PASTORAL PRACTICES AND THEIR TRANSFORMATION IN THE NORTH-WESTERN KARAKORAM

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Textbooks and research papers dealing with pastoral practices in high mountain contexts generally favour the European '*Alpwirtschaft*' or '*Almwirtschaft*' strategy as the only important way of utilising mountain resources. The first diagram published by Arbos (1923: 572) described the movement of mountain farmers and their livestock in Tarentaise in the French Alps. More than half a century later it was reproduced as the sole and/or role model in the textbook on 'mountains and man' by Price (1981: 413). In addition, a diagram based on the situation in the Swiss Val d'Annivers, initially published in 1936 in the influential text of Robert Peattie later figured in the textbooks as the 'ideal' model of resource utilisation at different elevations. Needless to say, this practice has not existed in the Valais for nearly two generations. Nevertheless, this diagram was republished during the 1980s and even as late as 1997 (see Grötzbach 1982: 10; 1987: 65; 1988: 27; Grötzbach and Stadel 1997: 26). This seems to be an example of an Eurocentric view of pastoral practices in mountain regions. Western textbook authors seem to support a romantic view of long-extinct practices, while neglecting the existence of forms of mobile animal husbandry in other parts of the world. In an attempt to overcome this restricted and fragmented world view, in the present article emphasis is placed on current pastoral practices in High Asia.

Types of Pasture Utilisation in High Mountain Regions

In South Asian mountain contexts we find a full range of non-stationary practices in livestock-keeping which fill the spectrum from mountain nomadism through transhumance to combined mountain agriculture (*Alpwirtschaft*). Concepts of distinction will thus be clarified before proceeding with a case study from a Karakoram mountain valley which illustrates the dynamics and changing importance of animal husbandry in combined mountain agriculture (see Ehlers and Kreutzmann 2000). For the scope of this study three classes/categories are introduced which are linked to the utilisation of high mountain pastures by distinguishing mobility patterns, socio-economic organisation and property rights (Fig. 1).

Mountain Nomadism

In mountain nomadism, nomadic economy and labour activities are predominantly based on animal husbandry. Mixed herds are composed of sheep and goats, cattle/yaks for livestock production and camels, horses and donkeys mainly for

transport of tents, household goods and utensils. The whole group covers great distances between lowlands and highlands during their seasonal migrations towards suitable and accessible pastures. The mobile communities show strong kinship relations. As a rule they distinguish themselves from their neighbours and business partners as a social group of livestock proprietors and traders. Nomads utilise pastures to which they claim rights of access based on customary law; nevertheless grazing taxes are levied and paid to the state or private individuals. Such are the business relations regarding pastures, in addition to barter trade with farmers for basic goods, such as grain. Traditionally, mountain nomads have engaged only in very few side activities beyond animal husbandry such as transportation, trade, services and other commercial activities, and crop cultivation was not a practice attributed to them. The absence of permanent settlements and village lands resulted in a mobile society of which movable property, including tents and yurts, was characteristic and provided shelter in the grazing grounds. Both traditions have changed quite drastically in all these societies in recent years. Planned and forced sedentarisation of nomads, the introduction of permanent winter camps, agrarian reforms and general socio-economic change have resulted in adjusted and comparatively confined migration cycles. All factors have contributed to a controlled mobility with features of permanency, such as houses and stables in a community settlement. The expansion of crop cultivation and

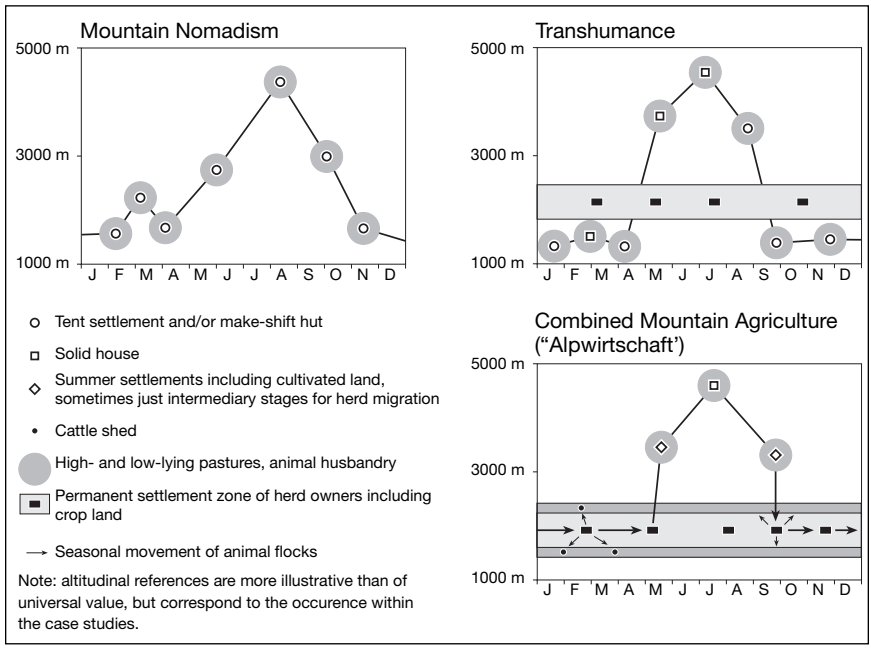

Figure 1: *Time–Space Diagram for Different Types of Pasture Utilisation in High Mountain Regions*

village lands, the reduction of available space and the progression of bureaucracy have limited the rangelands and pastures accessible to nomads. Territorial, political and private delineation of boundaries has increased the phenomenon of nomadism executed under 'closed frontier' conditions (Shahrani 1979: 169–212).[1]

Transhumance

Described about a century ago as a regional pastoral practice in southern France, the term 'transhumance' has gained many connotations and global applications in recent years. Sometimes it is used in a wide sense, synonymous with pastoralism and nomadism as a comprehensive concept in Anglo-American publications; sometimes it describes pastoral practices linked to certain ethnic groups, while a narrow interpretation with a focus on flocks prevails in non-English language usage (Blache 1933; Rinschede 1979, 1988: 97f.). Rinschede (1988) addresses some features of livestock-related agrarian activities originally observed in the riparian states of the Mediterranean. Transhumance involves seasonal migrations of herds (sheep and goats, cattle) between summer pastures in the mountains and winter pastures in the lowlands. In contrast to mountain nomadism the shepherds of a migrating team are not necessarily so strongly affiliated with one another as to form a group of relatives managing their own resources. They serve as wage labourers hired by the livestock proprietors on a permanent basis. As a rule, they are neither related to them, nor do they have livestock of their own. The proprietors of the flocks can be farmers or non-agrarian entrepreneurs. In terms of management, the year-round migration between suitable grazing grounds is independent of other economic activities of the proprietors. In cases where they are farmers, their farm management and agricultural activities are not related to their livestock breeding. Nevertheless, sometimes proprietor farmers provide shelter and grazing on their fields after harvest or on meadows. Usually common property pastures are used in the mountains, while customary rights or contracts with residents in the lowlands establish the winter grazing conditions. Shepherds live in mobile shelters (tents, carts etc.) or in permanent houses provided for them. Transhumance of this kind is found in mountainous regions on all continents (Rinschede 1988: 99f.), and there is no general trend of decline observable, although its share in pastoralism varies widely.[2]

Almwirtschaft/Alpwirtschaft or Combined Mountain Agriculture

The terms '*Alm*' (Austrian, Bavarian), '*Alp*' (Swiss) and '*alpage*' or '*élevage avec estivage*' (French) all refer to the high pastures as a characteristic and idiographic feature of the European Alps. In this narrow sense only one seasonal aspect of high mountain agriculture is addressed: the utilisation of alpine grazing grounds by mountain farmers during summer. At the same time, '*Alp/Alpen*' is a term describing the whole mountain system or a general mountain range. Consequently '*Alpwirtschaft*' could be understood as the specific form of agriculture prevalent in the European Alps. In a wider sense it addresses what Rhoades and Thompson

(1975) understand as mixed mountain agriculture and what Guillet (1983: 562f.) introduced as an adaptive strategy description. Although these authors have identified '*Alpwirtschaft*' as 'agropastoral transhumance', this description is questionable. There are a number of differences between both strategies in livestock-keeping. In *Alpwirtschaft* the proprietors of the flocks are residents of the homesteads in the valley grounds. They initiate and control the organisation and management of the grazing cycles to increase agricultural productivity and livestock numbers in a given territory. The example of the Hindukush-Karakoram-Himalaya region shows that not only can herd sizes be increased by incorporating high pastures into the domestic economy, but simultaneously the quality of natural grazing in the high pastures has been estimated as between twice and four times that in the lower zones of the arid mountain valleys (Sheikh and Khan 1982; Streefland et al. 1995: 85). On the one hand agricultural production in the homestead is strongly linked to the livestock sector by growing grass and storing hay for the winter provision of fodder. During the winter period the flocks are kept in stables or out in the open close to the permanent dwellings of the mountain farmers. The shepherds are traditionally members of the extended family, although in recent years a tendency to employ hired professional labourers can be observed. With growing job opportunities it becomes more difficult for mountain farming households to provide the manpower, especially during the summer season when the agricultural workload is high and other financially lucrative employment might be available. Thus it is fairly common for households to pool their livestock and send their herds with a trusted person or hired professional to the summer pastures, which are mainly common lands.[3]

All three practices mentioned above are to be found in the northwestern Karakoram mountains. More specifically, all three practices have been part of the agro-pastoral system of the Hunza Valley, although it seems nowadays that combined mountain agriculture has replaced mountain nomadism and transhumance. In the following section, a case study from the Hunza Valley is presented, highlighting societal and agro-pastoral variations over time and space.

Pasture Utilisation in the Hunza Valley

Changes in political conditions over time and subsequent socio-economic transformations have affected all walks of life in the Hunza valley. Agriculture and the livestock sector in particular are no exception. Since high-mountain economy is a complex phenomenon and consists of an interrelated set of activities, significant changes could also be expected in the livestock sector. Consequently, it seems justified to address socio-economic transformations from the perspective of pastoral practice within a given ecological and politico-economic environment.

The latter aspect seems to be especially important, as political power structures and transformations have affected the local and regional economies significantly.

At first sight a well known pattern of pasture utilisation is observable in the Hunza Valley (Fig. 2). Seasonal migrations take place between permanent homesteads in the arid valley grounds and natural high pastures in the vicinity of glaciers. Their schedule reveals a time–space relationship in the utilisation of locally available resources. Going beyond 'what we can see', a number of questions arise about the underlying manmade rules and regulations, access rights and livestock productivity, workforce and composition of herds, commonalities and disputes. While focusing on pastoral practice, I shall attempt to assess the dimensions of change from three perspectives: first, the importance of animal husbandry for the generation of state revenue and the active role played by the Mir of Hunza in setting the stage for pastoralism within his sphere of influence; second, the availability and division of labour, which have undergone substantial changes over time and their impact on pastoral practices is strongly felt; third, the

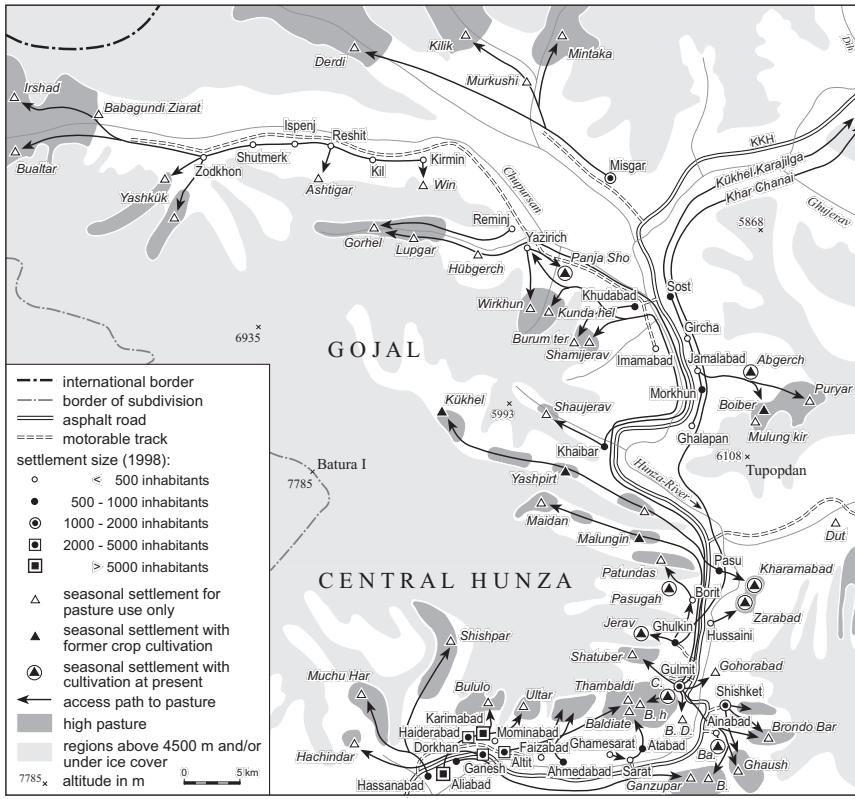

Figure 2: *Settlements, Pastures and Seasonal Migrations in Hunza*
Source: *Kreutzmann 1998*

contribution of the livestock sector to present-day income generation and its role in the dispute about the commons.

