

Pastoralists of Himalayas

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ABSTRACT Pastoral societies have revived strong and renewed interest among the anthropologist. Pastoralism is a subsistence pattern in which people make their living by domesticating large herds of animals. The pastoral subsistence economy provides an adaptation to such conditions since it promotes the conversion of the low quality plant resources into portable, high quality animal foods. However, the overall low level of energy availability necessitates low population density and high mobility among pastoral population. Within a pastoral society the ecosystem diversity does not only means the variety of ecological zones or habitats, but, it encompasses cultural diversity and ecological processes related to different pastoral production systems as well. Therefore, biodiversity provides a fundamental base to pastoralism and to the overall economic systems. Sheep and goat pastoralism is a constant feature of traditional mountain societies. It is rare that any pastoral group lives exclusively with the products of their herds. All pastoralists have to look for supplementary forms of economic activity. The pastoral communities of Himalayas make use of resources like high mountain pastures by three different ways by characteristic mobility patterns, socio-economic organisation and property rights. The study deals with three pastoral groups of Himalayas who inhabit Ladakh, Sikkim and Himachal Pradesh. Changpas nomads of Changthang raise herds of sheep and pashmina goats, yaks and horses. Gaddis of Bharmour are agro-pastoralists and raise large flocks of sheep and goats. Bhutias of North Sikkim are agro-pastoralists and raise local cows and ox, yaks, sheep, goats and ponies. These societies use animals as providers of food, fuel, fiber, draught power and transportation. However, nomadic, semi-nomadic and transhumant pastoralist societies have lifestyles that revolve mainly around their livestock. The transhumant pastoral societies inhabiting the high Himalayan areas exploit the seasonal abundance of grazing areas. As social and ecological conditions change, pastoralists adjust accordingly. Pastoralists play an important role in the ecology of India. Their production of organic manure contributes to the maintenance of soil fertility. Their grazing controls invasive exotic species. Contrary to their reputation, pastoralists have traditional practices for conserving vegetation by rotational grazing. Pastoralists make a significant contribution to India's economy in terms of food security (milk), provision of draft animal power, as well as foreign exchange earnings (meat, fibre e.g. pashmina wool). Since pastoralists do not own land, their produce is generated by dependence on communally and state-owned grazing land. Currently, the trend towards globalization of the market, with pastoral lands increasingly being commercialised and/or turned in to national parks has created problems for the pastoralists. Due to neglect by officials and policy makers, pastoralists face deprivation from their traditional and customary rights to these grazing areas. The political marginalisation of pastoral communities paved the way for forcible eviction from their land and/or restriction of their movements. In Ladakh, protection of wildlife has proceeded at the expense of the availability of grass biomass for the herds of the pastoralists. Since Independence of India, the pastoralists of Himalayas have faced a series of significant changes from external political and economic changes. These structural alterations have brought adjustments in many aspects of the traditional pastoral system, including migratory cycle, local economy and social organisation. Many of them left their traditional transhumant way of life and settled along valleys. Some have settled in urban areas others stick to the pastoral activities by changing the composition of livestock by increasing number of goats and decreasing number of yaks. State policies regarding forests, agriculture, irrigation, fodder, famine, pastoral rights and migration are some of the mechanisms that contribute to the alteration of pastoral life-style. Development of animal husbandry is a major government goal. All pastoral groups in Himalaya face the similar constraints and stimuli. Natural exigencies- extreme weather conditions, drought, epidemics and predators result in reduction of animals. Likewise, social crisis, such as phases in domestic developmental cycle and work force shortage in herding groups cause concern in the community

INTRODUCTION

Pastoral societies have revived strong and renewed interest among anthropologists. Pastoralism is a subsistence pattern in which people make their living by domesticating large herds of animals. Pastoralism is an effective means of exploiting marginal environments. The survival of pastoralism is interlinked with many aspects of

sustainable land use. The pastoral subsistence economy provides an adaptation to such conditions since it promotes the conversion of the low quality plant resources into portable, high quality animal foods. However, the overall low level of energy availability necessitates low population density and high mobility among pastoral population. They inhabit different areas across the world associated with specific 'core' animals

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and different methods of subsistence. Within a pastoral society the ecosystem diversity does not only mean the variety of ecological zones or habitats, but, it encompasses cultural diversity and ecological processes related to different pastoral production systems as well. Therefore, biodiversity provides a fundamental base to pastoralism and to the overall economic systems. In the mountainous regions of South-west Asia, it is mainly sheep, goats and yaks.

Pastoralism is a successful strategy to support a population with the limited resources of land. All forms of pastoralism can be considered as different methods of economic adaptations, the parameters of which are determined by ecology and level of technological development. Pastoral nomadism is specialised, both from economic and cultural point of view. It is a successful way of food production in marginal environment. It is only through pastoral nomadism that man is able to exploit all potential resources of vast ecological zones. Low population density, mobility and multifarious information systems are important mechanisms of pastoral adaptation. The pastoral system is dynamic as pre-planned actions of pastoralists are constantly attuned to changing conditions. There is misconception that all pastoralists exist at basic subsistence level. There are pastoral groups who have accumulated wealth through their economic activities having exchange relationships with other groups. It is rare that any pastoral group lives exclusively with the products of their herds. Pastoralism is most often an adaptation to semi-arid open country or high altitude dry land where farming is not feasible. Pastoralism is more productive than hunting and gathering. Hunters do not try to increase the number of animals or use the products of animals while they are still living. Pastoralists invest in breeding and caring for their animals and so increase their reproduction and survival rates. Pastoralists are concerned with the production of milk, hair, hide, blood or wool or with traction, using animals as vehicles or source of work energy. By investing human labour in the production of milk and wool than meat, pastoralists make more profit. The animals need not be killed to be valuable. This makes pastoralism the most efficient way of using resources in dry land and marginal areas. A pastoral production system rarely focuses on a single product, but makes use rather of both "continuing" (calves, lambs, and kids; milk, butter and cheese; transport and

traction; manure; hair and wool; and occasionally blood) and "final" (meat; hides and skins) products (Horowitz and Jowkar 1992).

However, there are limited possibilities for innovations in the pastoral economic system. The survival of pastoralists in ecologically fragile areas depend on the diversity of the ecosystems. Therefore, biodiversity provides a fundamental base to pastoralism and to overall economic systems. In pastoral nomadism once its formation is complete, the simple reproduction of highly specialised forms of same type prevail. This does not make nomadism as a highly specialised blind alley. It is just that in the wider sense nomadism cannot be fully acknowledged with pastoral economy, although the later forms the basis of nomadism. On the other hand, specialisation restricts prospects for economic growth. However, a specialised pastoral economy in itself cannot take care of instantaneous necessities of nomads. All pastoralists have to look for supplementary forms of economic activity.

The earlier studies focused on environmental context of the livestock husbandry. Krader (1959) described nomadism as an, "extreme case of a human society's adaptation to an unfriendly natural environment". The further studies were related to the problems of balance between availability of natural resources (water and fodder), livestock number and population size (Barth 1961; Sweet 1965; Swidler 1973); common land use and its regulation (McCay and Acheson 1987; Brombley 1992); changing environmental conditions, particularly due to environmental degradation resulting from development and pastoralists response to droughts and other environmental hazards. The impact of changing market conditions on herding practices was an important topic of research. Later studies observed that pastoralists are not dependent on livestock rearing only, but they practice "multi-resource nomadism" (Salzman 1971). It has been shown that pastoral nomads diversify their resources in order to survive in harsh and unpredictable weather conditions. Pastoral societies, once thought to be independent entities are now seen as maintaining stable and permanent relationship with sedentary peasant and urban population (Gellner 1973). The latest studies are considering the political relationships of the pastoralists and the sedentary population (Irons 1971) and with state policies and state politics (Dahl and Hjort 1980). In the study of nomadic pastoralists, it was thought

that the pastoral societies are essentially egalitarian. Studies are being carried out on the subject of gender inequality and impact of changing division of labour assignments in pastoral societies, particularly related to gender (Human Ecology, Special Issue 1996). Human ecologists are concerned with the problems of common land pastures. The 'tragedy of commons' apparently arises when a group of resource users have common access to single resource. Recent studies have examined the systems that regulate access to and use of common property such as pastures to show how some pastoral groups have done well traditionally while others failed, and the circumstances that led to success or failure of the pastoral groups (Hardin and Baden 1977; McCay and Acheson 1987; Brombley 1992). Barth (1961) studied the role of chiefs in nomadic pastoral society who synchronised the migrations of pastoral groups as well as liaisons with sedentary populations. Studies have been carried among pastoral groups of high altitude areas, where nomads' movements are in frontier areas. Central governments have sought to control the movements of nomadic pastoralists throughout their existence, in part because they are often regarded as threat along a frontier (Lattimore 1940). However, in modern times, government interventions are intended as well for delivering services such as health and education (Gardus, 1985) and for overall development of the livestock as well as pastoral population. Some pastoral groups have settled in response to political turmoil and civil war. Several studies report negative social and health consequences of pastoral sedentarisation, including poorer nutrition, inadequate housing, lack of clean drinking water, and the higher rates of infectious diseases. For the past ten years a cultural anthropologist, an anthropological demographer and a physician have engaged in a longitudinal research examining the biosocial concomitants of sedentism for Ariaal and Rendille pastoralists of northern Kenya (Fratkin 1991, 1998; Fratkin and Roth 1990; Fratkin and Smith 1995).

CLASSIFICATION OF PASTORALISM

The important *pastoral strategies* can be classified: *by species*; *by management system*; *by geography*; and *by ecology*. Apart from these, there is broad distinction between the developed and developing countries. In Australia and North

America, extensive livestock production is accomplished with scientific methods and improved technology. The association between pastoralism and presence of grasslands is always there, but there are many types of grassland without pastoralists.

PASTORALISM IN INDIA

There are more than 200 tribes comprising six per cent of the country's population engaged in pastoralism. (*Source*: Pastoralism in India: a scoping study by Vijay Paul Sharma, Ilse Kohler-Rollefson and John Morton 2003). Indian pastoralists can be divided into groups that practice horizontal movement and vertical movement like in the mountainous regions. Nomadic pastoralism is prevalent in the dry lands of western India, the Deccan Plateau and in the mountainous regions of Himalayas. India has one of the largest livestock populations in the world. Livestock contributes about 25 per cent of India's agricultural GDP. Livestock provides local people in isolated areas with milk, meat and wool. Pastoralists use marginal, otherwise uncultivable land, increasing the amount of land available to an already expanding population. They also rear indigenous animal breeds, retaining rich genetic variety.

India is home to a large number of pastoral groups – which include Golla and Kuruma of Andhra Pradesh, who move with their cattle and sheep respectively; Rabari and Bharwad from Gujarat, who raise flocks of sheep and goat and cattle and small stock respectively; Kuruba and Dhangar from Karnataka both raise sheep flocks; Raika/ Rabari and Gujjars from Rajasthan and Gaddi, Gujjar and Bakarwals of Himalayas moving with their camel, sheep and goats and buffalo and sheep respectively; Raika / Rabari are the most numerous pastoral groups in the western part of India. In spite of being in such a large number, these pastoral communities have very low public and political profile. Scientists point fingers at them for adhering to an obsolete form of production, despite their large contribution to the national economy in terms of production of milk, meat, wool, leather etc.

PASTORALISTS OF THE HIMALAYAS

Sheep and goat pastoralism is a constant feature of traditional mountain societies. *Gaddis*,

Gujjars, Bakarwals, Kinnauras, Kaulis and Kanets of the north Indian Himalayas, *Bhotias* of Garhwal Himalayas, *Bhotias* and *Sherpas* of Khumbu valley of Nepal, *Kirats* of eastern Nepal, *Monpa* yak breeders of Arunachal Pradesh, *Bhutias* of Lachen and Lachung, Sikkim and *Changpas* of Changthang, Ladakh are some of the known pastoral communities of Himalayas. The pastoral communities of Himalayas make use of resources like high mountain pastures in three different ways by characteristic mobility patterns, socio-economic organisation and property rights. There are nomads like Changpa of Changthang in Ladakh, whose economy is predominantly based on animal husbandry; there are agro-pastoralist groups like Gaddis of Bharmour, Himachal Pradesh and *Bhutias* of Lachen and Lachung in Sikkim, who practice marginal agriculture and raise herds of sheep and goats and yaks (Bhasin 1988, 1989, 1996). The interaction of altitude, climate and soil fertility set upper limits on agriculture and pastoralism and within the range of agriculture, upper limits on types of crops (Troll 1968, 1972; Uhlig 1976; Dollfus 1981). Transhumance with or without agriculture becomes profitable where high pastures are available. Transhumant that migrate from summer pastures to winter pastures with their flocks have some sort of living arrangement at both the places and use tents as shelters during ascending or descending. Each household grazes their own animals but with the increase in size of flock, the professional shepherding comes up as an economic necessity. Where people have regular summer and winter pastures, to supplement their resources they start growing grains or vegetables at or near the winter or summer pastures. Among the agro-pastoral Gaddis of Bharmour, Himachal Pradesh, India, although agriculture provides the bulk of staple food, Gaddis themselves give major importance to the care and value of the sheep and goat. From animals they obtain additional food in the form of meat and milk, wool for clothing and cash for buying other necessities. Transhumance of this type is practiced in mountainous regions of many parts of the world. These studies point to the lack of transparency in defining and classifying nomadism and pastoralism. Several authors have carried out studies on these pastoralist groups (Newell 1967; Khatana 1976a, 1976b; Nitzberg 1987; Goldstein and Masserschmidt 1980; Kango and Dhar 1981; Rao and Casimir 1982, Bhasin 1988, 1989, 1996).

