ENVIRONMENT AND SOCIO-ECONOMIC TRANSFORMATION OF KINNAUR, HIMACHAL PRADESH

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MASTER OF PHILOSOPHY

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CERTIFICATE

I, **Uttam Lal**, certify that the dissertation entitled "**Environment and Socio-Economic Transformation of Kinnaur, Himachal Pradesh**" submitted for the degree of **Master of Philosophy** is my bonafide work and may be placed before the examiners for evaluation.

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Dedicated

To

Nana, Nani

&

Maa, Papa

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Introduction

"The tribesman cannot be the bogymen that he is represented to be. He is just like you and me and capable of responding to the human touch, which has hitherto been conspicuous by its absence in dealing with him. I did not find that their nature was essentially different from human nature elsewhere. Give to the tribesman all the love that you are capable of and you will have theirs in return"

- MAHATMA GANDHI

The only thing permanent in this world is change. It would be naïve to maintain that tribal way of life is monotonous and static without any appreciable change in general. However, the truth appears to be anything but this. Like any other society, they too have treaded upon the path of development, of course, according to the social and ecological niche of their own. Thus, in the process they have inculcated many rituals and values, which have been alien to them till recently. The cross-cultural currents began to flow because either the hills or forest which have been home to the tribes have of late strategically been brought under influence of the mainstream or they themselves have headed for plains, villages, towns and big cites. The socio-economic intercourses between the society at large and the tribal world, which they have undergone during the colonial period, have made them either backward Hindus or Christians.

Ever since the establishment of modern Indian states the word transformation has been quite a fancy among anthropologists, development planners and many other scholars and researchers. But when we talk about the transformation of the tribal societies, it is imperative on us to ask ourselves- "after all, what do we want to make of them?"[1] According to the government development planners, answer to the question does exist. The society at the fringe meaning thereby the tribes are the target groups as per the obligation of our constitution. The objective is to integrate them into the national mainstream as well as to empower them to reap the fruits of modern development. Prima-facie, the

objective appears satisfactory and fulfilling. The aim of socio-economic transformation is to make them able contributors to the national culture. However, a deeper and detailed observation of the matter, does not necessarily confirm to the official objective rather suggest that the integration of tribes to the path of present paradigm have some definite degrees of deviation from the objective too. The word 'transformation' may appear rather simple but it is intriguing because it conceals many processes of integration and assimilations. In the transformation of the tribal world, there has been a plenty of other processes also at work. An overall look into it suggests that so far outcome could not have been achieved exactly according to the envisaged government plans and perspectives.

India today faces challenges from divisive forces both within and outside the country which are attempting to divide us in the name of caste, creed and class. Though slightly, but our society has started giving signals of having been influenced by such forces. It appears quite likely that divisive forces will attempt to influence societies which have been geographically and culturally at periphery of the mainstream. Therefore, it is imperative to understand such sections of our society and respond to their socio-psychological needs in more subtle manner.

Ever since the human being came into existence, they have not only been adapting but also transforming the immediate natural environment. The spatial spread of diverse civilizations has been nothing but an apt pointer to the human response to its immediate natural settings which varies both in time and space. "Man as a natural being and nature as Human reality"[2] have been the fact which emerges from human response to its environment.

The sphere of man-nature interaction may be viewed as "triangle of forces" in which nature, technology and institutions are placed at the three apexes of the triangle[3]. Nature serves as a base, governs the freedom and suggests the direction for human activities. Technology makes the human purpose flexible, thus, extending the degree of freedom. Institutions correspond to the ecology and their dictates which regulates and at times restricts the man-nature interaction.

In their competition for the existence and survival, human beings encounter some environmental hardships wherever they venture out. Plains, plateau, coasts, hills, etc have their own sets of associated inclement environmental and geo-physical factors. Physical accessibility is one such attribute to it. The concept of accessibility not only has the spatial connotation which includes the physical distances and ease of communication but also availability of amenities at people's disposal. Thus, accessibility signifies social and economic aspects as well.

Terrain is the prime factor to demarcate a hill area. Aspects, slope, heterogeneity and complexity of climate, soil, biodiversity and land-use patterns are the other factors delineating a hill area. However, rugged terrain governs most of these factors to various degrees. Hill areas have ecology of their own which determines the Biotic and Scenic resources. Thus, such areas can not be generalized. Some hill areas are known to be quite popular due to their enchanting natural beauty but with delicate ecosystem. While other are with tampered natural balance which urgently require restorative measures. Depending upon the carrying capacity of a region, certain other areas allow the developmental projects, provided the 'green-philosophy' is incorporated in such works. However, the general picture of hills reflects a situation of tender human-resource-environment-equilibrium. That is why, the Ministry of Environment and Forests (MOEF), Government of India has classified most of the hill areas in 'ecologically sensitive zones'[4].

Not only the life in hills have a direct relationship with the prevailing conditions there, but also the nearby plains respond to the rhythm of the conditions of the adjacent hill areas. Hill societies are by and large conservative with strong rural and agrarian background. Most of the hill areas in the country are industrially poor.

Until recently, the efficient technological applications had very little visibility in the hills; however, from fourth Five Year Plan the word 'Hills' were incorporated into the Target area projects. Like any other area, hills too have their location specific difficulties. Therefore, the formulation of strategies for socio-economic development in line with the ground realities of hill regions is required.

Tribal areas are the most secluded and include the remotest as well as usually inaccessible hilly tracts. The life in such areas is adventurous and quite prone to natural hazards. That is why; people from areas of relatively favourable environmental conditions usually do not enter into such areas. Even at present, tribal stock comprises of 'primitive' social groups which have taken refuge in isolated mountainous areas. Instances of exploitations by outsiders even now are not very rare. Driven by this reason, many such ethnic groups are confined to the geographically remote parts of the country. It is not easy for the outsiders including the government officials and social workers to reach there and the locals are suspicious of the motives of outsiders. Hence, they usually do not mix with outsiders readily. Owing to these factors, tribal areas have lagged on development front. Multitudes of tribes are poor and usually uneducated, thus, are forced to live a hard and miserable life.

India has a large tribal population, which is next only to whole of Africa. Within the country the state of Himachal Pradesh has about one percent of the total tribal population of India. Kinnaur, Lahaul-Spiti districts as well as the Bharmaur and Pangi tehsils of Chamba district constitute the scheduled tribal areas of Himachal Pradesh. These areas are among the most difficult, dreaded and inaccessible mountain tracts. About eighty six percent of total population is tribal in these parts of Himachal Pradesh, which is more than three percent of the total population of the state.

"Himalayas are not only near to us but also very dear, for they have always been a part of our history and tradition, our thinking and poetry, our worship and devotion.....They are not only physically present in India, dominating the vast Indian plains, but, for every Indian, they convey a deeper message."

-JAWAHARLAL NEHRU

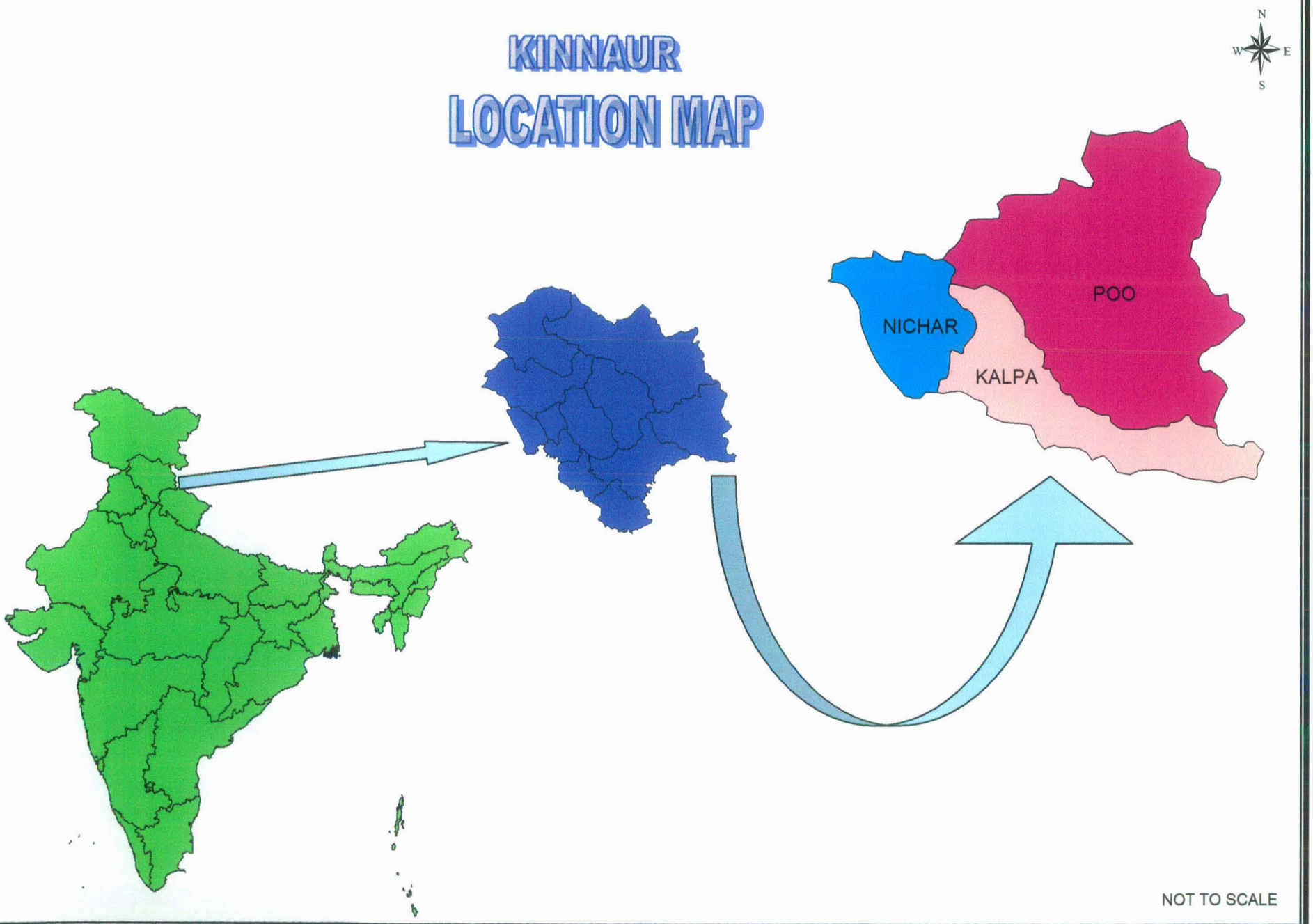
The Himalayas are among most majestic mountains in the world. These have been the areas of interest for millions. The very word-Himalaya generates different pictures in different minds. A few perceive these mountains as nature's painting of lush-green coniferous forest, to some these are wider biodiversity park.

Adventurers view these as the spectacular breadth-taking landscape, which changes its hues and moods according to the season and also according to the hours of the day. For people of big cities it is the perfect resort to retire from the high level of urban pollution. For scores of scientist, environmentalists, anthropologists etc., these provide among the nature's best laboratories and research material. From time immemorial, the Himalayas have been treated as the abode of God and Goddess. The pilgrimage routes through various ranges of the Himalayas are but natural. Spiritualists view these as a pristine and peaceful place for spiritual upliftment, enlightment and meditation. These have been taken as perfect place to achieve *Nirvana*-the enlightment. Till about a century ago Himalayas had been a sanctuary to streams of people from plains and plateau whose life and prosperity was endangered in their own land. The grandeur of snowy peaks of Himalayas bear slow but salubrious life-style and present visual treat to people of plains and mountains alike. Many view these as saviour from inimical human and natural forces. For each one of us it certainly stands for something.

The rugged topography of high altitude mountains and their characteristic hostile climate severely limits the developmental works and thus, restricts the diffusion of technology. The lack of modern amenities coupled with poor technology in mountainous areas, render people to accept the greater authority of the natural forces and subscribe to the prevalent harsh environmental conditions even in their daily chores. This is undoubtedly more conspicuous in the Greater-Himalayan and the Trans-Himalayan regions of the country as the problem of physical accessibility to these areas have kept them in virtual isolation for long. This resulted in different ethnic communities with characteristic socio-cultural tastes and preferences.

Kinnaur is among the most isolated districts of India and many of its parts remain near out of bound for a good part of year even till present day. Thus, the area is inadequately developed. The physiography and climate seriously restrict the extent of cultivable land and length of agricultural season respectively. People of

KINNAUR
LOCATION MAP



Kinnaur are heterogeneous, therefore, Kinnaurese like many other hill communities have evolved a composite culture of their own.

I. 1. Introduction to the region:

The physiograpy of Kinnaur consists of, rugged mountainous terrain with altitude ranging from 1300m to 6000m above the mean sea level. It is situated in the eastern part of the state of Himachal Pradesh between 31°05'55" and 32°05' 20" north latitude and between 77°45' and 79°00' 50" east longitude having an area 6401 sq km and population of 77007 persons respectively. It is bound on its Northern and Northwestern frontier by spurs of snowy mountains which separating it from Spiti and in the east by similar terrains, which closes it from Tibet. To its South are situated Shimla district of Himachal Pradesh and Uttarkashi district of Uttranchal. The climatic conditions range from Sub-tropical temperate to cold arid. The rainfall varies from 100 mm to 900 mm and snowfall is heavier than in the most of the Himalayas as well as the plateau of Tibet, which is adjacent to the region.

Kinnaur district is entirely rural and this population is distributed in three Community Development Blocks, which are further sub-divided into five Tehsils and one Sub-Tehsil. Nichar block topped with population of 26399 persons and next position was occupied by Kalpa block with 17024 persons in 2001.Poo block has the population of 22343 persons. Hangrang is the only Sub-Tehsil of Kinnaur district. It had a population of 4057 persons in 2001. Sex ratio in Kinnuar district was 884 females per persons per thousand males in 2001 and is quite below the state average of 970 females per thousand males.

Kinnaurese constitute the third largest ethnic group of Himachal Pradesh. They are among the least known ethnic groups of India. Kinnaurese form a mixed lot; some are Buddhist but the bulks are Hindus. However, irrespective of religion everyone follows Buddhist rituals and practices due to strong influence of neighbouring Tibet.[5]

After Indo-China border conflict of October 1962, Kinnaur Came into main focus. This resulted in obvious and stepped up initiation of socio- economic

development in the district. The main objective behind this was to broaden their social horizon and bring economic contentment among the people who till then were 'backward' and formed 'closed society'. This resulted in induced in-migration, spread of educational facilities, and construction of roads, most importantly NH-22 and initiation of many projects under the 'Tribal Area Development Scheme'. Consequently, it ensured the acceptance of new ideas and technologies by the people, thus, gradually opening up the region.

I. 2. An overview of literature:

Kinnaur remains secluded due to the inaccessible terrain and inhospitable climate. Of course, there exists a considerable amount of literature on the various aspects of the Himalayas but except for some references in the form of travel accounts and mythological interpretations, systematic and comprehensive works on the district are far from adequate. Recent decades have seen only a few scholars taking up detailed study of Kinnaur. Only a few studies have been attempted on the area and even fewer are relevant to the present study. One of the earliest references of the people of Kinnaur is found in Sanskrit literature[6].

Available literature has been organized into three groups.

a) Historical Aspects

Frazer[7](1820) who visited the state during the Gorkhas invasion was the first modern writer to write admiringly about the kinnaurese and give social, religious and morphological accounts of the societies. Though he observed that Kinnauri language is different from Tibetan and Hindi, he could not make any significant discovery regarding it.

District Census Handbook[8] (1991) provides some information about the ethnography of former Bushahr state and gives an account of the administrative set up of Kinnauri villages and forest wealth

Gerard[9](1841) has given a detailed account on the topography and drainage of the area. He also provides details of the inhabitants. This work appears to be

most systematic work, which was attempted during colonial period and still commands relevance.

Currumooddeen[10](1815) in his paper brings out the facts of trade between Bussahir and China. He reports that the Chinese trade node- Garroo- though named a town does not contain a single permanent house or hut. Along with describing the trade route, this paper also mention the trade articles.

Leveling Bussahir as the most remote part of the British dominion in Asia, Kennedy[11](1824) divides the former state into three divisions Kunawur forms one of these three divisions. He has made an attempt to describe every thing from revenue, property of people, absence of crime, petty chiefs, battles of Bushahar, its political importance, villages, dresses, minerals, trade with Ladakh and Tibet, rivers, and links with the Russians to the tranquility of the place.

Based on Census report of 1883, Ibbeston[12](1911) gives the distribution of Kanets in Kinnaur and in the process reflects upon birth, marriage and death customs, Lamaism, cults in Kinnaur, Fair and Festivals have also been discussed by him.

Singh[13](1999) has based his study on the recent chance-discovery of the cist burials in the Nesang village. He cites the closeness of the cephalic index of Nesang skull to the Indo-Aryan stock and opines that higher reaches of western Himalaya including Kinnaur was inhabited by the people of different ethnic stock, probably nomadic Scythian/Shaka, who were marching from Central Asia to South in India.

Das[14](1954) gives a non-Aryan origin history in his article where he describes Kinnaurese and the type of languages they speak. He noted that modern Kinnaurese have retained many characteristics of their Kinnaurese ancestors and gives the example of their sportive nature and their fondness for singing and dancing.

b) Cultural and Socio-economic Aspects

Kapoor[15] elucidates on the socio-cultural and religious attributes of the Kinnaurese. He also discusses the dialect of the Kinnaur and attempts to bring out the linkages between the local geography and the above factors of the district.

Basu, Malhotra and Sharma[16] attempt a detailed Socio-economic evaluation of Kinnaur and Comes up with the in-depth analysis of I.R.D.P in the district. However, their study fails to bring out the regional Diversity and variations as their study is not based on data where villages are taken as a unit rather they took Tehsils for the purpose ignoring the fact that in Kinnaur, the intra-regional and intra-valley variations are hard to wink at.

Tribal Development Department[17](1980), Shimla in their benchmark survey of integrated tribal development project in Kinnaur has presented a household analysis of socio-economic conditions, agriculture and allied activities, artisans, hamlets and road, transport as well as communications. Taking data on tehsil level too, does this work. Thus, it is unable to bring out the intricate regional variations within the district.

Moorti, Oberoi, Sharma[18] did their detailed scientific studies on the dry fruits, nuts and other fruits cultivation in Kinnaur for the identification of superior strains, problems in production and income from dry fruits and nuts as well as the role of extension services to boost the production. This is one of the best studies on Kinnaur on any topic.

Mitra[19] in his travelogue presents his first hand information about Kinnaur and Kinnaurese as well as their cultural traits including their Fairs & Festivals, dance, religions, superstitions etc. Interest of the author even in the minor rites n rituals is evident from the descriptions of some of the not so prominent aspects of the Kinnauri society.

Bose[20](1973) while dealing some Indian tribes gives introductory information about Kinnaurese and their villages, settlements, castes, livelihood, agricultural pattern, trade, pastoralist life, craft, history, religion, family lives, etc.

