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PASTORAL SYSTEM IN SHIGAR / BALTISTAN. COMMUNAL HERDING MANAGEMENT AND PASTURAGE RIGHTS.

MATTHIAS E. SCHMIDT[1]

1. INTRODUCTION

Pastoralism involves an interaction between land, livestock and labour, and is in the case of Shigar (Baltistan) confronted with the challenges of the high mountain conditions of the Central Karakorum such as severe winter temperatures, difficult topography, and meagre seasonal fodder resources. The people of the area have managed to utilize different ecological niches within this harsh environment and established their own specific agro-pastoral system. Their choice of which types of livestock to keep and the means by which they can best exploit different altitudinal and seasonal range resources represent adaptive responses to the high altitude conditions of Shigar. However, although environmental adaption certainly shapes pattern of herd composition and herding movements, pastoralism in Shigar is a complex activity that also reflects a number of other cultural, social and economic factors. Intra- and inter-household cooperation in herding practices as well as community regulations of livestock management are important related aspects.

The aim of this contribution is to illustrate indigenous pastoral practices and seasonal herding patterns and to highlight recent developments of the pastoral economy in Shigar. Since investigations about pastoralism in Baltistan are very limited it seems necessary to explain in detail different aspects of livestock keeping in the area.[2] Although statements within this paper concern the Shigar valley in general, the focus of investigations and their findings is based on the example of Shigar Proper.[3] It serves to illustrate certain aspects of herd composition, herding management and practices as well as types of pastures, pasture settlements and implemented pasturage rights. Recent developments connected

1 The author is indepted to the German Research Council (Deutsche Forschungsgemeinschaft) for its financial support and to Prof. Dr. Eckart Ehlers for his scientific guidance. Special thanks go to Claudia Polzer for her kind cooperation and to Prof. Dr. Hermann Kreutzmann for his critical comments. As always, the author would like to express his gratitude to the people of Shigar for their hospitality and contributions to this work.

2 MACDONALD (1994; 1998a) presents detailed information about animal husbandry in Askole village (Braldo); HEWITT (1991) for Chutrun (Bashe), and JENSEN (1997) for the Thale valley, briefly cover pastoral aspects.

3 Fieldwork was carried out between March and November 1997 and in summer 1998, mainly in and around Shigar Proper.

with the construction of new roads and the increasing mountaineering tourism in the area poses the question of how these changes affect the implemented agro-pastoral systems. It should be looked at to what extent the new facilities for education, employment and income, as well as the introduction of farm machinery, improved crop varieties and breeding stock influenced the pastoral structures. The new possibilities and challenges thus not only lead to a change of labour division between households and household members but also of appearance and reputation of pastoral work.

2. ECOLOGICAL AND SOCIO-ECONOMIC CONDITIONS

Shigar is situated just north of Baltistan's district capital Skardu in the Central Karakorum. Its major water course, the Shigar River, is formed by the confluence of the Braldo and Bashe Rivers, and is a tributary to the Indus River. The three valleys: Braldo, Bashe and (lower) Shigar are administratively connected to the Shigar subdivision with its central place at Shigar Proper.[4] Whereas Braldo and Bashe, extending roughly from 2,500 m to 3,000 m, are narrow valleys, with villages located on terraces several metres above the rivers, the lower Shigar valley is relatively wide and its villages are situated on alluvial fans. All villages or village clusters form oases in the semi-desert environment.

The combined mountain agriculture still forms the main economic basis for the valley's population. The arable land depends entirely on irrigation. Apart from a few exceptions, land holdings are very small,[5] therefore many households barely meet subsistence needs. Main crops are wheat and barley. A second crop, usually buckwheat or sometimes millet, is possible following barley in regions up to 2,600 m. Main crops of the single cropping zone, the upper Braldo valley, are wheat, buckwheat and peas. Numerous fruit trees, especially apricots in great variety, are grown in gardens (*tshar*)[6] or along irrigation channels of the lower Shigar valley. Gardens are fenced with stone-walls and thorny hedges against sheep and goats while the arable fields are unprotected. Irrigated and stone-walled meadows (*ol*) are situated at the edge of the cultivated area, mostly at steep slopes or at places with poor soil quality. These fields are private property and kept mainly to supply fodder for the livestock. During spring and summer they are irrigated every ten to twelve days. The meadows are rarely manured by dung spreading, but by grazing animals, mainly in the autumn.

In addition to the cultivated areas in the valley floors each village has affiliated pasture areas at different elevations. The most valuable of these com-

4 Place names are often used both by the local population and in the literature, in a multi-level and inconsistent way. In the following, Shigar refers to the whole area – Braldo, Bashe and lower Shigar valley. The central place is here called Shigar Proper; it comprises several villages of the two Union Councils Markunja and Marapi.

5 The majority of households possess between 10 and 20 *kanal* land (1 *kanal* = 505,86 m^2), i.e. a household rarely owns more than 1 ha.

6 Terms in Balti language are given in italics.



Fig. 1: Shigar, Bashe and Braldo valleys with affiliated summer pastures

mon grazing lands are summer pastures (*bloq*), located on the floors and slopes of the side valleys (s. p. 129) between 3,200 and 4,600 m. Permanent summer grazing camps or pasture settlements used for shelter for men and animals, and for dairy production are situated at altitudes of about 3,200–3,800 m. Fig. 1 shows the main villages of Shigar and the approximate location of the affiliated pasture areas.

Like in other regions of the Karakorum a prominent feature of climate and vegetation patterns in Shigar is the great variation referring to altitude and aspect. A major cause of this is the significant difference in precipitation, humidity and the varying periods of snow-coverage. The vegetation of the lower subalpine areas is influenced by arid to semi-arid conditions, whereas it is primarily humid for the plants of the alpine and sub-nival level. Consequently, Shigar provides pastures at several distinct altitudinal levels.

The heterogeneous moraine and gravel base of the valley floor and lower slopes show no real plant societies while *Artemisia* (*burtse*) is the dominant plant on the extensive, steep valley slopes. These *Artemisia* steppes offer rangeland grazing that is especially useful to sheep and goats in spring. Different shrubs and bushes are predominant along water courses. Juniper trees (*shukpa*), the main source of firewood, occur around 3,000 m in limited number but form closed forests on northern-aspect slopes between 3,300 and 3,900 m. Above 3,600 m there is good summer grazing in the large expanses of subalpine and alpine grassland on the floors and slopes of the wide, glacier-carved upper valleys. The grassy vegetation with a large number of species shows an exposure-dependant differentiation as well with more or less open forb-rich steppes on sun-exposed slopes, while closed sedge mats are confined to shady areas. Small willow bushes (*bloqlhchang*) in particular cover northern slopes between 3,700 and 4,200 m, mainly near or along water courses. In the high alpine and subnival zone at altitudes of about 4,600–4,800 m patchy and sparse alpine vegetation forms final grassy seats that are accessible only in July and August (cf. HARTMANN 1968, 1972; MIEHE et al. 1996: 199–200).

3. COMPOSITION OF HERDS

Hyaq, Crossbreeds, and Cattle

Pastoralism in Shigar is mainly based on the herding of different varieties of cattle. A special feature of Balti pastoralism is the cross-breeding. In order to adress this complex aspect of herd composition certain terminological points need to be clarified. The Balti word *hyaq* (yak) refers strictly only to the males of the species *Bos grunniens*, the female yaks being called *hyaqmo*. Similarly, the females of the hybrids which result from the extensive interbreeding of yak with the common domestic cattle (*Bos taurus*) (referred to here as 'common bull' (*xlang*) and 'common cow' (*ba*)) are marked with the suffix *-mo*. The detailed nomenclature for the different generations of hybrids is given in Tab. 1. Howev-

er, the terms for the F3 and later generations are little used, partly because ancestry of such an animal were not known or remembered by the informant, but mainly because there are fewer of them, resulting from a decline in fertility.

Table 1: Different generations of cattle hybrids in Shigar

	Parents (male)		(female)	Offspring (male)	(female)
	hyaq	x	*hyaqmo*	*hyaq*	*hyaqmo*
F1	*hyaq*	x	*ba*	*zo*	*zomo*
F2	*hyaq*	x	*zomo*	*gar*	*garmo*
F3	*hyaq*	x	*garmo*	*gir*	*girmo*
F4	*hyaq*	x	*girmo*	*hluk*	*hlukmo*
F1	*xlang*	x	*hyaqmo*	*zo*	*zomo*
F2	*xlang*	x	*zomo*	*tol*	*tolmo*
F3	*xlang*	x	*tolmo*	*baju*	*bajumo*
	hyaq	x	*tolmo*	*tolzo*	*tolzomo*

Source: Own survey 1997; cf. Afridi 1988: 283.