All forms of pastoralism may be regarded as different forms of adaptation, the parameters of which are determined by ecology and level of technological development. This makes pastoralism a special adaptation, both from economic and cultural point of view. It is special because it manages the conditions dictated by environment.

Natural resource use is influenced by the history and cultural system of a human population as well as by the availability of resources. The distinctive physical environment of the mountains restricts economic processes. The 'multi-resource economy' that Salzman (1972) describes in relation to nomads in Baluchistan and Africa also characterises most pastoralists in India. Human populations settled in mountainous environments have developed diverse strategies of natural resource use associated with water and land limitations, although its practice depends on the technological and socio-cultural characteristics of the population. Pastoralism is an age-old livelihood option for number of communities and ethnic groups in the mountains. Pastoralism is a system of production devoted to gaining a livelihood from the care of large herds of animals. This is a form of adaptation of natural resource management, which requires maintaining an ecological balance between pastures, livestock and people. The technology of the pastoralist requires that the life-practices of the people be adjusted to the requisites of the animals which are movement to pasture, water, salt as required and protection from predators. Some immediate confluences of pastoralism are that the people must remain mobile, they cannot invest heavily in personal goods, in houses or in land. They protect and share the permanent and essential sources for animals. The social structure, social organisation and community life of pastoralists that traverse the difficult terrains year-long is bound to have specific needs, which social and functional groups fulfill. The pattern of social, functional and administrative groups in the transhumant way of life has emerged out of the needs that meet the demands of a migratory mode of production. Some studies have treated the pastoralists as a people who resisted change because of tradition or because they reacted passively to the vagaries of nature. Other scholars feel that pastoralists as an occupational group are open to continuous change. No culture is static and pastoralists are no exception. Cultural borrowing and adaptation in time and space has

been a continuous process, yet pastoralists have preserved their culture in form and structure.

Alpwirtschaft

In the Alpine region, a peculiar strategy is based on agro-pastoral transhumance, each segment of which is intricately intermeshed with productive areas only during the growing season from spring to early fall, has been described as *Alpwirtschaft* (Rhoades and Thompson 1975, p. 537). It is associated with the movement of people and animals in vertical and horizontal space, communal control of pastures combined with individual control of plots and haying fields and a social institution that schedule the complex movement in space and time (Rhoades and Thompson 1975; Vincze 1980).

The concept of *Alpwirtschaft* shows how a cultural adaptation, response to a particular set of environmental constraints leads to patterned social and political relationships. This Eurocentric view of pastoral practices in mountain region became a role model for text books published afterwards. However, the limitations of the concept are broad range of agropastoralism and secondly, many of its correlates, including vertical and horizontal movement and communal institutions to facilitate scheduling and integration are found in other agricultural communities. As a result, the conflicting demands on household time and labour and the necessity for continuous vertical movement among zones create complex scheduling problems solved through communal institutions.

In the Himalayan mountain milieu, we find a full range of mobile practices, in livestock keeping from mountain nomadism through transhumance to combined mountain agriculture (*Alpwirtschaft*). Several studies have been carried out on pastoral groups in different parts of the Western Himalayas (Singh 1964; Newell 1967; Khatana 1976b; Nitzberg 1970, 1978; Goldstein and Massers-chmidt 1980; Kango and Dhar 1981; Rao and Casimir 1982; Bhasin 1988, 1989, 1996) mainly focusing on nomadic routes, regular seasonal movements in a typical landscape, agriculture and human settlements. Some of these studies show the changing importance of animal husbandry in combined mountain agriculture. All societies use animals as providers of food, fuel, fiber, draught power and transportation. However, nomadic, semi-nomadic and transhumant pastoralist societies have lifestyles that revolve mainly

around their livestock. The transhumant pastoral societies inhabiting the high Himalayan areas exploit the seasonal abundance of grazing areas. The demarcation between the nomads and transhumant is not a permanent divide. As social and ecological conditions change, pastoralists adjust accordingly. A traditionally nomadic society or few families can become more or less transhumant in their migratory patterns if opportunity arises.

Transhumance

Transhumance is the regular movement of herds between fixed points to exploit seasonal availability of pastures. In hills, the transhumant pastoralists follow a cyclical migratory pattern from cool highland valleys in summer to warmer lowland valleys in winter. In the terms of ecological adaptations, the two most significant factors for transhumance are seasonal severity of winters, associated with presence of territorial use of highland and lowland pastures. Transhumant agro-pastoralist have regular encampments or stable villages with permanent houses. They often practice subsistence level agriculture at one or the other destinations in summer. They trade their animals and animal products in town markets for grains and other necessities of life, which they do not produce themselves.

Ethnic groups in transhumant category are few and are of low population density in relation to the total land mass. There is low margin of surplus because of low level of technology, little occupational specialisation, high participation of women in the economy and highly flexible residence. The emergent pattern of social structure has kinship and functional groups that helps in meeting the demands of a migratory mode of production. As all follow the same mode of production, there is little variation in economic level and behaviour from one household to another. The relations of economic control, which are legally manifested as property ownership are absent in transhumant societies. Among transhumants, the community governs access to the common resources, therefore, it demands a strong village organisation. The base of local-level leadership or prestige is not economic power or capacity to coerce but the charismatic personality, mediation ability and social work attitude.

In transhumant societies, the ecological conditions constitute a significant factor in the

socio-cultural systems. Social relations, technology and environment are variables, which are part of a system. The three variables are interrelated and interdependent and the functioning of the system may change in response to a change in any one of above variables *e.g.* an economic change could have an effect on environment as well as social relations.

The Himalayan region is a social and cultural interface, (Fisher 1987) a contact zone. In the Himalayas, the northern-most, high-altitude regions are heavily Tibetan throughout their length and the southern-most, low altitude regions are Hindu dominated.

PASTORAL NOMADS

There are over 200 hundred million nomadic people in the world today. They follow a productive way of life in the marginal regions they live in. This associates the availability of forage a necessity for pastoral way of life. The timing and destinations of migrations are determined primarily by the needs of the animals of the herd for fodder and water. They inhabit economically, socially and politically marginal lands on the periphery of settled societies. The mobility of nomads enables them to exploit meager resources of these marginal lands in a way not possible to settled societies. They do not feed any specially sown fodder plants or grains to their livestock, and their animals survive exclusively by grazing on forage. Pastoral nomads are livestock producers who grow no crops and simply depend on the sale or exchange of animals and their products to obtain foodstuffs and other necessities. They are dependent on their livestock for food, status and cultural practices.

Nomadism is viable in the extreme hot and cold. In the hot dry deserts of Arabia, Sahara, East Africa, South Iran and Baluchistan, camel domestication is prevalent. In the lush savannah grasslands of Central Africa and Sudan belt, cattle is the main animal. The temperate mountains and the valleys of Southwest Asia and the Mediterranean Borderlands, support large populations of sheep, goat, yak and horse. In the extreme climate of Central Asia steppes and mountains horses, Bactrian camel, sheep and goats are preferential and in Sub-Arctic tundra of northwest Eurasia, the inhabitants herd only reindeer. According to Spooner (1973) there are no features of cultural or social organisation common to all nomads or

even that occur exclusively among nomads. Pastoral nomads present not only different lifestyles and means of subsistence but also various types of social organisation. Patterns of social organisation they develop depend on their specific ecological, cultural, political or historical circumstances. Pastoral populations are organised into so-called descent groups (tribes, clans and lineages). It is acknowledged that social organisation of pastoral nomads is based on kinship. However, it is not only nomadic societies, where kinship and pseudo-kinship form the structural basis of social organisation, many other societies with different economic systems also have kinship base. The mobility of nomads and the permanent instability of pastoral economy give rise to a fluid social organisation, which is capable of change and which has the requisite segmentary means with which to accomplish this. Flexible social organisation means that nomads have not only one secure support network of people but have a more fluid and changing support network within a community. People often go to people for help who are readily available, or who have the resources at that particular time. According to Spooner (1973), units of lower levels of segmentation, which, primarily, are connected with social, economic and more narrowly productive needs, rely on kin and contractual relations (pp. 25-26). Kinship regulates relations within a relatively small group of people; it mediates the individual's position in a system of horizontal ties by superseding the discrete character of different descent groups. The nomads inhabiting different ecological zones make different movements depending on the physiographic conditions of the area and availability of pastures in time and space. Pasture is often sporadic and connected by routes of access; villages are mobile and maintain themselves as distinctive entities whether they are in temporary camps, besides pastures or permanent villages. The scheduling and destinations are pre-determined according to the availability and needs of the animals for water and fodder. Mobility of pastoral nomads requires an annual pattern of decision-making about directions of movements, places of encampments and duration of stay. The nomadic pastoralists do not invest heavily in material goods. They do not have permanent settlements or build houses but live in portable dwellings in encampments near the resources. It is necessary for them to have knowledge of their

pasture, water resources, rainfall, snowfall, disease, political insecurity and national boundaries with access to markets and infrastructure. They follow established migration routes and often develop long-standing exchange arrangements with families to make use of crop residue or to trade goods.

Pastoral nomads are usually self-sufficient in terms of food and most other necessities. The pastoral nomads rarely kill their animals for family use only. Whenever they kill an animal, they distribute the flesh among relatives and neighbours. The distribution not only insures that no spoilage takes place but it also creates number of reciprocal obligations within the community. It sponsors mutual aid and commonality. Culturally nomads are among the vulnerable communities that the international community has given priority to protecting. Nomadism has been seen as a survival strategy for the pastoralists. Nevertheless, it is not only the pastoral nomads and their flocks who survive by migrating; transhumance is a way of making nature survive. There has been a body of evidence to show that in most nomadic cultures and societies, nomads have successfully managed their rangelands with a high degree of diversity (Scholz 1995; Wu 1997).

Barefield (1993) used anthropological methods to examine the realities of life among different groups of pastoral nomads. According to him, while nomads live apart from sedentary society, there are bonds of association to the latter that affect the nomads. He has discussed generalities about certain themes like ecological base of nomads, how do they organise themselves economically and how do they form and maintain their political and social structure. He mentioned some criterion that defines the key animals for nomads. The animal must be adapted to the regional ecological conditions and it must be a necessary component of everyone's herd. According to Salzman (2004), nomadic movements are "highly purposeful, oriented towards achieving specific production rules." Nomads deploy nomadic strategy to meet main challenges: which is maintaining their main animal. Yak breeders in Tibet transport salt to sell in distant markets. The Basseri of Fars sells sheep offspring milk and wool in local markets.

The analysis of three tribes inhabiting different parts of the Himalayas with variations in their topography draw together some of the major features of the pastoralists of Himalayas.

Out of three tribes, Gaddis of Bharmour, (District Chamba, Himachal Pradesh) at the height of 2100 and Bhutias of Lachen and Lachung, Sikkim at an altitude of 3,000 metres follow *Alpwirtschaft* type of strategy, associated with the movement of peoples and animals in vertical space, communal control of pastures, combined with individual control of plots and haying fields and social institutions that schedule the complex movement in space and time. The third group is of Changpas, who inhabit the cold desert of Changthang, Ladakh at 3,500 to 4,500 metres. Unlike the other two groups, who happens to be agropastoralists in varying degrees, Changpas are nomads. Gaddis raise flocks of sheep, goats while Bhutias of Sikkim domesticate herds of yak and flocks of sheep and Changpas of Changthang raise herds of yak and flocks of sheep and *pashmina* goats. However, their animals are not raised on any cultivated fodder crops but survive exclusively on natural pastures. Their complete reliance on natural pastures creates difficulties for year round sustenance. In the high altitude areas of Changthang, natural grasses stop growing in mid-September. The grasses start rejuvenating in late April or early May. In the beginning of May, the quantity is meager and is not sufficient for the sustenance of livestock. Changpa pastoral cycle is striking as there are few areas where anything grows in winter. Unlike Gaddis and Bhutias, Changpas have no reason to migrate to far off places.