Sharma[21](1999) gives the theoretical aspects of leadership and describes the traditional and emerging leaders, their socio-economic bases and roots, their family and age structure, social status, caste impact, occupation, education, land ownership and income status etc, . While reflecting on tradition and culture, she explains the *Khel* and *Khandan* systems as well as its importance.

Gupta[22](1998) while delving into the handicrafts, he finds that owing to limited land, tough terrain and scant industrialization, people in the tribal areas have been engaged in a variety of handicrafts to supplement their meager agricultural earnings.

Sanskritayan[23](1956) discusses peopling of the area and gives eulogical account of the people. As he himself put it "besides being the description of the journey the book is also a book of introduction to a hitherto neglected parts of Himalayas". This is in no way an exaggeration as he set out for his Kinnaur journey right after about a year of Indian independence. This is one of the earliest and detailed books on Kinnaur by an Indian writer. The book not only makes an excellent reading but it also raises some utmost pertinent issues related to the development of the region.

Monga[24](1998) tries to bring out the dynamics of the family structure among the Kinnaurese giving an emphasis on marriages and marriage types. Whereas. Bhatnagar[25](1992) in genetical demography paper on Kinnaurese, concentrates on the marriage and marriage area as well as marriage patterns of different stocks of the Kinnaurese. Chandra [26](1973) describes the tribes and the forms of marriage among the Kinnaurese and the trends of change in the types and forms of marriages in response to the Indian pattern of the economy. In another article [27](1982) he takes the issue of surplus women in polyandry and brings out the myth behind it as well as how the different form of marriages and the Lamaistic Buddhism accommodates and absorbs the 'surplus women'. On the basis of his study [28](1987) on Kinnaurese he presents the case for intrinsic quality of human beings/groups of responding to the harsh environmental conditions in best suiting manner to countervail the situation. This paper is an attempt to explore the nature and extent of environmental adaptation in relation to a particular community in the

perspective of geographical situation. Reflecting upon ecology and religion of the Kinnaurese, Chandra[29](1981) underlines that geography of a particular area help in shaping the society at its Value system level as well as cultural level. Religion has played an important role in their lives by providing a balanced approach to meet the challenges of environment of the area. In his book [30](1992) he is focused to the socio-cultural and religious perspectives. He discussed ethnicity, inheritance, legitimacy of children, types of marriages including polyandry.

Malhotra[31](1992) studied the Physical growth of Kinnaurese male Rajputs and compared the similarities and dissimilarities of them with the neighboring and other Indian populations as well as with population, which is outside India.

Bajpai[32] is to tell us that even in Buddhists and Jain literatures, Kinnaurese find some mention. This work of Bajpai throws a good amount of light on history and mythological connection of the Kinnaurese as well as their house type, dress, food economy and rituals etc.

Nag[33](1981) gives the racial chemistry of the tribe and its religious account. Kinnaur has three distinct religious regions. Regions with the dominance of Indo-Aryan stocks have Hinduism as the people of Tibetan blood dominate the prevalent religion while the upper area. This area has Buddhism as the main religion. Central Kinnaur is the influence zone of both the religions.

Sharma and Minhas[34](1993) takes up the study of land use and biophysical environment of Kinnaur in which they discusses pasture, health of the forest, livestock, soil characteristics and the cultivated lands. This paper is one of the most systematic researches attempted on Kinnaur.

Tiwari, Shrma and Randav[35](1992) take up new topic horticulture for their study and focused on the role of management in horticulture describing its potential in the district. Their work suggests that horticulture commands a vital position in the development of hill economies. The hills are generally composed of valleys and ridges. The valleys with assured irrigation facilities are dominated by cereal crops while the ridges, without irrigation, are covered by horticultural

plantation. They suggest that horticultural crops being labour-intensive, cultivation of these should be encouraged in the labour- abundant, capital-scarce economies.

Rawat[36](2002) based his studies in Kinnaur to study the alternative farming system in the dry temperate zone. This book deals with the constraints in agriculture and highlights the main problems of the farmers. The author comes up with some viable suggestions for the farmers while studying the input-output ratio in the farming system.

Singh[37] in his very short article gives an informative account of medicinal wealth and its potentials in Kinnaur. He highlights that apart from being suitable for horticulture, the agro-climatic conditions of the district are highly suitable for cash crops and off season vegetables and importance of *chilgoza* tree, which is a tree cash crop and does not compete for land with other crops for increased production.

Negi[38](1987) presents the political dimension of Kinnaur where he enlightens us about the tribal leadership and tries to come up with its socio economic reasons According to him, under the new trends of formulation and implementation of the various Welfare and Development Programmes and introduction of new organizations and institutions, there has been a significant shift in the existing leadership pattern among the Kinnaurese. Leadership is still dominated by males but it is no longer a monopoly of older people. This work also suggests that joint family continues to be strongly related to village leadership but there are signs of its decline. Further, he [39](1990) made and an elucidating attempt to describe the social relations of village structure and network of mutual services and the patterns of its operations

Chib[40](1977) gives a description of natural settings, social as well as economic characteristics of the state. Thus, he also touches upon the people and the place in the consideration but this work gives only the cursory information on Kinnaur. He also talks about how Rajputs and other casts are given tribal status. But his[41](1980) another work is a detailed account of Kinnaurese where apart from other socio-economic characteristics of the tribe, he projects the religious make up

and their cultural traits as well as their physical niche. Further he[42](1991) attempts to portrait the changing demographic landscape of Kinnaur through the medium of population region of the Kinnaur district.

In his travelogue Sharma[43](1960) while giving description of Himachal Pradesh devotes a chapter but this work is not of much use considering the present nature of work.

Raha[44](1987) in his edited book takes up the *Khandan* System of Kinnaurese and gives us elucidating descriptions of social institutions while explaining the stratification among its people. He has made an analysis of *the* system while studying the traditional traits and the contemporary changes in economy as well as religious rites and rituals in the region.

Dasgupta and Danda[45] their work deal with the tribal education in India where along with other tribes; they give passing references about the educational scenario of Kinnaurese during 1961-71.

Negi[46] comes up with his work on tribes of Himachal Pradesh. He gives tribe- wise profile including that of Kinnaurese also, which cannot be stated as detailed work on the tribe. He throws light on the extraneous social influences, which is very unsettling particularly in Kinnaur. Jeopardisation of tribal interests due to newly set-up communication links and associated forces have also been taken note of.

Parmer[47](1989) attempts to study the tribal development of Himachal Pradesh with special reference to Kinnaur. He focuses upon the manpower and its utilization as well as economic infrastructure. His work too is not a detail work because he uses only the block level data, which is only three. However, he puts an emphasis on population increase in Kinnaur, studies this with data of 80 years, and also studies the workers in different sectors of economy.

Thakur[48](1991) et al. worked upon socio-economic impact of tribal development programmes in Himachal Pradesh; assessing programmes and policies through evaluating the farms situations and animal husbandry by focusing

Kinnaur and Lahual and Spiti. They also suggested measures to combat the unfavourable conditions after identifying natural and other factors, which are associated to these factors. To them the physical achievements do not appear to be in line with financial expenditure in the area of the study

Raha and Mahto[49](1985) worked for anthropological survey of India and give a detailed account of Kinnaurese sociological and economic characteristics apart from historical, political and religious accounts and changes therein. This is by far the most detailed book on socio-economic studies in recent decades.

The book by Sanan[50](1998). and Swati compiled after the experiences of his field posting as an Indian Administrative Officer. This is more of a travelogue, though it also gives the history and Religion of the two Places.

Bajpayee's[51](1981) though tried a multi-disciplinary study on Kinnaur after his field experience but it is more social in its approach than anything else. This book appears liberally inspired by the district Gazetteer of Kinnaur when he generates the picture of folkways, customs, beliefs, rites and rituals, superstitious etc. He tried to trace Kinnaur from ancient age to the present giving various aspects of the people.

c) Adjacent and Similar Areas

As the literature available on Kinnaur is very few and keeping in mind the nature of present study, the dearth of literature available becomes all the more acute. Therefore, some of the work based on the adjoining areas, which bears some degree of resemblances due to the rather similar topography, climatic conditions and socio-cultural influences, have also been taken up.

Ladakh

In their joint effort, Raza and Singh[52](1983) have highlighted the problems of regional development in Ladakh through identification of the degree and nature of limitations impeding the developmental processes and spatial units for planned

development. By taking the selected socio-economic indicators, they have worked the hierarchical structure of settlements and growth points for development.

While delving upon the regional development of Ladakh under the dynamic frame-work of 'triangle of forces', Singh[53](1978) maintains that nature under low level of technological development has deterministic role. Human simply adapt themselves and shape-up their social institutions accordingly without altering much of it. In another work[54](1992), he concludes that harsh climate and rugged topography are the main constraints on the agriculture of Ladakh. Agricultural economy of subsistence type is underlined by lack of chemical inputs, use of local seeds and traditional agricultural techniques. He points out that agriculture has four fifths of the total work force engaged in Ladakh. However, the seasonal economy, which is largely confined to the summer months coupled with low land use intensity, the carrying capacity of the region is hardly enough. Therefore, the people resort to pastoral nomadism to supplement their subsistence necessities.

Singh[55](1976) on the roles of *Gompa*[*] in Ladakh traces its hierarchical linkages as well as spacing. He brings out the organization of *Gompas* and finds out that this is in fact the practical organization of space in Ladakh.

Another article of Singh[56](1991) suggests that not only the economical underdevelopment but also the educational underdevelopment is the handiwork of the hostile natural environment. Inadequate infrastructure coupled with the uneven terrain and resultant inaccessibility and the unfavorable climate make the use of existing educational facilities by children quite difficult. Chatterjee[57] studied the traditional as well as contemporary systems and done the analysis of social stratification and changes in the socio-economic attributes of the Ladakhi Society. Goldstein and Tsarang[58] while studying the changes in polyandry, suggest that, it has been the traditional method of limiting population. However, the de-encapsulation of the region and the resultant advancements has jolted the system of polyandry. This resulted in to the rapid population growth and uneconomical fragmentations of the land.

[*] 'Gompa'. A Tibetan word for Buddhists Monastry.

Pangi Valley & Lahaul and Spiti etc

Singh[59](1999) confining his study in Pangi valley points out that the 'primitive' people have a greater sense of ecological consciousness compared to modern people who have ignored it under the spell of development due to science and technology. He argues that the matrix of relations between nature and culture have given rise to what may be termed as 'folk-rationality' of the 'primitives' which is opposed to the 'scientific-rationality' of the modern people given to progress and development. This work put across the idea that development could take place within the parameters of natural environment without exploiting it beyond a point.

Kuldev[60] (1984) probed that Lahaul & Spiti is rugged and mountainous having pronounced intra-regional physiographic variations. The area is predominantly cold arid with scanty or no vegetation. The society prefers joint family system and people share their proximity to different racial stocks among themselves. Only valleys with gentler slope and milder climatic conditions are inhabited. Agriculture is the prime economic activity. MilapChand[61](1986) has done the study of relief, drainage and morphology and has reflected upon the geology of Lahaul. Based upon his analysis of altitude, geographic processes and vegetational correspondences he distinguishes five geomorphic regions in the area.

Negi[62](1992) et. al. studied the mongoloid, Kashmiris and Kanets and Indo-Aryan populations such as Koli, Lohar, Kolta etc. and concludes that these groups of populations have maintained their ethnic identity owing to socio-cultural and geographic barriers to a large extent. But to some extent owing to the processes of miscegenation and mixture, there had been an exchange of genes between the major racial strains so as to give rise to same intermediary mixed populations, in some cases, and obliteration of genetic variability in others.

Hazra[63](2003) made an attempt to understand how two religious sections of a single tribe adjust to alien economic pursuit and new way of life due to assigning up of the tribal status by the Government of India. In the course of the study, the author notices how the Hindu Gujjars respond to the new situation and open

themselves up for the newer projects to garner the maximum development from such initiatives unlike their Muslim counterparts who still practice nomadism.

For the appraisal of ecological potentialities and limitations of central and western Himalayas, Gupta[64] conducted the study on ecological setting of the region, where he traces out the variations in physiography, drainage, climate, soils and flora & fauna of the two regions.

The over view of the literature sufficiently suggest that there has not been many researchers in studies related to Kinnaur and Kinnaurese. Barring few scholars such as Manish Kumar Raha, Ramesh Chandra and S.S Chib who have frequently written on the subject after their personal intercourses with the Kinnaurese, the majority of work appears to be too similar and cursory. Most of the literary materials available on Kinnaur are of Socio-cultural natures, which are highly inspired from the district gazetteer of Kinnaur. Raha & Mahto work for Anthropological survey of India as well as the work of Moorti, Oberoi and Sharma is the only two detailed work with sound field observations. The second study in particular, is based on good methodological approach. However, the work has a small purview of influence as it is confined to the developments in production of dry fruits and nuts. Agriculture is the second area, which scholars have preferred to embark upon but in most of the cases its ambit is too limited. Most of the writings give impression that due to the highly undulating topography of Kinnaur, there are great ecological variations across valleys and villages resulting in variations in the rites and rituals and numerous other practices. Most of the scholars have worked on Kinnaur taking Blocks and Tehsils as the unit of analysis. Thus, such works are unable to reflect the variations within the district and suffer from too much of generalizations.

As the limited availability of materials on Kinnaur calls for an overview of the literature on the adjacent and similar areas, it helped to go through some systematic works that help to draw some useful inferences for the present study.

I. 3 Objectives:

By virtue of being harsh, the environment plays a rather deterministic role in Kinnaur. This gets further accentuated due to low level of prevalent technology. The people suffer owing to the ruggedness and remoteness of the area. With this knowledge, the following objectives have been identified for the present study:

I. To understand the natural setting of the region and to assess problem of resource base.

II. To comprehend historical processes in the area, its spatial relation and peopling

III. To study the economic structure in order to understand the role of physical environment on it.

IV. To understand and analyse the demographic characteristics and changes therein

V. To understand the nature of economic activities and to study the existing infrastructure and variations therein

VI. Finally to comprehend the socio-economic change among the Kinnaurese.

I. 4 Hypotheses:

Last few decades have shown that diversification of economic activities in Kinnaur has resulted in raising the proportion of workers in economic pursuits. Along with primary economic activities other sectors have also shown some increment suggesting economic transformation. This seems to have raised the carrying capacity of the area and has helped in bringing changes like decline in polyandry, and extended joint family and the inculcation of the new practices from the mainstream society at large. With the realization of these facts and in the light of the above objectives, the following hypotheses have been formulated-

I. More rugged and harsh is the environment less will be the possibilities of socio-economic change.

II. More isolated areas of Kinnaur are likely to show greater hold of tradition and religion.

III. Lower the altitude and more favourable climate shall result in greater concentration of population.

IV. More accessible villages with better physical settings shall have more literacy and social awareness.

V. Villages nearer to administrative centers shall have greater economic diversification.

VI. Administrative and other nodal villages shall have greater socio-economic transformation.

I. 5 Database:

Data relevant to meet the objectives of the study has been obtained from secondary sources and primary sources.

a) Secondary sources:

i. District Census Handbook, Kinnaur; Village and Town Directory, 1981, 1991 & 2001 (C.D). Director Census Operations. Himachal Pradesh.

ii. District in Figures, 1999.Himachal, Department of economics and Statistics. Himachal Pradesh, Shimla

iii. Annual & Seasonal Crop Report, 1996-97, 1997-98, 1998-99, 1999-2000, 2000-01. Directorate of Lands Records, Shimla.

iv. Institution Report, 30th June 2003, Office of Deputy Commissioner, Reckong-Peo, Kinnaur

v. District gazetteer Kinnaur, 1972

vi. NATMO maps

b) Primary sources:

Information pertaining to socio-cultural and religious attributes was not available. Therefore, in order to familiarize with the area and to know about these aspects, the researcher undertook a tour of the district in the month of March 2004. The purpose of the trip was to interview some people in the villages of Nichar and Kalpa tehsils to have an idea about the cultural mosaic and to collect data from the district headquarter at Rekong-Peo.

Census data of 2001 was available in the district headquarter and was acquired from D.C office, Rekong–Peo. The latest infrastructure data of Kinnaur was also obtained from the same office.

I. 6 Methodology:

Villages have been taken as a unit of analysis in most sections of the present study. This was found necessary due to -

(a) Size of the study area is very small and is confined to the district of Kinnaur.

(b) A village is the basic level on which a secondary data is available.

In order to achieve the objectives and to test hypotheses certain methods were needed. Therefore, a set of methods have been used:

Percentages of all the social and economic attributes selected for the study have been calculated. Attempt to interpret spatial variations in the socio-economic change has been made using class intervals of variables and its frequencies among villages.

Cartographic techniques are representative in nature. So these were used to depict the physical settings and some cultural phenomena. Composite index has been worked out to see the socio-economic transformation.Mean and Standard

Deviation methods have been used for categorizing and ranking the settlements. The analysed data have been used and represented in the form of tables.

The mathematical formulation of the method is[65]:

$$I.C. = \sum_{j=1}^{n} \frac{X_{ij}}{\overline{X}_j}$$

Here, X_{ij} = value if j^{th} variate for i^{th} village

n = number of variables.

The value of the index at village level shows the extent of transformation. The assumption is that the higher the value of C.I., the higher will be level of change.

I. 7 Organization of Material:

Proposed study has been organized in six chapters. The first chapter deals with the theoretical aspect of the problem, introduction to the study area, objective behind the exercise, hypotheses, database and methodology attempted. It is substantiated by survey of literature, which helps us in developing the framework for our study and to know the nature of work attempted on the area.

Nature plays a very conspicuous role in an underdeveloped area like Kinnaur. Therefore, it is imperative to understand the environment because it is reflective of natural resource base and associated natural checks and balances. So, aspects of natural environment have been discussed in second chapter.

Social structure shows the adjustments to natural dictate, which are more pronounced in underdeveloped hilly regions. The third chapter on 'Cultural Ecology' is in this line. Demographic profile, too, is reflective to the immediate natural setting. In the light of this, the fourth chapter has been devoted to social and demographic profile.

"Simple societies interact more directly with nature and have economic structure that is different from those having more indirect interaction"[66]. So

economic structure and infrastructure levels have been probed in chapter five. The economic activities and the level of infrastructure lead to changes in the society. It has been analysed in the same chapter and villages are ranked according to the degree of transformation.

Finally, a summary of conclusion has been presented in chapter Six.

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Chapter-II

The Natural Environment

Environment is the vital part of any geographical area. Topography serves as a prominent factor in human effort to modify, and adapt according to their immediate natural settings and is responsible to a great extent in giving particular direction to human endeavour.

Kinnaur is among very remote districts of India. It remained quite underdeveloped due to its seclusion where the prominent elements of physical environment viz; rugged terrain and harsh climate etc. have been playing dominant role in influencing the society and affecting its development. Therefore, it is imperative to understand the natural settings and its limitations as well as potentials.

As the region is part of the Himalayas, which has undergone geological and physiographic changes, it is all the more important to understand the following vital components of its physical milieu.