The presently kept *hyaq* can be described as a semi-domesticated form of the wild *hyaq* that is indigenous to the Tibetan plateau. They are noted for their heavy coat that ends in a distinctive fringe of long hair on the legs and flank and are complemented by a bushy tail. *Hyaq* are neither used as beast of burden for carrying loads nor as draught animals for ploughing and threshing purposes as they are in some other high-altitude regions.[7] A reason for the latter can be seen in the fact that *hyaq* are said to be unable to withstand the summer heat of the deep valleys. On the other hand, the common bulls and cows kept in Shigar are small and cannot tolerate the altitude of the upland pastures. Resulting from this, the hybrid husbandry that has a long tradition in the region is practised with the aim to produce animals with more advantageous qualities in regard to fitness, environmental adaption, and milk yield. The most common hybrids, *zo* (female: *zomo*), a mixed breed of *hyaq* and cow (Tab. 1), seem to be particularly adapted to regional conditions. The male *zo*, larger than the common bull but easier to handle than the *hyaq*, is mainly used for ploughing and threshing purposes (Photo 1). As tractors and threshing machines become more and more common in the valley, the necessity of acquiring *zo* is decreasing. They are often slaughtered or sold before reaching maturity. The female, known as *zomo*, is highly valued, being reputed to yield more milk than a *hyaqmo*, but of nearly as high quality. The hair of *zo* and *zomo* is black and short except on the flank and tail where it forms a long shaggy fringe. Features of the tail, horn and fell serve as signs of identification. After four generations the specific features become indistinct so that the farmer cannot give details about the origin of the animal (cf. Friedl

7 Cf. Kreutzmann (1996: 35) for the Pamirs; Mann (1986: 106), Osmaston et al. (1994: 201) for Ladakh; Stevens (1993: 149) for Khumbu (Nepal).



Photo 1: Ploughing with *zo* in Shigar (6. 3. 97)

1983a: 71). All the female hybrids are fertile with decreasing fertility from one generation to another while all the males are sterile.[8] Consequently, many farmers have difficulties in maintaining their herd size, let alone producing surplus stock for sale. Since *zo* and *zomo* are preferred, the other types of the above mentioned generations of hybrids are not very common in Shigar.

While common bulls are few, cows are kept by most households. Due to their small size they can also be fed by poorer households with limited winter fodder resources. Cows are valued for their milk, and are important for cross-breeding. Furthermore, the manure of all cattle is regarded as an important resource particularly for fertilizer which is, for some households, the most crucial contribution of livestock to the domestic economy. Additionally, some cattle dung is dried and used as fuel during winters. A common occurrence in autumn is people collecting manure from the stock grazing in the open field area.[9]

8 Osmaston et al. (1994: 207–212) state for Zangskar, a similar environment, that fertility of cattle and hybrids in general is relatively low, with females calving only in alternate years or even less.

9 Dung is rarely carried down from the high pastures as is practised in Ladakh (cf. Friedl 1983b: 244).

Goats and Sheep

Goats (*rabaq*) and sheep (*lu*) have also long been a component of livestock-keeping in Shigar. Both are valued for their hair and wool, their meat, and their manure. Goats are also raised as a main source of milk supply. The goats' hair is cut twice a year (in spring and autumn) and spun on wooden spindles into long strings. The spun strings are used for weaving long and broad strips which after sewn together make a rug (*chari*). Women's caps (*nating*) are also made of goat hair. Sheep are sheared in spring and their wool is used for making blankets (*kar*) or caps. In former times, the people of Shigar weaved rough clothes such as long coats, shawls and footwear by themselves. A special type of carpet is also made of sheep wool by beating and felting it. Usually shearing, spinning and weaving of goat hair is men's work, while the similar work connected with sheep wool is done by women. Like goats, sheep are sacrificed on special occasions like Moharram, Id-e-qurban and other Muslim holidays. Hides of sheep and goats have been manufactured as footwear or leather bags, but are mostly sold to traders nowadays. Goats and sheep are occasionally sold when households are in need of cash.

Donkeys, Horses, and Poultry

Today, donkeys (*bongbu*) and horses (*hrta, rgunma*) are not very common in Shigar. Since the valley has been connected by a jeep-track with the next major center Skardu, and most goods are carried by jeep or tractor, these load animals have become unnecessary for this purpose. The few donkeys of Shigar are kept for carrying manure to the fields or transporting down dairy products from the high pastures. Today, and probably also in the past, most farmers do this kind of work by themselves without using any load animal. One reason for the small number of donkeys is the lack of fodder to feed them on during winter. They are usually kept at the villages during the summer, so that they are readily available for use. Today, approximately ten to twelve horses are held in Shigar and are only used for playing polo which has always been held in high esteem.

Poultry (*biapho, biango*) is mainly raised for self consumption and fowl birds are only kept in small numbers. Today there are two poultry farms in Shigar that sell chicken and eggs to shopkeepers. In addition, fowl and eggs brought by traders from Skardu, are also sold in the valley. Chicken and eggs are thus rare commodities, but are offered to guests when no other meat is available.

Herd and Flock Size

Up to this day pastoralism in Shigar is carried out as a subsistence and, only in rare cases, partly as a commercial activity. Mixed stock herds are the common pattern of livestock ownership. Almost all stockowners keep cows or goats as a

source of dairy products for household consumption. A household's wealth is traditionally judged primarily by the size of its landholding and the number of livestock, while both are interdependent. Households who own more than thirty head of mixed goats and sheep and as many as half a dozen *zo* or *zomo*, are considered extremely well off. However, excessive stock holdings are limited by the need to provide winter fodder, and only a few households can afford the land and labour required to maintain larger herds.

Tab. 2 shows estimates of the livestock owned by an average household in different parts of the area. Although there are some uncertainties in the figures, some points stand out clearly: The number of livestock kept on average by a household in the different Union Councils reflects roughly the size of pasture land that is at the disposal of the villages. It is highest in upper Braldo and Bashe due to their extended pastures while the lowest rate is given in Gulabpur where there are limited grazing grounds in the steep mountain chain between Shigar and the Indus River. The total pasture area of Shigar Proper is quite large but in connection with the high population number the grazing area per capita or household is relatively small.

Characteristic for large herds is the Bashe valley where much butter is produced by the local farmers. Butter from Bashe has been sold for a long time or exchanged for dried apricots in Shigar Proper. In all parts of Shigar, female cattle are kept in twice as high numbers as male ones. Most households keep less than two adult male cattle, only in Braldo and Bashe is the number significantly higher. The major reason is given by the fact that ploughing and threshing is done in the lower Shigar valley by tractors while it is still carried out with *zo* or bulls in Braldo and Bashe. Goats are raised in larger numbers than sheep since they are not only a major supplier of dairy produce but can cope better with the meagre fodder conditions, especially in spring. Other (modern) reasons for the regional differences in herd size such as the possibility of selling animals to expeditions or the consequences of non-farming employment are discussed later.

Table 2: Herd and flock size per household in Shigar (by Union Councils)

Union Council	Male bovines (hyaq, zo, bulls)	Female bovines (hyaqmo, zomo, cows)	Goats	Sheep
Marapi	2.3	4.6	10.5	6.2
Markunja	1.8	3.1	6.2	2.8
Churka	1.5	3.8	7.2	9.0
Alchori	2.2	6.5	8.4	8.0
Dassu	1.6	3.0	6.1	5.9
Braldo	5.6	10.1	13.8	16.1
Gulabpur	1.2	4.4	7.4	3.2
Tisar	2.6	6.8	6.6	5.3
Bashe	4.0	10.6	15.2	7.2

Source: Own survey, 1997–98.