Changthang nomads represent one of the last great examples of nomadic pastoral way of life once common in many regions of the world (Goldstein and Beall 1990). Changpas are pastoralists like Masai and Bedawlb Beja among others. Pastoral way of lifestyle involves perpetual mobility in extreme conditions in remote areas. A pastoral nomadic lifestyle is an adaptation to dry, cold rangelands with extremely harsh environment that are non-arable and limited in their production capacity. Their way of life prevents living in permanent settlements. Therefore, their pattern of migrations differs from Gaddis of Bharmour, Himachal Pradesh and Bhutias of Lachen and Lachung, Sikkim who have permanent houses at middle altitude. Gaddis and Bhutias move with their flocks to high altitude in summer and to lower altitude in winter (Bhasin 1988, 1989, 1996). Changpas of Changthang change places all over the year according to the availability of pasture, water and needs of the livestock. The highlands of Rupshu-Kharnak in

Changthang, besides having an arid environment, support a large number of livestock population—goats, sheep, yaks and horses. The tent-dwelling Changpas traverse with their livestock across the Changthang. The nomadic groups of Changthang are politically distinct with traditional grazing rights and well-defined boundaries. Traditionally, the rangeland of Changthang was state-owned and individuals had usufruct rights. They migrate to different valleys for summer and winter grazing of their herds. During summer and autumn, the Changpas generally live together as one encampment.

Agroastoralists employ different strategies to adapt to variations in the environmental, social and political risks they confront. Their actions contradict the common representation of pastoralists as illogical, capricious and politically submissive migratory people. Instead, many studies (Bhasin 1988, 1989, 1996) show them as consciously pursuing specialised strategies for making a living, dealing with states and marketing their products. Pastoralists enter into contracts with state agencies and cultivators where they pay for their animals to graze and at other times are welcomed for the manure of their animals. Like people everywhere, pastoralists follow economic strategies that are set by physical, social and economic conditions at the local, regional and national levels. Together, these conditions characterise the community's ability to adapt, survive and even prosper in relatively harsh and marginal environment. Though all pastoralist societies are feeling the currents of change and consequently their economies are also varying. This happens mainly with an increase in national and international tourism and the availability of government and non-government salaried positions. However, agropastoralism continues to play a key role in household economic strategies. This is important because tourism is particularly sensitive to economic, political and other fluctuations, beyond the control of local people. By resorting to variety of ecological, social and market niches, pastoralists minimise the risks that are part of life in constraint environments.

PASTORAL ADAPTIVE STRATEGIES

Mobility

Physical conditions in a region, especially climate cannot be altered but the human activities

in the region can be manipulated. Mobility is one of the most important components of pastoral adaptation. Mobility allows pastoralists to exploit more than one environment simultaneously, thus creating the possibility for marginal regions to support human life. Rather than adapting the environment to suit the "food production system" (Bates 1998: 104), pastoralists successfully managed their environment with a high degree of diversity. In order to adapt to harsh climate, the indigenous people migrate to different locations having a combination of seasonal and ecological variables in the location of pasture and water. Consequently, for appropriate economic and ecological land use, mobility is essential. It is the basis for survival strategy in the environments of herders. According to Janzen (1993), mobile livestock keeping is a best active human adaptation to the harsh environment and is probably the only way of putting the pastures to economic use without a huge expenditure of capital. In view of biodiversity conservation, exploiting ecosystem diversity is another ecological reason of nomadic movement. It is certain that mobility allows pastoralists to take advantage of resources with low productivity and irregular spatial distribution but markets are important as well in permitting them to exchange their special goods for grains and other necessities of life.

Besides owning animals in large numbers, which necessitates transhumance, two out of the three tribes of Himalayas under consideration have additional reasons for adopting a transhumant way of life. There are Gaddi families in Bharmour who do not have enough land or do not rear enough sheep and goats to meet their economic needs throughout the year. Apart from this wool and woollen products need some way of disposal, which is not possible if they are stagnant locally as the area lacks market network.

Likewise, for Bhutias of Lachen and Lachung, animal husbandry was not sufficient to sustain the population, so they indulged in marginal trading activities with the Tibetans across the border. For centuries, Bhutias of Lachen and Lachung in North Sikkim had grazed their herds of yak and flocks of sheep in Khama *Dzong* section of the Pahari district of Tibet during summer and fall months. In these areas marginal agriculture and animal husbandry was not sufficient to sustain the Bhutia population. Consequently, the Bhutias of Lachen and Lachung were trading with Tibetans across the border. The barter

of timber, wood, dyestuffs and dairy products of North Sikkim for Tibetan salt and wool formed the basis of this trade. The Bhutias of Lachen and Lachung pursued it as an occupation intimately interwoven with their pastoral activities.

Diversity of Pastoral Systems

A large variety of pastoral systems classified by the degree of mobility from *pure nomadic* to *transhumant* to *agropastoral* is found in the Himalayas. With increasing altitude, mobility increases and reaches the extreme in the opportunistic migratory pastoralism which utilise the most marginal areas. In some areas, farmers also domesticate animals for work as well as to trade animal products. Pastoralists are flexible by nature and can switch over to another way of managing the living, if need and opportunity arises. A traditional nomadic society or some families within it become more or less transhumant in their migratory mode of production if opportunity arises or vice-versa.

In the high altitude areas, like Changthang in Ladakh, Changpa nomads divide the season into two parts and they refer to their pastures as 'winter pasture' and 'summer pasture'. They use these pastures in rotational grazing system, namely two season grazing system. Livestock grazing in the Changthang could survive through the centuries because of the indigenous practices which maintain the livestock ratio and to avoid overuse of some pastures or low use of others (confining grazing of horses and yaks to separate pastures, herding sheep and goats together and avoiding simultaneous disturbance of pastures). Their production system involves raising yaks, sheep, goats and horses; harvesting their products; paying a portion to gompa as taxes; consuming a portion and bartering yet another portion along with salt to obtain grain and other necessities like tea. As environment is not conducive to any other form of land use, no grazing land is irrigated, fertilised or sown.

On the contrary, the areas with varied topography have three season grazing system, which include a transitional belt between winter pasture and summer pasture to support the grazing activities in spring or autumn. The Gaddis of Bharmour, Himachal Pradesh, follow three season grazing system. Among the Gaddis, the grazing area is spread over three ecological zones, with distinct pasture types: subtropical grazing

of the lower hills; sub temperate-temperate pastures of the middle hills; and alpine pastures of the high hills. Some Gaddis, who accompany the flocks of sheep and goat, take turns months at a time, in shepherding and in cultivation with brothers, cousins, uncles and sons. In Kangra district these areas (*kandi dhars* or *ban*) are claimed by Gaddis as *warisi* (inheritance). There Gaddis allow their flocks to pasture on fields and receive payments from the land-owner because the flocks provide natural manure to the fields. Winter pastures are poor but extensive. Gaddis are in touch with the people of lower hills while grazing their sheep and goats. During the same period, their families are working in the homes of the people in the Kangra hills. Migration towards summer pastures starts in April- May.

For spring and autumn grazing, the flocks are brought back to the village in April to manure fields. Pastures exist in patches along the valleys where Gaddi camp during the summer. In the beginning of September, shepherds travel down slowly the valley below Kugti to Bharmour, and flocks return to *trakar* pastures (village fields). When flocks are in the *trakar* pastures, the Gaddis join in the various activities of the season of the year. Migration towards summer pastures starts in May. Gaddis walk to different pastures at differing altitudes to graze their herds on nutritious grass of Lahoul and Spiti, even to the border of Ladakh and Tibet. The collection of medicinal plants from the alpine pastures and distance forests is combined with grazing of animals. Gaddis collect medicinal plants mostly for marketing however they keep part of it for self-consumption as well.

Among agropastoral Gaddis of Bharmour, Himachal Pradesh, ecological conditions of the area necessitate their winter migration to lower hills in and around Kangra hills. Land holdings are small and often the different fields belonging to a family are widely scattered. Excessive snow, severe winters and presence of *dhars* (grasslands) in the region facilitates transhumant adaptations. Upper ranges of these mountains are noteworthy for their large, lush meadows and other summer grazing. However, these pasture are seasonal, Gaddis cannot rely on them for year-round sustenance. Consequently pattern of transhumance is developed to utilise the productive mountain area in its productive season- migrating in summer to Bharmour upper ranges and in winter to Kangra hills (Bhasin 1988, 1996). Prior to the establishment

of the profitable timber trade in the Indian state of Himachal Pradesh, local kings encouraged herding for raising revenue for the state. Like Gaddis, other pastoralists of Himachal Pradesh, Uttar Pradesh, Haryana, Gujarat and Madhya Pradesh in the plains, pay taxes to government agencies or cultivators pay money for manure their fields.

Total travelling is around six hundred kilometers. Migration towards summer pastures starts in May. In March, traders come to the Gaddis and strike deals for the purchase of animals; during downward move-ment, the traders arrive again in September.

Water and Fodder

Balance between availability of natural resources, as water and fodders are indispensable to pastoralists. Pastoralists mostly depend on natural resources, particularly for fuel, fodder and water. Their dependence on natural resources is institutionalised through a variety of social and cultural mechanism such as religion, folklore and traditions. Pastoralists mostly depend on natural resources, particularly for fuel, fodder and water. Their dependence on natural resources is institutionalised through a variety of social and cultural mechanism such as religion, folklore and traditions.

PROPERTY RIGHTS

Property rights systems institutes' relationship between people, not between people and belongings. Property rights systems are part of communities' law and as such are the foundation essentials that differentiate communities. Property rights simply do not define and grant rights; rather they establish the rights and responsibilities of the system participant's vis-à-vis each other. Pastoral societies cannot perform without access to grazing lands. There are state-owned pastures, crop-residue and institutional arrangements made with other communities to have access to their pastures and purchased feeds. The majorities of pastoral land resources are held under a controlled access system that is communal in form. 'Communal' land tenure relates to that system of tenure in which the tribe or clan or a group has access to land. Tenure is thus a social institution: a relationship between individuals and groups consisting of a series of rights and duties with

respect to the use of land. Traditionally, in pastoral societies, land belongs to a group or family that is linked by descent or cultural affiliation. Rights of access to resources are highly limited and tend to be allocated through inheritance, sibling co-operation and marriage. Because of political marginalisation of pastoralists, unfavourable land tenure reforms and the alienation of pastoralists from their lands, traditional mechanisms and customary methods of negotiations, arbitration and adjudication over land issues are breaking down. Pastoralists follow established migration routes and often develop long-standing exchange arrangements with families to make use of crop residue or to trade goods. These people hold property rights in herds, pastures and routes between the pastures. Their legal arrangements include the means for control over the pasture, identification of herds, regulation of access to routes, regulation of disputes over property rights, marriage disputes and other social problems. The failure of state-ownership and statutory legislation to achieve better resource management has fostered new interests favouring community control and management and customary tenure-systems (Jodha 1991; Blaikie 2001). The capacity of pastoral institutions is based on availability of resources both at local level as well as in the broader vicinity, where they serve as access options. Spatial mobility is required to achieve a balance between man, animals and pastures. There is a great variability in herd management strategies, social organisation and degree of mobility. Descent regulates relations between different groups and at the same time establishes the individual's membership in a given society as a whole and in specific subdivision of it; this membership involves both corresponding rights and commitments and some times even social position. Kinship establishes the position of individual in the society; descent legitimises it (cf. Marx 1976). Each geographical region has its own unique pattern of development and interaction with the sedentary societies. Pastoralist's economic dependence on their domesticated herds in varying degrees is the only feature that all pastoralists share in common. Where herders lack proprietary rights to specific grazing grounds, they use labour, capital or kin networks to exchange resources.

Unlike much of Central Asia, where command economies over-ride traditional access rights, the Bhutias and Changpas have communal pasture-

land with strong community regulation of land usage. Among Gaddis Historically speaking, all the land belonged to the *Rajah* (King) of Chamba who would rent out small fields to different families. The lush mountainous meadows and grazing grounds in the area facilitated the raising of sheep and goat. They were given property rights in the Alpine pastures and customary rights or contracts with residents in low hills for grazing. Gaddis spend the summer in their permanent homes in Bharmour and cultivate their lands and in winter, they migrate to lower hills of Kangra valley with their sheep and goats. In winter migrations, their families also accompany them. While men go with animals, women and children work as labourers and house help. The proprietor farmers provide shelter and grazing on their fields after harvest or on meadows. In return, the farmers get manure for their fields. In summer migrations, when agricultural activities demand attention, the Gaddis engage *puhal* (shepherd) on wages to look after the flocks. The year-round migration in search of pastures between upper and lower hills is independent of other economic activities of the flock owner (*malhundi*) (Bhasin 1988, 1996). All customary institutions relating to transhumance are based on reciprocity; the underlying principle of this practice is coordination between nomadic pastoral groups and communities of cultivators on the way and the foot-hills. Survival of the pastoralists and their livestock calls for complementarity, rather than competition, between arable and pastoral demands on resources at different altitude. There should be provision for economies of scale for both arable and pastoral land-use pattern.