1. Geology-the stage on which the drama of various natural factors unfolds.
2. Physiography –the resultant landscape feature.
3. Natural drainage- sings the song of the climatic conditions and shapes-up various landforms and agricultural practices.
4. Climate- the co-curator of economy and the society also plays a role in shaping the physiography.
5. Soils- the nature's canvass for the socio-economic and biotic paintings.
6. Natural vegetation- along with soils this is the index of the natural forces.

I. Geology

Since the landforms are dependent upon the underlying lithology apart from various other natural forces, it is imperative to acquire some bit of geological understanding in order to appreciate the associated evolutionary processes. Kinnaur presents the following geological formations-[1]

Table 2.1

Geological formations

Recent-sub-recent	Soil.
Triassic-Rhaetic	Limestone, Shales, Dolomites etc.
Carboniferous	Quartzite and Limestones.
Silurian	Coral limestone, Quartzite
Late pre-cambrian cambrian	Haimanta system- Phyllites, Quartzites, Conglomerate, Shales, & Shlates
Pre-cambrian	Schist, Gneiss, Granites, Quartzites (Vaikrita system)

The rocks belonging to varying geological age range from Pre-Cambrian to Triassic periods are exposed here. Taking a geological point of view, Kinnaur can be divided into the three following categories--[2]

(a) Kinnaur-Shimla-Jangi:

This geological series is named Sarahan series. Schist and geneiss with granite and pegmatite intrusion as well as basic rocks are the materials found in the series. This is belongs to Pre-Cambrian period.

(b) Jangi-Shipkila:

Jangi-Shipkila is known as Jangi series. Slates, graphite, phyllite, chlorite-phyllite, sandstone and thin bands of limestones are constituents of the series. This formation ranges from pre-cambrian to Cambrian age.

(c) Area North and West of shipkila:

Rocks exposed in this region date back to Ordovician, Silurian, Devonian and Permo-Carboniferous periods. Here the limestone bands have preserved mollusks, brachiopods, corals, gastropods and trilobites etc. as fossils. The overlying rocks- Muthquartzite are of Devonian age, which is succeeded by the formations of limestone and dolomite belonging to upper, and lower carboniferous and Permian system.

II. Physiography

In order to understand the socio-cultural and economic settings of a rugged, isolated region, it is important to study its physiography. Physiography plays an important role in keeping an area secluded. Like other isolated regions of the Himalayas, Kinnaur too has marked altitudinal variations. In order to appreciate the regional structure of Kinnaur, physiography of the district can be divided into Hills & Mountains and Valleys.

II. (i) Hills & Mountains:

Entire district of Kinnaur is composed of a series of mountains, which are alternated, with a succession of valleys. Kinnaur is situated at a height ranging between 1220 meters to 3050 meters above sea level. These mountains are traversed by Satlej and its tributaries. It has the following three more or less parallel ranges:

a. Zanskar Range

b. Great Himalayan Range

c. Dhaula Dhar Range

The Zanskar Mountains cut off Kinnaur from Nagari region of Tibet. The great Himalayan range extents from the south of Zanskar Range. The Dhauladhar Range occupies the southern boundry of Kinnaur separating it from Uttarkashi district of Uttaranchal and Rohru tehsil of Shimla district. It merges with the Great Himalayan Range at the southeastern corner.

The spur of Srihand Dhar separates the district from Kullu and Rampur areas in the west while spurs of the Zanskar separate it from Spiti. The Parasala and the Purgeol- the two chains of lofty summits branch off in somewhat south and southwest direction from the elevated ridges located near Indus River and fall within Kinnaur. The two highest peaks of the district are Leo (6770 meters) and Pargial (6608 meters). These lie in the Zanskar Range. The Satlej-Spiti divide has the third highest peak (6593 meters) which overlooks the Mauring pass at the head of the Ropa valley and belongs to the Great Himalayan Range. The Kinner-Kailash or the Raldang peak rises from the base of the Satlej. It also belongs to the same range. The district is formed of great masses of mountain spurs, and the only level ground, to some extent, is the baspa valley at an elevation varying between 2438 meters to 2591 meters.[3]

II. (ii) Valleys:

The region is highly rugged with barely any flat area .The major features of Kinnaur consist of various river valleys along with the conspicuous ridges. That is why the whole Kinnaur is formed of river-valleys traversing mountain ranges. To some extent each valley represents geographical and socio-ecological identity of its own.

(a) Satlej Valley:

The valley of Satlej is the largest and broadest in Kinnaur having general direction from northeast to southwest with its length about 140 kilometers. The valley is uninhabited in the upper reaches. Human settlements in the Satlej Valley in the district start after the point where the Spiti drains into the Satlej. The upper Satlej Valley presents bare rocky terrain. High Mountain peaks with glaciers and snowfields overlook the valley throughout its course. The major stretch of the

Satlej valley lies within the Great Himalayan Range followed by the Dhauladhar Range. The Zanskar Range touches it near Khabo village. There are many cliffs along this valley; Taranda, Wangtu and Rogi are to name a few. Some vineyards and cropland, interspersed with orchards of apricots and apples are found here. Right bank has better pasturage, while left bank contain comparatively more plain land suited to farming. Shepherds with their herds of goats and sheep frequent meadows present above the tree line in the summer months.

(b) Bhabha/ Wangpo Valley:

The valley rests under the lofty Dhauladhar Range. The Valley of Bhabha is stony in its upper course and bare like that of the Satlej. However, it is wooded in the middle and lower course. Its elevation ranges between 4500 meters to 2000 meters above the mean sea level. The trade route to Spiti passes through this Valley. Mountain meadow soil is the extensive soil type in the valley. Graywacke, Slate and Quartzite rocks predominate in the upper Bhabha valley. Rocks in the lower valley area are Shale, Slate, Sandstone, Quartzite, Limestone and Conglomerates. The valley lies in the zone affectively influenced by the monsoon. Katgoan, Huri, Karaba, Yangpa, Bei, Yutrang, Siangon, Kafnun, Homte etc. are some of the villages situated in this valley.

(c) Tidong Valley:

This is the valley of the Tirung stream. This tributary of the Satlej runs through the most rugged area and has some hair-raising pathways due to highly undulating topography, bare rocks and caves etc. Population in the valley is very small because of the above factors and due to its physical distance from the main communication artery of Kinnaur. Charang the highest village of Kinnaur is situated in this valley. This valley has skeletal soil and lies in the zone of scanty rainfall and suffers from cold-arid conditions. Granite, Grano-Diorote and Pegmatite are the chief rocks found here. Altitude ranges from 4500 meters to above 4800 meters above mean sea level.

(d) Baspa Valley:

The Baspa is very picturesque and romantic valley of the region. This area extends across the left bank of the Satlej and is drained by Baspa River. Sangla and Kamroo are the main villages of the valley. Chung sakhago pass lies at its head. It is 95 kilometers long. Both sides of the valley are richly cultivated. There are barren ridges with perpetual snow in its upper part covering half its length from Chitkul village. The remaining stretch from Chitkul village to its confluence with the Satlej has dense woody vegetation. The valley lies within the rainfall zone of 600mm. to 1000mm. However, the rain is quite uncertain. Baspa valley is confined between the Great Himalayan Range and the Zanskar Range in the northeast and southwest respectively. The main soil found belongs to Mountain meadow type. Altitude varies from about 1800 meters to 4800 meters. Granite, Grano-Diorite, Pegmatite is the main rocks found in the area.

(e) Kalpa Valley:

The Kalpa valley is situated at the feet of the Kinner-Kailash peak. It contains nearly one dozen prominent villages. This valley is relatively at higher level and average altitude of the valley is about 3000 meters. The valley has pine forest on both sides. It receives moderate amount of rainfall. Valley is thickly populated because of broader extent and gentler slope.

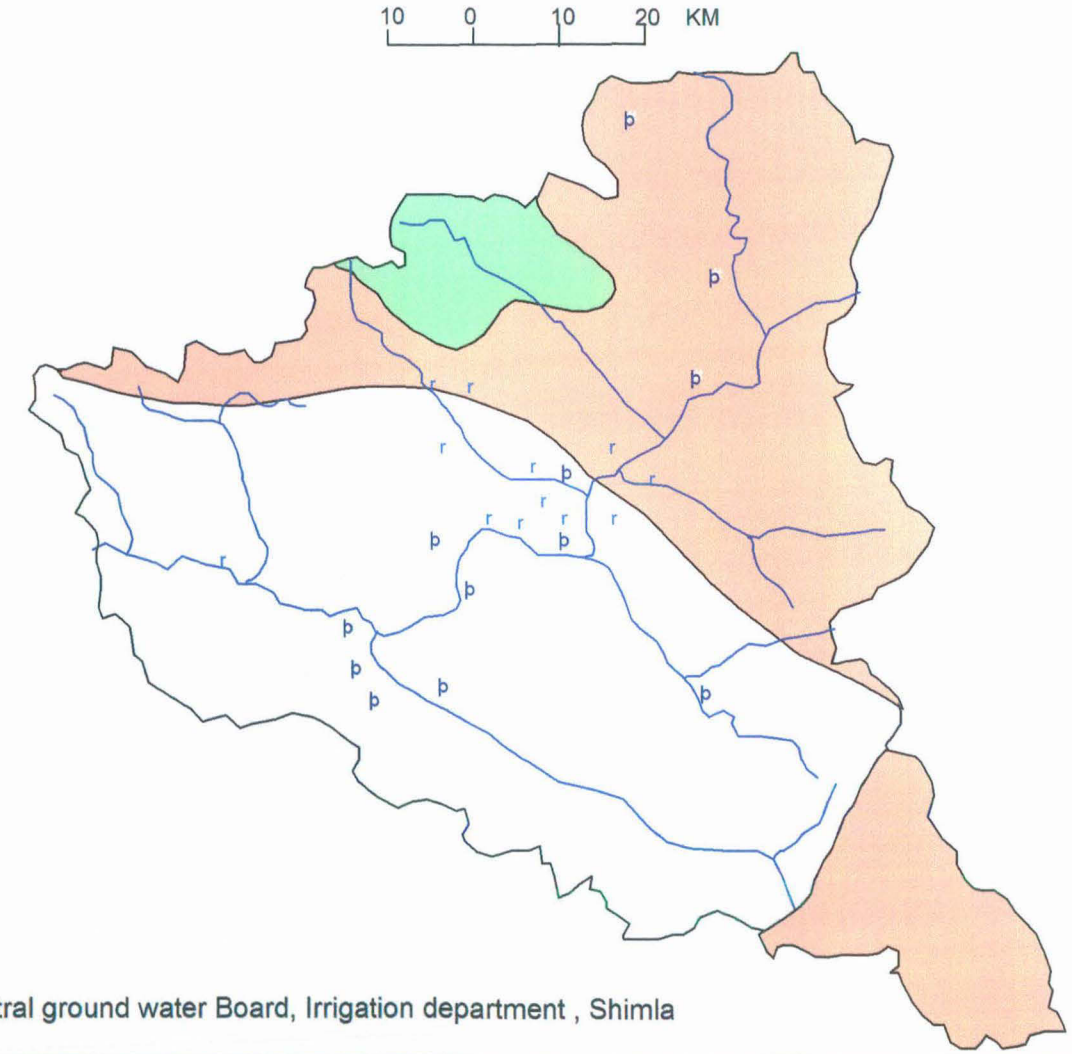
(f) Ganjul Valley:

It lies between Kanam and Poo. It has scanty vegetation and has vast variations in topography.

(g) Hangrang / Spiti Valley:

It is the second largest valley of Kinnaur and has been carved out by Spiti River. It is situated on the upper most part of the district. Compared with Baspa valley, Spiti valley possesses entirely different climatic conditions. Vegetation is largely absent. Precipitation is scanty. It is an elevated territory bound on the south and west by the lofty limestone ridge of Hangrang, on the north by Ladakh, and

KINNAUR
IRRIGATION AND HYDROLOGY



Source: Central ground water Board, Irrigation department , Shimla

east by Tibet. It is about thirty-two kilometers long including the lower course of Spiti River running from north to south. It has entisols type of soil. This is the only area of Kinnaur where gypsum is found. Shale, Slate, Sandstone, Limestone and Conglomerate are other rock types of the Hangrang valley. Altitude ranges between 1800 meters to 4500 meters above mean sea level.

(h) Ropa/Shyaso/Sangam Valley:

This valley runs northwest to southeast and has been carved out by the Ropa stream. It contains four large villages of which Ropa and Sunnam are prominent. The Ropa stream passes through inhabited area for about thirteen kilometers and has no vegetation except stunted pines and birches. The valley rises to about 4500 meters above mean sea level. Sangnam, Shyaso, Giabong and Ropa are other important villages of the valley. Rainfall is scanty and the soil type is entisols. Chief rock type includes quartzite, limestone and magnetite etc.

Besides these there are some other minor valleys in Kinnaur such as the Gyanthing or Nesang, the Pejur or Lippa, the Mulgoon and the Yula. These valleys have abundant grazing lands.

III. Drainage:

Streams are the result of direct precipitation and melt water from the precipitation in the form of snow as well as surface runoff and slope. Study of drainage helps in understanding physiography and in assessing water resources. It also gives some information about the general slope and form as well as degree of precipitation. The drainage in mountainous areas influence distribution of settlements and agricultural land as these provide gentle slope suitable for terrace farming and milder climate for human settlements.

(a) Rivers

Satlej River:

The main river of Kinnaur is Satlej also known by the names of Sitloda, the Satardru, the Satrudra, the Muksung, the Sampoo, the Zung-tee, the Sumudrang

and the Sutoodra. It originates in the vicinity of Manasarover Lake in Tibet and enters India through Kinnaur near Shipkila after cutting through the Zanskar Range and flows for 128 kilometers in the district[4] .The entire district is more or less equally divided into two parts by Satlej valley. At places the Satlej flows furiously due to steep slope. This river practically has no use for irrigation as the current is too fast and banks steep and high[5]. A number of small rivers originating from different places merge with the Satlej. These tributaries include Spiti River, which forms Hangrang Valley and joins the Satlej near Khabo village. The Baspa descends down the Sangla Valley and merges with the Satlej at Karchham village. The Spiti, the Ropa, the Taiti, the Kaisang, the Mulgoon, the Yula, the Rupi, the Wanger, the Shorang are the right bank tributaries whereas the Tirung, the Gyanthing, the Baspa, the Duling and the Saoldung are the left bank tributaries. Some other streams (*khad*) are the Tidang, the Solding, the Titan, the Kiran, the Shiring, and the Shaiso etc.

Spiti (Lee) River:

The Spiti is the second major river of Kinnaur. Its origin is traced in the far-north on the eastern slopes of Kunzum ridge, which run between Lahaul and Spiti. After the confluence of the Kunzum La Tango and the Kabzima and the Pinlung streams at the base of the Kunzu Kaurik the river takes a southward turn to meet the Sutlej. It receives several feeders in its course. The Yulang and the Lipak join it from the west. With the joining of these streams, Spiti River becomes quite a prominent with a sizable volume of water and rapid current. It passes through solid-granitic-stratified flanks.[6] The contrast between the Spiti and the Sutlej is quite conspicuous. Spiti river forms froth in a blue deep body, before joining muddy Satlej and, breaks violently upon the rocks with deafening din.

The Spiti contains as much water as the Sutlej in the middle of August. The river has four large tributaries within Kinnaur. The Chaladokpo lying between Chango and Changrizang is the only mentionable tributary on the left bank. The Tirasang forms after the confluence of Chuling and Hara streams.

Baspa River:

It originates in the northeastern part of outer Dhauladhar Range. It runs smoothly for about seventy-two kilometers and finally joins the Satlej at an elevation of 5945 feet. It is bound by the Dhauladhar on the southwestern side and by Raldang peak of Great Himalaya range on the northern flank. The river channel is wide. It is next to the Spiti in size and its whole course lies within Kinnaur. The Baspa descends from an elevated ridge, which is traversed by Neelung. The riverbanks are grassy and form gradual slopes.

Baspa River is fairly turbulent and often changes its course. Thus, causes extensive damage to the cultivated fields on its banks. The Zupkia, the Thatang, the Bering and the Rukti are some of its tributaries on the left side. The Suthi is the right bank tributary of the Baspa.

Yulang River:

Originating between places called Shalkar and Leo, it joins Spiti River after flowing for about thirteen kilometers. The river is chiefly fed by snowmelts and its water is quite clear.

Ropa River:

The river, which originates on the southwestern declivity of the range, which bounds Kinnaur on the side of Lahaul and Spiti and after flowing for about 45km, it surrenders itself to the Sutlej near Shiaso village.

Pojur/ Taiti River:

The Pojur or the Taiti is one of the largest feeders of the Sutlej, which runs for about forty kilometers independently in a southeasterly direction through the journey.

Kashang River:

It is a hill torrent and is crossed by the route from Pangi to Sanghnam. While flowing in southeasterly direction, it joins the Satlej with considerable

volume of water. The stream has quite a high turbidity, thus appears as a stream of foam.

Wanger River:

The Wanger formed by the torrents of the Bhabha and the Soorchi and it finally falls into the Satlej on the right side at Wangtu. The lower part of the river passes through a succession of fine rapids and a waterfall. It flows from the eastern declivity of the Damuk Ghue.

Mulagoon River:

This torrent is considerable in size and rises on the southeastern declivity of a very lofty range separating the district from Lahaul and Spiti. The old Hindustan-Tibet road crosses it near Pangi. The National Highway no 22 also crosses it. The river joins the Satlej after flowing for about twenty-four kilometers in a southeasterly direction.

Yula River:

The Yula originates on the eastern declivity of the range forming the boundary between Kinnaur and Lahaul and Spiti districts. It flows independently for a distance of about twenty-three kilometers and thereafter it joins the Satlej.

Tidong River:

The Tidong rises from the southeastern frontier towards Garhwal and holding Northwesterly course along the northwestern base of the huge Raldung ridge and falls into the Satlej near Rispa on the left bank.

II.3. (b) Lakes:

Nako Lake: Kinnaur doesn't have any large sized lake. However Nako Lake in the village of same name in Poo Tehsil can be mentioned. It has captivating natural beauty. This lake lies on western slope of Leo Pargial mountain ridge. It is less than two kilometers away from left bank of Spiti River.

Sorang and Tomchho are other two small lakes. The former is situated above Ramni and Jamni villages of Nichar tehsil while latter is above Labrang village of Poo Tehsil.

The topographical configuration of Kinnaur does not allow large-scale irrigation facilities. Water resources of the district are mainly in the form of snow fed stream or the hill rills, which flow, jutting out of the sides of the mountains. However, wherever Nature permits, people have constructed narrow canals called *kuhls*. A land lying near the banks and bed of rivers enjoy irrigation. Precipitation does not play very prominent role in the agricultural practices as large part of it lies in the rain shadow zone.