Thus it might be possible to shed some light on the transformations that have occurred in time, space and quality. Both nomadism and combined mixed mountain agriculture have been undergoing regular changes, modifications and adjustments. In particular, their dynamic adaptation to a transforming socio-political environment and their powerful incorporation within a supraregional market structure need to be looked at in any discussion of sustainable development, where the search for a role model has too often been orientated in terms of ecological conditions alone. The neglect of economy and society contributes to the presentation of a somewhat distorted representation of pastoral practices. Attention to animal husbandry and its role in high mountain agriculture is all the more challenging, as research about this sector seems to call for more complex approaches and historical depth.

Livestock Taxes as a Major Source of State Revenue in Hunza

A century ago the Hunza population had reached about one-fifth of the 46,000 individuals counted in the latest census returns of 1998. For earlier periods trustworthy estimates are not available, but oral traditions claim that the population was even lower at the beginning of the nineteenth century. Only Central Hunza was fully inhabited, by Burusho people who lived in fortified villages (*khan*), while a few Shina speaking settlers occupied the lower part of the valley. The upper Hunza Valley, which is now called Gojal, was devoid of any permanent dwellings. Every summer, Kirghiz nomads crossed the northern passes of Hunza and utilised the high pastures in Chupursan, Mintaka, Kilik and Khunjerab, probably even further down the valley (see Fig. 2). Grazing taxes were delivered annually to the Mir residing in Baltit (present-day Karimabad) or extracted by his collectors on the grazing grounds (App. 1). Pastoral practices were divided between Kirghiz nomadic use in the upper part (Gojal) and combined mountain agriculture in Central Hunza and the lower parts of the valley (Shinaki); it seems unlikely that nomads and transhumant shepherds visited the Hunza Valley from the south. The only exception might be that of a Gujur community which had its winter camp in the present-day village lands of Sultanabad (Gujur Das) and spent the summer with its flocks in the Naltar Valley. Nevertheless, the Gujur were out of the taxation grip of the Hunza ruler, as his power did not extend that far south. The extra revenue from affluent nomadic communities was bitterly needed for the upkeep of the frugal lifestyle of the Hunza ruler. Mir Silum Khan III succeeded in expanding his territory further north in order to control more Kirghiz pastures. A contribution of one animal per forty sheep and one per thirty yaks had been agreed upon as annual grazing tax.

Relations between the nomads of the Taghdumbash Pamir and the Mir of Hunza continued for about one-and-a-half centuries (see App. 1). They contributed substantially to his income while he sent his own flocks with Hunza shepherds for summer grazing to the Pamirs as well. Mir Silum Khan III is still regarded as one of the most innovative rulers. He initiated the construction of a number of irrigation channels and increased the agricultural lands of Hunza significantly. The internal agrarian colonisation characterises the nineteenth century and coincides with a shift of pastoral practices within Hunza. The juvenile irrigated oases were meant to support a growing population and to provide shelter for refugees from neighbouring communities, thus increasing the population and – most importantly – the revenue of Hunza. In the aftermath a two-fold strategy was applied: the distant and difficult-to-control Pamir pastures were allocated to nomadic communities such as the Kirghiz and to peasants dwelling in adjacent Wakhan and Sariqol who utilised those summer pastures in their practice of combined mountain agriculture. In the Hunza valley itself and in its major tributaries the ruler tried to settle agriculturists on a permanent basis. Besides some fortified villages with Burusho settlers from Central Hunza, mainly Wakhi refugees occupied the single-cropping region in Gojal and colonised the majority of oases at the upper limits of cultivation. As a rule, the share of animal husbandry in their combined mixed mountain agriculture was higher than in the lower-lying parts of Hunza where double cropping was feasible.

As a consequence of this development, Kirghiz nomads lost their traditional grazing grounds and were forced to shift their flocks northwards. Towards the end of the nineteenth century British intelligence reports claimed that the competition between Kirghiz nomads, Wakhi and Sariqoli on the one hand and Hunzukuts with their own and their ruler's flocks on the other led to disputes, which were settled by the Chinese representative in Tashkurghan in the Mir of Hunza's favour (App. 1). Although in the preceding period grazing dues had been levied in live animals, the production of livestock in Hunza itself seems to have increased substantially. From then on the grazing dues (*khiraǰ*) levied by the Mir of Hunza in the Pamirs were paid predominatly in kind–in felts, woollen blankets (*namdà*), yak hair ropes, cotton cloth (*kirpas*), coarse cloth (*kham*), coats (*śuqá*), saddles (*ǰhul*), rugs (*śarmá*) and socks (*paipakh*). From the beginning of the twentieth century regular payment of grazing dues was received in Hunza; in 1931 those amounted to sixty-five felts, fifty ropes, twenty-five rolls of cotton cloth and two coats. These goods had an exchange value in the Gilgit and Kashgar bazaars and created a welcome extra source of revenue for the ruler. In addition, the political influence in the border areas and the participation in Central Asian trade as a transit region enhanced the value of authoritative presence in the Pamirs.

Livestock production in the newly developed oases within Upper Hunza grew substantially during the nineteenth century. Gojal provided four-fifths of all taxes in Hunza, although barely one-fifth of the population was settled here. In 1894 Gojal delivered 350 sheep and goats (*kla*) in addition to fifteen *maunds* (1 md = 37.32 kg)

of grain to the tax collectors.[4] This basically covered the regular demand of the Court, while additional livestock was available in the personal flocks. The then ruling Mir, M. Nazim Khan (1892–1938) backed by the British authorities in Gilgit, managed to increase his personal income manifoldly. The example of the village of Shimshal, where in the adjacent *pamér* the best grazing of Hunza is available, provides ample evidence. While in 1894 the livestock dues (*ilban*) amounted to fifty sheep (equivalent of 200 Rs), in 1938 the tax collectors extracted a total of 40 md salt (= 400 Rs), 7 md wheat, 16 md barley, 146 sheep and goats, and two yaks. The value of all goods amounted to 1598 Rs which equals an eightfold increase during Mir M. Nazim Khan's reign (IOL/P&S/12/3292). Thus the forty-eight households (approximately four hundred people) of Shimshal contributed in 1938 nearly an equal amount of taxes to the Hunza revenue as did the whole principality in 1894 when a total of 1800 Rs was collected.[5] The importance of Gojal in providing revenue to the state is obvious when we remember that all types of livestock amounting to 350 animals in total in 1891 were extracted from there (IOL/P&S/12/3292: 156; IOR/2/1079/251: 8). At that time the population of Hunza was about ten thousand. The resettlement of Wakhi refugees and Burusho colonisers in Gojal and the subsequent severe taxation practices considerably increased the wealth of the ruling family. Emphasis on a controlled grazing policy with higher returns from intensified animal husbandry was reflected in the stocking density all over Hunza. On a reconnaissance tour, Colonel R.C.F. Schomberg visited Gojal and acknowledged the overall importance of animal husbandry in the combined mountain agriculture. He regarded the Wakhi pastoral practices within their combined mountain agriculture as equivalent to those of nomads or recently settled nomads.[6]

The exploitative taxation at the climax of Mir M. Nazim Khan's reign coincides with the loss of all rights in the Taghdumbash Pamir, such as the levying of grazing taxes as well as sending flocks from Hunza there. The loss was estimated at equivalent to a meagre Rupees 200–300 Rs annually, and the Mir was compensated by the British authorities (see App. 1). While the Pamir revenue had been stagnating for about three decades, the livestock taxes within Hunza had grown substantially, as had the utilisation of grazing grounds. As a document from 1935 explains, from a legal aspect the Mir of Hunza regarded himself as the sole proprietor of all natural resources, including pastures:

> All forests, mountains and pasture lands in Hunza belong to the Mir and have been granted by him to the different communities who take their flocks for grazing to their respective grazing grounds. The Mir is entitled to graze his flocks in any pasture he wishes. The Mir's wood cutters are at liberty to cut wood from every forest. If the Mir betakes himself on a pleasure trip to any of the above pastures, every shepherd should present him with a sheep and one roghan [wakhi *ruğun* = piece of dehydrated butter].'[7]

The hereditary ruler put this into practice when he expropriated the grazing rights at Ultar (above Karimabad) for his own herds and when he compensated himself for the loss of grazing rights in the Chinese-controlled Pamir by shifting his personal herds to grazing grounds in bordering Kilik, Mintaka and Khunjerab which were previously used by Hunzakuts' peasants. (Lorimer 1935–1938, II: 259).

It did not escape British intelligence that the exploitation of the Hunza people had reached an undesirable state. Colonel Schomberg, who admired Mir M. Nazim Khan as 'a personality seldom met with in the East. He is a thorough Oriental in every respect, and that is to his credit' (Schomberg 1935: 119) observed during his mission in 1934 that the Hunza 'population is little better than serfs. Everything is done at the Mir's orders.' The future expectations and a relief option for the population is expressed as follows:

> They only ask to be governed as they were before the British came. They ask that their Mirs should rule in future as their ancestors did in the past. The customary laws, especially in Hunza, amply safeguard the rights of the subject … The Mir is the irresponsible arbiter and autocrat, governing solely for his own advantage.[8]

The colonial administration in Gilgit feared social unrest at the northern frontier and registered a growing number of Hunza people escaping the state and attempting to settle in the vicinity of Gilgit town where cultivable lands and jobs were available.

Times had changed since the Gilgit Agency was leased by the Maharaja of Kashmir to British India in 1935. The activities of colonial authorities were directed in improving the 'pedigree stock' and in encouraging local farmers to produce more wool in order to meet the demands of the Gilgit bazaar. At the same time the first ever cattle show was held in Gilgit and merino rams were introduced.[9] For some observers this event marks the beginning of development activities in the Northern Areas and it coincides with the peak of livestock-keeping in Hunza. At the same time the impact of colonial rule on local administration and livelihoods had led to the loss of a previously existing 'balance' in the relationship between rulers and mountain farmers-cum-pastoralists.

Importance and Quantitative Decline of Animal Husbandry in Hunza

In the year in which revenue from pastoral practices reached its climax, Qudratullah Beg, a local historian compiled a survey of all pastures in central Hunza and Shinaki (see App. 2). His work, augmented by other contemporary sources[10] provides us with a reference which forms the basis of comparison with the current situation. Although the number of households has doubled in central

Hunza and Shinaki and quadrupled in Gojal since 1931, the number of persons involved in animal husbandry has decreased substantially. In several cases no shepherds at all are recorded today, in other summer settlements the workforce has been reduced to nominal representation. Indeed, high pasturing as part of combined mountain agriculture has undergone a significant transformation in the last fifty years. In central Hunza in 1935 every fifth to tenth household usually sent a shepherd to the high pastures, and in Gojal more than three-quarters of all households participated in the seasonal migration (*kuč*) (Quadratullah Beg 1935; Schomberg 1936). Half a century later our enquiries revealed a completely different picture (See App. 2): little more than one percent of the households provided shepherds in Shinaki and central Hunza. Even in Gojal, the number has decreased considerably with the exception of Shimshal, where the proportion of households following the difficult tracks to the remote pastures resembles the pattern found fifty years ago.[11]

The general impression is that the use of seasonal settlements for cultivation and animal husbandry has been reduced, in some cases to insignificance. Crop farming as a side activity of shepherds in the summer settlements has been given up almost completely. In a few rare cases the cultivated terraces are used for fodder production (grass and alfalfa). The animal mix has remained similar, only horses are not kept anymore. The size of flocks must have diminished considerably, although comparative data are difficult to come by. Especially in central Hunza, one or two shepherds are now sufficient to control the herds of their respective communities. With a population of over five thousand in 1992 the four clans of Karimabad accounted for herds composed of 2,224 sheep and goats and 970 cattle.[12] The average household (with 8.5 members) calls less than four sheep and goats and less than two cows its own. In comparison, the mean livestock property in Pasu accounted for twenty-three sheep and goats, and more than seven cattle (including three yaks) per household (8.5 members) in 1998. Both villages are far from representative of the overall situation and there is a growing tendency to extend cattle husbandry in the permanent settlements all year round. The cow in the homestead covers the household's needs in milk and milk products.