Changpas have neither crop-residue option nor any institutional arrangement with other communities for grazing their animals. They have only access to their traditional grazing in different valleys in summer and winter. Single resource competitors always have framework to overcome scarcity and conflicts due to internal pressures (population growth, growth in herd size and change of activity) and external pressures (climate changes and environmental degradation) as their resources are limited. The organisation of spatial movements is important in pastoral communities. Among Changpas, these movements are regular and cyclic between the areas of summer pastures and winter pastures. The orbit of routes and pastures, the routine, direction and schedules of migration are fixed.

Changpas have communal pastureland with strong community regulation of land usage. Changpas follow the traditional system of grazing wherein the headman- the *goba* decides areas for animal grazing. A unique feature of the traditional pastoral system is the complex administrative system of pasture allocation and reallocation by *goba*. The Changthang is divided into a number of named pastures of varying size, each with delimited borders recorded in register book. Changpa households can use only their assigned pastures. Each pasture is painstakingly suitable for a fixed number of animals calculated locally on their own system. Thus, access to pasture with particular characteristics is allotted to a particular household with some combination of animals, totalling to a specified number. Each pasture is expected to sustain only what is considered an appropriate number of livestock. Triennial censuses of adult animals determine each household's herd size and its allocation of pastures and taxes. Additional pastures are allocated to household whose herds have increased and are taken from those whose herds have decreased. The whole area under his control is divided into two zones—one for gompa (monastery) animal grazing and the other for community animal grazing. Every year three families selected by *goba* in rotation take gompa animals with their own herds to allotted pastures (*lungrung*). The community and gompa animals graze at pastures, which are far off from each other. In addition, one selected family has to take all community as well as gompa horses for grazing. The gompa animals graze on the best pastures and so do the animals of the caretaker families. The families who look after gompa animals are in an advantageous position as their animals have good graze, along with gompa animals.

Like Changpas, Bhutias of Lachen and Lachung have also preserved their traditional form of *dzumsha* (village council) and *phipun* (headman) administration, which control the land distribution. The Lachen and Lachung area has a special status with regard to settlement, land revenue and local administration. The Bhutias of Lachen and Lachung have communal forest/pastures and agricultural land with family ownership of land but with strong community regulation of the land usage. The village is an important land-holding unit. The whole system of land distribution is *sago*. In this form of land

tenure, the communal authority overrides any claim the state might extend on internal sovereignty or state landlordism. In Lachung, there are three types of land: (1) land in apple belt; (2) land in maize, wheat and millet belt and (3) temporary belt. Land in apple and grains belts is permanent. Each family, which is a member of the *dzumsha* and fulfills his duties as a member is entitled to specified portion of land. Community membership entails mandatory participation in a number of domestic rituals, as well as ceremonies of territorial and ancestral deities. These rituals help ensure the health, fertility and prosperity of the individual, the land and the household (Bhasin 1993).

COMMON PROPERTY RESOURCES

Hardin's *Tragedy of commons* (1968) described how common resources, such as the land shared by pastoralists, ultimately become ruined (Hardin 1968). Private property proponents have erred in believing that common property necessarily results in resource degradation. Blaiki and Brookfield (1987) define *common property resources* as resources that are "subject to individual use but not to individual possession", has a limited number of users with independent use rights, and have users organised as a "collectivity and together have the right to exclude others who are not members of the collectivity". Many studies have shown that people can work together to manage common-property resources sustainably (Brombley 1992; McCay and Acheson 1987). As can be seen among Changpas and Bhutias, shared rights can lead to a more equitable distribution of scarce or dispersed resources and reduce risk in the face of environmental uncertainty (Bhasin 1994, 1996).

Most 'common - property' studies, neglect the importance of production strategies and resource access options used by pastoral communities to evade risks associated with environmental variability and other external pressures and thus maintain their pastoral system. 'Access options' are bundles of options available to individuals and communities for securing their livelihoods and production in response to the constraints they face.

HERD DIVERSIFICATION

Pastoralists raise mixed herds of sheep and goats for animals and animal products, and

domesticate yaks, horses etc. for their products as well as for transportation of goods and human beings. Changpas domesticate a mix of yaks, goats, sheep and horses. These animals fulfill their many needs. Yak, goat and sheep provide them with wool needed for ropes, tents, clothing beddings, milk, meat and transportation. Composition of Changpa herd is not random but is an adaptive response to environment, which they inhabit and the resources available to them. The herd of different animals takes full advantage of the use of vegetation in the same pasture as different animals graze on different plants making efficient use of resources. Different animals also provide diversified products for self-consumption or sale. "Maintaining diverse herd composition is also a strategy employed by nomads to minimize the risk of losses from disease or harsh winters, since a mix of different species provide some insurance that not all animals will be lost and herds can be rebuild again" (Miller 2004). Meat is rather a by product of the necessary process of slaughtering animals from the flock, which takes place before the winter, so as to avoid wasting scarce fodder on animals which have outlived their usefulness. The domestic goats of Changthang produce the finest cashmere wool or *pashmina*. Rupshu has highest livestock population and consists on an average 300 animals per family. The household depends for its subsistence on the animals owned by its members. Changpa's flock must include sheep and goats as producers, yaks to transport the belongings on the migrations and a dog to guard for the herd and tent.

Gaddis domesticate two types of animals, non-migratory and migratory. Gaddis keep the non-migratory domestic animals - bulls and cows in the permanent villages of the middle hills. The cattle subsist on wild fodder, which they forage and that which is gathered for them comes from forest trees, brush and grassland. No fodder crops are grown, although chaff, stocks and occasionally grains, are fed to them. During winter months when most of the families depart, a small percentage of the population is left behind to look after the cattle (that subsist mainly on corn stalks), fields and spinning and weaving of the woolsens.

The migratory flocks of Gaddis consist of sheep and goats, whose survival depends largely on transhumant herding. Sheep are raised mostly for their wool, which is sheared thrice a year to provide the coarse wool, which is woven into

rain resistant blankets and the snowshoes for the shepherds. Gaddis raise goats for their milk and meat. Milk is the staple of the shepherd's diet on migration. Of greatest financial value is the meat. To maintain the size of the flock, about 40 percent of the goats are sold during winter. Although sheep produce more wool, they as compared to goats are less hardy and give less milk and meat. Goats are able to survive on poorer pastures than sheep but at the same time tend to destroy the pasture after they have grazed for a certain length of time, as their sharp hooves cut the turf, exposing the top soil, which is blown away by the wind (Bhasin 1988).

Bhutias of Lachen and Lachung raise yaks, *dzow* (a breed of yak and common cow) sheep, horses and mules. They obtain milk, meat and wool from the animals. Bhutias rely on yaks, ponies and mules for transportation (Bhasin 1989).

CONCEPT OF WEALTH

An accumulation of material goods beyond a certain point restricts the pastoralist's freedom of movement, thus reducing his ability to care for his herds and intimidating his livelihood. The pastoral nomad's economy is not organised for sustained production even in normal times. According to Lattimore, "the pure nomad is poor nomad" (cf. Salzman 1980: p. 34). However, there is emphasis on accumulation of more animals. Having a large herd is cultural goal of most herders; prestige and status are defined by having larger herds than one's fellows. Work is organised by "non-economic" relations in the conventional sense, belonging rather to the general organisation of society. In nomadic pastoralist society, inequality is more the organisation of economic equality and one secures or maintains high position by generosity.

The economic structure of a society become visible from the interaction of the general forces with the specific thoughts, habits, culture and patterns of social organisation and institutions existing in the society. Even as pastoral nomads show a variety of social organisation, they are generally simple in nature and frequently dominated by kinship relations. An economic sense for these pastoralists means an efficient way to exploit natural grassland resources. According to Barfield, "the economics of pastoralism is based on the type of animal raised and what is done with the products" (Barfield 1993: p.

12). Concept of wealth is different among pastoral nomads. Wealth is tied to the ownership of animals rather than the ownership of land. The number of animal heads they possess determines the prosperity of pastoral households. The household depends for its subsistence on the animals owned by its members.

According to Salzman (1980), "they also see their herds as banking and investment devices, so that they will try, for example, to keep some small stock as relatively liquid assets or 'small change' for consumption purposes, or will convert downward to small stock from their remaining large stock after a drought to take advantage of higher growth rates and lower per-unit risk factors" (Salzman 1980: p. 177). Importance of non-economic goals in pastoral societies reveals many interesting aspects. Their economics requires distinguishable strategies for short-term productivity and longer-term insurance.

Pastoral societies are not often homogenous, but are discernible by household variation in wealth and livestock ownership. Livestock, unlike land, constitute fluid capital for a pastoralist, which they use as a productive resource, a marketable surplus and a form of stored wealth. Livestock are subject to both natural increases and catastrophic losses, and amassing wealth in pastoral society has been described as volatile where the fortunes rise or fall (Barth 1966). Fratkin and Roth (1990) examined the effects of 1984 drought upon household wealth differences in a community of Ariaal pastoralists of northern Kenya. Their analysis confirmed the hypothesis that the drought resulted in increase household wealth inequalities.

Among all the three tribes, ownership of herd is the key determined of a man's wealth and status. Number of animals in herd is always more important than quality. Animals are also the only form of inherited wealth, since access to pastures is acquired by lineage affiliation and is not personally owned.

The members of the three groups use their animals to acquire prestige and influence in their societies. Loaning of milk animals to needy, accumulation of impressive dowry, gift giving, commitment of resources are not strictly understandable on an economic grounds alone. The increasing of animal numbers is not a projection of prestige or an indicator of only social status. It is as an insurance against constraint events, herders have to struggle to increase stock numbers,

in order to provide security in case of losses, to leave a remainder of feasible size, to rebuild its herd.

SETTLEMENT PATTERN

The scattered and constantly shifting herding units of the pastoralists are truly the primary communities of pastoral society. They correspond to hamlets among sedentary people. The members of a herding unit make up a socially bounded group. Unlike a sedentary community, which persists unless the members abandon their house and land and depart, a herding unit of nomads can only persist through continuous reaffirmation by all its members. The coordination of components of economically independent herding units is essential to make it a viable unit. The consent of the members of the herding unit regarding such decision is important for the maintenance of a herding unit as a social unit. In some areas, the transhumants live in tents and move with their animals and families on fixed routes. When routes are fixed between the summer and winter pasture, they may construct huts at both the places. In such cases, tents are used only during migrations. Gaddis at mid-altitude own permanent houses and agricultural land. Some Gaddis also own houses and fields at their winter pastures. Gaddis do not use tents in any of their migrations. They like to travel lightly. They obtain products from animals and use them directly. When they pass agricultural areas, they barter animal products for grain and other necessities. When pastoralists have regular summer and winter pastures, they start growing millet, barley or vegetables near them, as Bhutias and Gaddis do. The grain is for the human population and left-over of arable farming as forage for animals.

Like Gaddis, Bhutias of Lachen and Lachung have houses at their permanent villages but they also use *byah* (tents) made of yak hair during migrations to high altitude pastures. Lachenpas migrate seasonally and have encampments at different places. Lachenpas inhabit Lachen from middle of February to middle of May and then move towards Menshithang. As a rule, young people accompany their herds to grazing area but some Lachenpas do take their families along as they have built *Kachcha houses* there. Besides grazing animals, they collect firewood and grasses. After April, only young men and women migrate to higher villages of Zemu, Tallum, Samdong, Yakhang and Kalep and later to Thanggu area to sow potatoes. From May

to September, they stay in higher region and engage themselves in different activities like agriculture, pasturing, trade and collecting minor forest produce. Thanggu is the meeting place of migrating Lachenpas as they have a yak-tent gumpa and a communal tent kitchen for feast. *Dzumsha* meeting takes place twice a month at Thanggu.

Among Lachungpas there are no encampments as the families do not migrate seasonally. The three *busties* (hamlets) of Lachung revenue block have cultivable lands at Khedum, Leema and Lothen. All these places are nearby and total cultivable land is about 16 hectares. During the months of November-December, male members go with animals beyond these places. While grazing they collect grasses and firewood. In May they take their animals to high altitude pastures halting at Yumthang (3,660 metres), Yume Samdong (4,880 metres) and Chholhamo. Thus, Lachungpas migrate six kilometres up the Lachung to Chholhamo and six kilometres down Lachung to Khedum, Leema Lothen. Two *phipun* (headman) look after the affairs of these encampments, which are primary communities of Bhutia society. The members of encampment make up a clearly bounded social group, their relations to each other as continuing neighbours are relatively constant while other links are governed by chance. Members of the encampment must agree in their decisions on the vital questions economic strategies, such as division of cultivable land at different places, grazing land, migratory schedules and other social matters. A *phipun* holds his encampment together by exercising his influence in establishing and formulating unanimous agreement within the encampments on dates of migration and beginnings of agricultural activities (Bhasin 1989, 1996).

