked is the key role women play in terms of food production, maintaining agro-biodiversity, and providing labour. They also offer specialised knowledge in certain areas of animal husbandry and have specific decision-making roles. Raika herds are passed down from father to son. Many generations of Raika took pride in their occupation and were able to make a good living out of sheep and goat husbandry. But young Raika men are not as keen as their forefathers to take up pastoralism. Despite a growing demand for animal products such as meat and ghee, there are several factors that challenge the pastoralist lifestyle. In the past the Raika were able to overcome many bottlenecks and challenges because of their innovativeness,

flexibility and expertise. But now the solutions seem to lie increasingly beyond the reach of the Raika, entangled in a complex mix of local politics, unfavourable national agricultural policies and conflicting interests within the Raika themselves.

A migratory life

Raika sheep and goat herds vary widely in size from 20 to 200 head of sheep and generally a smaller number of goats. Large herds (about 140 head of sheep or more) are taken on migration for two to ten months. Smaller herds remain in the area since the benefits of migration do not outweigh the costs of transportation, food, bribing officials and so on. These herds are taken out for grazing on a daily basis. During the dry season (October-May) sheep are grazed on agricultural and common lands, and in the rainy season (June-September) they are commonly taken to the forest. Most households supplement the herd's feed, especially during the dry months, with straw, maize, soybean, cottonseed, buttermilk, sorghum, millet, ghee and vegetable oil. In the winter, women often collect, grind and boil the seeds of 'Deshi Babul' (*Acacia nilotica*) and 'Angrezi Babul' (*Prosopis juliflora*) as a nutritional supplement for the animals. Despite their migratory lifestyle, the Raika also engage in crop production. Many Raika own or rent a small piece of land for crop production, or sharecrop with others. The primary staples are wheat and maize, followed by sorghum, lentils and vegetables. These crops are used for home consumption or animal fodder, and some may be sold locally.

Breeding strategies

Most households breed their own stud ram or rams, and the Raika follow a very careful selection process, which involves both men and women. They evaluate and inspect all close family members, especially the ram lamb's mother, using a system called *nav guna*, meaning "nine qualities". The mother of the ram lamb is assessed according to several criteria, the most important of which is milk production (see Table 1 on p 14).

The selected ram lamb is given extra care by allowing it to drink all its mother's milk and sometimes supplementing with milk from other ewes or does. The lamb is given oil and turmeric and sometimes ghee, eggs and extra fodder. The Raika restrain their ram from mating during particular months of the year so that lambs are born in or after the rainy season when there is enough forage to graze on². The stud ram is used for about three years, after which it is sold, exchanged or given away. Most households keep more than one breeding ram depending on the herd size. One ram



² Ellen Geerlings, *Sheep husbandry and Ethnoveterinary knowledge of Raika sheep pastoralists in Rajasthan, India*. MSc thesis. Environmental Sciences, Wageningen University, The Netherlands, 2001. www.pastoralpeoples.org

can serve approximately 40 ewes. Ram lambs not suited for breeding are sold for slaughter between 4 and 8 months, and some become devotional rams that are never slaughtered or sold.

Most Raika have observed that breeding with cross-breeds generation after generation results in sheep that become weaker, less productive and less disease resistant. To counter this, the Raika change their herd composition by selling old and sick adult female crossbreeds and start breeding with a *Boti* ram. By backcrossing with *Boti* breed, the herd can again become almost pure bred *Boti* sheep again after some years.

Shifting preferences

The *Boti* breed was abundant until several decades ago. But once people started bringing *Bhagli* and *Dumi* sheep back with them from their migrations, a preference for these large, exotic breeds emerged because they were bigger, fast growing and produced more meat and milk. Slowly the exotic breeds were crossbred with *Boti* sheep and the herd composition changed in favour of the higher-producing breeds. The *Bhagli*, and to a lower extent the *Dumi* breed, enabled the Raika to breed selectively for meat production. This specialisation led to a decrease of the multipurpose *Boti* breed. But over the last decade the Raika have observed that the *Bhagli* and *Dumi* (cross-)breeds do not produce as well as they once did and they have difficulties coping with ongoing drought and disease pressure. As a result the Raika are shifting their preference back to the *Boti* breed. Unfortunately there are now very few pure *Boti* sheep left. This regained interest has been triggered by several recent developments, including long drought periods in the last ten years, overpopulation, increasing disease pressure, decrease in fodder resources and longer migration routes because irrigated fields get in the way of migration routes and do not allow sheep to graze on the stubble.