4. ORGANISATION OF PASTORALISM IN TIME AND SPACE

The Annual Cycle of the Agro-Pastoral System

The organisation of pastoralism in time and space is closely connected with agricultural needs and is dependent on the seasonal availability of fodder for the livestock. For instance, agricultural tasks like ploughing and threshing demand the availability of cattle's traction power at specific times and places. Or to use another example, it is necessary during the growing season to keep livestock away from cultivated areas to avoid damages in the crop land. On the other hand, there are insufficient grazing grounds near the villages and productivity as well as accessibility of different pastures vary during the year which leads to the necessity of a seasonal movement of livestock through an elevational range of pastures to allow the animals access to diverse fodder resources. The migration cycle that may vary from village to village should be illustrated by the example of Shigar Proper (cf. Fig. 1). All high pastures of Shigar Proper are localized in the connected side-valley, called Shigar Nalla by the local population.[10]

The best starting point for tracing the annual migration of herds may be mid-winter, because only at this time are all livestock, apart from some *hyaq*, located roughly in similar places – in the stables of the main villages. On sunny days in late winter and early spring, goats are led out to graze on the slopes near the villages where they find *Artemisia*. In March and April, stockholders of Agepa, Astana, Shopa and Ghzoapa take their herds on daily movements to transitional pastures in the Shigar Nalla – Kaniskar, Yulba and Lhchaxmachan (Fig. 2). These privately-owned meadows are very limited and are not sufficient for the livestock of all villages of Shigar Proper. When the fields are ploughed in March, which is done by tractors, or with the help of *zo*, in case of small and badly accessible fields, *zo* are driven to the high elevation pastures (*bloq*) where they graze unattended. Sheep and goats are moved up valley in May. All animals are collected at Kaniskar village-by-village and given to a few men who take them up to the *bloq*. On daily movements the flocks are driven to high elevated meadows following the receding snow line to as high as 4,500 m. The timing of herding in different parts of the alpine pastures may vary, reflecting perceptions of the value of grass in different places. Cattle and *zomo* are moved up to the *bloq* in mid June by the stockholders themselves.

The newly born calves, lambs, and kids as well as one or two lactating animals per household for the daily milk supply are retained in the villages during the whole summer. They are fed with fresh grass and weeds removed from the fields by women. The village community or in some cases the village elderly (*tsharma*) select a village guardian (*lura*) who protects the crops to ensure that no animal enters any field until the fields are harvested. The *lura* usually serves for

10 In the vernacular Balti, this side valley is called Shigar Phuchaph, while the Urdu form Shigar Nalla (*nālā*) is more common today. On most maps it is wrongly called Bauma Lungma, a name that is not used by anyone of the area today.

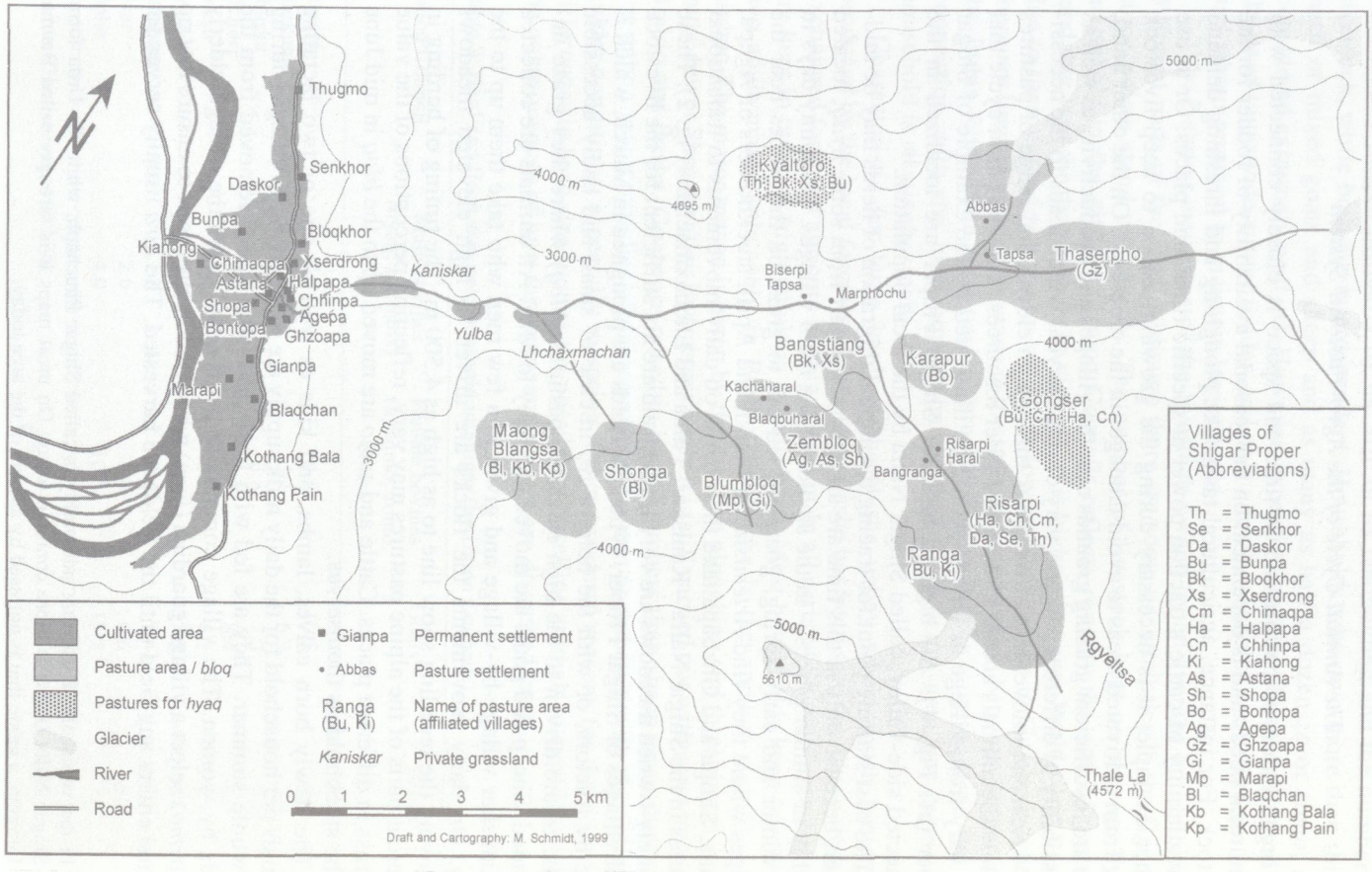


Fig. 2: Villages and affiliated pastures of Shigar Proper

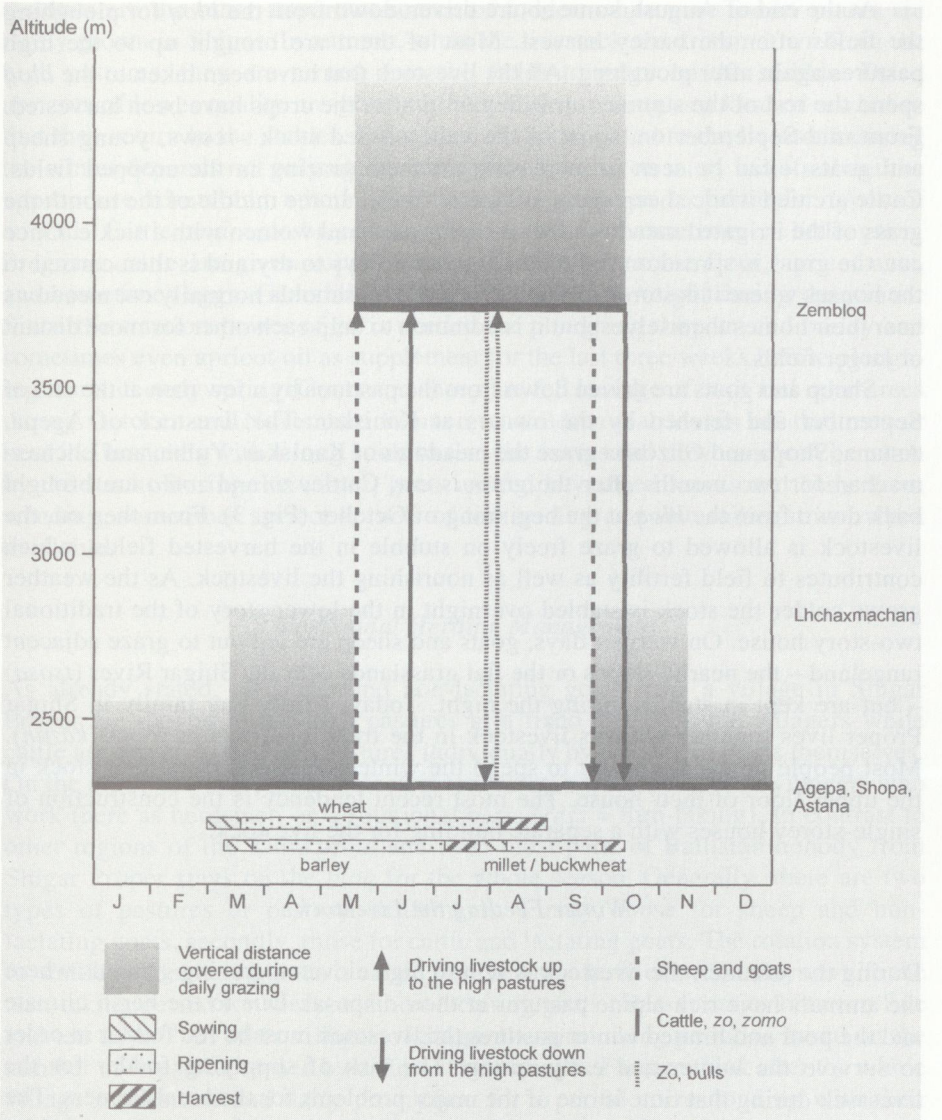


Fig. 3: Annual movement of livestock in Shigar Proper

one year and receives 5 kg wheat from each household as payment for his duty. In addition if he catches grazing animals in the fields, he receives fines from the owner of the specific animal.[11]