Springs are scattered all over the district. Wherever possible, water from a spring is used for drinking purposes as well as for irrigation. Kinnaurese carefully utilize the stream water and bring it to their fields through *cutchha/pucca kuhls* .The spring water mostly comes from the snow which falls heavily during winter months due to western disturbances which is far more important than the monsoon unlike rest of India. Nichar tehsil has number of hot springs. One such spring is at Nathpa, another one at Joktiaring hamlet, which is about five kilometers east of Nichar. Three of such springs are at Tapri village

Snowfields, Glaciers and ice caves:

The area of the district above 5200mts from the mean sea level remains perennially under snow. The terrain above 4250mts remains covered with snow for about six months in a year. The area between 4250 and 3050 meters above sea level remains under snow for five to nine months and the part of the district falling between 3050 to 2000 mts only during three to six months. Further, the tract between 2000 and 1200 meters above the mean sea level experience snow fall during winter months. However, the extent of snow varies from season to season.

Kinnaur experience snow falls throughout its length and breadth. During winter the snow line descends to lower altitudes, between 2150 and 2750 meters. It depends upon the aspect and the severity of the cold conditions.

Kinnaur is the district of lofty mountain ranges with peaks permanently covered under snow. Such permanent and the extensive snow in these mountain ranges are called snowfields. Higher parts of Pargial and Raldum Kailash have prominent snowfields in the district.

Avalanches, which are associated with Blizzard like winds, occur during the winter months. Snow bridges are frequently formed after a heavy snowfall in the region of coalescing glaciers.

II.3 (c) Recent climatic pattern and the death of Glaciers:

Fears of global warming threatening the Himalayan glaciers have come true and for the first time Indian space scientists have gathered concrete evidence that four glaciers in the Baspa Basin in Kinnaur are facing "terminal retreat".[7] According to the same article based on the finding of the investigator of glaciology projects at the Space applications center, Ahemdabad fifteen more glaciers in the same basin also face extension as all of them presents a picture of negative mass balance.

Warmer winter due to global warming which is a direct fallout of numerous unsustainable practices of human as well as some of the natural phenomena are causing melting and retreat of snow covers in higher altitude regions- such as the Baspa basin- even in December and January.

Debris fall is another agent in the death / decay of a glacier. Though the debris cover of a mass of glacier prevent the direct melting of snow but this only ensure the glacial retreat and just slows down the process. Because debris prevent the addition of fresh snow, thus, not allowing the formation of new ice, leading to a slow and rather certain death of these glaciers. The phenomena of debris fall can itself be linked, though indirectly, to the human activities. As the process of debris fall can be associated to the arid conditions, which finds linkages in deforestation in the catchments areas of the concerned streams and the rising global temperature.

The study of glaciers reflects that if recent climatic conditions prolongs, the glaciers of the Baspa and alike will vanish completely by 2040[8]. But as it is known

that the global temperature is rising, this process of glacial melt will only be hastened. This is not going to be the story of just the Baspa and that of other glaciers of Kinnaur rather all of the Himalayan glaciers are going to follow suit. The process of glacial retreat is associated with the increased runoff in the beginning stage as observed in the Baspa basin where stream runoff has gone up by seventh five percent in the last twenty-nine years.[9] This stage is followed by diminished runoff. It could result in some immediate economic losses as well. For instance, the diminishing runoff can render the hydroelectric power projects fossilized apart from seeing the catchments area arid and parched.

The melt water from the Himalayan glaciers is the key source of water for most rivers in the north India; therefore, we ought not to take our Himalayan Streams and its feeder glaciers, not even in upper reaches, for granted. Lest, a very dismal picture of human sufferings awaits us right from higher reaches of the Himalayas to shorelines of the Oceans.

In light of above knowledge the key Himalayan rivers face the fate of going parched or at best becoming seasonal rivers in few decades time, it remains interesting to be seen how the national enthusiasm and ambitious rive inter- linking plan aligns itself to the above fact when the Himalayan rivers are perceived as perpetual for the lifetime and trusted to have surplus water at least in the monsoon months which is the very logic behind river interlinking plan.

II. 4 Climate:

Role of climate is more marked in areas like Kinnaur, which has hostile environment. It greatly influences socio-cultural and economic aspects of people. It is according to the dictates of climate and the technology at people's disposal that a society adopts transhumance as way of life or resort to settled agriculture. Responding to these factors and their socio-ethnic make-up, Kinnaurese have taken to the cultivation of land rather than transhumance, which used to be prevalent in the days when Kinnaur spent years in virtual isolation from rest of the country.

The climate of Kinnaur is basically governed by its geographical position and its topography. As geography and topography varies in different parts of the

district, the climate inevitably changes accordingly. From the heat of the tropics to near freezing temperature of a snow clad area both can be experienced here. These varied climatic conditions are conditioned by the intensity of rainfall and the nature of vegetation[10]. As one advances towards the interior the district rainfall ranges from near normal to scanty. Monsoon finds easy way up to Nichar and there after it gradually thins out on its way to Kalpa and after Kalpa rain becomes quite poor. That is why Nichar and Kalpa have denser forest while regions like Poo hardly have a green patch. Climate of Kinnaur can be divided into the four different types-

(i) Spring: lasts from middle of March to the middle of April

(ii) Summer: middle of May to middle of September

(iii) Autumn: middle of September to the end of November

(iv) Winter: December to middle of March

Most of the precipitation in Kinnaur is received in the form of snow from October to May due to a series of western disturbances. This is more so in regions, which lies north of the Greater Himalayas. Apart from altitude, the general direction of valley-face, valley width and inversion of temperature also account for the climatic variations within the district.

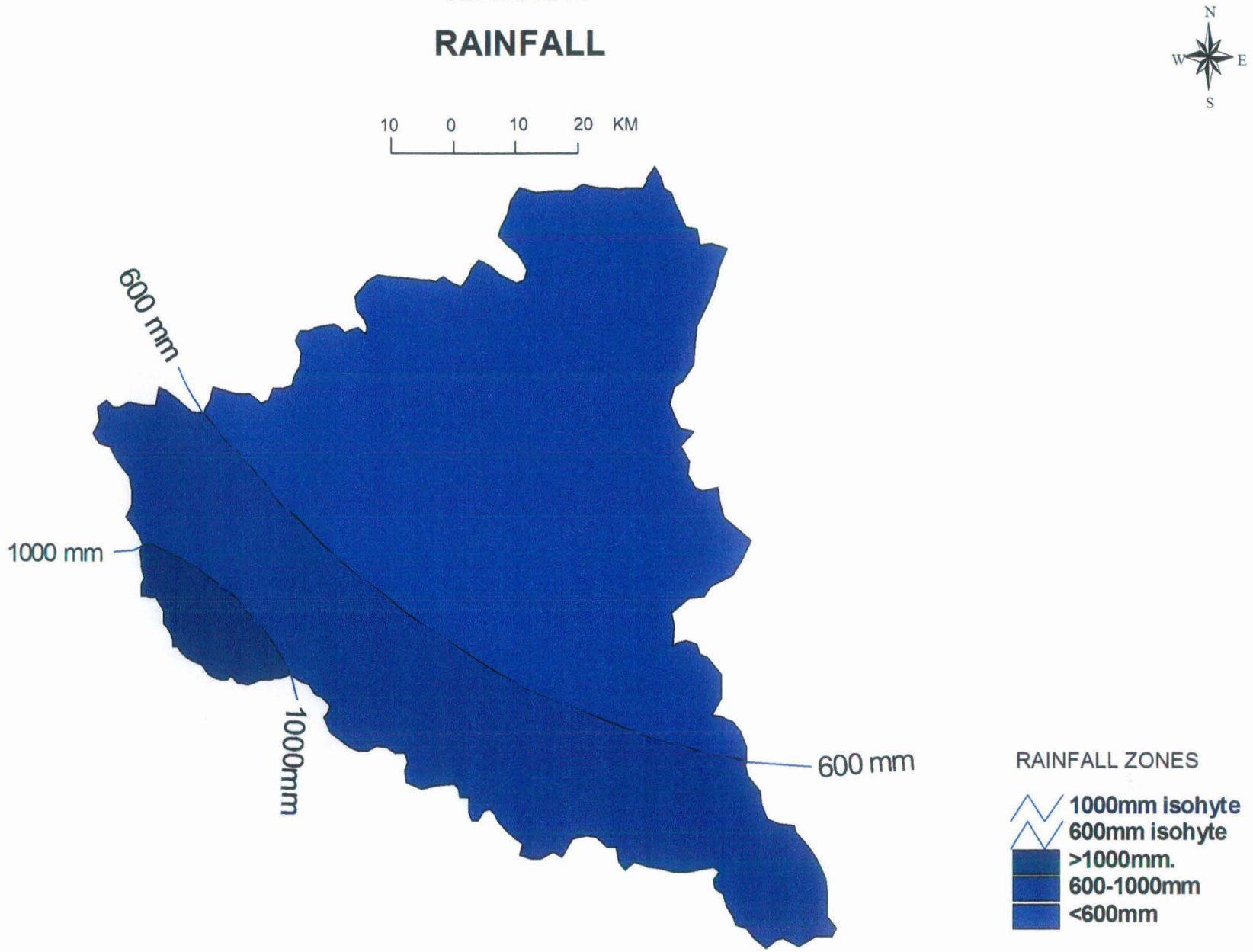
Since there was no Meteorological station till late seventies in Kinnaur, records are not there to provide the accurate weather condition, however, records of a few years at five stations can be deduced[11] to fair degree of accuracy.

The relative humidity starts increasing from May. They are the highest during the period of South- West monsoon. At this season relative humidity is in between eighty and ninety percent. However, during the remaining parts of the year they are low and are usually between thirty-five to forty -five percent.

Rather than monsoon months, Kinnaur experiences heavy, persistent and prolong clouding in the long winter season due to the arrival a winter disturbance that brings snow to the district. The Lower Satlej valley up to about Karchham, and the Baspa valley, enjoys considerable cloudiness in the summer because the

KINNAUR

RAINFALL



Source: NATMO maps

southwest monsoon registers their presence up to these places. Clouding is sporadic and insignificant and only a very strong monsoon burst sees clouds of some importance in the upper arid zone north of the Great Himalayan Range, which serves as the barrier to the monsoonal rhythms.

II.4 (a) Rainfall:

The rainfall is neither uniform nor heavy. In the district, it decreases rapidly from southwest to northeast. Along the valley of the Satlej as east as Wangtu; the rainfall does not vary too much from that of Shimla region. However, beyond Wangtu the difference is considerable. Towards Shipki, rain progressively dissipates so that the climate of upper Kinnaur is semi-arid .The rainfall map corroborate this fact. The Satlej valley has the annual rainfall of 175 centimeters. At Kilba, 16 kilometers east of Wangtu, this drops to 107 centimeters and at Poo to 40 centimeters.

Kinnaur experiences two wet seasons in a year. About fifty percent of the rainfall occurs as snow during December to March. This period receive almost twenty percent of the annual rainfall.

On the basis of rainfall Kinnaur has been divided into three following precipitation zones: (Precipitation map)-

a. Moist zone

b. Semi-arid zone

c. Arid zone

Moist zone is confined to the Southwestern part of the district. It is the zone of more than 1000 mm of average annual precipitation. The Semi-arid zone is delimited by isohyte of 600 mm while the arid region of Kinnaur lies above 600 mm.

Table 2.2

Mean monthly Rainfall (Based on all available data upto 1960)

Stations	No of years of data	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Kilba	60	69.6	73.4	112.0	77.5	53.9	30.0	69.6	60.2	75.4	29.5	14.2	49.5	714.8
*		5.3	4.9	8.7	5.6	4.9	3.2	7.6	7.1	5.6	2.2	1.1	2.9	59.1
Sangle	-	184.7	177.5	98.0	73.4	73.4	33.0	69.3	55.9	69.9	76.5	16.3	142.5	1070.4
*		9.4	5.8	8.0	6.0	5.2	3.2	8.2	6.9	6.3	3.6	1.0	3.8	67.4
Purbani	10	146.8	123.2	104.1	54.4	63.0	11.4	35.1	26.4	44.2	56.6	15.2	99.3	779.7
*		8.5	3.8	8.4	5.5	5.1	1.4	4.8	3.2	4.9	3.6	0.9	3.6	53.7
Chini	10	22.5	65.0	74.4	81.3	81.5	20.3	55.1	36.8	61.5	74.2	10.9	54.6	708.1
*		8.4	5.4	7.5	6.6	5.9	2.0	6.7	4.9	5.3	3.4	0.9	3.9	60.9
Nachar	30	105.9	87.6	112.8	66.3	61.5	60.7	145.0	141.2	117.3	51.3	11.7	41.7	1003.0
*		6.1	5.1	7.6	5.9	6.2	6.7	13.1	13.3	8.7	3.2	0.9	3.1	79.0
Kinnaur		119.9	105.3	121.3	70.6	66.7	31.1	74.8	64.1	73.7	57.6	13.7	77.5	885.3
*		7.5	5.0	8.0	5.9	5.5	3.3	8.1	7.1	6.2	3.2	1.0	3.5	64.3

*Average no of rainy days (Days with rain of 2.5mm or more)

Source: District gazetteer Kinnaur 1971.

The main Sutlej valley flanked by sky-measuring snow peaks of the Great Himalayan Range which serves almost as a suction conduit between the broad Tibetan plateau in the north and broader valleys sheltered by hills of the outer Himalayas, facilitating the high northerly winds in the winter months that rush down the valley with biting cold intensity. During Dec- March, these winds are strongest measuring up to 30knots and are responsible for pulling down temperature several degrees below zero. Southerly winds are not so strong during the summer monsoon months and usually to the average of about 10 to 15 knots. Spring and autumn seasons experience relatively calm conditions with diurnal variations in winds velocity and direction being caused throughout the year by local convection currents.[12] The arid zone of the upper Kinnaur valleys beyond Kalpa the semi desert condition is responsible for convectional winds of 15 to 25 knots that daily whip- up a lot of dust and sand causing considerable problems to the people.

II.4 (b) Temperature:

According to the elevation, temperature varies in the different parts of the district. It begins to rise rapidly from about the end of February, till June. In the lower portion of the Kinnaur, June the warmest month and it is July and August in the upper reaches because it lies beyond monsoon range. From 2500 to 3000 meters there is favorable situation such as at chango, Leo and Morang where the temperature of July and August ranges from 20 to 30 centigrade, the October temperature is about 10 centigrade. At 3500 meters the summer temperature is from 13 centimeter to 3 centimeter. Onset of Southwest monsoon marks the drops in Mercury. Nevertheless, the decrease in temperature is rapid after October,

Table 2.3

Mean Monthly Temperature

Months	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug	Sept.	Oct.	Nov.	Dec.
Min (in deg.Cent.)	-07.0	-04.5	-03.6	-01.0	05.7	07.4	11.9	10.2	07.2	03.7	-00.3	-02.3
Max(in deg.Cent)	11.7	09.6	10.6	22.4	28.6	25.2	26.2	26.1	24.6	23.4	19.6	15.7

(With respect to Kalpa for the year 2001)

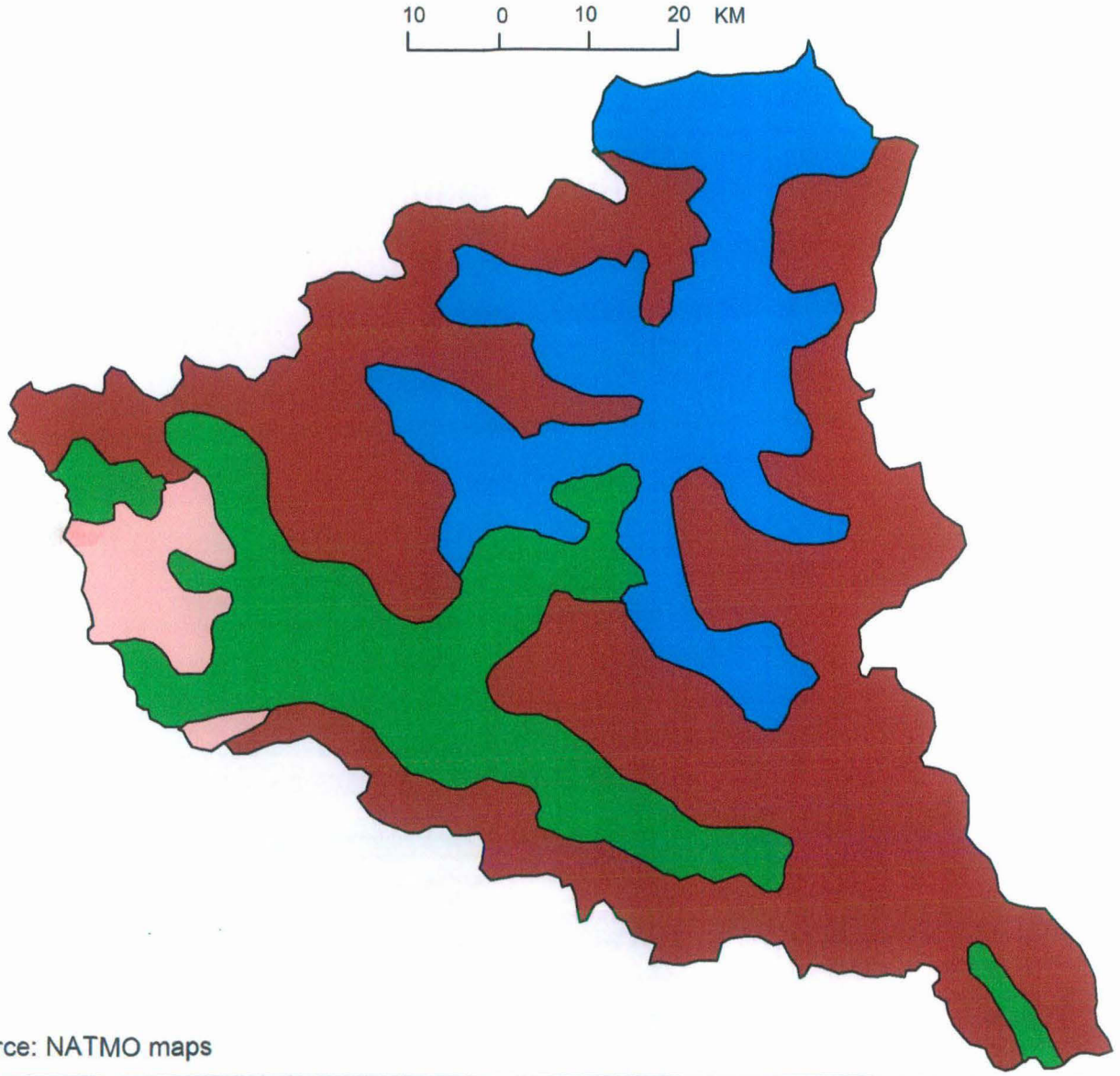
Source:http://hpkinnaur.nic.in/fact_file_1.htm.

January is the coldest month. Due to winter disturbances in the cold season, Kinnaur receives spells of cold weather when the temperature usually falls down several degrees below the freezing point in the valleys too.