What are the reasons for such a decline? If taxation was a burden, this problem was solved in 1974 when the State was abolished and the fiscal power and administrative authority of the hereditary ruler were terminated. In fact presently no direct taxes are levied in the Northern Areas at all. The decline of animal husbandry is linked, I suggest, to a general shift in economic activities. Contributions from off-farm resources have increased significantly, and simultaneously a labour shortage for pastoral activities has occurred. Jobs in the military and civil services and in trade and tourism require the availability and presence of manpower throughout the year. The returns from non-agrarian occupations are in general also higher. This holds true especially for emigrants to Gilgit, Karachi and/or overseas. Even if there are periods with a smaller workload, these time frames do not coincide with the heavy burden in agricultural activities

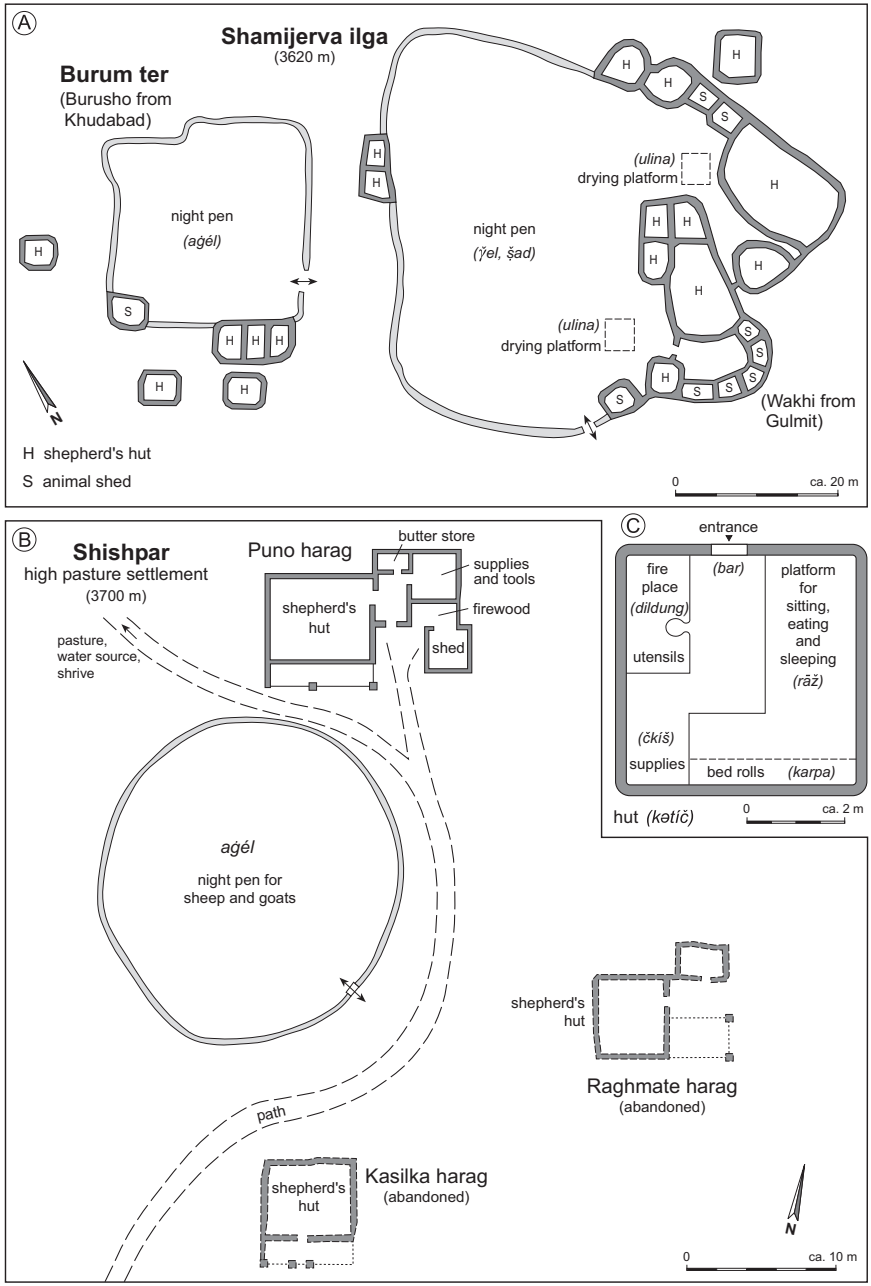

Figure 3: *Maps of Pasture Settlements in Hunza.*
Source: *Kreutzmann (1989: 137; 1996:58)*

during the summer season and it has become more difficult for individual households to spare a member as shepherd. Different strategies are being followed to solve the problem of labour shortage. As off-farm jobs have been predominantly taken up by male household members of a certain age group, the agricultural burden is distributed among the remaining household members: women, elderly men and children, though children are nowadays rarely available for agricultural activities in Hunza as almost all of them are registered in schools and attend classes, many of them becoming young migrants when they continue their education outside their villages. Boys and young men are seen on the high pastures when they accompany tourist trekking groups who very often follow the traditional migration paths of livestock or when they visit relatives during vacation after a long stay outside Hunza. Basically, the task of shepherding now lies in the hands of elderly men and women, where community rules permit them to go to the pasture settlements. Traditionally, the access of Burusho women was restricted while it is quite common among the Wakhi. This difference is not revealed in the layout of the combined Wakhi-Burusho pasture settlement in Shamijerav ilga-Burum ter (Fig. 3A), which harbours the two different milk-processing techniques applied in the Hunza Valley (Fig. 4). Wherever herds are kept in high pastures, durable and highly appreciated livestock products are made, the best part of Wakhi animal husbandry in Gojal being controlled and executed by female household members. Where men are still involved, the age structure of the shepherds has

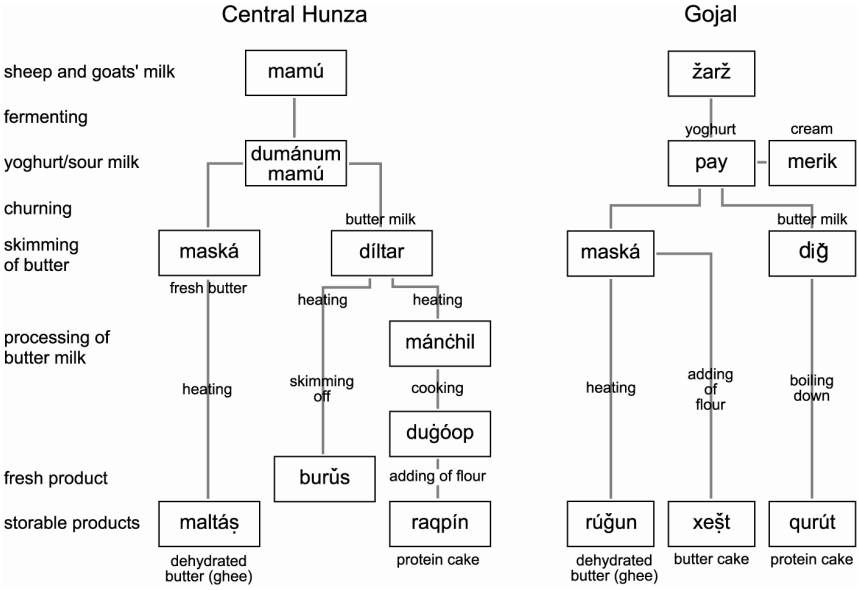

Figure 4: *Milk Processing in Hunza*
Source: *Author's survey*

changed, elderly men having taken over duties that were traditionally reserved for the sons of a household for whom it was a privilege to spend the hot summer season in the cool mountain pastures.

The flocks have decreased nearly everywhere, since no household is presently able to look after sizeable herds all year long. The extra value from animal husbandry is easily compensated through non-agrarian incomes. In the village of Gulmit in 1990, 12 percent of households were without non-agrarian income. Nearly 60 percent of households (217 people) had more than one additional source of income.[13] The dependence on animal manure and products has been reduced since mineral fertiliser has been distributed in Hunza. Fresh meat, poultry, milk powder and cooking oil are regularly on offer in the bazaars, even butter oil and *qurút* (dehydrated buttermilk) are imported from other valleys. The strong dependence of the household economy on the agrarian sector in general has been weakened by increased market participation. Furthermore the pasture rotation system (Fig. 5) has been simplified due to lack of qualified personnel. Difficult glacier crossings and passages along narrow and steep tracks require the guidance of experienced shepherds. Easily accessible pastures are used more frequently and for extended periods and this in turn is exhausting the natural pasture resources in certain areas, while giving up additional available pasturage in remote areas. Are we experiencing the final stage of combined mountain agriculture and the end of pastoralism? Does the commercial value of pastures lie only in fodder, timber and firewood? One aspect needs to be kept in mind. Since state rule in Hunza was abolished in 1974 the proprietary rights of village lands, including pastures, have been taken over by clans and village communities. In a region without cadastral surveys and registered property rights the transfer from ubiquitous Miri rule and absolute control over resources to a democratic society with personal landholdings and communal property resembles aspects of agrarian reform. But such a transformation does not necessarily take place undisputed. The separation of the state and personal property of the hereditary ruler and his relatives from that of the farmers resulted in different perceptions and prolonged negotiations. Immediately valuable resources, such as physical infrastructure, communal meeting places, irrigated lands and cultivable waste were affected, while pastures and forests were less prominently impacted in the beginning.

High Pastures and their Part in the Commons

The scenario described above suggests a continuous process of decreasing importance for animal husbandry and a dramatically changing socio-economic environment. One would expect that these developments would affect all walks of life. Do economic activities nowadays take place mainly in the permanent settlements and does entrepreneurship function mainly outside the valley? If so, there should be severe consequences for agriculture. In such a scenario the pasture settlements should look barren and dilapidated, the 'drama of the commons'

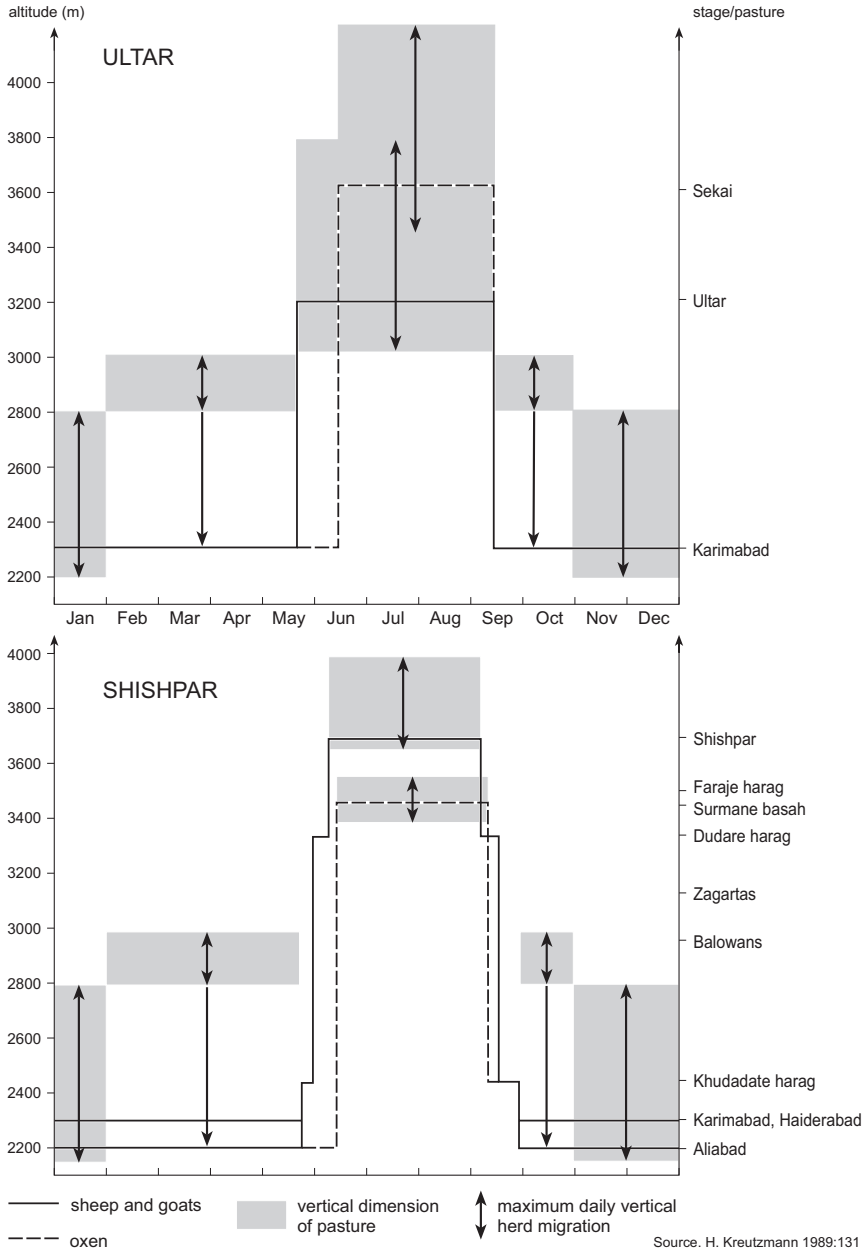

Figure 5: *Time–Space Diagram for Livestock Migration in Central Hunza*
Source: *Kreutzmann (1989: 131)*

(Ostrom *et al*. 2002) would have reached the next act. This statement holds true for some places such as *Shishpar* along the left bank of the Hassanabad glacier in central Hunza (Fig. 3B). While in 1935 forty to seventy shepherds (*hueltarč*) spent the summers in the three habitations surrounding the animal pen (*agél*), their number had come down to four in 1985; nowadays mainly two shepherds from Aliabad inhabit the one remaining building, while the other two buildings are in ruins (see App. 2). For certain duties helpers are arriving to support the two elderly men, especially when the animals are driven up or down the valley (see Fig. 5). On the right bank of the Hassanbad glacier the pastures of Muchu Har are not utilised at all. In Tochi the former pasture settlement has been converted into an orchard with apples, pine trees and willows, and animals are not permitted to trespass. No shepherds at all visited Muchu Har in 1998.