The *Boti*'s hardiness and drought and disease resistance, good walking abilities and milk persistence are especially important in the dry season and during migration. The multipurpose character of the *Boti* breed is important because it offers a way of spreading risks by generating income from different products. But in areas where there is no lack of grazing land and good access to grazing resources the Raika still prefer the exotics. Personal preferences, aesthetics and family traditions also play a role in determining the breeds that the Raika keep.

Raika breeds and their characteristics

The majority of sheep found in the study area are cross-breeds (*Bhildami*), which originate from three pure bred sheep, namely:



1) The *Boti* ("small eared") sheep (officially known as the *Marwari* breed) has very short ears and its black face, and is a small to medium sized sheep. The *Boti* (cross-)breed is the most abundant breed and is rated best by the Raika for wool quality and hardiness. In times of extreme drought,

heat and fodder shortages this breed is said to have the best chance of survival because of its ability to sustain itself on little and low quality fodder. The *Boti* needs little water and is capable of walking long distances over rough terrain, a quality especially appreciated by Raika who take their sheep on migration. The *Boti* generally yields 50-200 grammes of milk per day during lactation, but it can produce up to 500 grammes under favourable conditions. Wool production ranges from 500 to 1000 grammes per shearing. The *Boti* breed has a relatively short pregnancy compared to the other breeds and generally has one lamb per lambing. The growth rate of the lambs is relatively slow because of low milk production, but ewes go on producing milk well into dry season when other breeds have stopped. This breed produces the highest number of lambs during its life (up to 11) because of short parturition intervals and its long productive life span.



2) The *Bhagli* breed (officially known as *Sonadi*) is the second most abundant breed and originated from the state of Madhya Pradesh. Some 20-30 years ago Raika started bringing this sheep back with them from migration and started to crossbreed it. The

Bhagli sheep is medium to large in size, with long, broad ears and big head. The ears often display ear nodes. The Raika appreciate this breed for its high milk and meat production, and it yields 250-500 grammes of milk during lactation. In contrast with the *Boti* breed, the *Bhagli* needs more fodder of better quality to sustain it. Ewes produce up to eight lambs during their lifetime.



3) The *Dumi* breed is a large sheep originating in Gujarat, and has a cream to reddish to dark brown face with a typical roman nose. It is a big milk producer (500-1000 grammes per day). It also produces good quality wool (though not as good as the *Boti*) being soft, long and dense. *Dumi* sheep

produce 1-1.5 kg of wool per shearing. This breed is especially kept for meat production. This breed is said to be less selective than the *Bhagli*, eating everything that is available during grazing.



Table 1. Qualities that are looked for in a stud ram lamb's mother

	Quality	Explanation	Times cited
1	Milk production	High quantity and quality of milk. Milk persistence is highly valued, as is the quality of the first milk	18
2	Big and strong body	Muscled and meaty backside, indicating meat quality and quantity	16
3	Wool production	High quantity and quality of wool; fine wool is preferred	16
4	Long strong legs	Indicating good walking ability	12
5	Big udder/long spleen	Indicating high milk production and facilitating milking for humans and lambs	8
6	Health, vitality and general appearance		7
7	Black face	Indicating preference for the local <i>Boti</i> breed	6
8	Drought resistant	Ability to cope with low quantities and low quality fodder	6
9	<i>Hej</i>	Indicating mothering qualities of the ewe	6
10	Disease resistance		5
11	Big and healthy lambs		4
12	High growth rate of lamb	Lamb should grow fast after birth, probably also indicating milk quantity and quality of the ewe	3
13	Short parturition interval	Indication high number of lambs during lifetime	2
14	Good characteristics in family members	Earlier generations and family members of ewe should all have good qualities	2
15	Small ears	Indicating preference for the local <i>Boti</i> breed	2
16	Obedience/docile	Easy to handle and manage	2
17	Strong hooves	Indicating walking ability and resistance to foot rot and other problems of the hooves	2
18	Long tail	? (Possibly indicating preference for the <i>Bhagli</i> breed, a relatively high producing breed)	2
19	Dung production	Indicating quality and quantity of dung	2
20	Fast recovery of ewe after lambing		1
21	Short tail	Indicating preference for the local <i>Boti</i> breed	1
22	Easy parturition	No birth complications	1
23	Colour	Personal preference for a colour or colour pattern probably indicating indirectly preference for a certain breed	1

This data was obtained through household and group interviews in which both men and women participated. Six group interviews (averaging 8 people) were conducted. Twelve household interviews were held, typically involving the female and/or male adult of the household, occasionally with another family member joining in.