Among Changpas, though places of migration and routes are fixed but they have many reasons of not building permanent houses. The pastures are assigned only for three years for a particular group. This rotation and lack of building material restricts Changpas from building permanent houses at any altitude. They live in a black tent (*rebo*) with designs, suited to local economy and availability of raw materials in the vicinity. These tents are woven and made by Changpas themselves. These tents are strong enough to last many generations. The tent is water-proof because of natural greasiness of the hair and the oily smoke of yak dung burned inside in the hearth. These tents withstand heavy snowfall and strong winds.

Almost all nomads have a base, usually in a traditional winter village from where they make well-established moves with their livestock to seasonal pasture. The number of moves from winter to seasonal pastures depends upon the availability of water and fodder. The Changthang nomads move along with their livestock annually between summer and winter encampments with associated pastures. The migration sequence enables the nomads to utilise the different pastures in their growing period. Often, households move parts of their herds, say, male and non-lactating sheep and goats to a secondary satellite camps at other pastures and in a different season pregnant females are moved to another satellite camp, depending on availability of pastures and labour to do so. This system applies only to sheep and goats. Yaks are moved according to different sequence. They leave male yaks unsupervised in the mountains throughout the year until they are needed for transportation. In autumn, the female yaks are herded daily and move with the sheep and goats. In winter, the female yaks are moved to mountain slopes to forage there. According to Changpas, their traditional system has allowed them to survive on Changthang Plateau for centuries without destroying their resource base precisely because it fostered a balance between their highly adapted herds and the harsh environment. This also justifies the individual herd management strategy. Changpas have permanent stone and mud houses in winter villages, where parents settle after retirement from transhumant life.

The Changpa economy is labour intensive and the labour resources of a household set an upper limit on the number of animals they can care for. Changpa household consists of either nuclear families or polyandrous households. These domestic units are stable in composition, but camp groups, herding groups and groups that migrate together are very unstable in composition. These groups tend to change in composition with every season as households make temporary agreements based primarily on economic considerations. Households are grouped into shallow agnatic lineages based on known genealogy and there (Bhasin 1996).

SOCIAL ORGANISATION

Pastoral nomads present not only different living lifestyles and means of subsistence but also various types of social organisation. Pastoral

populations are organised into so-called descent groups (tribes, clans and lineages). The social structure, social organisation and community life of pastoralists emerges out of the needs of its individuals and social groups.

The role of Indigenous Institutions in the Pastoral Communities is very important. The indigenous institutions play the role of governing the behaviour of individual member of the society.

The indigenous institutions are organised to serve the social, economic, security and development needs of its members. They also have the responsibilities of decision-making and enforcement of resource use rules through political authority.

Majority of pastoral groups in the world are patrilineal. The pattern of social, functional and administrative groups in the nomadic pastoral societies have emerged out of the needs to meet the demands of a migratory mode of production. Resulting organisation of labour and social organisation is complex and variable. Flexibility is required to manage herd movement, information sharing, risk pooling, aggregation and dispersal of herders across the region. Formal institutions are necessary to control ownership and transfer of property as well as adjudicate conflicts.

Among Bhutias and Changpas, the encampment is a level of social organisation, which is an administrative and jural unit. It remains the most inclusive level of political activity. The Bhutia and Changpa polity is characterised not by a hierarchy but by equality among its members. Power and authority is diffused among members. Bhutias have their own local government organisation, *dzumsha*, an assembly composed of the heads of the separate households. The *dzumsha* is the most powerful traditional system governing natural resources. In Bhutia system, laws regarding livestock production involve range-land and water resources management as core components of the indigenous institutional system, which still strives to be adhered to. Management of these resources are closely bound to the pastoral livelihood and strictly observed by the society. Every member of the society is required to respect customary laws. Under the general assembly, *dzumsha*, *phi-phun* has the highest authority in the system. He has two *gyapons*, who work as his helpers and acts as constables and messengers as well. Village elders *gen-me* assist *phi-phun* in the effective working of village administration. The institutional structure extends to community

and village levels where the actual administrations and management of resources take place. Village elders reinforce co-operation and social solidarity between people through shared rituals and resource sharing.

Among Changpas there is one official head *goba* and Members (*ghansum*) number of which depends on the size of the camp. Like Bhutia's *phipun*, *goba* holds Changpa encampments together and unites into unit. In this democratic form of government, the village council (*chogdus*) selects *goba* (Headman). The village council consists of all the male heads of the separate households. Membership and affiliation in village council is founded on the formal recognition of both descent and residence rules. Changpas allow a fellow villager to attend village council, if he has fulfilled his duties as a member of the society. Selection of the *goba* is by consensus. This consensus is arrived by finding the person with positive qualities of simplicity, honesty, truthfulness, social status, reputation and dealing ability. A sound economic background is not an essential factor but it is an added qualification. Occasionally, a situation of discord arises for the selection of *goba*. In case of discord, religious bigwigs have the final say. The life and culture of Changpa is strongly religion-ridden. Religion is a dominant force manifested in all aspects of Changpa life. Ecological conditions in the area make religion and religious dignitaries an important part of their life. Gompa men, *Chhog Jot* and *Kushok* (head Lama) have final say in the selection of *goba*. In turn *goba* selects Members (*ghansum*), *sangcho* (camp heads) and *kotwal*.

The *goba* regularly exercises his authority in allotting pastures and coordinating the migrations and settling the disputes. District Commissioner and other members of the administration anticipate his co-operation in all sorts of economic, social and educational schemes and development programmes.

Sangcho, camp head, who is responsible for the management in his section to the *goba*, manages the scattered tent camps and in his turn, *goba* is responsible for the whole group. *Goba*'s mandatory registration with the *tehsildar* and Member's registration with National Congress Office in Leh link the village council to wider political party. Each section has a *kotwal* appointed by *goba* who act as constable, messenger and odd job man. *Kotwal* informs the people about

the meetings; and collects funds. He is not part of the judiciary but acts as messenger.

Bhutia and Changpa societies are largely unstratified. The indigenous system of prestige and power among Changpas is based on relative egalitarianism. This system differs from "kinship societies" as there are no divisive characteristics of a kinship system overpowering the socio-political system. There are no social classes and the whole population carries out the same kind of economic activities.

Gaddis of Bharmour have small compact villages or hamlets. The members of these villages make up a clearly bounded social group; their relation to each other as continuing neighbours are relatively constant, while all other contacts are passing, ephemeral and governed by chance. Like all Hindu communities, Gaddis are divided into endogamous groups called castes. The caste ties stretch outside the village to unite people of the same caste. The village, which appears as a unit from outside, reveals clear social divisions. The division of a village into number of castes plays a part in actual social interaction because social interaction is limited by membership of different castes. Members of different castes are expected to behave differently and to have different values and ideas. These differences are sanctioned by religion. In Bharmour villages, there is major division between high castes and low castes, with only minor hierarchical distinctions within each level. Most of these castes recognise large categories of caste mates united by a myth that they were related by a patrilineal descent from a common ancestor. Each of these categories is denoted by its own name and its members are found in several villages. These groups are known as *gotras*. These *gotras* are further subdivided into many *khinds*, *als* and *jaths*. A *gotra* forms a kind of corporate group sharing territorial lands; it makes demands on the loyalties of its constituent members, each member being responsible to and for the whole group. It is also especially useful as landholding entity, serving as a broad basis for recognising and protecting land rights. *Al-* association is a form of co-operation and mutual insurance, and through it, a man maintains a large range of significant interpersonal relations within a wider society in which he lives. Because of ecological conditions and resultant economic pursuits, the ties of common residence, daily cooperation and face-to-face relations in local neighbourhood always

keep on changing. A person may not see his *al* associates for lengthy periods as they are scattered widely and arbitrarily over a large area, and both his and their locations change frequently. The relationship of *al*-associates therefore consists primarily in mutual assistance on the more important occasions of individual social life during the months of concentration. For much of the time, these relations remain dormant, being reactivated as occasion requires. Occasional pastoral co-operation may occur between *al*-associates. The obligation of support in judicial affairs also exists and these are more important as most disputes are settled in the traditional *biradari* courts. The patrilineage is divided into the *khinds* named after the ancestors where the split is supposed to have taken place. A *khind* consists of number of *tols*. Each *tol* consists of two-three generations in depth and may consist of one or more brothers and share a common hearth. Though physically and economically divided, a family remains nevertheless a part of *tol* or extended family. Frequently, all the families of a *tol* keep their flock together under the supervision of two hired shepherds and two *tol* members (belonging to any family who can spare two male members at that time for reason). In addition to these kins, Gaddis have help of *dharam - bhai* (pledge brothers). *Dharam-bhais* are associates whose ties are not coincident with kinship, but which, by virtue of reciprocal rights and duties have a pseudo-kinship quality. An underlying theme of Gaddi social organisation is the general difficulty of group activity on any large scale because of widespread dispersal of population together with diverse and frequent movement. Practically every household is a farming and pastoral unit. In Gaddi community where agricultural labour cannot be purchased, they have assured a stable labour supply through *barton* (obligatory assistance) and co-operation between families. At the same time, the *barton* group exercises an enormous amount of control over society. The *barton* relationships are, therefore internal regulators of Gaddi society, which bind relationships and castes organisation. In the cases where fields of the family are dispersed and far apart, then the few members of the family or one nuclear family may reside in field dwelling. A large extended family may own three or four field dwellings at different places. The residents of the field dwellings are considered as being members of the village community.

They participate in all village ceremonies and fulfill their *barton* (obligatory assistance) obligations. Failure to fulfill this obligation breaks the *barton* and creates great ill-will. The field dwellings are regarded as the extension of the village, occupied in order to take advantage of the cultivated fields. The allocation of the people to these field dwellings "is a significant social strategy in local demography, with important implications for social ecology. It facilitates optimal land use and maintenance of suitable ratios of people to land" (Berreman 1978: p. 351).

Every village is headed by an elder known as *Pradhan* and everybody abides by his decisions. A group of villages is organised into a *Panchayat*, the local governing body. Local disputes are settled at the level of *Pradhan*, whereas the local *Panchayat* settles disputes between villages (Bhasin 1988).

Studies have shown that decision-making organisation and pastoral nomads' camp-size depicts variation. It is suggested on both theoretical and empirical grounds that tendency and maximum potential range of variation in camp size among nomads groups is heavily constrained by limitations on the ability of individuals and small groups to monitor and process information in decision contents (Johnson 1981).

Social organisation of pastoral groups is based on kinship. However, it is not only pastoral societies, where kinship, pseudo-kinship form the structural basis of social organisation, other societies following different economic systems also has a kinship base. Transhumant way of life necessitates relation beyond the limits of a village. The quality of social relationships in which, transhumant engage: their form and meaning, the way they are initiated and sustained, is similar. However, despite the apparent likeness, there are cultural differences. All the three-transhumant groups have bond brotherhood type of relations. Widespread and diffused social ties have ecological and herd maintenance advantages for a broad variety of nomadic peoples regardless of local or the particular species herded (Pastner 1971).

It has been reported by Lanchester and Lanchester (1999) that among nomads of Arab, all activities have both subsistence and surplus aspects. With a choice of conduits like gifts, exchange, hospitality and taxation surplus is distributed. Among nomads, the social relationships supported mainly by generosity imply much more

significance than mere material wealth. According to Lancaster, Arab nomads see social relationship as the practical base of their flexibility, which is the key of their survival. They see their socio-economic system as more sustainable than that of the state systems, because former is based on strict morality lacking in state system.

Among Changpas through the law of *primogeniture*, the eldest son inherits the property of the parents including *rebo* (tent). After the wedding of his eldest son and birth of his offspring, father hand down his tent to his eldest son and move to a *reb-chung*. They leave their migratory life and settle in traditional winter villages of their sections. In traditional winter villages, they have a small house, little piece of land and few animals sufficient for the support of the several fathers, the mother and unmarried younger sisters. The eldest son or daughter in case of no sons acquires the remaining, larger portion. The children do not abandon their parents and regularly visits them, especially on festivals and other social occasions. Traditionally, Changpa practiced polyandry. However, now all types of marriage are prevalent. The polyandrous marriage provides the required labour to set themselves as an economically independent and viable household unit (Bhasin 1996, 2009 in press).