In other places, such as Shamijerav (Burum Ter) above Khudabad, the Wakhi from Gulmit have sustained an intact pasture settlement which they share with Burusho from Khudabad who have their own corral and housing arrangement (see Fig. 3A). Both groups utilise their pastures intensively. In 1935 they sent twelve and six shepherds respectively, in the 1990s the numbers were still six and two. Similar developments can be observed in Shimshal where the whole community is actively involved in the summer *kuč* to the *pamér*. Here livestock numbers are still high and for over a decade fresh yak stock is being imported from the neighbouring Chinese Tashkurghan County.[14]

The pastures north and south of the Batura glacier (Fig. 6) are used by farmers from Pasu and Hussaini. In 1998 the 87 households of Pasu sent a herd of 356 cattle, 282 yaks, 1547 goats and 468 sheep to their Batura pastures, while their neighbours from Hussaini sent only 47 cattle, 677 goats and 214 sheep.[15] The significant change since the previous survey in 1985 is in the increase of yak numbers, all other herd sizes remaining quite stable, although the number of households (61 in 1985) increased (see Abidi 1987; Kreutzmann 1986: 102). Here we find a pattern where a village community depending to a higher degree on off-farm employment than most other villages sustains a system of pasture utilisation through the help of female household members, and the productivity of their herds has been increased by the introduction of Pamirian yaks.

Labour shortage has increasingly become a problem for all communities, but at the same time attention has again shifted towards the summer pastures. Wherever these pastures are located near the access routes to high mountains or along trekking paths, the communities who share the right of pasture claim the right of guiding and portering in these areas as well. They feel entitled to negotiate the terms of trespassing on their common property. Villages that are affected by mountain tourism such as Pasu (see Fig. 6) and Shimshal have developed a rotation system within their community so that all households can participate in this source of income. In a few days more cash income can be earned by a household than a full summer of shepherding would enable them to do. Thus mountain tourism has led to a new valuation of high pastures.

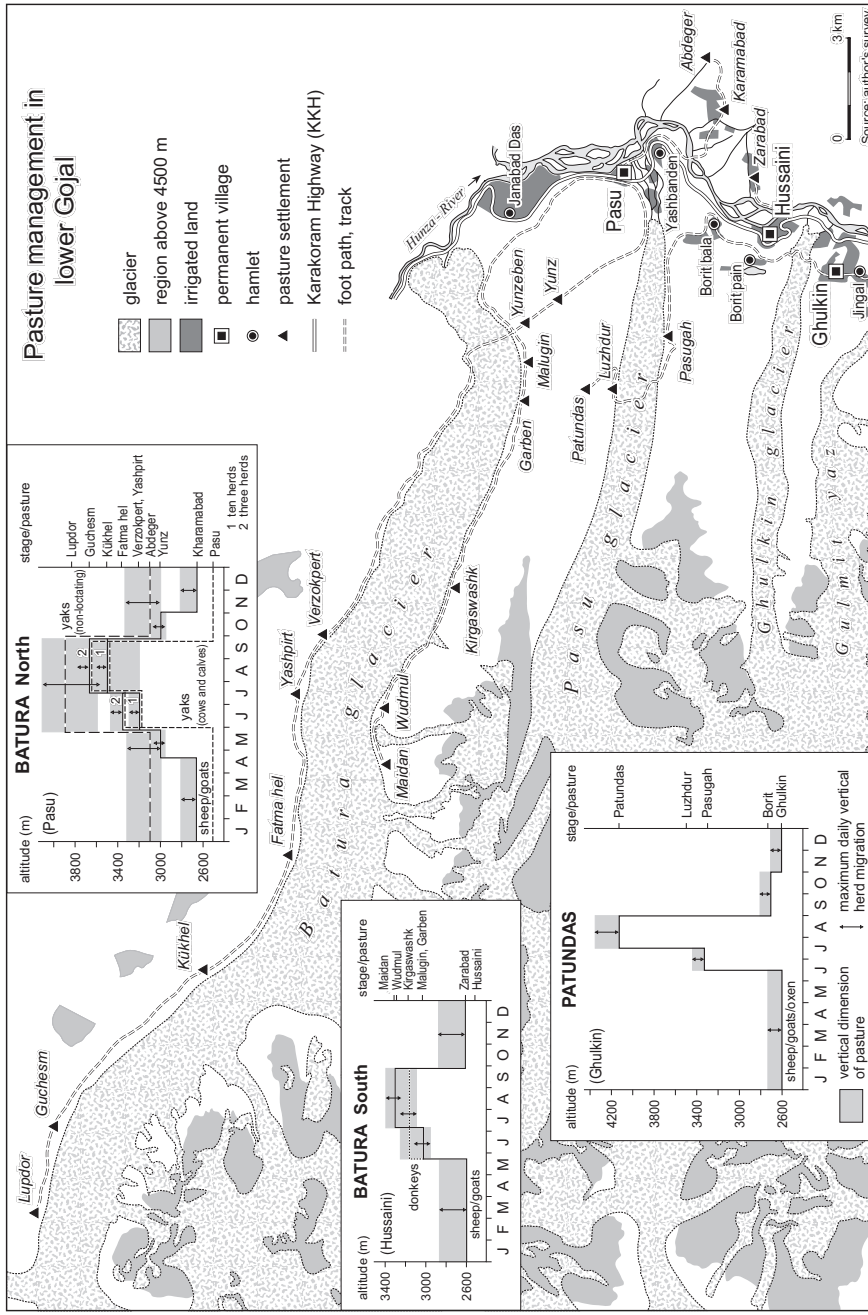

Figure 6: *Pasture Management in Lower Gujal*
Source: *Author's survey*

A second case is provided by the people of Abgerch, i.e., the Wakhi settlements in the Hunza Valley above Khaiber (see Fig. 2). Their traditional right to two pastures in tributaries of the Khunjerab valley – Kükhel and Karajilga – was taken back when the Khunjerab National Park was inaugurated in 1975. The mountain farmers were promised compensation, which was, however, not paid until 1990 when a dispute between the Abgerch people and the Government of Pakistan broke out. Negotiations finally led to a settlement that included preferential provision of jobs to Abgerch people in the National Park and control of traffic and hunters, as well as certain access rights to pastures.[16] These mountain farmers faced a dilemma. On the one hand global interest in the protection of Marco Polo sheep affected their pasture resources, on the other hand the protection of extremely old juniper trees in the Boiber valley – their second pasture resource – was supported by the International Union of Conservation (IUCN). The villagers are compensated for not cutting trees there any more and for restricted pasture use. For these five villages – Ghalapan, Gircha (Sarteez), Morkhun, Jamalabad, Sost – the access rights to common pastures have become a negotiable quantity in their relations with the regional and federal administrations as well as with international organisations.[17]

Although it may appear contradictory to the observations presented above, the commons as village property and one of the last communal resources have gained in importance recently. Never before have village funds been spent to such an extent in legal disputes in religious and civil courts (see App. 2). The village of Gulmit is the most severely affected of all and serves here as an extreme example. Gulmit's pastures lie scattered comparatively far away from the permanent settlement and are not located just above the homestead (see Fig. 2 and App. 2). During the 1990s different disputes arose with neighbours about the hereditary rights of pasture use. In 1990 a severe dispute began with Shishket across the Hunza river. The Bori kutor clan of Gulmit was to be deprived of its right to access Gaush, and the Ruzdor clan had similar experiences in Bulbulkeshk and Brondo Bar (see App. 2). Although kinship and marriage relationships exist between the inhabitants of Gulmit and Shishket, no solution could be reached through the local institutions and negotiations by mutually accepted and respected neutral persons. The whole conflict escalated and became a major affair of defending property rights that had not been laid down in written documents. Representatives of public and religious institutions were consulted in vain before the legal proceedings started. Up to the present day more than 0.5 million Pakistani Rupees have been spent on lawyers and court fees alone by the people of Gulmit. Similar or even higher contributions were invested by the opponents, not counting all travel expenses and secret meetings of representatives. No solution is in sight, despite 'stay orders' issued by the courts permitting both sides to use the pastures. The funds spent exceed by far the commercial value from animal husbandry in these pastures for the next decade.

Another dispute between these two villages occurred about the waterless scrub area of Bulchi Das. The driving force behind allocating so much energy on a land dispute is, all opponents mostly explain, pride, and sometimes the case is interpreted as an ethnic dispute. But at the same time there is hope that potential mineral wealth will be found in the barren lands and pastures; there is also the need to develop irrigated land for future generations and, of course, those areas are the only land resources left. If they are lost to a community, the pressure on land will be even higher. A similar conflict soon followed about Baldi hel/Baldiate (see Fig. 2), in this case the dispute being between Gulmit and Altit. Again, huge funds were spent on a dispute about a pasture which most of the opponents had never visited. The tradition recalled by one side claims that the pasture was divided into three sections, the westernmost part belonging to Altit, the central to the Mir of Hunza and the eastern one to the Gulmitik. The opposing party tries to make the point that already during the reign of Shah Ghazanfar (1824–1865) or Mir Ghazan Khan (1866–1886) the immigrant settlers from Altit and Baltit were allocated Baldi hel as their pastures. Obviously no eyewitness could be presented for this view. The abolition of hereditary rule in 1974 created misperceptions and controversial interpretations of customary rights. But here the attempt is to drive out one party entirely, although it has practised animal husbandry in Baldi hel until recently. Normally, in such cases, knowledgeable and respected village elders are consulted first, in the second instance religious representatives give their advice before public bodies are addressed. In this case all institutions have failed to find a solution and now the ultimate instance is being considered – honourable men from both sides are being selected and requested to take an oath on the Holy Quran and then decide about the property rights.

The third case involved the Gulmitik in a dispute with the farmers of Khudabad about Shamijerav ilga, the high pasture above Khudabad (Fig. 3A). The customary priority was given to the Gulmitik, while the Khudabadkuts were tolerated in the same grazing grounds. Now the latter are attempting to reach a status of equal rights and finally separating the pastures into two shares. Again huge funds have been invested for the legal proceedings, with only little hope for a mutually accepted solution. These cases have been presented as an example for the need of a settlement in areas without cadastral surveys. It is quite clear that any settlement could generate more disputes and could become a painful affair for the concerned parties. Currently pastures lead the list of importance in land disputes. But stretches of barren land along roads are also coming under dispute in growing numbers.[18] From the intensively used permanent settlements – where land disputes between the former hereditary ruler and local farmers were dominant in the 1970s and 1980s – controversies have shifted to the extensively used parts of the village lands: pastures and barren lands. The funds spent on these disputes by far exceed their present commercial value and result in huge economic losses every year. Noting on the one hand a decline in the importance of pastoral practices we observe at the same time a general rise in the value of land.