The Raika do not only diversify within species to cope with ecological conditions and market demands; they also diversify between species in order to spread risks and maximize profit. Keeping mixed herds of goats and sheep offer several advantages. Goats can serve as wet nurses for lambs whose mothers have died and goat meat fetches higher prices than mutton. Goats are more resistant to disease than sheep, survive better on the dry season vegetation of trees and shrubs, and make good leaders for the herd. On the other

hand, sheep have the advantage of producing better quality wool and dung than goats. Sheep can be shorn up to three times per year, while goat hair is only cut once a year. Keeping mixed herds spreads risks, diversifies products and spreads income more evenly throughout the year. In the study area, goats comprise 11%-35% of the herd, which probably maximises the returns. In areas where rainfall is a serious limiting factor for vegetation growth, goats and camels are more popular.



Men and women share the work

Women and men have their own responsibilities and workload when it comes to sheep husbandry. Most women's work and decision making takes place within the house or yard of the household, while men take the sheep for grazing and participate in public meetings that relate to sheep husbandry. Because the contribution made by women is not as visible as the men's, it is often assumed that women do not play a significant part in sheep husbandry, let alone sheep breeding. Gender-based division in labour and decision making varies highly between Raika households. Households exist where women perform all or the majority or all of sheep husbandry related work because men are not available or capable to perform activities relating to sheep husbandry due to illness, alcohol or opium abuse, mental disability, divorce or paid labour.

Women are typically responsible for milking ewes, processing milk products, caring for newborn lambs, collecting dung, cleaning the corral and preparing and giving supplementary fodder and water. Women are often more knowledgeable when it comes to assessing the mothering abilities of ewes and issues relating to milk production, including the persistence and quality of first milk of a potential stud ram lamb's mother. Because they care for newborn lambs they are also very knowledgeable about the character, vitality and health of lambs. Preparing traditional medicines is equally shared by men and women. Typical male tasks include herding, cutting branches for home feeding and applying modern medicines. Cutting wool, administering traditional vaccines to prevent sheep pox, and castration are exclusively men's domain due to socio-religious restrictions. Almost all important decisions are taken jointly between the male and female heads of the household. These decisions include which animals to sell and at what price, disease diagnosis and treatment of sick animals, and ram lamb selection. Women negotiate dung prices with farmers, while men negotiate wool prices.

More than just mutton

Sheep play an important role in social and cultural life. They are offered as dowries, and when a Raika loses a lot of sheep to disease or drought others in his village donate one or more sheep to him for the symbolic amount of 1 Rupee (\$0.02). Sheep are prayed for and play a crucial role in several religious rituals. Before sheep shearing, the Raika perform a ceremony for Laxmi, goddess of money, who they hope will reward them with good wool prices and quality wool. They select some of their



Soni Devi (right) selected this Boti lamb to be her ram lamb because of the Boti sheep's drought resistance and good milk persistence.

best sheep, rams and ewe lambs. These sheep are washed, paint (*tika*) is put on their head, and are given jaggery and coconut while incense is burned. Some sheep are given silver jewellery to wear around their necks. When a lamb is born during the last day of *Poonam* (14th day of each Hindi month when it is full moon) or during *Amavash* (the 30th day of each Hindi month when there is no moon), the lamb is never sold or slaughtered. These *Amar* sheep (male) and *Janri* (female) give status and respect to the owner. The colour black is associated with a local god called "*Kala Bheru*" (black god). Black sheep are rare and are highly valued by Raika, and black wool fetches prices up to five times more than white wool. Wool from the neck and head, which is considered unspoilt and clean, is used to make good luck charms or *dora*. Black sheep are said to protect a herd against death and sickness, and are used in purifying rituals.

What about the future?

For decades the Raika have managed to earn a good income by selling ram lambs, wool and dung. They have been able to cope with harsh climatic conditions because of their knowledge of breeding, migration routes, fodder resources, diseases and healthcare. Their success not only depended on their own efforts, knowledge and skills but also on their good relationship with farmers, forest officers and other governmental employees.