11 In Zangla (Ladakh), a watchman, called *lorapa*, performs a similar practice . Besides taking care that no animal enters the fields he tends all the livestock of the village that stay in the valley during summer, and receives wages per tended animal (FRIEDL 1983b: 244).

At the end of August, some *zo* are driven down from the *bloq* for ploughing the fields after the barley harvest. Most of them are brought up to the high pastures again after ploughing. All the livestock that have been taken to the *bloq* spend the rest of the summer up valley until after the crops have been harvested. From mid-September on, some of the valley-based stock – cows, young sheep and goats – can be seen in increasing numbers grazing in the cropped fields. Cattle are tied while sheep and goats graze freely. In the middle of the month the grass of the irrigated meadows (*ol*) is cut by men and women with a sickle. Once cut, the grass is spread on the field for several days to dry and is then carried to the houses where it is stored as winter fodder. Households normally cut meadows near their homes themselves, but it is common to help each other for more distant or larger fields.

Sheep and goats are driven down from the pastures by a few men at the end of September and fetched by the owners at Kaniskar. The livestock of Agepa, Astana, Shopa and Ghzoapa graze the meadows of Kaniskar, Yulba, and Lhchax-machan for two months after the grass is cut. Cattle, *zo* and *zomo* are brought back down from the *bloq* at the beginning of October (Fig. 3). From then on, the livestock is allowed to graze freely on stubble in the harvested fields, which contributes to field fertility as well as nourishing the livestock. As the weather grows colder the stock is stabled overnight in the lower story of the traditional two-story house. On warmer days, goats and sheep are led out to graze adjacent rangeland – the nearby slopes or the flat grasslands near the Shigar River (*tsosa*) – but are kept in stables during the night. Today, hardly any family in Shigar Proper lives together with its livestock in the traditional winter room (*kazah*). Most people nowadays prefer to spend the winter separated from their stock in the upper floor of their house. The most recent tendency is the construction of single-storey houses with a separate building for the livestock.

Winter Feeding the Livestock

During the summer, the livestock is sent to high elevated grazing grounds where the animals have rich alpine pastures at their disposal. Due to the harsh climate and the poor and limited winter pastures the livestock must be fed fodder in order to survive the winter and early spring. The task of supplying fodder for the livestock during that time is one of the major problems for the local farmers. The number of animals kept by a household depends closely on the quantity of fodder that is possible to generate. In order to assist the upkeep of their herds, the farmers try to exploit all sorts of fodder resources, whereby all kinds of greenery constitute potential fodder. They take great care to see that no fodder is left unused or wasted.

An important source of winter fodder derives from the already mentioned *ol* and the grassy banks between the fields or along irrigation channels.[12] Crop

12 Wild grass or mountain grass is not cut in Shigar as it is practised in some parts of Tibet and Nepal (cf. Stevens 1993: 164).

residues are the other important source of fodder, while pure fodder plants are rarely grown in Shigar. In autumn, when the livestock are driven down from the high pastures, they are turned onto the fields to graze on the stubble. Dried apricots of lower quality are given to them in the evening as a kind of reward so that they return to the stables. What kind of fodder is fed to the livestock during the winter depends not only on its availability but also on many beliefs about the appropriate forms and amounts of fodder to be given to particular types of animal. Cattle and crossbreeds are fed straw, and sometimes a little grain. Pregnant cattle are given supplementary fodder, hay, some flour, apricot nuts, and sometimes eggs. Generally, all the livestock lose weight during the winter. Since the traction power of *zo* is needed for ploughing they are fed barley and sometimes even apricot oil as supplement for the last three weeks before ploughing starts in early spring. Goats and sheep are fed leavage of fruit and other trees during October and November. Women or children tear leaves off the trees or beat the branches with a long stick so that the leaves fall down and can be eaten by the stock. During the winter, goats are fed hay, dried leaves and herbs from weeding, sometimes apricot kernels of low quality and also millet straw, when available.

Communal Herding Management

As already stated, all sheep and non-lactating goats from a village in Shigar Proper are moved to the high pastures at a fixed day by some villagers while cattle are driven to the high pastures individually by the stockholders themselves. On the *bloq*, however, the livestock is tended by a fixed number of villagers who work there as herdsmen on a rotational basis (*ress* = turn-taking). In contrast to other regions of the Karakorum and even most parts of Baltistan nobody from Shigar Proper stays on the *bloq* for the whole season. Generally, there are two types of pastures or pastoral settlements. Firstly, those for sheep and non-lactating goats, secondly, those for cattle and lactating goats. The rotation system for cattle and lactating goats is called *baress* with a term of twelve days, while the turn-taking period for sheep and non-lactating goats (*luress*) varies between five and ten days.[13] In other villages of Shigar the turn-taking period is based on the number of livestock owned by different households. Farmers look after the whole village's livestock and dairy production for a period corresponding with their household's number of animals relating to the total number of livestock tended on the pasture (GLOEKLER 1995: 16).

For Shigar Proper the *ress*-system should be illustrated by the example of Zembloq affiliated to the villages Agepa, Astana, and Shopa (cf. Fig. 2): In summer 1997 two men were looking after 130 sheep and 35 non-lactating goats at Kachaharal (3,670 m; *haral* = stable, fold). In nearby Blaqbuharal (3,800 m) six men were engaged in tending and milking cattle (3 *hyaq*, 80 *zo*, 80 non-lactating

13 The turn-taking for moving sheep and goats in winter to the winter pastures is also called *luress* with a rotation period of two to three days.

zomo, 7 lactating *zomo*, 40 lactating cows, 100 non-lactating cows, 30 calves, 4 bulls) and 83 lactating goats (Tab. 3).[14] Each man was responsible for the daily milking of 20 goats, one *zomo* and a few cows.

Table 3: Examples of pasture settlement herds and flocks of Shigar Proper

High Pasture (*Bloq*)	Connected Villages	Herds-men	Zo	Zomo	Bulls	Calves	Cows	Goats	Sheep
Zembloq-Blaqbuharal	Agepa Astana Shopa	6	80	80	4	30	100	80	–
Zembloq-Kachaharal	Agepa Astana Shopa	2						35	130
Thaserpho Tapsa	Ghzoapa	10	100	70	5	50	120	220	
Abas	Ghzoapa	4						80	320

Source: Own survey, 1997–98.

Share-Tending Arrangements

The herding management on a rotational basis implies that all households sending their stock to the summer pastures have to tend livestock and manufacture dairy products there for a specific number of days to achieve the right to receive their full share of dairy products (butter) according to the number of their lactating stock on the *bloq*. Several households, however, give their livestock into the custody of friends, neighbours or relatives who participate in the rotational herding system. At the end of the season, these share-tenders are given a service charge. In case of non-lactating animals, the share-tenders are given tea, sugar, money or other goods from the owner of the livestock as payment. For lactating animals the periods as well as the payment are clearly laid down. In Markunja the "share-milking" period is fixed at four months and ten days, and runs roughly from 10 June to 20 October. Usually, the livestock is driven down at the end of September, but the herdsmen keep them until the four months and ten days are over. Only then they are handed over to the owner. According to an informant of Halpapa the following amounts of butter are taken by the owner at the end of the summer, the balance going to the share-milker:[15]

14 Some calves are apparently slaughtered just after birth so that less milk is drunk by them which can then be used for the production of butter.