II.4 (c) Special weather phenomenon:

Kinnaur doesn't experience storms of great intensity, such as cyclones. Thunderstorms which is very rare in the district, is probably owing to the uniformity of the high elevation of Kinnaur accounting for the temperate climate, which is not favorable for the sharp atmospheric instability that brings about the

KINNAUR
SOILS



Source: NATMO maps

thunder with cumulonimbus clouds which are hail producing. Corresponding to the pre and post monsoon periods, the spring and autumn respectively, harbors large cumulus and occasional cumulonimbus clouds, which are due to the orographic effects of the mountains and may produce, muffled thunder and only very tiny hailstorms. Dust storms never occur in Kinnaur.[13] Thunder storms, which rarely occur, are mild and usually do not produce hailstones. Milder Blizzards are experienced in the winter towards the end of the winter disturbances. The calm climatic conditions are in line with the temperate weather phenomena that are without the ferocity of the tropical storms. Thunderstorms, if any, more or less occur in spring, autumn and in the monsoon seasons.

During the snowfall of winter months, visibility is almost nil and there are three to six meters of low clouds; lower areas experience rain in monsoon months. At all other times the air is pure in this high altitude zone and visibility is limitless, obstructed only by the mountain-scape. [14] Barring the time of rainfall, fogs are hardly noticed even in the valleys bottom.

II.5 Soil:

Soil type of Kinnaur is out and out mountainous in nature. The types and characteristics of the soil are influenced by several factors viz. slope, altitude, temperature, vegetation etc. Glacial works cast a quite pronounced effect on the soil and edaphic processes in higher reaches. In fluvio-glacial terraces, soil types are primarily boulder clay and outwash-plain types.

The dearth of alleviation owing to the scanty precipitation and frigid to mesic temperature regimes, in higher regions like Kinnaur, the depth of soil cap is usually shallow and soil profile is quite poorly developed.

Soil in Kinnaur is mainly sandy clayey in texture and usually acidic in nature. Nevertheless, valley soil and that of uplands present remarkably striking variations. Soil of the valley is fine clay and less stony as well as richer from plant nutrient point of view because it is formed of deposits sediments and detritus material carried by the Satlej and a number of its feeders .The soil map clearly indicates that the upper Kinnaur have poor soil quality which are stony with

shallow soil profile. In steeper slopes grasses and shrubs are the main feature of the soil. The prime feature of the soil of Kinnaur is shallow profile, immaturity, thinness and poorness due to leaching. Basically, the soil of Kinnaur identify to the following four categories-

(i) Entisols (skeletal soil):

Entisols are the soil of higher Tehsils of Hangrang, Poo and Morang. It is recent soil without well-formed soil horizon. Basically it is thin soil on unconsolidated glacial drift. Most of its area has very little agricultural importance except the area near Labrang and Salgiu villages, which is quite near to the Satlej valley. Entisols follows the Tidong, the Gyanthing, the Satlej, the Spiti, the Ropa, the Pojur/ Taiti rivers. Shorter growing periods render the regions of entisols agriculturally poor. Most of the areas are under snow for about three months. Moreover, the area lies in the zone III (as indicated in the rainfall map) that is the zone of scanty precipitation. Irrigation is hardly possible in this area as villages are situated higher up the streams where as river valleys are quite narrow and low.

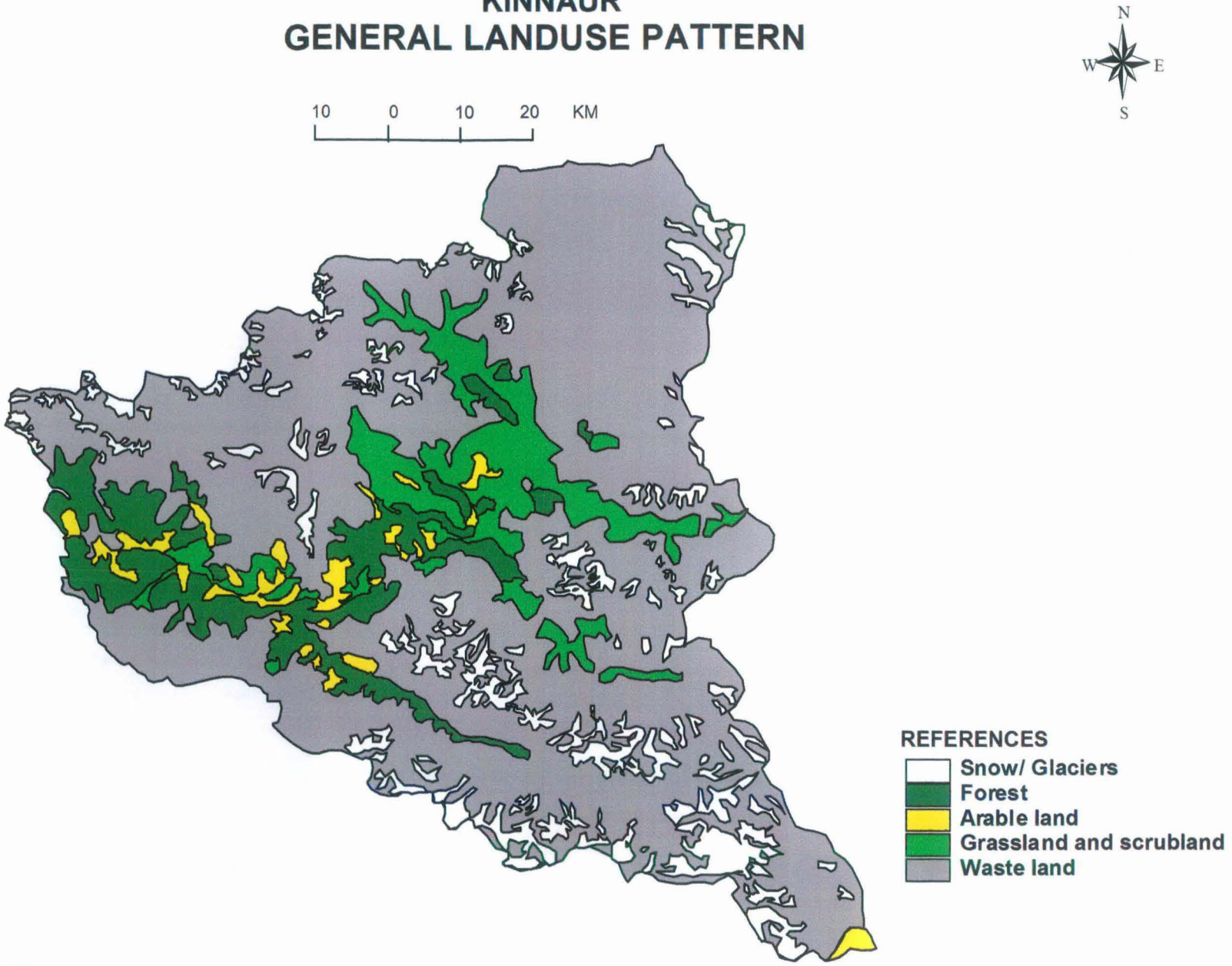
(ii) Histosols (snow fields):

The soil type of temporary and permanent snowfields which is in quite higher altitude, therefore, settlements are not ecologically possible. That is why these soils are also known as 'soils of wilderness'. Occupy most of the area of Kinnaur and are in higher reaches. They are the best representatives of cold deserts. Have very little nutrients for plants and are acidic in nature but wherever vegetation is present it has high organic content in its upper horizon. This is a soil type of rainfall zones II and III – moderate to scanty. This type of soil is characterized by high degree of water logging.

(iii) Mollisols (Mountain meadow soil):

One of the most fertile soil types. This category of soil undergoes seasonally active and inactive phases. It is quite important for apple and other temperate fruits and crop cultivation. The given soil map clearly indicates that soil occupies valleys of the Bhabha and the Baspa as well as the Satlej valley in the

KINNAUR
GENERAL LANDUSE PATTERN



Sources: NATMO maps

lower reaches. That is why Sangla and Kalpa tehsils are agriculturally quite rich. Of the two separate pockets of the soil type, one is in the extreme south-eastern corner while the other is in the lower south-western part of Nichar. Mollisols has its extent in all the three rainfall zones represented in the rainfall map. Environmental factors (climate, terrain, vegetation cover, soil character, snow cover, soil moisture etc) create considerable variations in the thickness of the active layer.

(iv) Alfisols (submontane soil):

As in the soil map, the Alfisols are interspersed between the mountain meadow soils and are least in aerial extent. Its maximum spread lies in the rainfall zone of above 1,000mm. However, some of its area falls within the zone of 600-1,000mm of rainfall. Alfisols are primarily the soil of Nichar Tehsil. This soil type occupies southwestern position and happens to be the lowest region in the district. It is a soil of deciduous woodland. This type of soil is agriculturally very productive for common crops.

II.6 Natural Vegetation:

The total plant cover of an is an index of many deciding factors of nature which acts in concerted manner .The controlling factors which acts in unison are climate, soil, terrain, effect of organisms and results of human interference etc.

Due to high altitude and resultant severe climatic conditions, most of the area of Kinnaur is quite akin to cold desert. Whatever vegetal cover is there, it is limited up to lower part of Kinnaur; that is along river valley. It is only up to Wangtu that the vegetal cover is denser which progressively becomes scantier towards higher reaches. This becomes more so after Sangla and Kalpa.

No forest records were available prior to early history of Kinnaur. In 1864, British Government managed a lease from Raja of Bushar to manage the forest of Bushar which included forest area of Kinnaur also.

Nichar and Poo are the two forest division which is presently functioning in Kinnaur .The legal classification of forest area in the district is 834897.41 hectares .Out of this, 21804 hectares are demarcated protected forest area while 619025 hectares are undemarcated (Nichar 464269 hectares, Poo 154756 hectares). Rest of 194068 hectares is unclassified forest.

Kinnauras are primarily agro-pastoral people. Their land utilization and management practices are crude and primitive.[15] Of late, forest has undergone deterioration both in extent and quality on account of spurt in developmental and construction activities as well as for extension of agricultural fields.

Owing to the northern exposure, on the left bank of valley of the Satlej, forests descend much low towards the river as compared to the right bank. The same species grow at higher elevation on the right bank, which is hotter due to dissolution of direct sunlight. Pandra Bis area on the right bank of the main valley slopes is basically hot grassland and it is only above this grassland, that the forest area starts here. According to ecological conditions forests here is grouped into the three main zones-

(i) The Moist Zone:

This zone extends left side of Satlej valley with Northern exposure up to Nichar. The Tranda range of forests comes under this forest zone and is continuous. The moist forest zone varies from the side of river at 3,500 feet to alpine pasture at 12,000 feet on the right bank consisting of grasslands and higher up are forest belt. Chir pines occur in pure stand on the lower slopes up to 5,000 feet. Rhodoeondron and Quercus come higher up. *Cedrus deodara* and *Pinus wallichiana* form intervine forest on shelter ravine bank. In higher reaches from 7,000 to 10,000 feet, *Pinus saenithiana* with mixture of broad leaf species are prominent. The most common Species of the zone are: *Pinus longifolia, Rhododendron arboretum, Pinus excelsa, Pinus smithiana,* Quercus *incana, Quercus semicarpefolia, Abies pindrow* etc,.

Plate II.1 Rhododendron flowers in Nichar Tehsil; Kinnaurese trust it for numerous blood related ailments. It is confined upto the moist zone of the district.

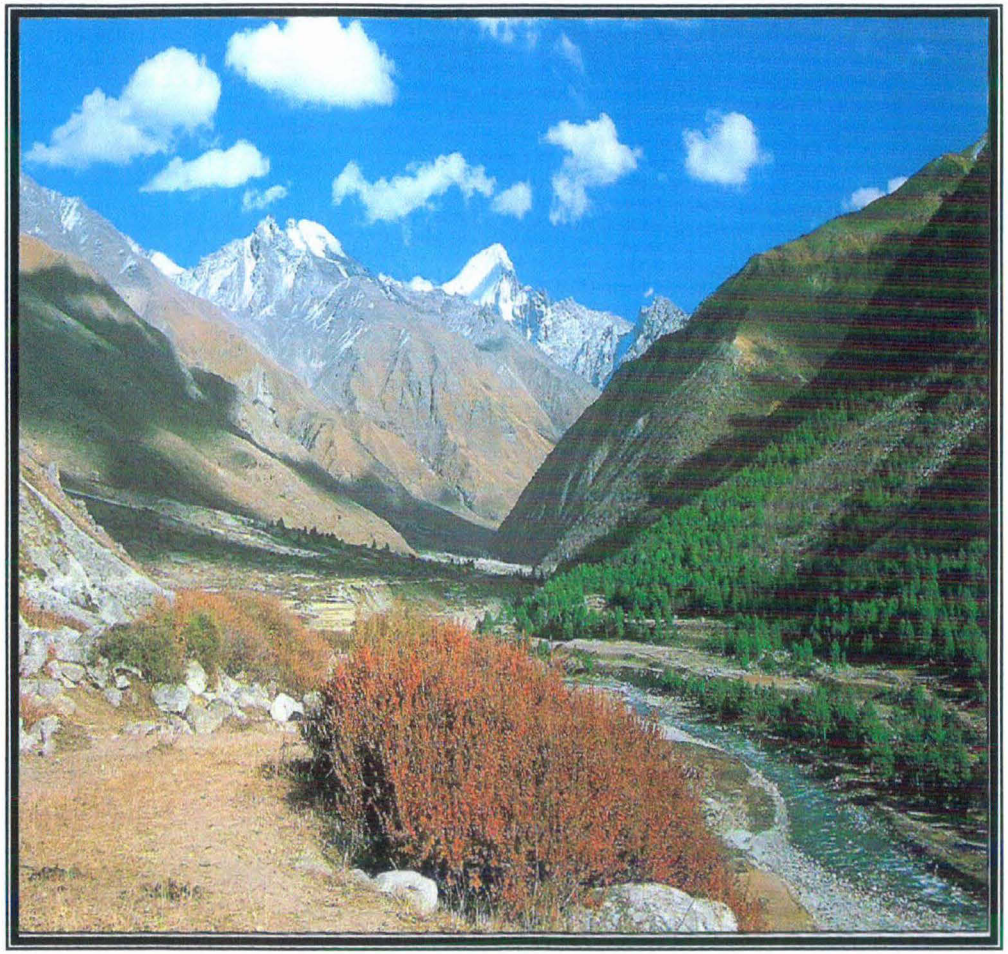


Plate II.2 Tree line is giving way to bare rocky mountains in Baspa valley near Chhitkul village.

(ii) The Dry Zone:

(Central Kinnaur; from Nichar to chini and also in Sangla valley). Neoza pines (*chilgoza)*, which produce edible nuts, grow here. Barring the Pir Panjal range, it is the only zone in India where Neoza is grown. The deodar reaches its optimum development and forms large areas of forest in pure stand. (Blue pine, Silver fir, Spruce, etc,)*Pinus gerardiana, Cedrus deodara, Quercus incana, etc,* is other species.

(iii) The Arid Zone:

(Area adjoining Tibetan border.) Forest consists of rose-dog and dwarf bushes. *Pinus gerardiana, Cedrus deodara, etc. are* in very fewer areas while vast area is barren and rocky. The deodar develops well only on cool aspects and comparatively at higher elevations than elsewhere.

The vegetation cover of Kinnaur presents valuable resources as it holds a great promise as timber forests and a source of considerable revenue provided it is managed in sustainable manner.

Wildlife Sanctuaries:

The considerable variations in the elevation, climate and topography of Kinnaur serve as the index of variety of flora and fauna. Therefore for the reasons of ecological and geomorphological attributes with main objectives of protection, propagation and development of wildlife and its environment, three wild life sanctuaries have been established in Kinnaur. These are:-

- Rupi-Bhabha wildlife sanctuary.
- Rakchham –Chitkul wildlife sanctuary.
- Lippa-Asrang wildlife sanctuary.

Lippa-Asrang and Rupi-Bhabha wildlife sanctuaries are situated in the north eastern part of the district. Lippa-Asrang is in the upper catchments of the

Taiti stream while Rakchham-Chitkul wildlife sanctuary lies at the upper catchments of the river Baspa.

Analysis of the geology, physiography, drainage, climate, soil and vegetation reflects that nature in Kinnaur is inhospitable. Even the initiation of the many developmental programmes and introduction of new technology could not deny the upper hand of natural forces in the human-nature relation. Table 2.4 summarizes the impact of nature on human and their developmental activities.

Table 2.4

Typology of major constraint factors and their impact on developmental activities[16]

FACTOR CAUSE	*IMPACT*
1. **High altitude and rugged relief** •Steep slopes •Loose materials •Erosion and mass wasting	•Isolation •Restriction on mobility and transportation •Land degradation, environmental hazards, catastrophe •Reduction of agricultural land and restricted land use
2. **Adverse climatic condition** •Low temperature •Reduction of atmospheric pressure and oxygen supply •Low temperature an excessive humidity	•Reduction of working capacity and human energy •Impairment of health •Selective crops can be grown
3. **Adverse soil condition** •Poor soils •Heavy soil loss by natural process •Shallow soils •Soil degradation	•Weakening of environmental conditions, mass wasting •Reduction of agricultural potential

4. **Adverse vegetation condition** •loss of vegetation by illegal felling, lumbering, forest fire etc. •Dense forest cover in some areas	•Increased soil erosion and accelerated natural hazards of landslides, mass wasting, slope failure, etc. •Shortage of fuel wood •Change in microclimate, geo-hydrology and soil condition •Reduction of mobility and transportation through forested land
5. **Natural hazards and catastrophes** •Landslides, rock fall and mudflow, earthquakes	•Destruction of wealth and property •Loss of life •Damage to transport and communication lines and other infrastructure

Kinnaur presents the episodic geological drama, which dates back to Pre-Cambrian and the physiographic studies shows that the region is hemmed-in among the Zanskar, the Great Himalaya and the Dhula Dhar range. Geologically, the region is important because it preserved the story of the Himalayan's birth in the forms of numerous marine fossilized organisms and rocks. Geologically Kinnaur is sensitive too because it lies in seismic zone.

Geographic location as well as the physiographic and climatic conditions has been responsible in a big way to keep Kinnaur in isolation till quite recent times. Even in the light of the modern technological marvels, the degree of inaccessibility emerging from the topography of Kinnaur could not be demoralized appreciably. Moreover, the harsh climate reserves communication to the region only for six to eight months. Therefore, the natural environment is the prime factor for the seclusion and inadequate economic development of the district.

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Chapter III

The Cultural Ecology

Culture is a sense of ultimate value possessed by a particular society as expressed in its collective institutions, by its individual members in their disposition, feelings, attitudes and manners as well as in significant forms that they give to material objectives.[1] Culture resides in a group of human beings called society[2].

Human beings participate simultaneously in systems of ecological and social relations of production. Their primary adaptive strategies are devised by an intelligent perception of environmental characteristics of their habitat that accordingly chisel and shape the cultural pattern in order to cater their needs.[3]

Apart from the taste and preferences, ecology of an area is the single most important factor which can be traced into the social systems and the man-nature interactions. In its intercourse with the immediate natural surroundings, humans like any other living beings acclimatize to its environment. However, humans are set apart from rest of the living organisms due to their ability to change the immediate environment. Human capacity to change nature is generally related to the level of available technology; the higher the level of technology, the more drastic is the change that can be introduced into the environment and vice-versa[4].