Recent Changes and Future Prospects for High-Mountain Pastoralism

The issues elaborated on above do not complete the picture of the present state of pastoralism and the estimation of natural grazing grounds. Some observations may point towards a further decline in agriculture and pastoralism, but at the same time agriculture remains an important economic resource. In times of crisis for the national economy, when unemployment of skilled people increases and tourism, dependent as it is on global events, is affected by market shifts, we observe that the traditional agricultural resource base of the Hunza Valley also transforms to adjust whenever possible to higher levels of productivity. New and valuable cash crops such as potatoes, seeds, fodder crops, cherries and other fruits have been introduced and have become profitable. Although farming no longer depends on the supply of manure from animal husbandry, households prefer to keep some livestock for their own domestic needs. In Karimabad, the commercial centre of Hunza, changes have affected not only individual growth patterns in irrigated agriculture, but also the common practice of free grazing (*hetin*) of all livestock in the cultivated lands between the harvest of the second crop in October and the germination of the next crop in March/April, which was abolished in 1993. Similar community-based legislation has occurred in other villages and is, as a rule, enforced by the respective local communities. Formerly private ownership of land was traditionally valid only during the cultivation period when animals were moved to the high pastures. After their return the harvested fields were accessible to everybody's animals until the cultivation period began again in spring. This practice, which was regarded by development agencies[19] as one of the most severe obstacles to improved cultivation techniques and as resulting in a stunted growth pattern, now belongs to the past. The ban is strictly supervised and non-compliance leads to severe penalties.[20] Farmers who experiment with new crops are keen to avoid any losses from livestock interference. Fruit orchards and vegetable and especially alfalfa plots or seed beds are presently in favour and are devoted to utilising the maximum vegetation period. Consequently, all sheep and goats are banned from other people's fields all year long. This decision was reached in a consensual village forum (*ǰirga*) and resulted in the search for a solution to how to deal with the remaining livestock. The farmers of Karimabad rejuvenated their previously more or less abandoned pastures. The Buroon clan which had sent six shepherds in 1935 with sheep and goats to Bululo, had no shepherd in 1985 to supervise the roaming oxen that were brought up there in spring and taken back in autumn. However, since 1998 the Buroon clan has adopted a system of turns (*galt*) as have the Baltikuts (mainly Qhurukuts) and Ḍom who make use of their pasture in Altikutse sat/Bericho chok. As no household can spare a full-time shepherd, the burden of watching the oxen and milking the few sheep and goats is distributed among all households on a two-day shift basis. Every household has to guarantee its participation and milking cows

are kept in stables near the homestead. Similar developments have also taken place in Haiderabad and Aliabad and are under discussion in other villages. Reduced numbers of oxen and the disappearance of horses in central Hunza have opened up the opportunity of using high pastures differently. Ultar ter (3,600 m) above Karimabad is the best example for a combined use of livestock keeping and mountain tourism. For several years the pasture settlement has been extended, a camping ground opened up and food and beverages supplied for the seasonal trekkers. Abandoned oxen pastures such as Sekai (3,600 m, see App. 2) have been stocked for the first time with yaks imported from the Chinese Pamirs.

The question of the future prospects of high mountain pastoralism within a framework of sustainable development deserves a complex answer, at least for the Hunza Valley. Evaluations should search not for an overall decline or replacement of high mountain pastoralism or agriculture as such by 'modern' enterprises and/or services, for the assessment of the fate of high mountain pastoralism within Hunza society has revealed that socio-economic transformations are reflected in all sectors, including the pastoral. Adaptations and modifications are influenced to a greater degree by political and social developments than by changing environmental conditions in the region where these practices are applied. Thus, sustainability has to account for all available opportunities under a given set of conditions. Consequently, pastoral practices and the use of grazing grounds will continue to play an economic and security-related role in Hunza economy. Their degree of importance for the generation of household incomes may nevertheless vary quite significantly. How important political issues are in a globalised world was evident in the aftermath of 9/11. The tourism industry collapsed immediately and annual income losses of more than 90 percent from tourism have been recorded for the following two years. As a consequence dynamic responses to a crisis situation have been created and agriculture in general and animal husbandry in particular have gained in importance once again. Young men who were previously employed in tourism went back to pastoral practices, and subsistence production once again contributes a higher share to household incomes.

Notes

1. For anthropological and cultural-geographical contributions to the spectrum of South Asian mountain nomadism see Barth (1956a, b), Bhasin (1996), Casimir (1991), Casimir and Rao (1985), Ehlers and Kreutzmann (2000), Jest (1973), Jettmar (1960), Khatana (1985), Kreutzmann (1995a, 1996, 1998b, 1999a, b, 2003a, b), Langendijk (1991), Rao (1992), Rao and Casimir (1982, 1985), Scholz (1982, 1991, 1992, 1995, 1999), Shashi (1979), E. Staley (1966), Uhlig (1962, 1965, 1973, 1976).
2. For contributions to the scholarly discussion of transhumance in the South Asian context see Alirol (1979), Chakravarty-Kaul (1998), Ehlers and Kreutzmann (2000), Jettmar (1960), Khatana (1985), Manzar Zarin and Schmidt (1984), Tucker (1986), Snoy (1993), Uhlig (1976, 1995).

3. For classical and recent contributions to the discussion of Alpwirtschaft in the South Asian mountains see Azhar-Hewitt (1999), Bhasin (1996), Bishop (1990), Butz (1996), Clemens (2001), Clemens and Nüsser (2000), Ehlers (2000), Fischer (2000), Herbers (1998), Herbers and Stöber (1995), Hewitt (1989), Iturrizaga (1997), Jest (1974, 1975), Kreutzmann (1986, 1996, 1999b, 2003 a, b), Nüsser (1998, 1999), Nüsser and Clemens (1996), Parkes (1987), Schmidt (2000), Snoy (1993), Staley (1966, 1969, 1982), Stevens (1993), Stöber (2001), Stöber and Herbers (2000), Troll (1973), Uhlig (1976, 1995).
4. IOR/2/1079/251. Quotations from files and books archived in the India Office Library are referred to under the abbreviations IOR (for records) and IOL (for library) accompanied by the file number: 'Transcripts/Translations of Crown-copyright records in the India Office Records appear by permission of the Controller of Her Majesty's Stationery Office.'
5. IOR/2/1079/251. British India and the Maharaja of Kashmir supported the Hunza ruler in 1896 with annual subsidies worth 3000 Rs (Godfrey 1898: 79). For the present state of pasture utilisation in Shimshal see Butz (1996) and Iturrizaga (1997).
6. Schomberg (1934: 211; 1935: 169). The nomadic connotation probably stems from a military report (General Staff India 1929: 144) and has been afterwards repeated by geographers such as Allan (1989: 135), Dichter (1967: 45) and E. Staley (1966: 322). The activities observed conform very well with what has been termed combined mountain agriculture and are quite different from nomadism. Similarly Gladney (1991: 37) terms the Wakhi and Sariqoli across the border 'Tajik nomads of the Pamir mountains in southwestern Xinjiang'. All of these neglect the significance of irrigated crop farming in the combined high mountain agriculture of these peasants which has been an integral part of their agriculture since settling there and not merely a recent development.
7. Quotation from an untitled and undated (approx. 1935) file from the Commissioner's office, Gilgit about the property rights of the Mir of Hunza.
8. All quotations are taken from Schomberg's confidential report on the social condition in Hunza (IOL/P&S/12/3293: 3–7).
9. See. IOL/P&S/12/3294; IOL/P&S/12/3288: Administration Report for 1936.
10. See. Lorimer (1935–1938), Schomberg (1934, 1935, 1936), Visser-Hooft (1935).
11. Cf. Butz (1996), Kreutzmann (1986, 1998a), Schomberg (1936: 56, 62).
12. Data according to Karimabad Census 1992 prepared by Karimabad Planning Support Service.
13. The twenty-six households without nonagrarian resources were mainly small households managed by widows or elderly people and without able-bodied members who would otherwise be engaged in labour, services or other occupations. Private enterprise, public services and educational migration plus labour accounted for the dominant occupations.
14. In 1995 Shimshal had about 4,473 goats, 2,547 sheep, 960 yaks, 399 cattle and 32 donkeys. The number of yaks was around 1,000 in 2003 and other livestock numbers were also stable (information provided by Didar Ali in Shimshal, August 2003).
15. The author is grateful for the data to Einar Eberhardt, Marburg who conducted the Batura livestock survey in 1998.
16. For a detailed account of this dispute see Knudsen (1996), Kreutzmann (1995b), Zaigham Khan (1996).
17. In 1996 a management plan for the Khunjerab National Park was outlined and with the withdrawal of the court case in 2000 the implementation process has started. The

mountain farmers are permitted to graze about one hundred yaks in the park core zone (compared to four to five hundred in the 1990s) and about one hundred sheep and goats in Kukshel, and about eight hundred in Furzindur and Arbob Kuk. In addition, the Khunjerab Village Development Organization (KVO) represents the interests of the roughly 300 farming households. The KVO controls access to certain areas and is engaged in the management of ibex trophy hunting. Thus jobs are provided, Park entrance fees (three million Pakistani Rupees since 1998) and hunting fees (about one million Pakistani Rupees from 1996 to 2003) are collected and invested in projects of mutual interest and/or distributed among the entitled households (information provided by Amjad Bahadur Khan, president of KVO, August 2003).

18. To sum up only briefly the areas of pasture disputes in the 1980s and 1990s besides the ones already mentioned: Murtazbad argued with Hassanabad about Hachindar; Ganesh and Shishket/Gulmit about the borders between Gaush and Ganzupar; Pasu and Hussaini about the limits of the adjacent newly colonised areas of Kharamabad and Zarabad; Hussaini and Ghulkin have different opinions about the environs of Borit lake and the lands of the seasonal settlements in Borit; Ghalapan and Kaiber disputed about Dildung kor; Kil and Kirmin both claimed stretches of barren land between the two villages; Misgar and Sost tried to claim Belli after it became commercially revalued due to its location on the KKH; after the construction of a tractor road Pasu and Shimshal fostered different opinions about the barren stretches of land between Tupopdan and Dut.
19. The Aga Khan Rural Support Programme (AKRSP) and the FAO/UNDP-sponsored Integrated Rural Development Project (IRDP) advocated such a strategy in the early 1980s. Fencing of irrigated terraces was discussed as one solution, others included the keeping of livestock in stables. Neither was successful with their proposals then (AKRSP 1984; Saunders 1983, 1984).
20. In all villages, so-called Falai committees were founded and authorised to collect sanctions for trespassing animals. In Haiderabad the fees amounted in 1998 to 5 Rs per sheep, 15 Rs per goat and 25 Rs per unit of cattle. The collected fine is handed over to the owner of the respective plot.

References

Abidi, S.M. 1987. *Pastures and Livestock Development in Gojal*. Gilgit: AKRSP Rural Science Research Programme Reports 5.

Aga Khan Rural Support Programme 1984. *First Annual Review 1983*. Gilgit.

Aga Khan Rural Support Programme 1991. *A Report on Livestock in the Northern Areas*. Gilgit.

Alirol, P. 1979. *Transhuming Animal Husbandry Systems in the Kalinchowk region (Central Nepal): A Comprehensive Study of Animal Husbandry on the Southern Slopes of the Himalayas*. Bern.

Allan, N.J.R. 1989. 'Kashgar to Islamabad: The Impact of the Karakorum Highway on Mountain Society and Habitat', *Scottish Geographical Magazine* 105(3): 130–41.

Arbos, P. 1923. 'The Geography of Pastoral Life', *Geographical Review* 13: 559–75.

Azhar-Hewitt, F. 1999. 'Women of the High Pastures and the Global Economy: Reflections on the Impacts of Modernization in the Hushe Valley of the Karakorum, Northern Pakistan', *Mountain Research and Development* 19(2): 141–51.

Barth, F. 1956a. 'Ecological Relationships of Ethnic Groups in Swat, North Pakistan', *American Anthropologist* 58(6): 1079–89.

Barth, F. 1956b. 'Indus and Swat Kohistan — An Ethnographic Survey' in *Studies Honouring the Centennial of Universtetets Etnografiske Museum, Oslo 1857–1957; Vol.II.* pp. 5–98. Oslo.

Bhasin, V. 1996. *Transhumants of Himalayas. Changpas of Ladakh, Gaddis of Himachal Pradesh and Bhutias of Sikkim*. Delhi.

Biddulph, J. 1876. Biddulph Diary 1876 (A 87/6). In Diaries and miscellaneous papers 1866–1903. Hereford Record Office.

Bishop, B.C. 1990. *Karnali under Stress. Livelihood Strategies and Seasonal Rhythms in a Changing Nepal Himalaya*. Chicago, Geography Research Paper 228–29.

Blache, J. 1933. 'L'homme et la montagne'. Paris.

Butz, D. 1996. 'Sustaining Indigenous Communities: Symbolic and Instrumental Dimensions of Pastoral Resource Use in Shimshal, Northern Pakistan', *The Canadian Geographer* 40(1): 36–53.

Casimir, M.J. 1991. 'Pastoral Strategies and Balanced Diets: Two Case Studies from South Asia' in H.G. Bohle et al. (eds) 'Famine and Food Security in Africa and Asia: Indigenous Responses and External Intervention to Avoid Hunger' *Bayreuther Geowissenschaftliche Arbeiten* 15: 115–26.

Casimir, M.J. and A. Rao 1985. 'Vertical Control in the Western Himalaya: Some Notes on the Pastoral Ecology of the Nomadic Bakkarwal of Jammu and Kashmir', *Mountain Research and Development* 5(3): 221–32.

Chakravarty-Kaul, M. 1998. 'Transhumance and Customary Pastoral Rights in Himachal Pradesh: Claiming the High Pastures for Gaddis', *Mountain Research and Development* 18(1): 5–17.

Clemens, J. 2001. *Ländliche Energieversorgung in Astor: Aspekte des nachhaltigen Ressourcenmanagements im nordpakistanischen Hochgebirge*. St. Augustin Bonner Geographische Abhandlungen 106.