15 The amount of service charge which is retained by the custodians varies from case to case; in Hashupi, for example, it is about 50 % of butter produced (GLOEKLER 1995: 17).

zomo	13 – 14 kg
cow	5 – 6 kg
goat	1 kg

If animals are killed due to illness, accidents, predators or other natural events the herdsmen do not have to pay any compensation to the owner. They should just try to use the meat if possible and should inform the owner so that he can take it down to the villages. If animals have to be slaughtered due to injury or illness the herdsmen are allowed to take heart and liver while the rest of the meat is given to the owner. Animals born in high pastures belong to the owner of the dam; he usually gives a small reward to the herdsmen. All animals are marked by scratches on their horns, paint spots on the hide, marks in the ear, or by cloth ear-tags to identify them. This herding arrangement on pay basis is practised when a particular household is short of men or does not want to send a household member to tend the livestock on the *bloq*.

Communal Breeding Arrangements

The major reason for keeping *hyaq* in Shigar can be seen in their reproductive capacity. There is usually only one grown *hyaq* in each village of Shigar Proper that is used for breeding purposes. It is owned by the whole village community and usually bought at the age of two to three years in the Thale valley (cf. JENSEN 1997: 51). Other villages of the lower Shigar valley buy *hyaq* in the Bashe and Braldo valleys. Only *hyaq* at ages between four and eight years are suitable for cross-breeding while old ones are sold, and from the profits a new younger *hyaq* is bought. During winter such a "village *hyaq*" is held within the stable of one household which receives one basket (*chura*) of straw from every household for the feeding of the animal. In former times, when a village *hyaq* was used to cover a cow or *zomo* the holder of the latter animals had to pay twelve eggs to the *hyaq* holder.[16] Today, farmers from the same village do not have to pay anything for siring their own animals by the *hyaq* while people from other villages without an own village *hyaq* must give some money for that purpose.[17] A different situation occurs in summer when the cattle are on the high pastures. There are specific pastures (e.g., Gongser, Kyaltoro) where *hyaq* and non-lactating cows graze together more or less unattended. The crossing of the animals is thus made easier and is desired. The coverage of cows by a local bull is free of cost. Just in case the village community has bought a breeding bull of a specific race, e.g., by development agencies, people have to pay some money to the community.

16 The same method with a village *hyaq* is practiced in Zangla (Ladakh) too, where the holder gets 1 kg butter as payment for each crossing (FRIEDL 1983b: 244).

17 Hashupi villages do not possess a *hyaq* of their own. Due to the costs of siring their cows by a *hyaq* of nearby villages they "prefer to backbreed their *zomo* with common bulls." The resultant offspring *tol* / *tolmo* is kept in Hashupi in great numbers (GLOEKLER 1995: 15).

Herding Patterns on the Bloq

The different pasture settlements may vary significantly in size and construction but all of them show the similar features (Fig. 4). Such a permanent pasture settlement consists of one or more clusters of small stone-built living huts (*kuru*) with associated cattle-sheds and pens (*haral*) for the livestock. They are situated just below the main grazing grounds, mostly with a permanent stream close by. The huts are relatively small, irregular in shape, windowless, and with a low roof pole, rafters and stone slabs covered with turf. Some *kuru* are one-roomed, others have two rooms, one for sleeping, cooking, and eating (*mephus*), the other for milk processing (*bjonkuru*). They are sparsely furnished with the minimum needed – blankets, a few cooking pots, dairy utensils such as milking buckets, aluminium pots, butter churn, plastic bags, and the required food for the stay (flour, tea, sugar) that is brought up by each person himself. Small, closed cattle-sheds for calves (*bukuru*) are grouped around the main hut, as are half-open pens for goats (*rakhor-haral*) or sheep (cf. Photo 2). Unlike other regions in the Karakorum (cf. FRIEDL 1983a: 73; OSMASTON 1994: 239), stables and huts are not privately but commonly owned and are used by the whole village community.

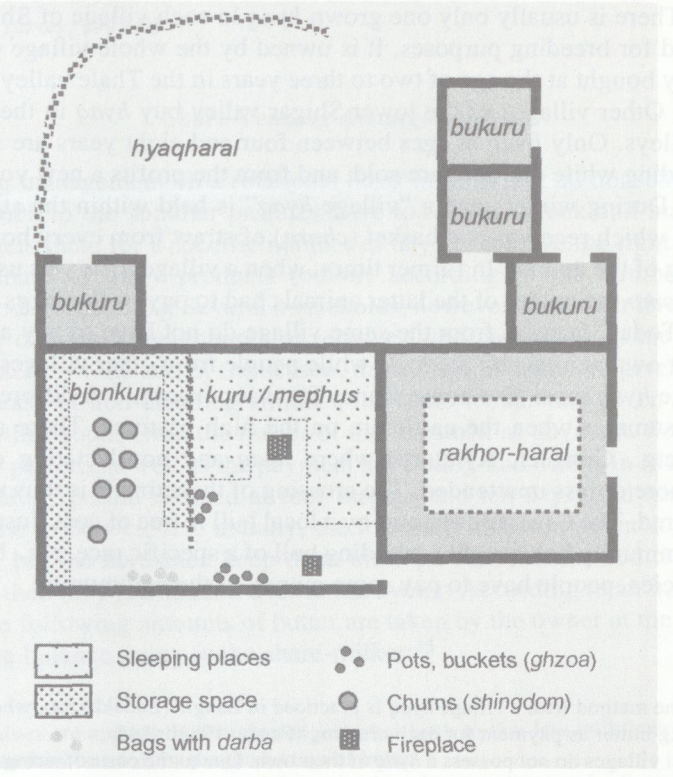


Fig. 4: Layout of a pasture hut (*kuru*) with associated cattle-sheds and pens (*haral*) in Shigar



Photo 2: Pasture settlement near Sesko Village (Bashe Valley) (26. 5. 97)

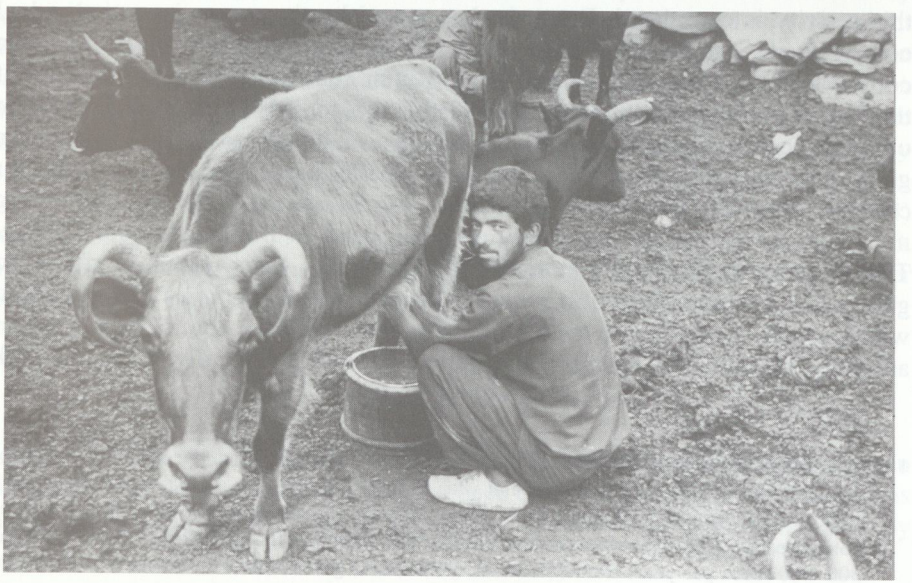


Photo 3: Milking in early morning at high pasture of Shigar (16. 8. 98)

In early morning, all animals are milked by hand into a small wooden bucket (*ghzwa*)(Photo 3). Goats are milked within the *haral*, cows and *zomo* outside near the stables. This work takes between thirty minutes and an hour. Goats are counted every morning when let out of the *haral*. One or two men, depending on the herdsize, move the goats to higher grounds, while the other men start processing the milk (*oma*) from which butter (*mar, bjon*), the main product of the pasture economy, is made. Although *hyaqmo* produce milk with the highest butterfat content they cannot be milked when on the high pastures where they graze on high grounds. Therefore, the milk from *zomo* which is of similar high quality is much preferred. Greater milk output clearly favours the *zomo* against the *hyaqmo* and common cow. A daily yield in summer is about 2–4 litres of milk from *zomo*, 1–2 litres from the common cow, and 0.2–0.4 litres from goats.[18] Raw milk is usually not drunk, except in salt or sweet tea.