The society of Kinnaur, for ages, has braved the harsh environment and has moulded itself into an evolving culture that is sustainably linked to its natural limitations. The natural compulsions served as the major constraints on the integration of the region to the rest of India. This kept it in near isolation for a long period of history. This helped in shaping the culture of its own. In order to understand culture, it is necessary to have knowledge of the cultural characteristics. Culture is the amalgamation of many elements and important among these include;

- **Peopling**: The history, inhabitability and immigration of/to Kinnaur.
- **Ethnicity**: Types and pattern of social stratification.
- **Languages**: Nature, type and distribution of dialects.
- **Food**: Types of local cereals, dishes as per the environmental suitability.
- **Dress**: Indicator of prevailing climate and influence of mainstream
- **Birth & death rites**: Shows proximity to tradition.
- **House type**: Indicator of degree of environmental compulsions and indigenous construction materials and living pattern.
- **Marriages:** The social contract as per the societal needs according to the resource-base and ecology; their unique types and changes in it.
- **Dances & Festivals**: Manifestation of their entertainment and recreation as well as peoples' trust in religion and predominance of agriculture in economy.
- **Religion:** Social organization of personalized expression of individual in tune with its locational and ecological realities.

III.1 Peopling:

Kinnaur has historical homogeneity with Ladakh almost from the 10th century to the 17th century A.D[5]. Kamru village is situated in the Baspa valley served as the seat of capital of Bushahr state that is one of the oldest kingdoms of the Himalayas. The upper Kinnaur was under the imperial control of Tibet till ninth century but later came under the Bushahr state.

The early history of Kinnaur is the history of the migration of the *Khasas* during the first century A.D[6]. Of course, scientific history of this region commanding a buffer position between rest of India and Tibet seems to have had been a hot zone of trans- Himalayan trade and human migration since remote past

what is evidently preserved in the art and culture of this region until now[7]. Some ancient graves in Kinnaur have been noticed in places like Lippa, Kanam, Jangi, Namgya, Rarang, Poo and Baspa valley[8]. Gerard too observed the practice of burying the dead[9]. In Kinnaur and the adjoining Tibetan cultural region; ancient graves are called *Khache Romkhang*. The word *Khache* in Tibetan language was used initially for Kashmir and Kashmiris, later it became dominative of Muslim since Kashmir came under the Mohammedan rulers[10].

Due to ignorance, the local people believe that the graves often unearthed in the terraced fields belonged to Muslims, which is not the case[11].The cephalic index of the Nesang skull as seen from one of the cist burial sites of Kinnaur and the extent of arms and leg bones confirm the tallness of the individuals. It clearly indicates that the deceased adult belonged to the Indo-Aryan stock similar to other central Asiatic nomads. A spot study and the condition of the graves as well as the mode of placing the corpse in east-west orientation suggest some connection with the cist burials found in the Central Asia, Swat valley, Burzahoma in Kashmir valley and Kumoan Hills[12]. It can be inferred that such cites are associated with nomadic *Scythians* and *Shakas*, who migrated from Central Asia to the south in India.

The Kinnaurese, an ancient non-Aryan Himalayan tribe, has been frequently mentioned in the early Indian literature. The etymological meaning of the term is "an ugly man", "what sort of man?" or "is he a man (*kim kutistah marah*)?"; it may be conceived that these people were uglier than the Aryans having peculiar physical characters[13]. However, this notion at best appears to be the inadequate interpretation or biased view about Kinnaurese of ancient Indian literature. The Kinnauri women are famous for their good taste, beauty and singing[14]. It is presumed that Kinnaur came under Tibetan rule during the rule of King Srong-Tsan-Gompo during 7th century A.D[15]. Tibetanisation of the region took place only with the invasion by the armies of Tibetan King Srong-Tsan-Gompo (620-649 A.D), and this resulted into the influx of Tibetan blood in local populace[16].Buddhist text *vimanvatthu,* composed in third/second century B.C

records the geographical expansion of Kinnaurese upto Chenab river and it clearly mentions that the banks of the river Chandra-Bhaga are inhabited by Kinnaurese[17].

King Yesh-es-od of Guge ruled over Kinnaur in and around 10th century A. D., at the time of establishment of the Tibetan dynasty in Ladakh. There is no evidence of Kinnaur ever having had any contact with the great Mughal Empire in the later period[18]. Upper Kinnaur witnessed the influence of Ladakh till 1681-83 A.D. when Ladakh was defeated by the Tibetan King. Consequently, Upper Kinnaur came under Tibetan influence[19].

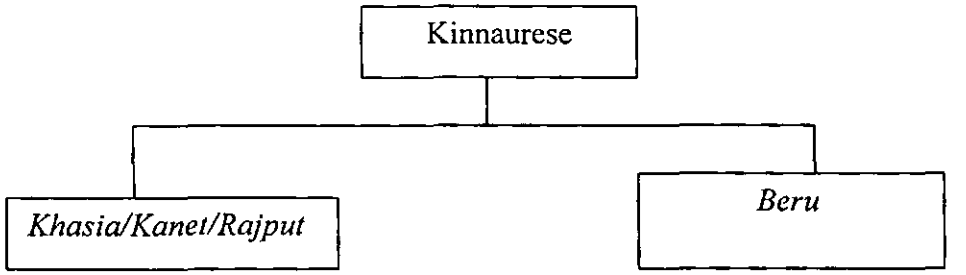
A significant development in the history of Kinnaur took place during the 17th century A.D with the rise of Raja Kheri Singh of Bushahr State. He was a powerful chief in the western Himalaya. During the war between Tibet and Ladakh in 1681-83 he sided with Tibet. He was awarded some portion of Kinnaur and free trade license was given to the traders of Bushahr State for the marketing centers of Western Tibet[20]. Kinnaurese are one of the ancient people who find mention even in ancient Hindu religious literature. The peopling of Kinnaur like rest of India has seen many streams of immigrants. Thus, the district is the mini-melting pot of people of different racial stock.

III.2 Ethnicity:

Before the separation of Kinnaur from the Mahasu district in 1956, an order was passed. It led to the division of people of present Kinnaur into the Kinnaurese as scheduled Tribe, and the rest consisting of *chamang* leather workers, weaver and farm labourers, the *Domang* blacksmiths and silversmiths and the *ores* carpenters as scheduled castes. After the formation of Himachal Pradesh in 1960, Kinnaur was declared as a scheduled area whereby all inhabitants of a scheduled area were given the rights and privileges of scheduled tribes, even when they happen to organize themselves into castes.

Kinnaurese are divided into the following ethnic groups.

Figure III.1



- *Orang-* - **Superior** *Kanet* - *Domang e.g., Lohar, Badhai* or *Ores*

Morang/ -Moorang/ Orangmechh- **inferior** *kanet*

- *Waza – Kanet weaving, potery* as occupation - *Chamang e.g., Koli*

- *Nagaloo e .g.,Chanala*

- Ethnic *Rajputs, Jad* or *Zod* Buddhist.

The figure III.1 shows that the Kinnaurese are divided into two broad groups. The *Rajputs* who are also known as the *Khasia* or *Kanets* are socially and numerically dominant group. This group has three sub-divisions of which the Orange is superior among Kanets. The Moorang in social hierarchy follows them. This sub-group is also known as *Orangmechh. Waza* sub-group consists of inferior most Kanets who are weavers, potters.

The second group is called *Beru*. People falling under this group lie even below the *wazas* in social-status. This group consists of the three sub-groups namely, the *Domang*, the *Chamang* and the *Nagaloo*

There is no occupation to which *Kanets* are specifically associated with. However, on the basis of social ladder and rich ritual practices, the *Kanets* are treated superior and at the top notch of the social matrix of Kinnaur. They are further sub-divided into sub-groups known as *Khels*. Since the caste and status hierarchy is very deeply embedded in the Kinnauri society, hypergamy or hypogamy is rather rare.

It is important to mention that cultural differences are present not at the inter-ethnic level but at the intra-ethnic level depending upon the size of the valley and geographical barriers creating isolation in pockets for these people.[21]

Badhi/Auras/Tharkhan, Lohar, Koli and *Nagaloo* are the other occupational groups treated as ethnic groups of Kinnaur. As *Kanets,* these groups do not have sub-divisions within their respective ethnic groups. Instead, they possess an underlying sense of groupism. All these ethnic groups have specialization in occupational skills. The *Kolis* are weavers; tailors and leather workers while the *Badhis* have specialization in carpentry and masonry. *Lohars* are skilled in smithy. *Nagaloo* is a small ethnic group of basket makers. This group is confined to lower Kinnaur in Nichar sub-division and southern and southeastern part of the Kalpa sub-division.

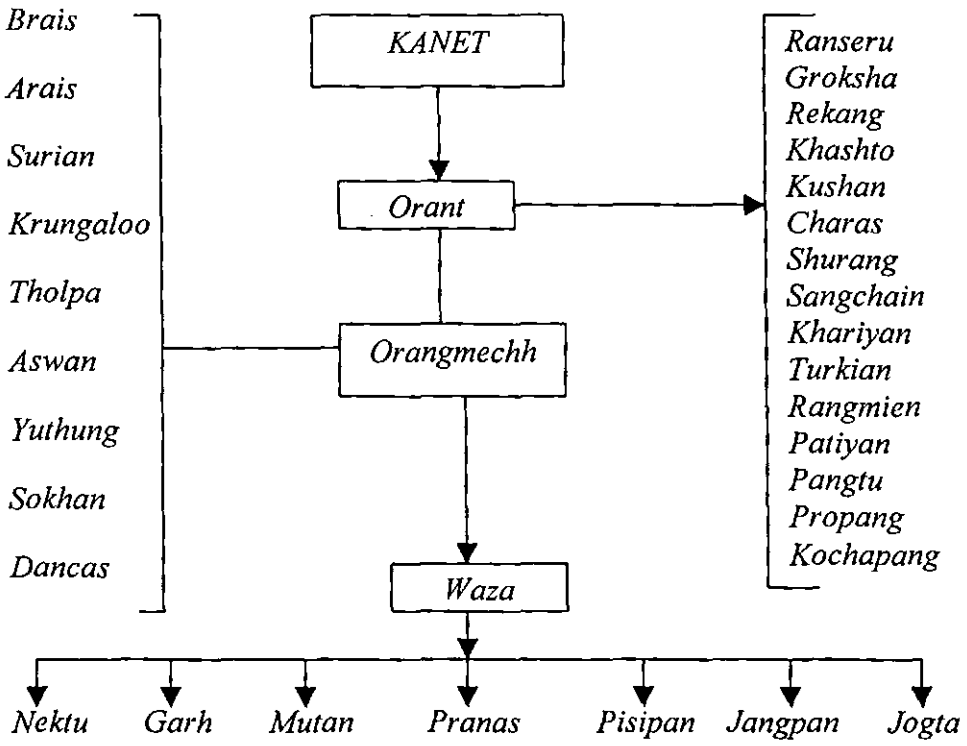
As the district is completely rural, agriculture is associated with all the ethnic groups. *Domang* is the broad group to which both the artisans, *Badhi* and *Lohars* belong. The *Rajputs/Khosias* and the *Kolis* are in general, present in all villages. Even *Badhi* and *Lohars* are also found in most of the villages. However, there is hardly any village where these two groups are dominant or are considerable in numbers. Thus, it can be inferred that village social structure of this Himalayan district is multi ethnic.

In the absence of Brahmins, *Kanets* occupy the highest place in Kinnauri society. On the ground of prevalence of 'pollution' in Kinnauri psyche, greater access to *Kanets* households is allowed for *Badhi* to take the services of their craft than what is permitted to *Lohars.* However, this greater acceptability to *Badhis* is just for the practical purposes and there is no socially prevalent and approved hierarchical superiority between the two groups. In this stratification *Kolis* are placed at a lower niche than the *Badhi* and *Lohars* and *Nagaloo* occupy still a lower position. This hierarchy is represented by the following figure:

Within their sub-groups Kanets have further divisions and hierarchy, which are represented in the figure III.2.

Figure III.2

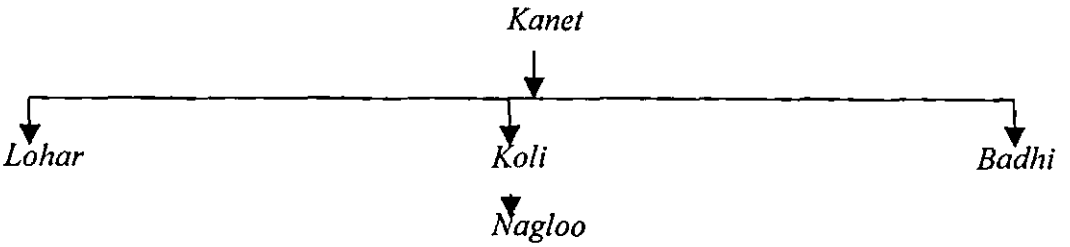
Hierarchy and social divisions among the *Kanets* in Central Kinnaur



Source: Ramesh Chandra- Highlanders of Northwestern Himalayas.

Figure III.3

Hierarchy in Kannauri society.



The pattern of social communication among different social groups of Kinnaur has been summarized in the following table.

Table 3.1

Pattern of social intercourse among different ethnic groups of Kinnaur.

Ethnic group	Accepts food from	Accepts water and Drinks from	Accepts dry things only
KANET	*Kanet*	*Kanet,*	*Badhi, Lohar and Koli*
BADHI	*Kanet, Lohar*	*Kanet, Lohar*	*Kanet, Lohar, Badhi and Koli*
LOHAR	*Kanet, Badhi*	*Kanet, Badhi*	*Kanet, Lohar, Badhi and Koli*
KOLI	*Kanet, Koli*	*Kanet, Koli*	*Kanet, Badhi, Koli Lohar.*
NAGLOO	*Kanet, Badhi, Lohar, Koli and Nagloo*	*Kanet, Badhi, Lohar, Koli and Nagloo*	*Kanet, Badhi, Lohar, Koli and Nagloo*

Though the *Domangs* have established their occupational superiority, *Koli* and *Domang* do not inter-dine because both of them consider themselves to be superior to each other. The other noteworthy element regarding the societal mixing up of Kinnaurese is that the *Kanets* though accepts the invitation for a socio-religious ceremony from a *Badhi, Lohar* or *Koli* households; they do not take the cooked food from any of the groups. Nevertheless, they do accept the uncooked food articles from such hosts. *Kanets* cook the accepted food materials on their own.

III.3 Language

The faculty of speech is by far undoubtedly one of the most distinctive human traits. Use of particular set of language between the members of a human group for communication started in the early stages of social evolution. Language is a tool that facilitates the multi-directional human co-operation that ultimately led to the division of labour.

"*Kanawari* dialect, also known as *Tibarskad* and in lower Kinnaur it is known as *Milchanang & Malhesti*, comes under the western sub-group of Tibeto-Himalayan group which belong to Tibeto-Burman family and *Kanewari* is the name of the dialect/dialects spoken in the Satlej valley from its junction with Spiti River"[22]. There are following ten dialects in Kinnaur

Table3.2:

Dialects spoken in Kinnaur:

Sl. No.	Name of dialect/language	Tahsil/village where spoken
1.	Kinnauri	(a) Nachar Tahsil (b) Kalpa tahsil (c) Sangla tahsil (except Rakchham and Chhitkul) (d) Rarang, Riba, Akpa, Raspa, Thangi and Morang of Morang Tahsil and Giabong and Ropa villages of Puh tahsil
2.	Jangram	Jangi, Lippa and Asrang villages of morang tahsil
3.	Kinnauri – Jangram mixture	Rakchham and Chhitkul villages of Sangla tahsil
4.	Shumcho	Kanam, Labrang, Spilo, Shyaso, Taling and Rushkalang of Puh tahsil
5.	Sangnam	Sangnam village of Puh tahsil
6.	Tibetan language	(a) All village of Hangrang sub-tahsil (b) Puh, Hubling, Khabo and Namgya villages of Pub tahsil (c) Kuno, Charang and Nesang villages of Morang tabsil

Source: Mamgain, Districts gazetteer of Kinnaur, 1971

The table III.2 shows that western Tibetan dialect is prevalent in the villages which is quite close to the Tibetan border and in the upper parts of Poo as well as in the Nesang, Kuno and Charang villages. Besides these dialects, Hindi is the second language of Kinnaur. With some exception of elder people in remote villages, Hindi is understood and spoken by most of the Kinnaurese. This transformation was carried out on the vehicle of modern education and better communication facilities that Kinnaur has seen in the recent decades.

III.4 (a) Dress

Originally the idea of costume was just to cover up parts of the body. But coupled with the human needs and imaginations, the geographical, climatic and racial factors greatly influenced costumes and their range developed rapidly. The climatic conditions of Kinnaur are such that people wear woolen cloths through out the year. One can do with light woolen cloths only during September to October and May to June. But this too is restricted to only daytime and in the semi-arid area of upper Kinnaur where daytime temperature goes fairly high due to direct heating of the bare rocks. In common, Kinnaurese wear their traditional dress.

Due to the compulsion of the climate, Kinnaur developed two very significant economic pursuits, first is trade with Tibet where wool was the prime commodity of import and the other is rearing of goat and sheep. However, the closing of the boarder with Tibet ensured the stoppage of the first economic practice. But as the newer and better communication arteries were laid, soon it was compensated by the supply of wool and its synthetic equivalent and cotton materials from other regions within the country itself.

The Kinnauri pattern of dressing for both men and women has several distinctive traits–

(a) *Chhuba* – It is a long woolen coat upto or even below knees.

(b) *Chamu-Suttan* – It is slightly loose woolen trouser with design at the lower edge. Mostly it is of grey colour.