Among Bhutias of Lachen and Lachung, the component households are economically independent. Each house has its own animals, land and grazing rights by virtue of his *dzumsha* membership. All sons inherit equally. Though the herd of a household is administered and utilised as a unit, individual members of the household usually hold separate title to the animals. When things are going good, fathers frequently give a few animals to their sons and daughters. In cases, where there are no sons, female inheritance is common. Like Changpas, after the birth of a child, the couple establish themselves in a separate house. Bhutia society make arrangements whereby productive property in the form of land, herds and equipment and additional labour force are provided to secure the viability of newly established incomplete elementary families (Bhasin 1989).

The household units of Gaddis are based on nuclear families. With the death of the father, the authoritarian unity of his nuclear family ceases and it breaks into a number of independent groups. These groups still comprise the 'family'

of the father but now these are the primary units of inheritance and will be nuclear family of each son. The establishment of each nuclear family frequently coincides with at least informal division of property. The widow mother and unmarried sibling stay in the father's house. If a father has one wife, the property is divided among the male children called *mundawand* (*munda*-boy, *wand*-division). If father has more than one wife, the property is divided among the number of wives one has. Later on wives divide their share among their sons (Bhasin 1988).

Among Bhutias, Changpas and Gaddis the household is the smallest and most important unit of production and consumption. However, in cases of need, group structures-larger than the household and smaller than the villages are accessible. These are the mutual aid groups based on reciprocity, consisting of neighbours and/or relatives, mostly on residential and customary lines. Though these are informal groups, violation of its rules may lead it to formal level.

The three groups practice different form of marriage. Gaddis practice monogamy, while Bhutias and Changpas practice polyandrous, polygamous or monogamous form of marriage. Under extreme environmental conditions, certain social structures like polyandrous marriage are important as an ecologically conditioned social and economic structure.

Transhumant Gaddis of Bharmour, Himachal Pradesh are agro-pastoralists, who own permanent houses, land and practice agriculture at mid-altitude. They rear large flocks of sheep and goat. In winter, they move to lower altitudes with their flocks and family, where men pasture their flocks and women and children work in the houses of local people. In summer, they go to high altitude pastures with their flocks, while the family manages the agriculture. For all these diverse economic activities, they do not resort to polyandry but manage with the nuclear family. They do have institutional support to add members to their family. Gaddis have provision for supplementing work force in these patrilocal families by marriage, birth/adoption and incorporation. In case, wife is infertile, polygyny is a mean to seek a heir; when a woman is widowed, polygyny (through the mechanisms of levirate, *i.e.* fraternal widow inheritance) is a means to provide her a husband within the family, retaining her labour and avoiding her separation from her children she has produced from a previous

marriage. Incorporation of young male relations and *ghar-jawantari* (a typical form of marriage) are the means to supplement work force of the family. In this form of marriage, the boy has to work, as a helping hand in the house of his would be father-in-law for a specified period decided earlier (Bhasin 1988).

While considering the exchange pattern of any society, anthropologists analyse three fundamental forms of exchange-reciprocity, redistribution and market exchange. Among pastoralists, the three fundamental forms of exchange are practiced in different combinations.

The use of surplus time and resources is socially, culturally economically specific. Bhutias, Changpas and Gaddis practice the three fundamental forms of exchange-reciprocity, redistribution and market exchange in different combinations. Food sharing beyond the domestic unit is uncommon. Rights of access to pastoral products lie within the domestic sphere and are not generally shared beyond the household. Relationships beyond the family or corporate groups tend to be based on balanced reciprocity and animals are used in many pastoral groups as a basis for creating social debt or obligation but generally within constraints of access to resources. All the three groups practice redistribution in various forms. As stated by Crapo (1995), that generally, the 'gift' constitutes the basic theme of reciprocity. Carpo (1995) elucidates reciprocity as "the system of exchange in goods or services are passed from one individual or group to another as gifts without the need for explicit contracting for specific payment" holds good for the three groups under discussion. As stated by Friedl (1976) that redistribution "entails the collection of goods by central authority and then the reallocation of those goods according to some principle to the members of the society" (p.319), the Bhutias, Changpas and Gaddis, collect materials and redistribute by arranging a feast. The feasts are sponsored either by rotation or by an individual in lieu of crime committed against the society in all the three groups.

A sexual division of labour is common in pastoral societies, but the role of women's labour stands in sharp contrast to that of women in foraging societies. In pastoral groups women have limited rights to dispose of the products of pastoral production, which tend to be controlled by men. Though women labour is important to societal reproduction, the status of women is

lower in pastoral groups. In all the three groups traditional rules and regulations form the foundation of women's position which is reflected in the traditional practices. The tools of production are owned by men as are the forces of production—animals and pasture rights. Limited right of girls' access to education, lack of access to control resources and the associated rights and benefits of their roles in community affairs, decision-making, labour division etc. In all the three societies under study, women power does not extend to societal or political spheres. The economic power of the women in the household is not translated in to corresponding community authority. Men's work in public sphere has usually enjoyed higher status than women's domestic work. Women supremacy is restricted within the family domain and does not extend to social or political spheres. The main obstacle to have equality in status of women and men is the women's lesser ability to perform work other than domestic work. By convention every village Panchayat has a female member, the lady never take any active interest in the proceedings of Panchayat. Bhutias have a tradition of collective decision making by communities through the institution of *dzumsha*. However traditional institutions do not witness a significant role for women and *dzumsha* is constituted of males only. In the absence of a male member, a female can represent her family unit. If a male head is absent from *dzumsha* meeting, he is fined, however if represented by female head, she is liable to pay half the amount for her absence. This shows that women have a secondary importance in public affairs and community decision-making. Women are generally bypassed and marginalised either because they lack the requisite skills or because women's heavy and unending domestic responsibilities makes attending meetings and participating in decision-making difficult (Chapter 14 in the present Volume).

PERCEPTION OF RELIGION

The perception of religious phenomenon among pastoral nomads is different from settled societies. The gather together habitat of the winter contrasts with scattered habitat of the summer season, with its mobility and the splitting of the group into families in the narrowest sense of the world. There are two ways of occupying land and two ways of thinking as well. This contrast

between life in winter and summer is reflected not only in rituals, festivals and ceremonies of all sorts, but it also deeply affects ideas, collective representation, in a word, the whole mentality of the group. In summer, the life is somewhat secularised. The ecological constraints to which the group is subject make mobility necessary and group's requirements come to restrict religious thought and practice. The mobility that characterises pastoral societies is indeed the central feature of their organisation. When they come to winter villages, they have more time and their thought process is different. Among transhumant, social relations become activated through changes of places-proximity and distances are not relevant, and space is in a sense negated. Among the Basseri, pastoral nomads of Iran, the paucity of ritual activity is striking. The central rite of society is migration itself. The movement leads nomads into closer recognition of the one constant in their life, the environment and its life-giving qualities. Under such conditions of flux where group and even family relations are brittle and fragmentary, the environment in general and ones' own encampment and grazing lands become for each individual the one reliable and rewarding focus of his attention, his loyalty and his devotion. The nomad does not have the impression of inhabiting a fabricated world but is in direct contact with the nature. He is controlled by nature and not by persons. The domestic animals whose interventions he exploits the wild objects, serve only to mediate this relationship with nature. Mobility and fluidity of groups and within groups, affect the ideology of nomads and that may be reflective in collective representations in rituals. Nomadism and its underlying ideology is a "certain type of behaviour" rather than a mode of economic production or as a variable determined by environment. This particular attitude in the face of supernatural and the symbolic world is governed by nomadic way of thinking (Spooner 1973; Barfield 1993). Legitimizing of the social structure is the primary purpose of the religion. Whenever people gather into groups that are in general concordance with one another- such as religious services and ceremonies-the existing social structure is maintained because balance has been preserved. Religion of Changpas may include worship of their animals and becomes so meaningful that the ceremonies and rituals surrounding it have become apotheosized. Both Bhutias and Changpas are Buddhists, while Gaddis are

Hindus. Gaddis are staunch Shaivites and believe that Lord Shiva resides at Mani-Mahesh for a period of six months and migrates to Piyalpuri, the nether land, during the winter months. The migratory period of the Gaddis coincides with the migratory pattern of their main deity, Lord Shiva. Gaddis' eco-socio-cultural configurations are conceptually derived from this upward-downward movement of Lord Shiva. The Gaddi annual calendar of activities is accordingly divided into two halves and represents two distinct modes of life during the summer months at Bharmour and the high passes of the Dhauladhar and winter months in the valley of Kangra. The up and down movement is cyclical and follows nature's rhythm. When Shiva migrates to Piyalpuri, he takes away with him all the living creatures, so the Gaddi too migrates. This upward-downward movement is so important to the Gaddi that it is reflected in his more sedentary existence as well, namely in the construction of his houses, which stand as if on a vertical pole and the life within the house, which also follows this movement. Despite being Hindus, they worship many spirits and supernaturals.

The Bhutias of Lachen and Lachung are Buddhists and believe in the basic principles of merit and sin. They also believe in a vast array of gods and spirits whom they propitiate at appropriate time for the general welfare of society. The Bhutias place great emphasis on coercive rites of exorcising and destroying demons. The execution is in the hands of trained specialists *pau*, *nejohum* and lamas. Bhutia nunneries (*manilkhang*) are geographically separated from the gompas and nuns do not perform rituals and funeral rites for people. There are frequent services in *busti* (village) *gompa*, conducted by the local lamas on different occasions at specified times throughout the year. Such services entail the construction of complex altar arrangements (destroyed at the completion of the event) and readings of religious texts, but every service culminates with a distribution of food, for which all Bhutias come. Each family contributes to the ceremonies performed at the *busti* gompa. Compulsory work and contributions are expected when festivals are held and rituals performed to ward off evil spirits and natural calamities. Bhutias are very particular about these services and have built a gompa in a tent at Thanggu, the summer grazing area. In addition to public gompa events, Bhutia religion also consists of privately sponsored services, usually held in sponsor's home, on

birth, marriage, illness and death. A household may sponsor a ceremony in the absence of any life crises, simply for the purpose of gaining merit, good luck, protection or all three for the household. All religious ceremonies have a broadly common base, centering on offerings and petitions to god, and offerings and threats to the demons and closing with a ritual food to all present. And finally, village religion includes the primordial tradition of shamanism (Bhasin 1989).

Changpas worship inside the tent as well as outside in the herds. Changpas worldview is that relation between animals and humans is based on link or association rather than a clear boundary between them. The belief is that both humans and animals exist as subjects within the same world and have a relationship of mutual dependency. Buddhist pantheon represents a three-tier division of the world. Gods inhabit the uppermost level, *klu* (spirits of aquatic and subterranean world) dwell in the lowest and the people and *btsan* (demonic deities) occupy the middle level. Among pastoralists, animals are a vital link between man and the gods. It is important to understand that the expressed relationship between living beings is not the general love for animals as such. Some animals are of importance for people's subsistence become icon of worship in a culture, as the sheep among Changpa. Among Changpas, sheep are the focal point of this entreaty of gods, *btsan* (demonic deities) and *klu* (spirits that inhabit aquatic and subterranean worlds) and have to be constantly appeased. Through sheep, the Changpas receive blessings. However, the correlation between 'worship' and subsistence value of an animal is not applicable to all pastoralists or hunters. Changpas herds consist of sheep of different colours. From each herd, five male sheep with specified colour combination are dedicated to different gods. Changpas keep few sheep for expelling curses and bad luck. These are not dedicated to any particular god. In case of evil eye or when another curses a person, Changpas offer incense and recite prayers over such a sheep to ensure the breaking of spell. They do not sacrifice these sheep but keep them simply for worship. Some families dedicate goats for worship too. Changpas commit male yaks and horses as well. These horses and yaks are property of the gumpa. Changpas worship these yaks and horses annually, at the beginning of the annual gumpa festival along with the other dedicated male sheep

and goats of the gumpa. Changpas make regular offerings to the dedicated animals in the herd. They neither kill nor sell these committed animals in any circumstances. Eventually, after their death, young ones replace them.

In addition, each family keeps some animals from each type of either gender for the welfare of the family members. Head of the family select these animals. To select *tshe-thar*, he throws prayer beads in the air and on which animal's body the beads fall are the chosen ones. Then a lama comes and blesses these animals. These animals elevate suffering of the family and take away sin or evil. All these selected animals get preferred treatment. They do not carry weights. Changpas do not ride over dedicated or selected horses. However, they shear dedicated sheep and remove *pashmina* from the goats. After the shearing of livestock, Changpas hold a large prayer ceremony and invite the Rinpoche of Dubbock to preside over the prayers. It is for the welfare of the community as well as the livestock.

The cultural interpretation of pastoralism is not separate from its practice but is more important for the outcome than the procedure. Changpas consider sheep as sacred and receive blessings through these. The perception of sheep as sacred implies that animals possess magical or super-human qualities, well thought-out for practicing successful pastoralism. The lamas of the gompas are very important even if they do not participate physically in herding animals. The festivals, rituals and associated taboos are all important. "The reciprocity between humans and animals was conceived of as an agreement between partners which prevented human beings from taking more than he or she needed" (Vecsey 1980: p. 20).