All milk from *zomo*, cows and goats is mixed and collected in pots. It is heated at once in an aluminium pot, a little buttermilk is added and then it is stored for some hours, by which time it will have curdled into a kind of yoghurt. It is then churned with the help of a wooden paddle (*skorbu*) and churn (*shingdom*) or, for smaller quantities, with a leather bag (sheep or goat hide) (*chhanghrkyal*) that is shaken on the knees to make butter. The shaft of the wooden paddle stands vertically in the open-topped churn, close to a roof-pole of the hut, turning easily in a loop of bent willow twigs. This is then turned by pulling in alternate directions with each hand on a wooden toggle wound round the ends of a leather-band a few times. After the churning, the butter is put into cold water to harden it and is then collected in old tin boxes or leather bags. The churning takes around an hour, and different men churn during the morning until noon, by which time this activity is completed. Butter is then stored by the owner in an individual compartment. After the butter has been carried down to the villages it is then cooked again to clean and concentrate it. Butter constitutes an important part of the diet. It is perhaps most often consumed in tea, for it is an essential ingredient of the basic beverage of the region, the *namkin cha* or salt tea that is consumed in great quantities daily by all households. A smaller part of the butter is used for cooking purposes. The making of butter is also an important strategy for storing milk because it can be kept nearly all year round in Baltistan's cool climate. Today, butter is only rarely stored in the ground for years, which is offered to guests as a delicacy. Most of it is kept in little wooden pots (*kase*) and consumed within a year. According to local informants, *zomo* produce about 20 kg of butter annually per head.[19] Usually, the butter is produced locally from the milk

18 In addition to the great difference in fodder between summer and winter months, aspects of the animals such as age, suckling, and year of lactation result in a great variation in milk yields. Furthermore, estimations are made difficult by the uncertainty of how much is consumed by suckling calves. FRIEDL (1983a: 68) estimates the lactation yields of *zomo* as 300–400 litres per year; OSMASTON et al. (1994: 219) gives similar numbers with 300–450 litres annually per *zomo*.

19 JENSEN (1997:60) came to similar results.

obtained from the domestic animals, but most households of Shigar Proper need to buy additional butter or fat.

After the butter is separated, the buttermilk is reheated to boiling point which gives a kind of curd (*darba*). *Darba* is put into bags (nowadays in the form of permeable plastic flour bags) which are hung above the ground to drain. Some of the curd is eaten fresh by the herdsmen themselves, but most of it is taken down to the valley when the men are replaced at the end of a rotation circle. Since *darba* is perishable, some curd is given to neighbours, friends and relatives for direct consumption. However, there is no strict rule for the distribution; the owner of lactating animals has no fixed right in receiving any *darba*.[20] During the winter, the stock produce far less milk which is just enough for the direct consumption in tea. Butter and *darba* are thus not produced in winter. In spite of the fact the people in Shigar domesticate so many animals, the returns from pastoralism in the form of dairy produce are rather small. This is made more attractive, however, by the high esteem and sale price of the butter.

Zo, non-lactating *zomo* and calves are usually not tended by herdsmen and graze on different meadows. They are driven to the high pastures in late spring and are caught in autumn to bring them down to the villages. *Hyaq* and *hyaqmo* also graze untended on high ground (4,300–4,600 m); they stay in the highest pastures close to or beyond the snowline. Some of them cross into neighbouring valleys where they have to be caught and brought back. The same holds true for *zo* that are sometimes difficult to find since they frequently change pastures. It is not uncommon that men have to search for their cattle over several days until they catch them.

Cows and *zomo* graze on the meadows above the pasture settlements. They return to the pasture settlements every evening for milking and stay the night unattended near the stables, or fenced in an open *haral*. Goats are penned in *rakhor haral*, which is always half roofed, so that the animals have shelter when the weather is bad. In the evening, all lactating animals are milked again. The milk is stored in pots and processed only the next morning. Butter is usually carried down to the valley only at the end of the herding season in autumn.

As opposed to other places such as Askole in Braldo (MacDonald 1994) where men and women go on high pastures or to Hushe where only women work on the high grounds (Emerson 1986: 94), the summer pasturing in Shigar Proper is an exclusive men's province.

Customs and Traditions

In former times, several customs were practised in connection with pastoralism in Shigar. Today they are almost never practised or are hidden since these traditions have their origin in pre-Islamic times and therefore are not appreciated by

20 In contrast to Yasin (Herbers & Stöber 1995: 100) and Zangskar (Osmaston et al. 1994: 217) the curd is not dried in Shigar, but only consumed fresh.

religious leaders. Today it is difficult to achieve any information about such customs. The following aspects are given by two old men from Gianpa (Shigar Proper).

During the night before goats and sheep were moved to the high pastures people burned juniper branches and walked anti-clockwise around their stables three times. In the early morning when the animals were let out of the stables the head of the household (*nang-go*) stood with burning juniper branches and birch bark at the right hand side of the gate so that the animals had to cross the fragrant smoke of these small fires. It is said that juniper is a sacred plant and its smoke has a cleansing effect on the animals.[21] In addition, in wealthier households, children stood at the gate with plates full of flour. The flour then was given to the poor.[22]

In July all sheep were moved down to the valley for shearing. Men, women and children went with musicians up to Kaniskar, where they received the sheep driven down to there by herdsmen. The music played the whole time as the musicians followed by the flock and the villagers went to the villages. The sheep were sheared over the course of two or three days in the villages and were then driven to the high pastures again. Flour was given to the poor of the village. Today, sheep are sheared only once a year in spring or autumn.

After the harvest of buckwheat in October, when sheep and goats were driven down from the *bloq*, the whole village population and musicians went to Kaniskar again to welcome the animals. All moved to the villages where every household at the central square (*changra*) had to pick out its animals that were marked before sending them to the *bloq*. Today, almost none of these customs remain.

5. PASTURAGE RIGHTS

Two land settlements were carried out in Baltistan in 1902 and 1914 by the Dogra in order to have a foundation for proper taxation according to the size and quality of fields. This has led to a distinction between settled land (fields, villages and their surroundings) and unsettled areas (barren land between villages, mountain areas, glaciers etc.). The latter, including the pasture areas, has been declared as government land. However, there are old traditions of village territories and connected grazing lands which continue to guide herders today. Each village or village *mohalla* (section) in Shigar has its own affiliated communal pasture area.

21 The special role of junipers as a sacred plant in connection with pastoralism is documented for the whole Himalayan range; from the Kalasha of the Hindukush (Parkes 1987: 649ff.), the people of Bagrot in the Karakorum (Snoy 1975: 112; 1993: 57), to the Sherpas of the Khumbu Himalaya (Stevens 1993: 176).

22 A similar tradition is practised up to this day: When family members leave the house for a trip to the town or elsewhere, while crossing the gate they touch the flour of the plate with their hand and tip the fingers on their forehead. The flour is also given to poor households of the village.