Clemens, J. and M. Nüsser 2000. 'Pastoral Management Strategies in Transition: Indicators from the Nanga Parbat Region (NW-Himalaya)' in E. Ehlers and H. Kreutzmann (eds) *High Mountain Pastoralism in Northern Pakistan*. Stuttgart.

Crook, J.H. and H.A. Osmaston (eds) 1994 *Himalayan Buddist Villages: Environment, Resources, Society and Religious Life in Zanskar, Ladakh.* Bristol.

Dichter, D. 1967. *The North-West Frontier of West Pakistan. A Study in Regional Geography*. Oxford.

Drew, F. 1875 [1980]. *The Jummoo and Kashmir Territories*. London, Karachi.

Ehlers, E. 2000. 'Pastoralism in the Bagrot: Spatial organization and economic diversity' in E. Ehlers and H. Kreutzmann (eds) *High Mountain Pastoralism in Northern Pakistan*, 73–87. Stuttgart.

Ehlers, E. and H. Kreutzmann (eds) 2000. *High Mountain Pastoralism in Northern Pakistan*. Stuttgart.

Fischer, R. 2000. 'Coming Down from the Mountain Pastures: Decline of High Pasturing and Changing Patterns of Pastoralism in Punial' in E. Ehlers and H. Kreutzmann (eds) *High Mountain Pastoralism in Northern Pakistan*, 59–71. Stuttgart.

General Staff India 1929. *Military Report on Sinkiang (Chinese Turkestan)*. Calcutta.

Gladney, D.C. 1991. Muslim Chinese. Ethnic Nationalism in the People's Republic. Cambridge, London, Harvard East Asian Monographs 149.

Godfrey, S.H. 1898. *Report on the Gilgit Agency and Wazarat and the Countries of Chilas, Hunza-Nagar, and Yasin, including Ashkuman, Ghizr, and Koh. 1896–97.* Calcutta.

Gordon, T.E. 1876. *The Roof of the World, being the Narrative of a Journey over the High Plateau of Tibet to the Russian Frontier and the Oxus Sources on Pamir*. Edinburgh.

Grötzbach, E. 1982. 'Das Hochgebirge als menschlicher Lebensraum', *München, Eichstätter Hochschulreden* 33.

Grötzbach, E. 1987. 'Zur siedlungsgeographischen Charakterisierung von Hochgebirgen', *Frankfurter Beiträge zur Didaktik der Geographie* 10: 61–75.

Grötzbach, E. 1988: High Mountains as Human Habitat. In N.J.R. Allan, G.W. Knapp and C. Stadel eds. 1988. *Human Impact on Mountains*, 24–35. Totowa.

Grötzbach, E. and C. Stadel 1997.' Mountain Peoples and Cultures' in B. Messerli and J. Ives (eds) *Mountains of the World: A Global Priority*, pp. 17–38. New York, London.

Guillet, D. 1983. Toward a Cultural Ecology of Mountains. The Central Andes and the Himalaya Compared, *Current Anthropology* 24/5: 561–74.

Herbers, H. 1998. *Arbeit und Ernährung in Yasin*. Stuttgart.

Herbers, H. and G. Stöber 1995. 'Bergbäuerliche Viehhaltung in Yasin (Northern Areas, Pakistan): organisatorische und rechtliche Aspekte der Hochweidenutzung', *Petermanns Geographische Mitteilungen* 139(2): 87–104.

Hewitt, F. 1989. 'Woman's Work and Woman's Place: The Gendered Life-World of a High Mountain Community in Northern Pakistan', *Mountain Research and Development* 9(4): 335–52.

India Office Library & Records. *Afghanistan Consulate 1927–1947*. IOR/12/50/394.

India Office Library & Records. *Crown Representative's Records – Indian State Residencies: Kashmir Residency Files*. IOR/2/1075/217.

India Office Library & Records. *Crown Representative's Records - Indian States Residencies: Gilgit, Chilas, Hunza and Nagir Files (Confidential)*. IOR/2/1079/251.

India Office Library & Records. *Departmental Papers: Political & Secret Internal Files & Collections 1931–1947*. IOL/P&S/12/2336, 2361, 3285, 3288, 3292–3294.

India Office Library & Records. *Departmental Papers: Political and Secret Separate (or Subject) Files 1902–1931*. IOL/P&S/10/278, 826, 973.

India Office Library & Records. *Files Relating to Indian States Extracted from the Political and Secret Letters from India 1881–1911*. IOL/P&S/7/61, 66, 157, 170, 181, 205, 222, 231, 233, 243, 252.

Iturrizaga, L. 1997. 'The Valley of Shimshal – A Geographical Portrait of a Remote High Settlement and its Pastures with Reference to Environmental Habitat Conditions in the North-West Karakorum (Pakistan)', *GeoJournal* 42(2–3): 308–23.

Jest, C. 1973. 'La société pastorale du Tibet de l' ouest', in *L'Homme, hier et aujourd' hui* pp. 435–44. Paris.

Jest, C. 1974. *Tarap, une vallée dans l'Himalaya*. Paris.

Jest, C. 1975. *Dolpo: Communautés de langue tibétaine du Népal*. Paris.

Jettmar, K. 1960. 'Soziale und wirtschaftliche Dynamik bei asiatischen Gebirgsbauern', *Sociologus* (N.S.) 10: 120–38.

Khatana, R.P. 1985. 'Gujara-Bakarwal Transhumance in Jammu and Kashmir Himalayas: Responses of Spring Migrations', in M. Husain et al. (eds) *Geography of Jammu & Kashmir, Some Aspects*. pp. 86–116. Delhi.

Knudsen, A. 1996. 'State Intervention and Community Protest: Nature Conservation in Hunza, North Pakistan', in O. Bruun and A. Kalland (eds) *Asian Perceptions of Nature: A Critical Approach*, pp. 103–25. London.

Kreutzmann, H. 1986. 'A Note on Yak-keeping in Hunza (Northern Areas of Pakistan)' *Production Pastorale et Société* 19: 99–106.

Kreutzmann, H. 1995a. Communication and Cash Crop Production in the Karakorum: Exchange Relations under Transformation. In I. Stellrecht ed. *Pak-German Workshop: Problems of Comparative High Mountain Research with Regard to the Karakorum*, Tübingen October 1992, Occasional Papers 2, 100–17.

Kreutzmann, H. 1995b. Globalization, Spatial Integration, and Sustainable Development in Northern Pakistan, *Mountain Research and Development* 15(3): 213–27.

Kreutzmann, H. 1996. *Ethnizität im Entwicklungsprozeß. Die Wakhi in Hochasien*. Berlin.

Kreutzmann, H. 1998a. From Water Towers of Mankind to Livelihood Strategies of Mountain Dwellers: Approaches and Perspectives for High Mountain Research, *Erdkunde* 52(3): 185–200.

Kreutzmann, H. 1998b. Yak-keeping in High Asia. Adaptation to the Utilization of High-Altitude Ecological Zones and the Socio-economic Transformation of Pastoral Environments, *Kailash* 18(1–2): 17–38.

Kreutzmann, H. 1999a. Rückzugsgebiet und Migration: Überlegungen zur Mobilität als Existenzsicherungsstrategie in Hochasien. In J. Janzen ed. *Räumliche Mobilität und Existenzsicherung*, 83–104. Berlin, Abhandlungen - Anthropogeographie 60.

Kreutzmann, H. 1999b. Animal Husbandry in High Asia. Yak-Keeping at the Upper Pastoral Limits. In G. Miehe ed. *Environmental Change in High Asia*, 361–71. Marburger Geographische Schriften.

Kreutzmann, H. 2003a. Ethnic Minorities and Marginality in the Pamirian Knot. Survival of Wakhi and Kirghiz in a Harsh Environment and Global Contexts, *The Geographical Journal* 169(3): 215–35

Kreutzmann, H. 2003b. Yak-Keeping in Western High Asia: Tajikistan, Afghanistan, Southern Xinjiang, Pakistan. In G. Wiener, Han Jianlin and Long Ruijun. *The Yak*, 323–36. Bangkok. (2nd ed.).

Langendijk, M.A.M. 1991. *The Utilisation and Management of Pasture Resources in Central Ishkoman*. Gilgit.

Lorimer, D.L.R. 1935–1938. 'The Burushaski Language', *Instituttet for Sammenlignende Kulturforskning, Serie B: Skrifter* XXIX-1–3.

Manzar Zarin, M. and R.L. Schmidt 1984. *Discussions with Hariq. Land Tenure and Transhumance in Indus Kohistan*. Islamabad, Berkeley.

Marshall W.M. 1913. *Note on the History of Hunza Rights on the Taghdumbash Pamir* (IOL/P&S/10/278: 216–218).

McMahon, A.H. 1898. *Report on the Subject of the Claims of the Kanjut Tribe (i.e., the people of Hunza) to Territory beyond the Hindu Kush, i.e., to the Tagdumbash Pamir and the Raskam Valley* (IOR/2/1079/253: 60–67).

Nüsser, M. 1998. *Nanga Parbat (NW-Himalaya): Naturräumliche Ressourcenaussstattung und humanökologische Gefügemuster der Landnutzung*. Bonn.

Nüsser, M. 1999. 'Mobile Tierhaltung in Chitral: Hochweidenutzung und Existenzsicherung im pakistanischen Hindukusch', in J. Janzen (ed.) *Räumliche Mobilität und Existenzsicherung*, pp. 105–31. Berlin.

Nüsser, M. and J. Clemens 1996. 'Impacts on Mixed Mountain Agriculture in Rupal Valley, Nanga Parbat, Northern Pakistan', *Mountain Research and Development* 16(2): 117–33.

Ostrom, E., Dietz, T., Dolsak, N., Stern, P.C., Stonich, S., Weber, E.U. (eds) 2002. *The Drama of the Commons*. Washington DC.

Parkes, P. 1987. 'Livestock Symbolism and Pastoral Ideology Among the Kafirs of the Hindu Kush', *Man* (N.S.) 22: 637–60.

Peattie, R. 1936. *Mountain Geography: A Critique and Field Study*. Cambridge, MA.

Price, L.W. 1981. *Mountains and Man: A Study of Process and Environment*. Berkeley.

Qudratullah Beg 1935. 'Hunza ters', in D.L.R. Lorimer (ed.) *Personal Records. Collection of Notes, Communication and Material Collected During 1923–1924 and 1934–1935, Archived in SOAS London*. MS 181247.

Rao, A. 1992. 'The Constraints of Nature or Culture? Pastoral Resources and Territorial Behaviour in the Western Himalayas', in M.J. Casimir and A. Rao (eds) *Mobility and Territoriality*, pp. 91–134. New York, Oxford.

Rao, A. and M.J. Casimir 1982. 'Mobile Pastoralists of Jammu and Kashmir', *Nomadic Peoples* 10: 40–50.

Rao, A. 1985. 'Pastoral Niches in the Western Himalayas (Jammu & Kashmir)', *Himalayan Research Bulletin* 5(2): 28–42.

Rhoades, R.E. and S.I. Thompson, 1975. 'Adaptive Strategies in Alpine Environments: Beyond Ecological Particularism', *American Ethnologist* 2: 535–51.

Rinschede, G. 1979. *Die Transhumance in den französischen Alpen und in den Pyrenäen*. Münster.

Rinschede, G. 1988. 'Transhumance in European and American Mountains', in N.J.R. Allan, G.W. Knapp and C. Stadel (eds) *Human Impact on Mountains*, 96–108. Totowa, New Jersey.

Saunders, F. 1983. *Karakoram Villages*. Gilgit.

Saunders, F. 1984. *Integrated Rural Development. Pakistan (Northern Areas): Project Findings and Recommendations*. Rome.

Schmidt, M. 2000. 'Pastoral Systems in Shigar/Baltistan: Communal Herding Management and Pasturage Rights', in E. Ehlers and H. Kreutzmann (eds) *High Mountain Pastoralism in Northern Pakistan*, 121–50. Stuttgart.

Scholz, F. 1982. 'Einführung', in F. Scholz and J. Janzen (eds) *Nomadismus – Ein Entwicklungsproblem?* pp. 2–8. Berlin.

Scholz, F. 1992. Nomadismus. Bibliographie. Berlin.

Scholz, F. 1995. *Nomadismus. Theorie und Wandel einer sozio-ökologischen Kulturweise*. Stuttgart.

Scholz, F. 1999. 'Nomadismus ist tot: Mobile Tierhaltung als zeitgemäße Nutzungsform der kargen Weiden des Altweltlichen Trockengürtels', *Geographische Rundschau* 51(5): 248–55.

Scholz, F. 1991. (ed). *Nomaden – Mobile Tierhaltung: Zur gegenwärtigen Lage von Nomaden und zu den Problemen und Chancen mobiler Tierhaltung*. Berlin.