Ceremonial life of Changpas consists of individual rites involving the family members. Some ceremonies include people outside the family, the *Pha-spun* members. Other ceremonies involve feasts and other entertainments where all the members of *pha-spun* are present. The *inter-pha-spun* participation include activities like joining a procession, the tent god (*phug-la*), the tutelary of each *pha-spun*, represented through the sacred arrow, is housed in the upper most part of the tent (Bhasin 2009, in press).

Rappaport (1968) pointed out that religion and rituals had advantages for humankind when it comes to building sustainable and reliable systems for society and in the long run, the environment. People invest emotions and their

deep-rooted traditional ecological knowledge in performing rituals. Since rituals are social events, the entire society becomes involved. According to Anderson, rituals regulate the egoistic and wasteful behaviour and embed the message of responsibility in a more efficient way than do mere secular ways. Traditional societies encode their resource system in rituals. All traditional societies that have succeeded in resource management have done so partly by embedding their praxis in religion and rituals (Anderson 1973).

RELATIONS BETWEEN STATE AND PASTORAL GROUPS

The relationship between states and pastoral nomads has been the subject of many studies (Klute 1996; Lenhart and Casimir 2001). State policies regarding forests, agriculture, irrigation, fodder, famine, pastoral rights and migration are some of the mechanisms that contribute to the alteration of pastoral life style. Some policies influence pastoralists directly and others have an effect on even if these were not aimed at herders. The pastoralists have been affected by the events that took place outside their own territory. Particularly, environment society relationship has been altered pervasively and considerably, an important feature being the expanding linkages with other production systems and a number of development interventions for the betterment of humans and livestock. Development of animal husbandry is a major government goal. The impetus to increase livestock productivity by scientific methods is strong. However, intervening in fragile environments with complex ecological systems is a difficult undertaking. Many pastoral programmes in other areas of world have resulted not in progress, but rather in destruction of the way of life of the inhabitants and an environment in poorer condition than before (Sandford 1983; Swift and Maliki 1984). It has been observed from development activities in pastoral communities in arid environments in inner Asia as well as from Africa and the Middle East, where external factors had detrimental effects on the traditional pastoralism and the sustainability of the natural resources (Nimir-Fuller 1999).

Tibetan nomads have been the subject of Chinese reforms. The advent of Chinese state, collectivisation, reform and economic development have swept away old forms of leadership in

Amdo and brought significant changes to the pastoral economy. However, the nomads' narratives of continuity reflect the persistence of an essential model of tribal organization (Pirie 2005). To avoid this, it is extremely important that planners understand the traditional livestock management system.

Recent research points to the fluidity within certain pastoral groups and the fact that individuals move in and out of herding, in response to a wide variety of factors-market conditions that may alter the profitability of herding, the availability of alternative options including agriculture and jobs in existing place or return to pastoral groups. All pastoral groups in Himalaya face the similar constraints and stimuli. Natural exigencies-extreme weather conditions, drought, epidemics and predators result in reduction of animals. Likewise, social crisis, such as phases in domestic developmental cycle and work force shortage in herding groups cause concern in the community. The presence of diffused web of social ties-consanguineal, affinal or pseudo kins coupled with their physical mobility enables pastoralists to overcome such pressures. They utilise such ties periodically for replenishing depleted stock, gaining access to an ally's pasture in time of local dearth or realigning personnel for herding efficacy. The pastoralists have managed to survive because of their position in the exchange system. Pastoralism is an important economic activity in the Himalayas, where ecological constraints restrict agriculture. It was through the domestication of numerous herds and flocks that the resources of distant pastures could be converted into wealth. The physical environment of the region has created a way of life, where groups of people along with their livestock are on move and are involved in regional transactions at different levels. These nomads are an essential part of the larger socio-economic system of the region. Before the closing of the border, they used pastures on both sides of the border. Along with their pastoral activities, they carried on border trade. Despite the ecological constraints, pastoralists were managing their environment for making a living without outside intervention.

There is chain of adverse conditions, which are forcing Changpas to abandon their nomadic lives, their traditions and total loss of their identity and culture. The key factors are harsh winter periods with temperatures reaching -40 degrees Celsius. During these six months, they remain cut

off from outside world. They survive on the food collected during summer and completely depend on *tsampa*, lentils, rice, milk, butter and dry cheese. This results in high levels of malnutrition and micronutrient deficiency. During the harsh winters, children do not attend school, as there are no heating arrangements. Even teachers are not willing to teach under such conditions. There are no shelters for animals. Many perish under heavy snow. During winter, medical help is not available to the human as well as the animal population. It is not that Changpas have not been confronting such conditions from centuries. Both animals and humans are highly adapted to the ecological peculiarities of the region. The patterns of living and rearing specific animals are based on the tested experience of centuries. However, due to recent changes in the area brought in by the closure of Tibetan border and Changpas despair has increased. Weakened by lack of food, animals had given births to dead lambs and kids in winter. In 2007, 124,530 sheep and goats and 10,390 yaks were directly affected by pasture scarcity caused by the desert locust attack (Sub-Division Report of Changthang 2008). The already overgrazed pastures were subject to locust attack resulting total loss of pasture. Over centuries, they have evolved an indigenous rangeland management system in which they reserve certain pastures to be used in winter when it snows in higher grazing areas. When other pastures were grazed or covered with snow, the Changpa used these 'emergency pastures'. During this period, the shepherds split the herds into smaller units. Stronger animals were taken to pastures higher up. In 2008, because of bad weather conditions and poor pasturage, herding groups shifted to spring pasture in January and February, one-and-a-half to two months ahead of time. There is scarcity of fodder and the traditional system of 'winter reserved pasture' is under strain.

Since the Independence of India, the pastoralists of the Himalayas have faced a series of significant changes from external political and economic changes. These structural alterations have brought adjustments in many aspects of the traditional pastoral system, including migratory cycle, local economy and social organisation. Many important changes have taken place in the region due to Indo-China war in 1962. China captured a lion's portion of the Indian territory in many border areas, including Changthang sub-division and Lachen and Lachung area in North

Sikkim, reducing pasturelands to their minimum levels. Chinese annexation stimulated the Tibetan migration to Changthang. Many of them settled in Changthang, creating social and economic problems. Changpas have long histories of cultural and religious homogeneity with the Tibetan refugees. Nevertheless, the additional human and animals' population in the area created a tremendous pressure on the carrying capacity of the land. Shortage of feed and fodder resulted in the death of a number of animals. The loss of trade and the winter pasture led to drastic changes in their life-style. There is increasing commercialisation of livestock values, competition with other pastoralists, diminished self-sufficiency through local dependence on local market, encapsulation by regional administration, decreased mobility and increasing social differentiation and inequalities in wealth and degree of economic security. Many Changpas left their traditional transhumant way of life and settled along valleys. Some have settled in urban areas near Leh, others stick to the pastoral activities by changing the composition of livestock by increasing number of goats and decreasing number of yaks.

The development process in Leh has increased opportunities of waged labour. This has encouraged the out-migration of many Changpas. According to a household survey data carried out between 1962 and 2001, 306 Changpas left Rupshu-Kharnak to settle near Leh town. Although small in number, this constitutes roughly one-third of the original population of Rupshu-Kharnak. Over the past two decades, out-migration has reduced the number of Kharnak Changpas. The Kharnak Changpas have established a permanent settlement about ten kilometres from Leh town. The clustering of migrants at one destination has facilitated additional migrants there, creating a 'chain migration', by reducing the associated costs and risks for subsequent migrants (Hugo 1981, cf. Goodhall 2004).

The advent of reforms and economic development has brought significant changes to the pastoral economy. Introduction of Public Distribution System (PDS) in 1983 has brought rations to their door steps at subsidised rates. However, this has increased the need for cash in the local economy and has exposed households to the risk and uncertainty of price fluctuations. Traditional trade relationships with lowland agricultural communities have declined in impor-

tance. Local availability of grains has encouraged a shift in Korzok away from the cultivation of subsistence crops towards a focus on pastoral production, which is far more lucrative (LNP 1995).

Changpas rationally make use of their resources and are perceptive and practical people. Their dependence on natural resources is institutionalised through a variety of social and cultural mechanism such as religion, folklore and traditions. When government assumes control of natural resources, these mechanisms become defunct and a radical reorientation of existing patterns of resources take place, including a transition from collective to individual use of resources. The results are protests, social movements and the violation of official laws, along with an erosion of social bonds that formerly regulated the customary use of resources. They are open to change when they perceive new options to be appropriate to their way of life and cultural value. For example, they have started using trucks for transportation and many have bought radio and cassette players during the past few years. Variety of manufactured goods is popular.

The local conditions in Changthang keep on changing, consequently development and conservation decisions must be based on micro-level data.

The question of the future prospects of high mountain pastoralism within a framework of sustainable development is complex. The fate of high mountain pastoralism within Changthang Plateau has revealed that socio-economic transformations are reflected in all sectors of pastoralism.

Nomadism has been undergoing regular changes, modifications and adjustments. In particular their transforming socio-political environment and their incorporation within a regional market structure. Adaptation and modification are influenced to a greater extent by political and social developments than by changing environmental conditions in the region where these practices are applied. Consequently, pastoral practices and the use of pastures will continue to play an economic role in Changpas life.

Like Changpas of Changthang, Bhutias of Lachen and Lachung were also victims of Chinese's aggression in 1962. Traditionally, in these areas marginal agriculture and animal husbandry was not sufficient to sustain the

Bhutia population. Consequently, the Bhutias of Lachen and Lachung were trading with Tibetans across the border. The barter of timber, wood, dyestuffs and dairy products of North Sikkim for Tibetan salt and wool formed the basis of this trade. The Bhutias of Lachen and Lachung pursued it as an occupation intimately interwoven with their pastoral activities. Thus, as long as trade was unhampered by political restrictions, it enabled them to remain economically independent. However, with the closing of the Tibetan border in 1962, life changed for these people. It deprived them of their livelihood and had an adverse effect on their traditional crafts. As long as Tibetan wool was imported in large quantities, weaving flourished and they produced variety of woven articles. The Bhutias were sufferers in another way too because of the closure of border. The Chinese seized many of their herds of yaks and flocks of sheep in 1962 during their seasonal migration under the traditional trans-border pasturing using arrangement. Their economy received a setback and underwent a number of changes. Military encampments, supply bases and defense posts were set up in the Northern Border area. Bhutias reallocated from pastoral and trading economy to agriculture, small-scale horticulture and wage-earning economy. Because of the scarcity of arable land near permanent village, the Bhutias of Lachen move to other areas along river valleys for agriculture and collection of grasses and firewood. During the rainy season, all Lachenpas move to Thanggue area (3900 metres) where they have their agricultural and pastoral land. The growth of barley, maize and buckwheat is restricted up to 2,745 metres but root crops like reddish and potatoes grow well up to 3,660 metres as a summer crop. From June to September, they stay in their farmhouses or yak huts on the Thangu plateau. Lachenpas move back after harvesting the crops, potato, radish and cabbage and some of them make a second move to down south to Chungthang or Mangan to sell the crops and dairy products. On the other hand, Lachungpas practice rain-fed agriculture on the fields near the village. They grow wheat, barley, potatoes and cabbage. Surplus production and export of potatoes and cabbage has brought prosperity to the village, especially after the introduction of road and vehicular traffic. Until 1903, agriculture was practically unknown and the people devoted themselves to their yaks and cattle. In 1903, there

were 400 yaks, 40 cows, 100 ponies and 30 goats. However, they grew potatoes, turnips and a little buckwheat (Freshfield 1903: p. 94). The alpine pastures in and around Lachung facilitate animal grazing. Pastoralism is still a major economic strategy, however, agricultural activities contribute to subsistence. They raise yak, dzow, sheep, goats, horses and mules. They move above and below the river valleys and exploit the grazing lands and arable land for cultivation along the valleys and surrounding areas. The seasonal migration emerges as an activity organised by family and community structure. In recent years, Lachung has gained prominence as one of the major tourist attractions. As a result there is profusion of lodges and hotels in and around Lachung. This has facilitated infrastructural development in the village bringing affluence to the Lachenpas who ventured into tourism industry as lodge owners, taxi owners and tour operators. The newfound prosperity has improved the way of life. Unlike Lachung, Lachen does not attract many tourists because the village wears somewhat dilapidated look as Lachenpas do not inhabit it year around. However, some Lachenpas have started building guesthouses at Lachen and Thangu. Lachenpas have benefited from the army headquarters of 112 Mountain Brigade and avail amenities like electricity, water supply, transport etc. Many of them pursue multi-occupations as agro-pastoralists-cum-traders-cum-transport operators. The Bhutias of Lachen and Lachung have adapted culturally to diverse natural landscape and have established settlement patterns and production activities tailored to the limitation imposed by the region. (For details see Bhasin 1989, 1993, 1996, 1997).