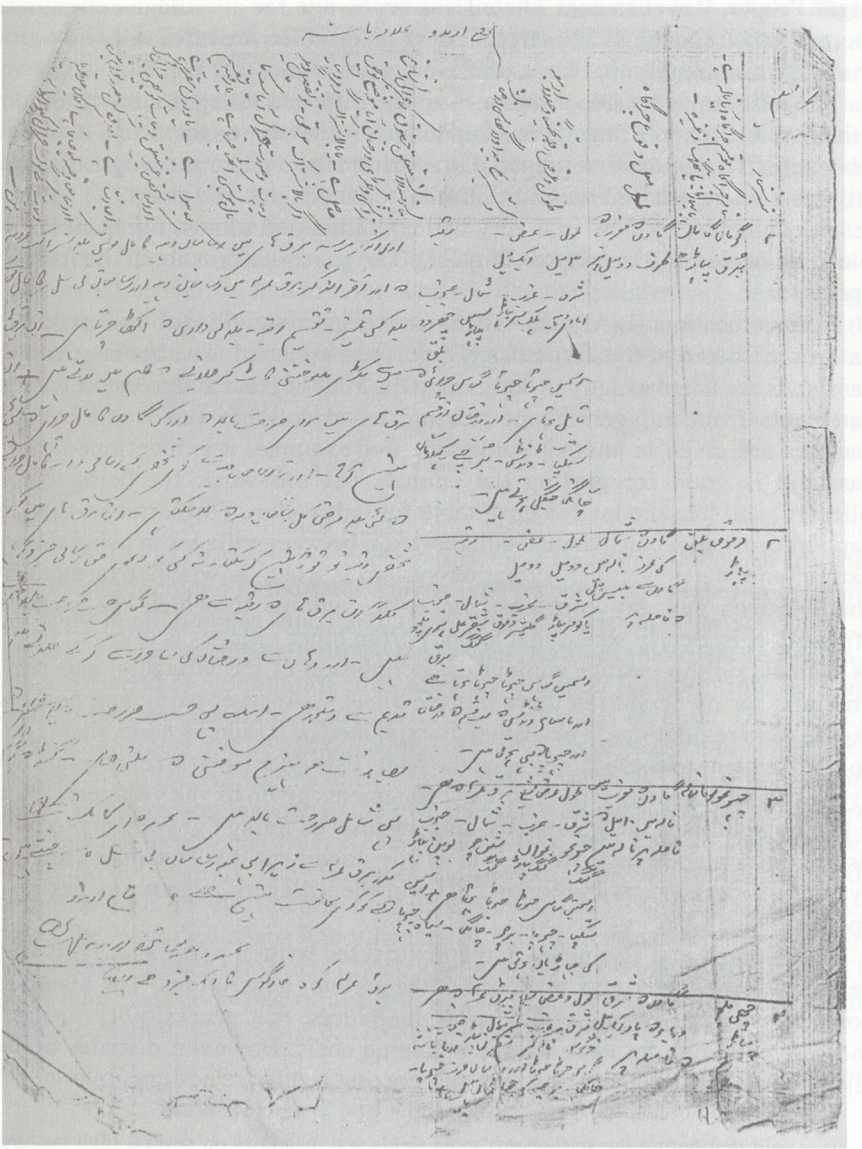


Photo 4: Page of a pasture rights document (*Naql-kajera-i*)

Pastures are considered commons and customary pasturage rights are shared by one or several village communities. In general, the pastures are distinguished between *maqbloq*, which are pastures on which several villages have grazing rights, and *nangbloq*, pastures used by only one village community. In the case of Shigar Proper, Rgyeltsa near Thale La is accessible for all village communities, whereas pastures such as Thaserpho Tapsa or Zembloq are affiliated to a particular village community that has exclusive pasture rights (cf. Fig. 2).

The pasture rights (*Naql-kajera-i*) of the different villages are written down in the revenue records that are used up to the present day as important documents in lawsuits. They were first prepared in a written form under the Dogra during the settlement and are based on traditional customary rights and practices. A few of these documents, by now in a very bad condition and almost unreadable, were able to be copied and translated (Photo 4). The papers inform about the following aspects:

Name, location (in distance from the respective village) and size of all pastures affiliated to the particular village are mentioned. The boundaries of the grasslands are listed exactly in addition to the kind of grass and trees grown there. Statements from villagers about grazing, wood cutting and wood collecting practices are given in another paragraph. For example, it is mentioned that the grassland is good for grazing the animals but too small for being cut and collected, and that the land is unsuitable for cultivation. Furthermore, this paragraph informs about an eventual collaboration between villages in using the same pasture, and states whether a rotation-system is used, or whether farmers from other villages pay any compensation to the village to which the pasture is affiliated. It is clearly stated that nobody from other villages is allowed to graze his animals on the pasture without the permission of the villagers, and nobody can claim for ownership in these pasture areas.[23] Another paragraph deals with disputes and regulations. The dispute is explained or if there is none, that is stated too. Subsequent to these paragraphs the Naib Tahsildar (low-level revenue officer) attests and comments the report and statements given by the villagers. Usually he just recapitulates the statements, and suggests enabling the villagers to use the pastures as stated above. At the end of the document the Tahsildar (mid-level revenue officer) attests the report, his and the villagers´ signatures certify the report.

As assumed and also noted in the reports, the written pasturage rights follow the traditional usage rights practised in the area for generations. The historically grown systems of resource allocation guaranteed that accessibility to grazing lands are equitable for each village within an oasis. However, disputes between village communities about pastures and grazing rights are not uncommon. Espe-

23 It is said that before the settlement, some fields and meadows on several high pastures of Shigar Proper were privately owned by some *qaum* (patrilinear lineage). Thaserpho Tapsa for instance, was the private property of the Ghzoapa Wazir. Furthermore, the Bontopa Wazir owned land in Karapur, while some farmers of different villages had fields in Bangma Haral. With the settlement, these areas became government land and all villagers have from then on the right to use these lands as pastures.

cially near the main rivers where a change of riverbeds frequently open possibilities for new pastures, the situation of usage rights is not clearly laid down. As noted above, winter pastures are meagre and limited. As far as Shigar Proper is concerned, only Marapi and Kothang villages have affiliated winter pastures – the villagers of Marapi use the common lands at the other side of the Shigar River, while the livestock of Kothang graze near Shigar River and Jerba Tso. All other villages of Shigar Proper have no affiliated winter pastures. It is worth mentioning here that the grazing rights for summer and other pastures are not identical with the administrative subdivision of Shigar Proper into different *mouza*. In the case of Ranga and Risarpi Haral, for example, villages from Markunja (Halpapa, Daskor, Senkhor), Stotkhor Kalan (Kiahong), and Thugmo have grazing rights to the same pasture.

The trails (*balam*, *bangstrangbu*) leading to the high pastures require building and maintenance, an undertaking which – like the maintenance of the irrigation system – calls for large coordinated labour inputs. Again, the *tsharma* of the respective villages are responsible for calling their villagers to such communal work (cf. POLZER & SCHMIDT 1999).

Privately Owned Pastures

The situation for the mentioned transitional pastures in the Shigar Nalla (Kaniskar, Yulba, Lhchaxmachan) is somehow different. These grasslands are irrigated meadows and included in the settled areas. The ownership is vested in the name of an individual. People who tend their animals there do this according to traditions or to an agreement with the landowner. As an example, the meadows at Yulba are owned by households from different villages. Farmers from Ghzoapa use these meadows as transitional pasture in spring and autumn. They used to give the landowners one basket (*churong*) of manure as payment and helped them by cutting the grass. As said by one owner, today the farmers neither help cutting the grass nor give any manure to the owners. Since all the meadows in this area are not fenced, the owners cannot exclude their own land from this practice and probably do not want to. The grazing of the animals improves the fertility of the land and is thus in the interest of the landholder, too. Another arrangement between the Wazir Ghzoapa and villagers of Agepa, Astana and Shopa about a large meadow in Lhchaxmachan (2,650 m) owned by the Wazir is still in use. The farmers tend their livestock on the grassland in spring and autumn and cut the grass in September which is given to the Wazir as compensation.

Land Revenues and Consequences on the Bloq

In former times, in addition to their own needs, the people of Shigar had to keep more lactating animals to supply butter, milk, wool and manure to the ruler at that time. It was obligatory and was done for the raja as well as for the Dogra officials in connection with the *ress*-system (cf. MACDONALD 1998b).

Furthermore, some of the high pasture areas of Shigar Proper were used for the growing of barley. Not only the suffix *-tapsa*, meaning growing of grain, for the pasture names Thaserpho-Tapsa or Bizerpi-Tapsa give proof of this fact but also the still existing terraces near some alpine settlements. According to local information the growing of barley at these places was done to achieve an additional food resource since the rulers, raja or Dogra, demanded a high tax burden. It is said that in the past, whole families went over several months to the high-elevated areas. This can be seen as advantageous for growing grain, which would be difficult within a rotational system. It is not known exactly in which year the cultivation of barley on the high pastures was given up. Locals report it happened in the 1920's – perhaps with the introduction of the rotational system.