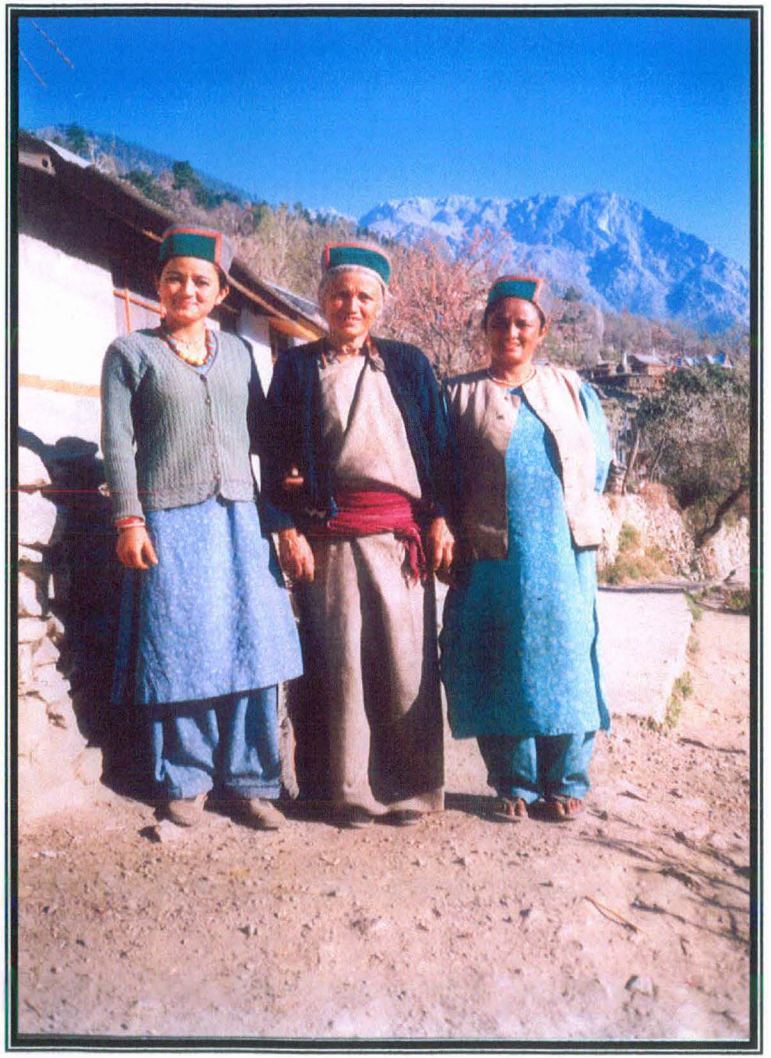


Plate III.1 Three generation of Kinnauri women;
The traditionally dressed grandma is flanked by her daughter (in modern attire) and daughter-in-law clad in mixture of both. Note the ornaments they are wearing.

(c) *Chamu Kurti* – Sleeveless woolen Jacket.

(d) *Kameej* – Cotton or woolen shirts are referred to as *Kameej.*

(e) *Thepang* – Cap made of woolen and velvet cloth. It is a common head gear for men and women. Also known as *Bushahari topi* or *Kinnauri topi.* On the occasions of marriages fairs and festivals, Kinnaurese tuck flowers in their caps.

(f) *Gachhang* – Used by both men and women. It is wrapped around waist and is usually crimson coloured. Gachhang is 5 to 8 yards in length and is made up of wool or cotton

Women dress includes *Choli, Dhoru, Chhamli (Pattu), Salwar* and *Kurti*

Choli – Sort of full-sleeved blouse made up of woolen cloth and velvet. If it is of cotton, it is known as *Kameej.*

Dhoru. Dhori – Woolen sari of usually 4 ½ × 1 ½ yards with beautiful embroidery of red, green, orange, sky blue and scarlet coloured thread.

Chhamli (Pattu) – A Kinnauri shawl used by women. Its two ends are held together near breast with help of a silver hook known as *digra.* Men also wear *chhamli* during severe winter.

Salwar and *Kurti* – Of late young Kinnaurese girls have started wearing *salwar* and *Kurtis* that is made-up cotton. In middle Kinnaur women folks wear *salwar kurti* as undergarments under *Dhoru.*

As recent decades have seen the diffusion of mainstream life style in Kinnaur in a big way, Kinnaurese in modern day attire apart from the traditionally clad folks are a common site (Plate no.III.1). Moreover, the sealing of boarder with Tibet led to the shortage in supply of wool at affordable price. So, Kinnaurese had to accept cotton and synthetic fiber garments also. Traditionally clothes used to be stiched by the local *Koli* usually by hand. However, recent years have witnessed the immigration of many tailors from Kangra and adjoining areas.

III.4 (b) Ornaments

Kinnaurese women like other women all over the world are also fond of ornaments. Local *Lohars* prepares ornaments. These people are so good at their craft that they check flow of money out side the region. Silver ornaments are more in vogue than the gold one.

Head Ornaments – *Chak, Shatab, Zuth, Tancal or Phiraza*

Ear Ornaments – *Kantai, Khul Kantie, Jhumku, Mool –u.*

Nose Ornaments – *Khundoch, Loung, Balu, Bulok.*

Neck Ornaments – *Kanth malang, Chandra-malang, Trimani, Shatungma, Patkachang* or *Kachaong, Shulickcha.*

Hand Ornaments – *Kagun, Dhaglo*

Ornaments of toes – *Polrij*

Dress Ornaments – *Digra, Tamuch* or *Pechu.*

Men usually do not use ornaments except in the form of finger ring or ear rings of gold which is known as *murki.* Traditional Kinnaurese wear bangles (dhaglo), silver chains with buttons (*botone-se-shanglya*) and silver buttons (*gau-tungama*). People in semi-arid regions used to carry a small piece of steel for striking fire. It is known as *chakmak.* In this part of Kinnaur typical Kinnaurese have *chakmak*, knife, hatchet, smoking pipe in his girdle and goat's hair-rope hanging from his right side.

III.5 Food

The hostile natural conditions of Kinnaur do not support more nutritious and remunerative cereal crops that are grown in plains and river-valleys. The staple food of Kinnaurese includes *algo*, *bras,* and *barley.* Apart from this they also eat *rad, shag, dankher kodro*, wheat and maize. Better communication arteries have ensured the greater infiltration of rice and wheat in peoples' menus. Kinnaurese

prefer meal thrice a day. The *Somchu-Khau* is the break fast, *shil* is the lunch and *Shupakchu-khau* is the dinner. People usually take local tea and flour of roasted barely mixed with *hodd* and *kan*. At noon, they eat roasted wheat or *yud* with bot, *hodd* with *bhaji* or *kan* and boiled potatoes. In '*Shypakchu-khau', hodd, kan, roti* and *phanting* is eaten.

Hodd is prepared of various sizes and are generally made out of flours of above-mentioned cereals except *kaoni* maize. *Hodd* is a thin paste of flour, which is spread and baked on a hot pan. *Roti* is like chapatti but is frequently made out of the flour of other cereals too apart from wheat.

Shag and *Rad* are boiled like rice and then eaten. *Talpole* is prepared out of wheat *olgo* or *kodro* flour almost resembles to *poori* and is deep fried in oil but it is thicker. '*Thispole*' or *Koyashids* are prepared out of wheat or olgo flour. These are cooked and fried and shaped like *jalebis*. These are special dishes prepared particularly on the occasions of marriages, festivals, *pujas* and other ceremonies.

Kinnaurese use '*spal* (a local root which is for flavouring vegetables). They refer pulses as *paithang*. '*Phanting*' is gravy prepared out of dried apricot and peaches. This preparation is consumed more in winter and generally served with *Yud. Chhura* or *chhurpe* is dried skimmed curd which is added to the boiling *kaoni* or rice to prepare *chhura thupa/thukpa. Kherang-Thuppa* is boiled and salted-milk and is taken with *hodd* or *roti.*

Du is prepared with the mixture of *olgo* and bras flour by boiling and cooking to make a thick paste. It is usually taken with butter and *Kan. Shakar-Kan* is prepared by dried turnip. A locally grown herb is boiled with milk to coagulate it and this dish is called *Kok-pole. Sigre, shakar-phanting* and *kapo, sutrale are* other dishes of Kinnaur. *Sha-thuppa* is like mutton-*pulao*. Till recently, fowls, fish and eggs were not there in menus of Kinnaur. However, it has creped into the dining halls and kitchens across the district. *Sangcha* is a type of local tea which is always offered with *yud. Thang* is the boiled common tea without addition of anything. Though modern dishes have slipped into people's house, traditional dishes are still prepared and taken.

Low quality grapes, wild apricot and wild peaches grow in plenty; therefore, it can not be marketed. Kinnaurese distil out spirit from these fruits. *Angori* of Kinnaur is quite famous. Apart from its regular use as liquor, it is also used as medicine against severe cold and illness like flu, stomach trouble, common cold etc. Usually women prepare the spirit but they do not drink it except in time of illness. Local brew is also an article of religious significance.

The food habits of Kinnaurese have been shaped up as per their environmental compulsions and necessities. The wide spread usage of alcohol is because it helps in keeping body warm. Kinnaurese eat locally grown inferior cereals and leaves apart from the meat of sheep and goat.

III.6 House type

When a house form is found repetitively in an area it becomes house type. The rural houses by itself are a type and it comes up from soil as the construction material stones, thatch, mud, wood etc. are locally procured. Cultural or social values of inhabitants are reflected in the internal design of house. However, development has ensured some changes, thus, houses of concrete, cement and burnt bricks are visible in many villages along with traditional house types that have mark of the region.

As the climatic conditions between upper Kinnaur and remaining part of the district vary, the housing types across the region vary too. However, the strong unifying factor across Kinnaur is the choice for Sun-facing side to construct houses. This is a fundamental requirement that emerges out of the environmental compulsions as the whole district braves severe cold conditions; therefore, sunlight is highly sought after. Sunlight not only gives temporary respite from cold but increases the working hours of rural folks. Life in mountains comes to stand still after the sunset and remain so till the first ray of dawn.

Throughout Kinnaur, houses are rectangular in shape. The house types in Kinnaur have following basic characteristics –

Plate III.1 A Kinnauri grandma with her grandson and daughter-in-law in front of her typical Kinnauri house at Bre-Lingi village.

- A courtyard is prevalent in houses of Kinnaur. However it is slightly of different kind as the verandah is over hanging as an extension of the main house.

- A separate store (urch) house for storing agricultural produce (PlateV.2) to ensure the supply of food grains even if the house is collapsed due to natural calamities or destroyed by fire.

- Walls and the roofs are made according to weather conditions and with the help of locally available raw materials.

- Cultural/ religious values quite often play a role in determining the direction in which the house open and even where the main entrance is situated. Site and architecture plan often reveals ethnic connections and rituals.

The material used for the construction of houses is different in different climatic zones of Kinnaur. Lower Kinnaur has abundant woods that are used to make wooden frames of houses. These are put in place first and then gaps are filled with stones (Plate III.1). As no mortar is used wooden beams are inserted in the walls after suitable intervals to act as a binder to secure walls from collapse under the weight of stones.

Owing to the lack of woody vegetation in upper Kinnaur, houses used to be made up of stones and no wood. However, the devastating earthquake of 1976 initiated people to transport wood for building purposes from Kalpa and Nichar Tehsils. Therefore, now the wooden houses have sprung up even in higher reaches. There was no provision for windows and ventilators in the earlier constructions of the region. It was to keep out chilling wind. In some houses there are small (*dusrang)* apertures that serve not only as chimney but also help to limit entry of the extremely cold wind. In times of precipitation such openings are blocked with stone slab or wooden planks.

Usually most of the earlier built houses are of single story but *Rajputs* houses are of two three storey also. Such houses have single rooms at each floor.

However, modern times have seen greater mobility of people in Kinnaur as well as in the influx of outsiders. Therefore, new houses have 2 –3 rooms at each floor so that there is more space to host relatives and to rent out some portion of their houses to government servants.

Ground floor of houses is used as cattle shed. Ironsmiths use this place as workshop. In summer Kinnaurese cook their meal outside their houses and do not construct a separate kitchen room, while in winter they use a hearth and cook in the middle of their main living room. This practice has an environmental significance, as it helps to keep the room warm. The practice of using ground floor as cattle sheds and workshops and using first floor has ecological significance too. The ground floor serves as the air cushions, thus, not only saving the room temperature to come down from the outside influence but also contributes to the warmth which emerges from the workshop hearth and cattle's body temperature. Besides, it also saves cattle from extremely chilling and dry winds. Moreover, the sense of hygiene also drives people to use first floor as their living room.

Flat roofed houses are one peculiarity of Kinnaur. In times of snowfall, people manually clear accumulated snow from their roofs of their houses. Houses in Hangrang Valley stores bushes on the roofs to protect wooden planks of house beams from the desiccating effect of strong sunrays and to some level this practice keep the cold out. The necessity to store and preserve the scarce-fire wood for winter months is another dimension of this practice.

In general, Kinnauri houses are flat-roofed at about two meters height. However, most of the modern houses have sloppy roofs. Main beams of the roof of houses occupy a significant space in Kinnauri psyche, as any other position of beam apart from the near paralleled position to boundary of the main door is believed to bring bad omen for inmates. The wooden planks of the flat-roofed houses are covered with birch *(bhojpatra)* tree bark and overlaid with earth. Floors of houses in lower Kinnaur are wooden while in upper Kinnaur it is plastered with mud and cow-dung.

Throughout Kinnaur, the selection of site is done with religious approval. Older houses do not have a separate bathroom. *Kimsu* the family God is kept in a cornice of main room in every Kinnauri house. In winter, the severe cold condition forces people to confine themselves in the ground floor or retire to the inner apartment of first floor. But as summer sets in, people spread out even to second floor (byoling).

Gorasang (house warming function) is similar to *grahapravesh* of other regions. At this occasion *Kimshu* the household deity and *Deshand Kulaj the* Village deity) are worshiped. In earlier times every care was taken to appease mason and numerous gifts used to be given to him as his displeasure signified the curse for the house and the household. But in the light of modernity this custom is in shambles.

III.7 (a) Death Customs

As the trade and wealth of Kinnaur increased and people came in greater contact with other parts of the country, they are abandoning some their old customs and inculcating new one too. Some of the customs that are deep rooted and still practiced as it used to be. Among these customs are those related to death. Cremation (*phukairt*) of dead body is the most prevalent death custom of Kinnaur. However, dead children upto an age of two years are buried while the bodies of children between the age group of 2 to 5 years are drowned in river (*dubant*). Previously the practice of *bhukhant* that is eating by vulture and other birds was practiced in Hangrang. In case of death due to small pox or leprosy, dead body is either buried or drowned into river.

Generally, a dying person is laid on the floor and *panchratna* the alloy of gold, silver, copper, brass and iron is placed in her/his mouth. The place of death is purified by besmearing it with cow dung or by keeping soil of a sacred site under the bed. A Lama or a Hindu priest is called to recite mantras to pray for the eternal peace of the departed soul and to purify the place of death. Thereafter, the body is given a warm-water bath. A brass lamp with mustard oil is lit to burn incessantly for seven days.

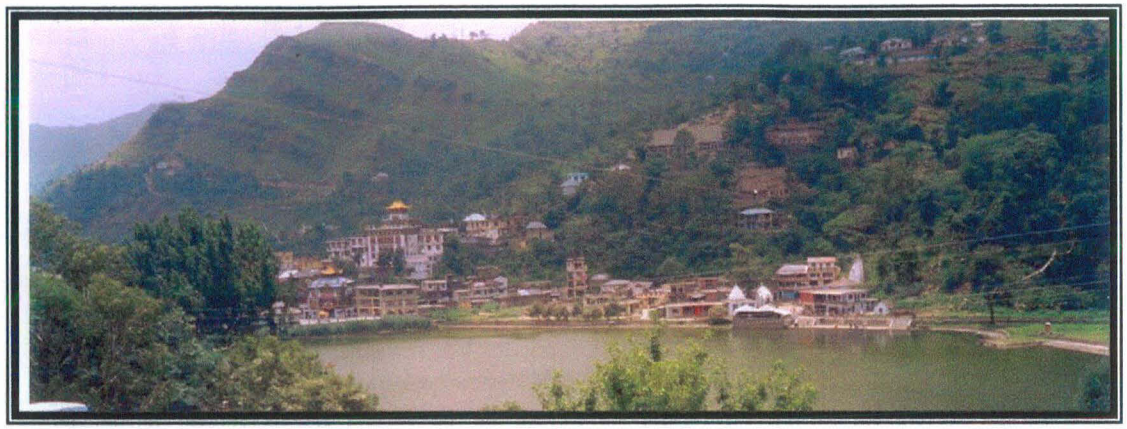


Plate III.2a Rewalsar lake in Mandi- One of the holiest pilgrimage center for the Kinnaurese.

Plate III.2b A Kinnauri offering food to fishes. It is believed that food offered to fishes reach their forefathers.

Usually, at least one male member goes for the funeral and helps in arranging wood for the pyre. People carry some musical instrument in the funeral procession and play sad-tunes. A close relative who leads the procession carries an urn with coals etc.. Barley and loose change of money are scattered at frequent interval in the procession with a belief that it is being offered to the departed soul. A *Koli* with an axe and *Kail*/neoza pine torchwood accompanies the general procession. Such a man is called a *Binanes.*

Son and close relative put few drops of honey and water in the deceased mouth and all in the procession pay their last respect to the deceased by kissing or putting their heads on the deceased feet. After that the person who is to lit the pyre near the neck take a few turn around the pyre and puts the torch to the pyre. Most of the villagers leave while the body is still burning; however, close relatives wait till it is burnt completely.

The ashes are immersed either in the holy Ganges, or taken to Rewalsar Lake of Mandi or poured in the Satlej itself. However the first two places are preferred. [Plate III.2 & III.2a]. Until the ashes are not immersed a lamp is kept burning besides the urn of ashes. Relatives shave off their heads as a mark of mourning and grief of separation from the deceased. Garlic onions, non-vegetarian as well as oily food is avoided for twelve days in the family and on thirteenth day a feast for all the villagers is organized where everybody pray once again for the eternal peace of the deceased just before their meal. This is known as *Kolyashinamg.*

III.7 (b) Birth Customs

Period of pregnancy is not considered as abnormal period, a would-be a Kinnauri mother lives a normal life and attends all her daily chores except taxing works that can have adverse effect on the foetus. However, the main period of precaution in Kinnaur during pregnancy is just last two months. An expectant mother is not allowed to gaze a lunar or solar eclipse, as there is fallacy that due to this the child in the womb becomes mentally or physically challenged.

Delivery takes place in any room but the main living room. Delivery is facilitated by *spi* (midwife). However, more and more help of medical facilities are taken these days. As the climate is very cold and dry, hot ghee is served to mother right after the birth to fight off the desiccation. Water is sterilized by boiling with hill fruits and made luke-warm to bathe baby and mother both.

As child birth is considered ritually unclean, the family members along with the new mother are not allowed to the place of worship. This is called *begnang.* If someone happens to enter such places, he is served *Cheema* that is a type of fine where the concerned person has to offer a male-goat to the village deity. The birth-pollution that is known as Sekhor is till seven to fifteen days.

A lama performs purification ritual on seventh day when the whole house is besmeared with cow's urine and sprinkling water of the Ganges. Not only the household but the whole *Khandan* is purified. This is the first day when mother and infant are brought under direct sunlight time after the delivery. Midwife cuts placenta, puts it in a vessel and buries it in forest and keeps stones over it so that it is out of the eyes of evil spirits and animals' reach.

After the *Sekhor,* relatives and acquaintances come to bless the child. As a mark of good wishes and gift they give ghee, flour, rice and other food articles. However, the offerings are accepted from the members of the same caste only. The household also organize feast to mark their joy when they generally invite all their acquaintances for blessing the child. At this occasion also guests bring some gift but now it is mostly other articles then foodstuffs.

In upper Kinnaur, a Lama is called on the third day after birth when he purifies (sang) the family. On seventh day *nawang* is performed where Lama reads out scripture and a feast is organized. Well-off families perform *bangri* that is infact *newang* on grand scale. In the upper Kinnaur itself, *Khaskis*, *bedhai* and *bose* are other ceremonies, which are associated with childbirth. *Khaskis* observed on the fifteenth day of the birth where all acquaintances are invited for the big feast.