War of 1962, did not affect the Gaddis of Bharmour like the Bhutias and the Changpas, but they are under stress because of the curb on their movements and restriction on the number of livestock. Transhumant Gaddis population of Himachal Pradesh are under great pressure (Chakravarty 1998). Before the mid-nineteenth century there was no legislation on the use of forests and grazing land but as increasing pressure became a threat to their existence, a national Forest Law was passed in 1865, giving the government powers to regulate most of the forests and pastures. Land settlement, carried out in Kangra between 1865 and 1872, led to the promulgation of the 1878 Forest Law, which introduced a system of reserved and protected

forests. The settlement earmarked grazing areas for each Gaddi family and herd size was fixed, as were the migration routes for each family and it was stipulated that each flock would move at least five miles daily, spending one night at each stopover. The Gaddis did not appreciate these controls. Goats were identified as a major threat and in 1915 herders were asked to pay a higher herding fee for goats than for sheep, even sedentary stock came under this regulation. Later, the deterioration of the forests was the subject of discussion and evaluation by many experts and acting on a 1920 report on the degradation of pastures in Kullu, the local forest settlement, a ban was proposed on grazing by local flocks but migratory flocks were exempted from the ban.

After Independence, two Himachal Pradesh Commissions on Gaddis reported in 1959 and 1970. The second recommended a freeze on flock size. In 1972, the State Government again issued orders regulating flock size but due to political pressure, these decisions have never been implemented strictly. Continued and uncontrolled grazing has resulted in severe degradation of the productive pastures. The livestock trends suggests selective grazing and overstocking along grazing routes as the main reason for decline in pastures with hazards like soil erosion and weed invasion in Himalayas (Tyagi and Shankar 1988). Due to high grazing pressure, palatable grasses and legumes do not get sufficient time for seed setting and dispersal. Meanwhile undesirable plant species, which are not grazed, get conducive conditions to thrive and set seed. The unchecked growth of weeds has led to their dominance in most of the pastures (Shankar and Singh 1996).

Developments in plains, including reservoirs, irrigated agriculture, urban expansion and intensification of cash cropping have reduced access to winter pastures. At high altitudes, where shepherds take their herds for summer grazing, serious over-grazing is taking place. At the same time, the herder's payment for winter in the form of providing organic manure during the process of grazing has become obsolete as a number of permanent agriculturalists are applying chemical fertilizers. Thus, the early movement of the herds up through the forest belt must begin progressively earlier because of restricted winter pasture, yet movement on the alpine pasture is restricted by the season. The enforced delay in the upward transfer of the herds adds to the grazing impact on the intermediate forests. Finally summer

grazing is prolonged as long as possible which in turn is leading to the over-grazing of the alpine meadows. This is leading to a break down of the traditional arrangement between the herder and the permanently settled cultivators. This is detrimental to both the groups as well as to the alpine pasture, the winter grazing area at low altitude and the forests along the migratory routes. Officials identify herding as the main cause for erosion of the north-west Himalayas. Gaddis are facing a double challenge: shrinking low altitude pastoral areas in the Siwaliks and rapidly eroding claims to whatever is left. Three dams constructed in the foothills of the Siwalik Hills have forced Gaddis to change their migration patterns with harmful effects for themselves and the environment. Pastoral resources are related to reservations and risks, which shepherds put up with. Gaddis practice transhumance because they cannot make their living by staying at one place throughout the year. With given simple technology, rugged terrain, steep slopes, small fields, absence of irrigation make agriculture insufficient by itself as a subsistence base. They compensate for agriculture deficit, by utilizing grazing grounds in the area by rearing sheep and goats. The high altitude combined with higher precipitation results in a greater accumulation of snow. It tends to accumulate through winter and it remains at some places in region up to March and April. The shorter season and absence of irrigation eliminates rice (most productive per land unit) as a food crop. These features serve to restrict the agricultural production and the number of animals that can be kept during the winter season as the draft animals that are left behind have to be provided with stored fodder throughout the months of winter. No parallel restrictions limit the possibility for summer grazing. Upper ranges of these mountains are noteworthy for their large, lush meadows and other good summer grazing. However, these pastures are only seasonal; Gaddis cannot rely on them for year round sustenance. Now-a-days, the forest department grants permits for grazing to individuals, not communities; in some, cases, based on rights granted in the last century. Gaddis are transient community bound together briefly; in summer by a stake in the Alpine common and not by blood ties. Rights in the Alpine commons are communal and are different from 'rights of way', which are individual. Transhumance tied nomadic grazing

to sedentary farming and was in turn sustained by them. Ignoring the needs and the experience-based wisdom of pastoralists will lead to tremendous loss of social capital and destroy a system of self-managed livelihoods.

The process of sedentarisation begins when a fully transhumant household begins to be rooted in land at any locality on the migration route or nearby town either due to enrichment or impoverishment. The typological separation of the pastoral from the agricultural mode of life of the transhumant from the settled mode is not rigid. The two modes of production, pastoral and agriculture exist side by side within the same household. Those who have settled and practice agriculture support pastoralists by growing food for them. Social intercourse between the two is common.

The sedentary adaptation requires an entirely different organisation of society. The principal sources of food among pastoralists (their herds) are mobile and demand transhumant patterns of settlements and social relations. Both agriculture and pastoralism involve the domestication of animals but the use of draft animals to draw ploughs denotes an entirely different strategy of adaptation than herding. The stability of a pastoral population depends on the maintenance of a balance between pastures, animal population and human population. Changpas worldview is that the relation between animals and humans is based on connection rather than a clear boundary between them. The belief is that both humans and animals exist as subjects within the same world and have a relationship of mutual dependency. The interplay between pastoralists and their environment is set up on required need fulfillment rather than exploitation.

Pastoralists mostly depend on natural resources, particularly for fuel, fodder and water. Their dependence on natural resources is institutionalised through a variety of social and cultural mechanism such as religion, folklore and traditions. When government assumes control of natural resources, these mechanisms become defunct and a radical reorientation of existing patterns of resources take place, including a transition from collective to individual use of resources. Goldstein and Beall (1990) in their study of Tibetan nomads demonstrated that traditional pastoral systems of Tibetan nomads successfully maintain their high-altitude grassland systems. In contrast, the modern strategies proposed by

the Chinese government threaten to degrade these ecosystems by limiting mobility of the pastoral population. The results are protests, social movements and the violation of official laws, along with an erosion of social bonds that formerly regulated the customary use of resources. Linkages between ecological and socio-economic approaches insure that development is location specific. Centre for Sustainable Development and Food Security in Ladakh, a NGO is working towards an enhancement of the living standards of the most deprived section of the Ladakhi population- the Changpa nomads. Food and nutrition security is important at the level of each individual for productive life; body security in turns depends upon the security of livelihoods. Environmental security is the base on which both food and livelihood safety rests. Thus, conservation and development of the natural resources becomes necessary components of a sustainable food and livelihood.

All Indian pastoralists are facing common problem of shrinking of their pastoral resource base. The establishment of national parks and sanctuaries, in combination with the expansion of agriculture in to marginal areas has undermined the traditional livelihood of all of them. As a result, almost all the groups are involved in long standing conflicts with the forest authorities and many of them were barred from their grazing areas. Forest authorities are continuing with their policies though there is mounting evidence that livestock grazing contribute to the conservation of biodiversity and eco-system.

The main challenge is how to establish a sustainable and efficient level of operations for the maintenance of natural resources and to ensure food security in the area. The authorities have to deal with problems of the depleted animals and vegetal genetic resources and increasing poverty in Changthang. However, there is no clear policy with legal, institutional and planning frameworks for sustainable development in Changthang. Wildlife development is a specialised field and requires skilled workers to implement the integrated development programme. There are considerable problems of integration, overlaps and duplication of efforts among development agencies, with no common vision and objectives. The development agencies are working without common vision and objectives causing problems of assimilation, overlaps and repetition.

CONCLUDING REMARKS

The Himalayas are characterised by highly complex sociological system, with rich cultural diversity linked with equally rich biological diversity. Himalayan pastoral movement is highly focused and its propensity is toward achieving specific production or other roles. Generally, pastoral mobility is used to precede production goals in a number of diverse sectors. In Himalayan mountain milieu, we find a full range of mobile practices in livestock keeping from mountain nomadism through transhumance to combined mountain agriculture (*Alpwirtschaft*). However, pastoralism is not tied to one type of economic system, some pastoralists have generalised consumption- oriented production, while others are specialised and market-oriented. Nor is pastoralism limited to one type of land tenure, some pastoral groups migrate within the territory they control, while others have no political or legal claim over the land they use. Moreover, some pastoral groups live in isolated regions far from other populations, while others live close to peasant and urban population. Pastoral groups vary in political structure from state-controlled peasants, to centralised chiefdoms, to weak chiefdoms, to lineage system. The dress designs, social practices, beliefs and rituals prevalent in the three areas are intimately linked with the local economy, availability of raw materials either locally or nearby and culture-historical factors. Once a human group has made a particular techno-economic adaptation, there remains latitude for socio-cultural variation. The traditional production strategy of pastoralists is of converting temporary abundance into storable form that can be used throughout the year. Though the permanent and essential resources are protected and shared, the herds are owned privately. The stability of a pastoral group through time can be maintained by balancing an equation between pastures, animals and human population. The quality and quantity of pastures in an area can set limits to the number of animals in a herd that can be supported in an area at a given time. Similarly the size of herds and pattern of production and consumption can also set limits to the size of human population that can be maintained. However, the equation is not so simple and all pastoral groups have to adopt certain strategies like dispersal and concentration of animals and

human population to overcome such problems. Culture is an adaptive strategy. It is devised according to the constraints and limitations posed by the environment, with it are associated the political factors.

Traditional pastoral systems have remained stable for a long time, particularly through flexible responses to short-term variations of climatic conditions. Today, however, numerous demographic and economic changes of long-term nature have occurred, which triggered adaptive changes likely to transform this system significantly. Since Independence of India, the pastoralists of Himalayas have faced a series of significant changes from external political and economic changes. These structural alterations have brought adjustments in many aspects of the traditional pastoral system, including migratory cycle, local economy and social organisation. The most important changes that have taken place in the region are: (i) loss of winter pasture at Skagjung; (ii) settlement of Tibetan Refugees in the region with their livestock; and (iii) changes in economy. The advent of reforms and economic development has brought significant changes to the pastoral economy. Traditional trade relationships with lowland agricultural communities have declined in importance.

The development process in Leh has increased opportunities of waged labour. This has encouraged the out migration of many Changpas. According to a household survey data carried out between 1962 and 2001, 306 Changpas left Rupshu-Kharnak to settle near Leh town.

The number of pastoral households in Rupshu-Kharnak remained relatively constant over many decades because of cultural practices that promoted low natural increase through polyandry, inheritance by primogeniture and monasticism. With the break up of polyandry and inheritance through primogeniture, nuclear households have started coming up. With more avenues of earning, opportunities of waged labour, changing expectations among community members and lure of better life facilities in the urban areas, all have helped Changpas in making decision to migrate.

Pastoralists play an important role in the ecology of India. Contrary to their reputation, pastoralists have traditional practices for conserving vegetation by rotational grazing. Pastoralists make a significant contribution to India's economy in terms of food security (milk), pro-

vision of draft animal power, organic manures as well as foreign exchange earnings (meat, fibre e.g. *pashmina* wool). Since pastoralists do not own land, the produce is generated by dependence on communally and state owned grazing land. Currently, the trend towards globalization of the market, with pastoral lands increasingly being commercialised and/or turned in to national parks has created problems for the pastoralists. Due to neglect by officials and policy makers, pastoralists face deprivation from their traditional and customary rights to these grazing areas. The political marginalisation of pastoral communities paved the way for forcible eviction from their land and/or restriction of their movements. Paradoxically, demand for products of pastoralists is very high. Such herding groups produce practically all the goat-meat in India. These herding groups also provide the much-needed organic manure for agriculture and horticulture. According to Kohler-Rollefson (1992), pastoralism is necessary to sustain the environment. "In Germany, when people stopped grazing livestock in the forests, this led to a change in vegetation, totally altering the landscape. The government now actually pays herders to graze their animals in the forest".

As a signatory to the United Nation Convention on Biological Diversity, India has committed itself to respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity. Therefore, the government of India is obliged to consider recognising and protecting the role of pastoralists and conferring certain rights that will support their livelihoods and community conservation of domestic animal biodiversity. Governments should restore traditional grazing rights in forest areas including wildlife centuries and national parks and in those areas earmarked for grazing purposes in village common lands.

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