6. PRESENT AGRO-PASTORAL CHANGES

During the last centuries the combined mountain agriculture guaranteed the subsistence of the valley's population. The dramatic population growth within the last decades (cf. POLZER & SCHMIDT 1999) in connection with limited growth of productivity and production in order to broaden the food base have led to the necessity of off-farm incomes to cover purchases of much needed goods for the livelihood of the resident population. Means of achieving non-farming incomes are similar to other parts of the region (cf. KREUTZMANN 1989; EHLERS 1995): labour migration, employment in the army, services for the government, or in the tourism sector. Numerous mountaineering expeditions and, to an increasing degree, trekking tours have been carried out annually in the region over the last decades. Since Shigar can be described as the main gateway on the route to the Baltoro Glacier – the destination of most tours and expeditions[24] – these undertakings offer the local population opportunities to work as porters or trekking guides. Households over the entire valley send more or less regularly one or more male members to work as porters on these tours.[25] The consequences are manyfold and include not only the generated cash income, but also the absence of male labour from the villages during the labour-intensive summer months.[26] Two possibilities are conceivable for the affected households to be able to cope with the labour shortage: Firstly, other family members take over the work resulting in a higher workload for each individual. Secondly, the expenditure of labour is reduced, e.g., non-growing of a second crop, decreasing herd size, or renting out of fields or livestock. Regarding the first aspect, large households or extended families can usually compensate the absent working force; brothers fulfil the

24 K^2 (8,611 m), Broad Peak (8,047 m), Gasherbrum I (8,068 m) and Gasherbrum II (8,035 m) are located at the upper end of the Baltoro Glacier.

25 About expeditions and portering in Baltistan, cf. GRUBER (1981) and MACDONALD (1998b).

26 On the other hand, porters are needed mostly in May and June, when the expeditions move to their basecamps. Less porters are needed during harvest in July and August when the workload in the agriculture is highest, as only trekking tours are carried out during this time and less porters are necessary for the return of expedition groups.

tasks of the man working as a porter. In smaller households, the absence of a male family member often creates serious problems for the remaining people. Women frequently have to replace the absent labourer and carry out work that is usually carried out by males. Consequences of this are not only a higher workload but also a bad reputation for the specific household. However, to conclude that the workload for women increases in general when men work elsewhere as it is often the case, is somehow questionable in the case of Shigar Proper. There is a dualism between the actual higher workload for the remaining family members and the increasing influence of the religious leaders who strictly define which kind of work can be carried out by women and which not. As examples, the high pastures became an area exclusively for men, and irrigation formerly done by both men and women became a predominantly male task. Compared with other places in Baltistan many working tasks are done in Shigar Proper by men that are carried out by women elsewhere (cf. STREEFLAND et al. 1995: 144–145; MACDONALD 1994). The gender-based division of work related to pastoralism is given in Tab. 4.

Table 4: Gender-based division of labour related to pastoralism in Shigar-Proper

Exclusively or predominantly male	Male or female	Exclusively or predominantly female
tending livestock and manufacture of dairy products at high pasture	milking livestock and manufacture of dairy products in village	feeding livestock
goats shearing, spinning goat hair, weaving and rope making	cutting and collecting grass and fodder	beating and spinning sheep wool
butchering, conducting sacrifices	tending livestock in village	tending poultry
guarding fields from livestock and wildlife		weeding fields
herding livestock at village pastures in winter		

Source: Own survey, 1997–98.

Since work on the high pastures in Shigar Proper is clearly defined as male work, the absence of male labourers results in a setup that small households frequently cannot afford a man to carry out his duty within the rotational cycle. Consequently, such households either give their animals to others for share-tending resulting in a lower butter yield, or they decrease their herd size.

The aforementioned expedition and trekking industry has led to another effect in the villages of upper Braldo: Goats and sheep are sold in high numbers to these groups for a relatively high price (cf. MACDONALD 1994). However, this

lucrative additional cash income is restricted to the Braldo valley and therefore has almost no effect on the lower Shigar valley. Much more relevant to the situation in Shigar Proper is the import of meat and animals. Cattle are brought from the Punjab to Skardu and meat and poultry is sold in the local market.

Prospects of Pastoralism in Shigar

According to several statements by locals and the above-mentioned findings, the number of animals kept by a single household is definitely in decline. However, due to population growth and a significant increase in household numbers the total number of livestock kept in Shigar is probably not much lower than it has been in the past.

This leads to the question about the role of pastoralism today. Obviously, the necessity to keep livestock for subsistence is decreasing: cattle today are not so much in need for their traction power since only some households still use *zo* and bulls for ploughing, and all threshing in lower Shigar valley is done today by threshing machines (Photo 5). (In Bashe and Braldo, people still use cattle for threshing.) Similarly, goods and people are today transported by jeeps and tractors – most villages are connected by a jeep-track – which means that donkeys or horses increasingly become redundant as pack animals. The dung from animals is still highly valued but almost all households in the lower Shigar valley use



Photo 5: Threshing in Shigar Proper (28. 8. 98)

additional chemical fertilizer that can be purchased in Skardu and even Shigar Proper. Cotton clothes are common nowadays. Clothes made of sheep wool are rarely seen in the valley today. Furthermore, carpets are often bought abroad and replace the local ones made from goat hair or sheep wool. Today, households usually use cooking oil from lowland Pakistan. Local butter is consumed only in salt tea or for traditional dishes that are rarely prepared today. Besides, butter from Bashe is still purchasable in Shigar bazaar but is much more expensive than imported fat.

On the other hand, it is interesting to note that most households of Shigar still keep animals. At least one goat or cow is found in almost all households. Animals are thus mostly kept for their milk supply or to have something in reserve in case of emergencies.

Further conclusions can be stated when looking more closely at the average herd size per household of two villages of Shigar Proper (Tab. 5). There is a significant difference between Halpapa and Daskor when regarding the number of stock per household. While cattle and goats are raised in small numbers in the former, there are much more animals kept in the latter. This fact can hardly be explained by the pasture area since both villages use the same pastures. It is more the result of a changed employment structure in the villages. Approximately 86% of all households in Halpapa have a regular (additional) cash income compared only 48% of households in Daskor. In particular, households with members having a full-time job (not portering) keep small herds. Their fiscal income allows such households to buy the needed products (butter, cooking oil, packed milk etc.) in the bazaar. Furthermore, it is interesting to note that except for one, all households of Halpapa do not keep sheep. No household of this village send male members for herding purposes to the *bloq* today. Thus, Halpapa households with larger herds rent out their livestock in summer to share-tenders, predominantly from Bunpa and Daskor.

Table 5: Herd and flock size per household in Halpapa and Daskor (Shigar Proper)

Village	Male bovines (*hyaq*, *zo*, bulls)	Female bovines (*hyaqmo*, *zomo*, cows)	Goats	Sheep
Halpapa	0.7	2.1	2.6	0.2
Daskor	1.4	3.6	6.3	3.0

Source: Survey carried out by C. Polzer 1994.

A further reason for the changed situation with fewer and fewer people being willing to stay several days on the high pastures is the decreasing attraction of pastoral work. In the past, the availability of plentiful dairy products on the *bloq* and the freedom from the social demands of village life were highly esteemed. Today, butterfat is available all year round in the bazaar, *darba* is regularly brought down to the villages, and several tea stalls, sport, radio and a few TV sets have increased the attractiveness of village life. Furthermore, the prestige of

pastoral work is relative low. Wazir families usually do not send family members to the *bloq*. As more and more people try to achieve a higher standard of living and a better reputation – formerly dependent on ownership of land and stock, but nowadays assessed in terms of education, cash income and cash savings –, they avoid taking part in the pastoral work. Consequently, educated persons mostly do not want to work on the high pastures. Finally, the emphasis put on education, particularly for boys who have to attend school regularly, leads to a lack of helpers on the *bloq*. As it can be assumed that in the future less manpower will be available to manage livestock on the pastures due to the mentioned aspects, share-tending arrangements will gradually gain in importance.

7. CONCLUSION

Pastoralism has always played a significant role in the overall survival strategies and cultural identity of the people of Shigar. The environmental conditions with limited fodder resources and the close integration of animal husbandry with arable farming confront Shigar's pastoral system with difficult technical and managerial problems. Indigenous knowledge of the range resources that vary considerably with altitude, aspect and season, influence decisions about herd size and composition, as well as seasonal and daily herd movements. Means of resource-management include clearly defined territorial rights of access and utilisation of pastures, communal herding and breeding arrangements. In this way, the Shigar farmers are successful in managing a considerable range of livestock to produce butter, meat and wool, besides the more vital outputs of manure, dung-fuel, and draught power without exploiting its ecological base.

However, the general transformation of the economic structure of the area – a slow shift from subsistence to market economy – leads to an erosion of the traditional form of Shigar's pastoral system. The consequences are manyfold and include the unwillingness of the new social elite to work on the high pastures or the decreasing stock numbers kept by individual households. This does not mean that pastoralism in Shigar is in a definite decline, since it still plays a vital part of local life and economy, but the present tendencies will lead to a redefinition of pasture culture and management styles, including an increase in the importance of share-tending arrangements and a more accentuated differentiation between large and small stockholders.

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