Schomberg, R.C.F. *Hunza Report* (IOL/P&S/12/3293).

Schomberg, R.C.F. 1934. 'The Yarkhun Valley of Upper Chitral', *The Scottish Geographical Magazine* 50: 209–12.

Schomberg, R.C.F. 1935 [1976]. *Between the Oxus and the Indus*. London [Lahore].

Schomberg, R.C.F. 1936. *Unknown Karakoram*. London.

Shahrani, M.N. 1979. *The Kirghiz and Wakhi of Afghanistan. Adaptation to Closed Frontiers*. Seattle, London.

Shashi, S.S. 1979. *The Nomads of the Himalayas*. Delhi.

Sheikh, M.I. and S.M. Khan 1982. *Forestry and Range Management in Northern Areas*. Peshawar.

Shipton, E. 1938: The Shaksgam Expedition, 1937. In: The Geographical Journal 91: 313–339.

Snoy, P. 1993. 'Alpwirtschaft in Hindukusch und Karakorum', in U. Schweinfurth (ed). *Neue Forschungen im Himalaya*, pp. 49–73. Stuttgart.

Staley, E. 1966. *Arid Mountain Agriculture in Northern West Pakistan*. Lahore.

Staley, J. 1966. *Economy and Society in Dardistan: Traditional Systems and the Impact of Change*. Lahore.

Staley, J. 1969. 'Economy and Society in the High Mountains of Northern Pakistan', *Modern Asian Studies* 3: 225–43.

Staley, J. 1982. *Words for my Brother: Travels between the Hindu Kush and the Himalayas*. Karachi.

Stevens, S.F. 1993. *Claiming the High Ground: Sherpas, Subsistence, and Environmental Change in the Highest Himalaya*. Berkeley, Los Angeles, London.

Stöber, G. 2001. *Zur Transformation bäuerlicher Hauswirtschaft in Yasin (Northern Areas, Pakistan)*. St. Augustin.

Stöber, G. and H. Herbers 2000. 'Animal Husbandry in Domestic Economies: Organization, Legal Aspects and Present Changes of Combined Mountain Agriculture in Yasin', in E. Ehlers and H. Kreutzmann (eds). *High Mountain Pastoralism in Northern Pakistan*, pp. 37–58. Stuttgart.

Streefland, P.H., S.H. Khan and O. van Lieshout 1995. *A Contextual Study of the Northern Areas and Chitral*. Gilgit.

Sykes, P.M. 1915. *Report on Tour to Yarkand. Kashgar* (IOR/2/1076/222).

Troll, C. 1973. 'Die Höhenstaffelung des Bauern – und Wanderhirtentums im Nanga Parbat-Gebiet (Indus-Himalaya)', *Erdwissenschaftliche Forschungen* 5: 43–48.

(NC) Tucker, R.P. 1986. 'The Evolution of Transhumant Grazing in the Punjab Himalaya', *Mountain Research and Development* 6(1): 17–28.

Uhlig, H. 1962. *Typen der Bergbauern und Wanderhirten in Kaschmir und Jaunsar-Bawar* (Tagungsbericht und wissenschaftliche Abhandlungen. Deutscher Geographentag Köln 1961), 212–22. Wiesbaden.

Uhlig, H. 1965. 'Die geographischen Grundlagen der Weidewirtschaft in den Trockengebieten der Tropen und Subtropen (mit Beispielen aus Kaschmir und Kolumbien)', *Gießener Beiträge zur Entwicklungsforschung* 1: 1–28.

Uhlig, H. 1973. 'Wanderhirten im westlichen Himalaya: Chopan, Gujars, Bakerwals, Gaddi', in C. Rathjens, C. Troll and H. Uhlig (eds). *Vergleichende Kulturgeographie der Hochgebirge des südlichen Asien*, pp. 157–67. Wiesbaden.

Uhlig, H. 1976. 'Bergbauern und Hirten im Himalaya', in H. Uhlig and E. Ehlers (eds). *Tagungsbericht und wissenschaftliche Abhandlungen. 40. Deutscher Geographentag* Innsbruck (19–25.5.1975), pp. 549–86. Wiesbaden.

Uhlig, H. 1995. 'Persistence and Change in High Mountain Agricultural Systems', *Mountain Research and Development* 15(3): 199–212.

Visser-Hooft, J. 1935. 'Ethnographie', in P.C. Visser and J. Visser-Hooft (eds). *Wissenschaftliche Ergebnisse der Niederländischen Expeditionen in den Karakorum und die angrenzenden Gebiete in den Jahren 1922, 1925 und 1929/30*, Vol. 1. pp. 121–55, Leipzig.

Zaigham Khan 1996. 'Saviours of the Lost Park', *The Herald*. Sept: 142–43.

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Appendix 1: *Revenue of the Mir of Hunza Derived from Grazing Taxes in the Taghdumbash Pamir and Sariqol*

Year	Revenue in kind				Source
	Namdā (felt, woollen blanket)	Ropes	*Kirpas* (cotton cloth)	*śuqá* (coat)	
1760–1865	Grazing dues from Kirghiz[1]				IOL/P&S/10/278:216
1865–1878	No revenue[2]				IOL/P&S/10/278:216
1875	Hunzukuts' looting in Taghdumbash[3], extracting goods from Kirghiz				Biddulph (1876: 116)
1878–1887	Grazing dues from Kirghiz and Sariqoli[4]				IOL/P&S/10/278:217
1879–1891	Taxes from Shakshu Pakhpu[5]				N.N 1928: 85
1888	50	–	–	–	IOR/2/1079/251:8
1889	100	–	–	–	IOR/2/1079/251:8
1890	90	–	–	–	IOR/2/1079/251:8
1890	Attack of Hunzukuts against Kirghiz nomads in Taghdumbash				IOL/P&S/7/61/52, 53
1891–1895	No revenue[6]				IOL/P&S/10/278:216
1895–1902	Grazing dues of Kirghiz and Sariqoli				IOR/2/1075/217:40[7]
1903	22	–	–	–	IOL/P&S/7/157/1277
1904	grazing dues of Kirghiz and Sariqoli				IOL/P&S/7/170/1893
1905	33	31	–	–	IOL/P&S/7/181/1554
1906	45	30	–	–	IOL/P&S/7/205/1602
1907	4030 (= total value 200 Rs)				IOL/P&S/7/205/1602
1908	40	30	–	–	IOL/P&S/7/222/2027
1909	41	35	2 *kham*[8]	–	IOL/P&S/7/233/1556
1910	50	–	2 *kham*		IOL/P&S/7/243/1407
1911	40	40	10	–	IOL/P&S/7/252/1654
1912–1914	40	30	3–4	–	IOL/P&S/10/826:1739
1914	70	50	9	–	IOL/P&S/10/826:173
1915	Regular dues from Sariqoli[10]				IOL/P&S/10/826:140
1916	Regular dues[11]				IOL/P&S/10/826:107
1917	60	45	15	3	IOL/P&S/10/826:86
1918	Regular dues				IOL/P&S/10/826:32
1920	62	47	17	5	IOL/P&S/10/826:9

1921	65	32	10	4	IOL/P&S/10/973:240
1922	60	30	6	–	IOL/P&S/10/973:217
1923	80	40	20	10	IOL/P&S/10/973:183
1924	60	40	6	–	IOL/P&S/10/973:15512
1925	52	40	10	–	IOL/P&S/10/973:12913
1926	72	45	4	–	IOL/P&S/10/973:104
1927	58	42	12	–	IOL/P&S/10/973:81
1929	55	30	10	–	IOL/P&S/10/973:36
192814	55	60	10	–	IOL/P&S/10/973:58
1930	61	43	20	–	IOL/P&S/10/973:9
1931	65	50	25	2	IOL/P&S/12/3285:370
1932	Regular dues				IOL/P&S/12/3285:329
1933	Regular dues				IOL/P&S/12/3285:329
1934	No dues [15]				IOL/P&S/12/3285:284
1935	No dues[18]				IOL/P&S/12/3285:284
1936	No dues[18]				IOL/P&S/12/3285:284
1937	Termination of all tax demands[16]				IOL/P&S/12/3285:233
1948	Attempt to regain pasture rights in Taghdumbash[17]				IOL/P&S/12/2336
since 1985	Renewed negotiations about property rights[18]				own interviews

1. In the aftermath of the conquest of the Taghdumbash Pamir and following the supplanting of the Kirghiz there by the Mir of Hunza's actions to drive them back to Tashkurgan, his control of the grazing grounds resulted in annual demands for grazing taxes from all users. Mir Silum Khan III materialised his claim by erecting a stone monument in Dafdar and presenting scalps of Kirghiz to the Chinese representatives in Kashgar and Yarkand (Godfrey 1898: 74, McMahon 1898: 5). Three hundred Kirghiz were estimated to have lived there before. The annual tax was supposedly fixed at the rate of one sheep for every forty sheep and goats as well as one yak per thirty yaks.
2. During the reign of Yakub Beg (1862–1878) in Kashgaria and his occupation of the Pamir region the Mir of Hunza failed to realise any revenue there. The majority of Kirghiz nomads had given up the Taghdumbash Pamir as their grazing grounds during this period and shifted their activities to Aktash. Godfrey (1898: 74) states that until 1880 no taxes were collected. Subsequent to attacks by Hunzukuts around 1866–1867 the Kirghiz of Taghdumbash retreated to Tagharma (Gordon 1876: 115). The sedentary inhabitants of Sariqol took their place and used the grazing grounds in the Pamir.
3. In 1875 a group of Hunzukuts is reported to have attacked the camps of Kirghiz nomads in Taghdumbash. They took some Kirghiz as hostages and drove away horses and a large flock of sheep. The Hakim of Sariqol, Hussan Shah, organised a punitive

expedition towards Hunza, liberated the captured Kirghiz and pulled down the fort at Misgar (Biddulph 1876: 115–16).

4. Around 1880 Mir Ghazan Khan permitted Kirghiz nomads (twenty tents) under the leadership of Beg Kuchmumabad (Kuch Muhammad) to use the pastures in the Taghdumbash Pamir. The taxes were fixed at one *namdā*, one *śuqá*, some rolls of *kirpas*, one rope or one saddle (*ǰhul*) per tent (*kirgah*), the exact amount levied depending on the size of the flocks. Godfrey (1898: 74) mentions grazing dues of one sheep, one *namdā*, one rope and one pair of *paipakh* (socks) per tent for this period. Since 1883 Sariqoli shepherds annually visited the same region under the same conditions. In 1886 the competition between shepherds from Hunza and Sariqol led to quarrels in Taghdumbash which were settled by the Chinese representative (Taotai) in Kashgar. According to Mir M. Nazim Khan and Wazir Humayun Beg he settled the dispute in a local court in Tashkurgan in favour of the Hunzukuts (IOL/P&S/7/66/701: Letter from J. Manners-Smith to Resident in Kashmir, Gilgit, 4.4. 1892; McMahon 1898: 6).
5. Following a punitive expedition under the leadership of Wazir Humayun Beg directed against the inhabitants of Shakshu and Pakhpu (upper Yarkand valley) the annual dues were increased. Until the Hunza Campaign in 1891, the Mir of Hunza received annually five *yambu* silver equalling 750–800 Rs (Godfrey 1898: 74). The taxes are supposed to have been paid partly in kind: Shakshu: one hundred sheep, silver being worth 60 Rs, two shot-guns; Pakhpu: ten *namdā*, silver being worth 60 Rs; two shot-guns (according to A.F. Napier in IOR/2/1079/251: Hunza and Nagar Subsidies). During his escape to Yarkand Mir Safdar Ali Khan levied and collected this penalty for the last time. It had been introduced to make up for the previous enslavement of two Hunzukuts (Godfrey 1898: 74; McMahon 1898).
6. In the aftermath of the Hunza Campaign for four years no dues were paid in the Taghdumbash Pamir (Godfrey 1898: 74). This power vacuum was filled by Kirghiz nomads who came back to this region with two hundred tents (IOL/P&S/10/278: Marshall 1913). Following a directive by the Chinese Amban in Tashkurghan the Kirghiz began again in 1895 to pay taxes to the Mir of Hunza. At the same time the Wakhi settlers of Dafdar (established in 1894) remained exempted from all dues.
7. The taxes amounted to one *namdā* (five metres in length) per household. Impoverished camps would provide smaller *namdā*, one rope or *paipakh*. In addition, the shepherds transported all dues as far as Murkushi in Hunza (IOL/P&S/10/278). From 1896 onwards the Mir was supported by the Chinese administration in allocating his dues (McMahon 1898: 6). According to the judgement of the Political Agent in Gilgit the revenue of the Mir of Hunza from grazing taxes in Taghdumbash accrued to the value of 200–300 Rs annually around the turn of the century. This amount was higher than the tribute paid by Hunza to China and about one-tenth of the value of return gifts received by Hunza from the Chinese Emperor (IOR/2/1075/217:40: Letter from Political Agent Gilgit to Resident in Kashmir, Bunji 6:6:1900).
8. The value of coarse cloth (*kham*) amounted to 2 Rs, that of *namdā* to 150 Rs, that of ropes to 20 Rs and the value of one *namdā*-sock (*paipakh*) to 0.5 Rs. During this year the inhabitants of Sariqoli (seventy-seven households) were the only grazing tax (*khiraǰ*) payers. They demanded their exemption on the same basis as was applicable to the Kirghiz (thirteen households) and Wakhi (twenty-five households). This resistance could take place because of the little authority displayed by the Amban of

Tashkurgan who refused to support the Hunza tax collector Kara Beg. He provided him with two *čárák ātā* (wheat and/or barley flour) and two *čárák* fodder for his horse only while normally a substantially higher provision was allocated: one sheep, one *čárák* rice, two *čárák ātā*, two *čárák* fodder for horses; two donkey loads of firewood (IOL/P&S/7/231/1399: Kashgar News-Report 10.8. 1909).