When questioned about bottlenecks related to sheep husbandry, the Raika unanimously cite the shortage of grazing land as a serious threat to their livelihood. The reduction of grazing land has several complex causes. Before the 1970s, The Rajasthan Tenancy Act (1955) and the Allotment of Land for Agricultural Purposes Rules (1970)



safeguarded the interest of the Raika and other livestock keepers by ensuring that certain village lands, such as forests, land around temples, pasture land, and lands covered by water could not be turned into private agricultural land. The Raika are especially dependent on common fodder resources because they own too little land to sustain their animals after harvest. But in the early 1970s, the national government began changing its stance by introducing a new forestry bill that allowed the local village council or *panchayat* to fence off common lands in a village to improve vegetation cover. The village council consists of predominantly upper caste landowning groups that have substantial power over the other (lower caste) members. Decisions taken by the council seldom favour the Raika, since their interests are not shared by other groups. This creates a vicious cycle: being forced into migration because of reduced grazing resources and staying out of the villages for longer periods means that the Raika represent even a less of a force in village politics³.

³ Arun Agrawal, "I don't need it, but you can't have it: Politics on the commons". In: *A Collection of Papers from Gujarat and Rajasthan*, Network Paper 36a, Pastoral Development Network, Overseas Development Institute, July 1994.

⁴ Ilse Köhler-Rollefson, "Organic" livestock production: An option for Raika pastoralists? *League for Pastoral Peoples Annual Report*, Ober-Ramstadt, Germany, 2003.

⁵ League for Pastoral Peoples, *Securing Tomorrow's Food: Promoting the sustainable use of farm animal genetic resources*. League for Pastoral Peoples, Ober-Ramstadt, Germany, 2002. www.pastoralpeoples.org

In addition, Raika society is inherently conservative; it is ruled by elders who are sceptical about change and do not realise the need to adapt to new circumstances and adopt new skills⁴. These elder Raika do not necessarily share or defend the interests of younger Raika pastoralists.

For a long time crop farmers and the Raika were dependent on each other, for the sheep provided the cultivated fields with manure, and in turn the fields provided the sheep with fodder and agricultural by-products. Due to the intensification of agriculture and agricultural policies, more people are switching from traditional rainfed agriculture to irrigated agriculture with the consequence that crops can be grown year round and the fallow period is reduced considerably, resulting in the Raika losing grazing

resources. The human population in Rajasthan is increasing above national average growth rates, and alongside it so is the animal population, especially that of small ruminants. Increases in livestock have overcrowded pastures and other grazing lands, depleting grazing lands and causing soil erosion.

These are but a few of the forces that have been changing the ecological and institutional landscape in Rajasthan. The Raika have not been favoured by any of these changes and are increasingly marginalised. When the Raika are forced to sell their animals there are few alternatives but to take up low paid labour in cities that are already overpopulated. This leads to disrupted families, frustration, alienation and sometimes alcohol abuse and HIV infection. Raika identity is tied to their animals. This distinguishes them from others and gives people a sense of pride, independence and well-being. If the Raika lose their livelihood, valuable breeds and invaluable knowledge will also be lost. As had been pointed out by the League for Pastoral Peoples, "*Local breeds may carry genetic material of immense value. When a breed becomes extinct, the whole world loses some of its ability to react to changing environmental conditions, resist unforeseen diseases, and respond to changes in human dietary preferences. This undermines the food security of the poor – and potentially of us all.*"⁵

Pastoralism provides a livelihood for thousands of Raika families in Rajasthan and Gujarat. They make use of areas that are otherwise unsuitable for crop production. Their sheep and goats' complex digestive systems enable them to convert roughage into products that are in high demand, such as mutton, milk, leather, wool and fertiliser. It is especially important in countries where mainstream policies are not in favour of pastoralism – like India – for likeminded organisations to join forces to convince governments of the importance and advantages of pastoralism. This can be done through regular meetings, symposia or workshops where new insights and research results can be presented. In this way, governments and other organisations concerned will be able to make more well-informed decisions that offer a secure future for the Raika and their animals.

Whether or not the Raika will be able to keep sheep husbandry as a profitable venture will depend as much on their political organisation, unity and ability to clearly articulate their collective interests as on their skills and innovativeness as pastoralists. The goodwill and support of NGOs, government officials, policy makers and international organisations, will be crucial in this respect. 2



Ellen Geerlings spent several months with the Raika preparing her MSc thesis on 'Raika Sheep Husbandry and Ethnoveterinary Knowledge'. Says Ellen, "I'm grateful to the Raika who provided me with their valuable information and tea, to the League for Pastoral Peoples for their support, to Hanwant Singh Rathore for logistical help, and especially to Ramesh Bhatnagar for his

help, patience, translation and good company". Ellen works closely with the League for Pastoral Peoples (www.pastoralpeoples.com) and can be contacted at ellengeerlings@hotmail.com.