9. In 1914 the Wakhi settlers of Dafdar (Sariqol) paid grazing dues for the very first time (IOL/P&S/10/826:173). At this time the grazing community was estimated as composed of fourty Sariqoli, thirty Wakhi and two to three Kirghiz households (IOL/P&S/10/278).
10. The Wakhi refused to pay any dues, since the Chinese authorities had threatened them with expulsion if they would not oblige the order to discontinue the tax relationship with Hunza (IOL/P&S/10/826: 155: Gilgit Diary March 1915; IOL/P&S/10/826: 143: Gilgit Diary July 1915; IOL/P&S/10/826: 140: Gilgit Diary August 1915). In the same year the Wakhi of Kilian paid grazing taxes (in currency) to the Chinese authorities for the first time. This agreement was negotiated by the British Consul General Sykes (1915: 26).
11. The Wakhi of Dafdar renewed the delivery of grazing taxes to Hunza (IOL/P&S/10/826:107).
12. Fewer herds were counted in Sariqol, while an increase was registered for Tagharma.
13. Seven households from Mariang (Sariqol) refrained from accessing the pastures in Taghdumbash Pamir.
14. The exchange value of some items in Kashgar in 1928 (Source: IOR/12/50/394):

1 kg *čaras*	5–14 Rs	1 horse	65–100 Rs
1 kg opium	40 Rs	1 donkey	20 Rs
1 *namdā*	2.5–3 Rs	1 sheep/goat	5 Rs
1 carpet	25 Rs		

15. The riots in Sariqol made the Mir of Hunza decide not to send any tax collectors to Taghdumbash Pamir.
16. In 1937 the Mir of Hunza gave up all traditional grazing rights for his own herds as well as the right to collect taxes in the pastures of the Taghdumbash Pamir. The average profit for Hunza from the Taghdumbash Pamir revenue and the asset from grazing a herd of three hundred yaks were estimated in the range of 200–300 Rs annually during the previous three decades (IOL/P&S/12/3292). 319. The British colonial administration compensated for the loss of the Pamirian pastures with an increment of subsidies and the provision of barren land in Oshikandas, and offered the Mir of Hunza potential grazing rights in Naltar Valley (IOR/2/1085/ 296: 23–27).
17. While after the partition of British India the status of Hunza is not clear in respect to its incorporation into Pakistan, the Mir of Hunza took the opportunity to negotiate with the Chinese authorities the option of regaining his traditional grazing rights in the Taghdumbash Pamir (IOL/P&S/12/2361: Letter from E. Shipton to Sec. of GOI, Kashgar 5.4. 1948). The Chinese Revolution of 1949 and its expansion into Xinjiang terminated these negotiations.
18. Agricultural reforms in China and Xinjiang entitled the regional authorities to start talks with the heirs of the Hunza ruling family who claimed property in China (especially in Sariqol and Yarkand) prior to the Chinese Revolution. The negotiations

Appendix 2: *Transformation of Pasture Utilisation in Hunza in the Twentieth Century*

Right of Pasture	Pasture Name, Location	Number of households[1]			Number of Shepherds		Type of Animal		Cultivation		Changes	Disputes
		1935	1985	1998	1935	1985	1935	1985	1935	1985	1998	1998
Shinaki												
Shinaki[2]	Baiyes	137	344	800	12		H/P	H/O	xx	—		
Shinaki[2]	Maiun bar	137	344	800	10	3–4	H/O/P	H/O	xx	—		
Shinaki[2]	Rui bar	137	344	800	10		H/O/P	H/O	—	—		
Hindi	Deinger haráay	170	303	401	3		H		—	—		
Hindi	Chashi haráay	170	303	401	2		H		—	—		
Hindi	Proni	170	303	401	4		H		—	—		
Hindi	Phulgi haráay	170	303	401	3		H		—	—		
Hindi	Hundri	170	303	401	5		H		—	—		
Hindi	Ghumu ter	170	303	401	4		H		—	—		
Central Hunza												
Murtazabad	Bate khar	112	190	267	3		H		—	—		
Hassanabad	Hachindar	47	72	114	5		H	H	—	—	(a)	
Ganesh gir.	Hachindar	127	204	225	10		H	H	—	—	(a)	
Buróon	Muchu har	220	260	>320	40–70	4	H/O	H/O	xx	—	(b)	
Dirámitin	Shishpar	250	320	>400	40–70	4	H/O	H/O	xx	—	(c)	
Dorkhan	Ghumat	45	84	93	2–3	1	H	H	xx	—		
Ganesh kalan	Ganzupar	90	100	132	15–20	3	H/O	H/O	—	—		++
Karimabad	Ultar	380	529	673	5–12	3–4	H/O/P	H/O	xx	—		
Karimabad	Bulen	380	529	673	–	–	O		—	—		
Buróon[4]	Bululo	100	130	160	6	–	H	O	xx	tt	(d)	
Dirámitin[4]	Hon	100	150	200	4	–	H	H	—	—		
Wazirkuts	Sekai	30	40	>40	4	–	O/P	O	—	—	(e)	
Botkuts	Suchash		2	–	H	–	—	—				
Mominabad	Berico chok	33	47	53	8	2	H	H	—	—		
Altit	Móintas	178	380	367	4	2	H	H	xx	tt		
Altit	Talmushi	178	380	367	4		H	H	—	—		
Altit	Khuwate	178	380	367	4		H	H	—	—		
Altit	Tiyash	178	380	367	8		H	H	xx	—		
Altit	Ghundoing	178	380	367	2		H		—	—		
Ahmedabad	Gurpi	36	70	126		3–4	H	H	xx	tt		
Faisabad	Churd	14	20	23		1	H	H	—	—		
Atabad	Baldiate	32	73	71	10	4	H	H	—	—	(f)	++
Gojal												
Shishket,	Ghaush, Brondo Bar, Baltin Bar	34	128	176			H	H			(g)	++
Gulmit[5]	Baldi hel	96	208	274	8	2	H/O	H/O	—	—	(f)	++
Gulmit[5]	Ghaush, Buri alga	96	208	274	2	1	H	H	xx	tt	(g)	++
Gulmit[5]	Brondo Bar	96	208	274			H	H			(g)	
Gulmit[5]	Shatuber	96	208	274	-	-	O	O	—	—		
Gulmit[6]	Shamijerav	96	208	274	12	6	H	H/O	—	—	(h)	++

Ghulkin	Patundas	41	83	124			—	—				
Ghulkin	Karachanai	41	83	124			—	—				
Hussaini	Batura (South)	21	50	70	21	6–8	H/P	H/D	—	—		
Pasu	Batura (North)	22	61	87	22	13	H/Y/P	H/Y	xx	—		
Shimshal	Shuwart/ Shuijerav	54[7]	123	171	42	80	H/Y	H/Y	—	—		
Shimshal	Ghujerab	54	123	171	12	6	H/Y	H/Y	—	—		
Khudabad[6]	Burum ter	22	70	127	6	4	H	H	—	—		++
Abgerchi[8]	Boiber, Puryar, Mulung Kir	57	153	335	18	10	H/Y/P	H/Y/D	xx	—	(i)	
Abgerchi[8]	Karajilga, Kükhel (Khunjerab)	57	153	335	?	–	H/Y	H/Y	—	—	i)	++

Source: Qudratullah Beg (1935) Lorimer-Personal Records (SOAS); Schomberg (1936); Shipton (1938); fieldwork and interviews by author 1983–2003.

H = sheep and goats (bur. *huyés,* wakh. *kla*); P = horses (wakh. *yash*); O = oxen (bur. *har*, wakh. *cat*); D = donkeys; Y = yaks (bur. *bépay*, wakh. *u*)
xx = cultivation of grain crops in pasture area; tt = irrigated grasslands (bur. *toq*)
++ = disputes have occurred between neighbouring communities who explicitly claim that their right of access to pasture overrules the one of the other party. Generally the seniority of common law is applied in these disputes.

1. Number of households entitled to access respective high pasture.
2. Excluding Hindi (Nasirabad).
3. These flocks are pastured by Nagerkuts.
4. In fact these clans from Karimabad are utilising the right of access.
5. The Gulmitik village population consists of sub-groups organised in clans (*kutor*). According to the *kutor* relationship certain pastures are mainly accessed by certain groups: Bori kutor: Ghaush; Charshambi kutor: Baldi hel; Ruzdor: Baldi hel, Bulbulkeshk, Brondo Bar; Budul kutor: Shamijerav, Kunda hel. All Gulmitik are permitted to graze their oxen in Shatuber and Jerav, and all Gulmitik claim property rights in Bulchi Das.
6. The combined pasture area of Shamijerav (Wakhi: white valley) and Burum ter (Burushaski: white pasture) is jointly used by Wakhi and Burusho in a contiguous settlement with separate dwellings (cf. Fig. 3A).
7. According to Schomberg (1936: 38) and Shipton (1938) fifty households with 160 male members had access to these pastures. An untitled file from the Political Agent's office in Gilgit recorded forty-eight households in Shimshal in 1938.
8. The term Abgerchi includes all Wakhi settlers of common origin who claim to be the first settlers of Morkhun, Gircha, Sarteez, Sost and Ghalapan who jointly are entitled to the use of all pastures of Abgerch, Boiber, Puryar and Mulung Kir above Morkhun. The data for Gojal originate from fieldwork by the author between 1990 and 1998.

(a) The pastures at Hachindar are losing importance for animal husbandry and are gaining in interest for trekking purposes.

(b) The pastures in Muchu Har are divided among three clans (Buroon, Qhurukuts and Barataling) of central Hunza. Buroon possess access rights for Mandosh and Bagh. Qhurukuts claim Tochi where no animals are permitted any more since some years ago, tree plantations (pines, willows and apple) have been converted this pasture into an

orchard. The Barataling's share is in Gaimaling and Bakhor where a water-mill (*yain*) proofs that in former time cultivation and pasturing prevailed. None of it exists anymore.

(c) Only two shepherds from Aliabad controlled the herds of oxen, sheep and goats in Shispar in 1998.

(d) After a long period the pastures in Bululo are again used by the Buroon clan of Karimabad which has introduced a shift (*galt*) system for shepherds. Each participating household has to provide shepherd's services on a day-to-day basis which is negotiated each season. This practice has been reintroduced as, since 1995, free grazing in the cultivated lands (*hetin*) is banned in most villages of Central Hunza throughout the year.

(e) In 1996 a member of the Wazirkuts introduced yak keeping in Ultar. In addition the tourism importance of Ultar has grown significantly. Food and camping services are provided for trekkers.

(f) After long periods of reduced summer grazing of herds the dispute between Altitkuts and Gulmitik (mainly Charshambi and Ruzdor kutor) about Baldi hel/Baldiate has rejuvenated the interest in seasonal livestock-keeping in these high pastures where an abundance of wood is available.

(g) Since 1990 a severe dispute has existed between the neighbouring villages of Gulmit and Shishket about the pastures in Ghaush, Brondo Bar, Bulchi Das and Bulbulkeshk. Presently Shishket is using Brondo Bar alone (one shepherd) while both villages share Ghaush and Buri alga by sending one shepherd each to the high pastures.

(h) Five Gojali households performed the pasture duties in Shamijerav. For the first time the community has hired five shepherds from Chitral and Wakhan as support for the women and children in the settlement. Three Burusho households from Khudabad participated.

(i) The Abgerchi people have been utilising the nearby pastures of Boiber etc. (see Fig. 2) much more intensively since they were forced to abandon the Khunjerab valley pastures of Kükhel and Karajilga with the inauguration of Khunjerab National Park in 1975. In 1990 a dispute with the Government of Pakistan about non-compensation for pasture loss led to the reoccupation of the Khunjerab grazing grounds. A partial settlement in recent years enabled them to use the latter and to close off the Boiber valley for some years in order to rehabilitate the pastures and woods there. This project is done in cooperation with development agencies.