In *Bedhai,* musical instruments are worshipped with the offerings of wheat/barely and wine. In this *Chamangs* and *Domangs* congratulates the family *Bedhai* is held on *Chait Sankranti* which is the first month of a year. *Bose* is observed when child is between one to three years of age. Bose is a function in which village deity is invited to bless the child.

Communal Life

III.8 Dances

Community dances occupy a special place in Kinnauri society and there is no occasion of festivity that is celebrated without community dancing. The women dance, sing songs of both old and contemporary local legends entwined to simple and soothing melodies. As community life is quite important every temple has its own courtyard that is mostly circular. It is in this courtyard that most of the dances are performed not just in joyous and gay mood but also with the mark of dedication to the local deity. As the dancer perform with slow and rhythmic steps and entwined arms, musicians who are *Harijans* attend with their drums, wind instruments and Cymbals.

According to the movements of steps, style of holding hands, variations in songs and types of music accompanying the dances, Kinnauri dances have been categorized into two groups

(a) Kayang

(b) Bonyungchchashimig.

Kayang is further sub-divided. In Nesang village, there are six sub-classes of *Kayang.* These are – *Debarkayang, Pulashon, Somatielang, tegsowang, bangpasshimig* and *thumgru*[23].

III.9 Festivals

Since festivals are the great occasion for amusement and recreation. It occupies significant place in rural life. This is more so because rural folks have

very limited avenues for their entertainment and pastime. A festival is a day or couple of days when religious observances are publicly performed. Almost all the festivals of rural areas have a religious origin. Such celebrations have a strong degree of proximity to rhythm of agriculture such as seeding time and harvest time; spring and autumn; thus, indirectly it is governed by the whether cycle of the area. Therefore, it can be said that natural forces govern the timings of festivals. As the climate in a mountainous region performs a rather deterministic role, there are many festivals where religious offerings are performed in order to get rid of natural calamities, disease, death, insecurity of food and wealth etc. If festivals of Kinnaur are observed closely, they contain a rhythm that speaks of a marked influence of predominance of agriculture in Kinnauri economy.

III.10 (a) Marriage

In Kinnauri society, marriage is required to meet the Biological, socio-religious necessities. Till not long ago, marriages used to happen with an added dimension i.e., for the realization of ecological economic –balance.

Earlier Kinnauri society was 'closed' and 'isolated'. Since the carrying capacity was quite limited in the want of better technology and communication lime, to keep the population growth under check was quite important. Therefore, Kinnaurese for ages remained customarily polyandrous because polyandry served as the potent tool of population control and a measure against excessive fragmentation and division of landholdings as well as other properties. However, the establishment of the line communication arteries that is the harbinger of development increased carrying capacity of the areas as well as the cross-cultural currents between Kinnaur and rest of India. Thus, monogamy crept into Kinnaur and precipitated so deep into the Kinnauri society that monogamy has almost completely rooted out the practice of polyandry.

Now the prevalent types of marriage in Kinnaur are-

(a) *Zanekang/Zanchang* – marriage settlement by negotiation.

(b) *Dubdub/Darosh* – marriage by elopement of a virgin.

(c) *Haari/Khuchis* – marriage by elopement of married women.

(d) *Bennang* – Love marriage.

In all the above four types of marriages, negotiations starts from the bridegroom's side. On an average, the girls' age at marriage is 17 to 24 years. Each ethnic group is endogamous; however, such groups practice exogamy at *Khandan* level and village level. Exogamous marriages are generally confined to villages within same valley.

Contrary to the dowry system of North Indian plains, marriages in Kinnaur have system of bride price. *Barni* and *Izzet* are the bride prices associated with *Zanakang* and *Dubdub* type of marriages respectively. However, *izzet* money charged is usually more than the *Barni* and such money is usually not utilized for the same purpose as *Barni* money is utilized viz., for gifts and marriage expenditures, whereas *izzet* money is retained by the bride's people by way of compensation.

Zanakang is the normal ritualistic arrange marriage. Such types of marriages have been named *zanakang* in western and central Kinnaur while the same named *phaglin* or *Raiya* in eastern Kinnaur. This is the most prevalent form of marriage and socially most accepted one too. The first approach to the would-be bride's house is with a bottle of *Ghanti*[a] with butter on top of it; a *khatak*[b] and some customary money offered to the girl's father or guardian. Here the initiation of marriage negotiation is from perspective groom side. Such process is started either by the father of the groom himself or by maternal uncle or by paternal anty's husband. As Kinnaurese are very religious, it is needless to say that important works are not pursued without approval from *kimshoo*[c]. *Bishtu*[d] are the persons other than the groom's father who goes for marriage negotiations. Lineage, status and *Barni* are main issues in the negotiations where the *Bishtu* helps the concerned

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[a] *Ghanti* is the local brew.

[b] *Khatak:* Kinnauri word for a piece of cloth

[c] *Kimshoo/kimshu*: A Kinnauri word for household or family deity.

[d] *Bishtu:* A go-between marriage negotiator.

parties to arrive at a common ground. After mutual agreement, marriage date is fixed with approval/consent of village deity.

After marriage, if a woman breaks free of the wedlock and marries someone else, new husband or the girl's family members have to pay double the amount of *Barni* to her previous husband and this money is called *Haari reet*. Such form of marriages is known as *Haari*. After accepting the *haari/reet* money, first husband looses all claims over former wife.

Dubdub – elopement of a virgin is second most acceptable marriage type in Kinnaur. In such types of marriages girls also have some degree of consent. However, girl's father and brothers show resentment and tries to get their daughter/sister back. But after negotiations and settlement for *izzet* money, they give their approval. *Dubdub* is performed with the knowledge of girl's family members too because it helps to cut down the expenses on *Zanakang* type of marriage where whole village, relatives and acquaintances are invited. In case, the *dubdub* is without knowledge of girl's family, heavy compensation is slapped as *izzet* money on the groom.

Harri is another form of marriage that is not frequent but such marriages are also socially approved. In this type of marriages a married women elopes with her paramour and marries him. Then the first husband is informed about this marriage. With no other alternatives, the pervious husband comes forward for *Haari* or *Reet* settlement that is a type of compensation for his lost honour. In *haari* the new husband or the woman's family members pays money to her first husband; this amount is more than the actual amount of what he incurred in his marriage and its associated rituals. Settlement of *haari / reet* marks the formal end of the marriage contract with the first husband.

In Hangrang tehsil that falls in the upper Kinnaur, marriage rituals are very different from other parts of Kinnaur. *Rehja* is the term, which is used for marriages here. A *rehja* give an opportunity for bargaining by parents of the respective parties. Here the negotiation used to be settled when the bride and groom are still very young. Nevertheless, recent decades have seen the respect of

marriageable age by many parents. Apart from this, sorority is also permissible in Kinnaur, where a man can marry his wife's sister. But this practice is not frequent.

III.10 (b) Divorce

In Kinnauri society, divorce is permitted in all caste. If a woman is not happy with her husband, her parents approach for divorce on her part. Like numerous simple ritual of Kinnaurese, the divorce process is simple too. On a pre decided day, parents of both the parties sit for the divorce negotiation where they settle accounts of utensils, ornaments, cash and other gifts given to the woman by her parents and other relatives at the time of marriage. After securing return of all these articles, a twig is placed between the couple, which they break. This is symbolic of breaking of their marriage alliance. In Kinnauri society, widow remarriage is permissible too.

Makpa system is another form of marriage in which groom shifts to his in-laws house because his parents-in-law does not have any male issue. Thus, the son-in-law (*makpa*) looks after his parents-in-law and their household. This system is rather common in Kinnaur.

Environmental conditions casts it's direct and indirect effect on the system of marriage too. The institution of marriage and the related customs as well as sexual morality have long been under direct influence of nature. As the severely limiting climatic conditions require an urgent and continuous effort for population control and division of labour for joint effort at family level which is for complex set of occupations such as cultivation sheep and goat herding, trade etc., people practiced fraternal polyandry till a recent time. The efficient communication facilities which Kinnaur lacked for ages, equipped people with better technologies; thus, helping Kinnaurese to unlock many opportunities for themselves. Consequently, it released people from the complete control of joint efforts at family level in the economic pursuits. The changing pattern of economy of recent decades and the greater cultural interaction with other parts of the country, gave the greater latitude to people. Thus, Kinnaurese moved away from their age-old polyandry system of marriage and preferred monogamy.

Plate III.3 A lama at Bre-Lingi village is preparing statues of Hindu deities besides Buddhist characters before his prayers.

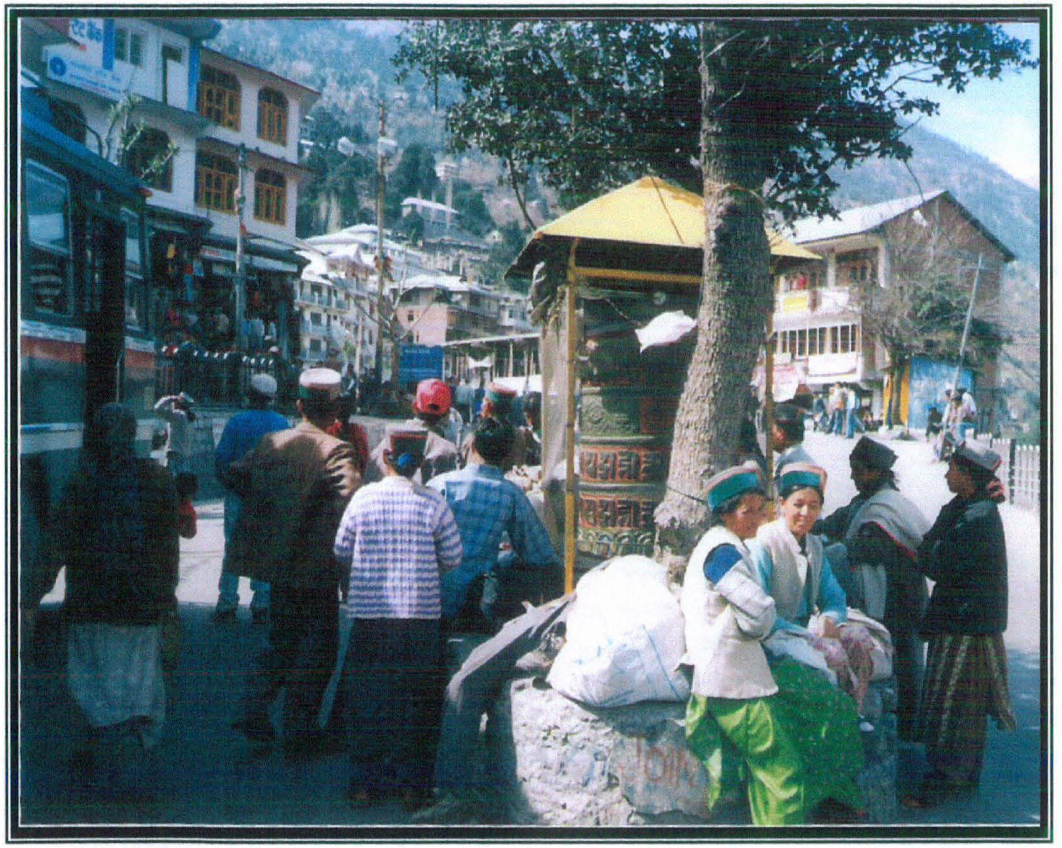

Plate III.4 Religion is the prominent aspect in Kinnaurese lives as the Kaal-Chakra at the Reckong-Peo chowk reflects.

Pilgrimage:

Kinnaurese used to go to Mansarovar and Kailash in Tibet. However, the sealing-off of the boarder sealed-off the pilgrimage to the place also. Riwalsar Lake in Mandi district is another place where Kinnauri pilgrims have been visiting since remote past. Rangrito enroute Roldang Kailash is the sacred place of pilgrimages within the district.

III.11 Religion:

Religion is a type of social organization. It is personalized, social expression of an individual's religious identity that leads to significant behavioural patterns. The traits and attitude embraced by different religious groups reveal that ideology is a deciding force in social behaviour. It is under the light of religious faith people make their social interaction mode.

Mythological sources suggest that Kinnaurese worshiped *Kuber* and *Indra* and Krishna. However, the field observation shows that Kinnaur is a place of co-existence of Hinduism with its local hue and Buddhism of Mahayanist type i.e. monastic Buddhism of Tibetan type as well as amalgamation of the two (Plate III.3 & III.4).

People of southern part i.e. lower Kinnaur follow Hinduism whereas the northern or upper Kinnaur have dominance of Buddhism and the middle part of district has the mixture of the two religions.

It is difficult to say which of the two religions, Hinduism and Buddhism existed first in Kinnaur but it may be probable that in spite of the presence of Hinduism in this region, the dominance of Buddhism was as undeniable fact[24]. "Although the kunawarese were, about 150 years back, recognized as Hindoos by descent an general profession; they, generally, followed Lama religion (Frazer, 1820: 256-57)"[25].

Hinduism is Kinnaur is basically due to the profession and spread of Hinduism by the King of Bushahr state. Though these Kings were at no point of

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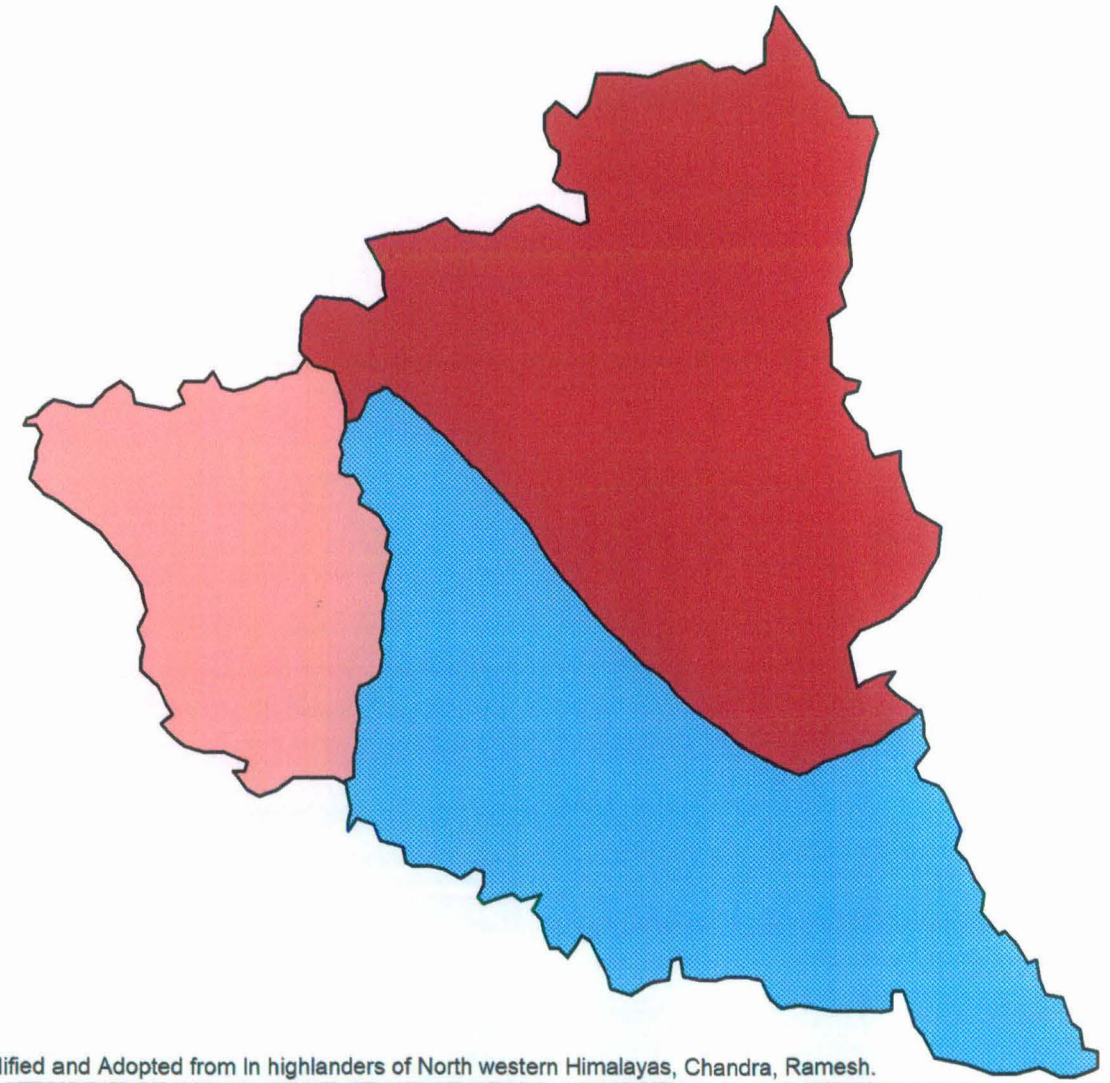


LEGENDS

- Mixed (buddhism + hinduism)
- Hinduism
- Buddhism

Source: Modified and Adopted from In highlanders of North western Himalayas, Chandra, Ramesh.

time antagonistic to Buddhism their patronage to Hinduism saw the diffusion of Hinduism in Kinnaur as previously a good part of the district was under the erstwhile Bushahr state. Buddhism is supposed to enter Kinnaur with Buddhist missionaries who visited western part of Himalayas and Tibet.

The location of the district is another factor that is responsible for the co-existence of the two religions. Since the district boarders with the northeastern part of Tibet, it has the influence of Tibetan culture also. Thus, upper Kinnaur professed Lamaistic Buddhism while its southwestern part boarders Shimla district that has dominance of Hinduism, Nichar (Lower Kinnaur) sub-division has majority Hindu populace. Middle Kinnaur serves as the melting pot as it lies under the influence zone of the upper and lower Kinnaur.

III.11 (a) Buddhism:

Nyingmapa and *Dukpa* are the two major sects of Buddhism in Kinnaur. *Gelukpa* is another minor sect of Buddhism. Lamas in Kinnaur belong to all the above three sects. However, the *Gelukpa* sect held supreme on account of their representative head at *Teshu-lumbu* as the sect present at Lhasa is same. The representatives of *Gelukpa* sect wear yellow dress and caps. The followers of *Dukpa* sect are dressed indifferently but wear their distinct red cap. *Nyingmapa* have the same dressing pattern or even remain bareheaded. Members of *Gelukpa* and *Dukpa* do not marry, however, there is no such restriction on devotees in *Nyingmapa* sect.

Like many other regions Kinnaur too has imparted its own colour to Buddhism prevalent there. In many Buddhist villages, a landmark in the form *Kankani* or village gate strikes people's attention. Such gate is not only the mark of end of village boundary but also imparts psychological security, as the commonplace trust is that a *Kankani* does not allow evil spirits to come inside the village. As one enters inside a village gate, there is *mane*. A mane is an uncemented tomb or platform of loose-stones. It is a custom to pass these *manes* while ensuring that it lies on one's right side.

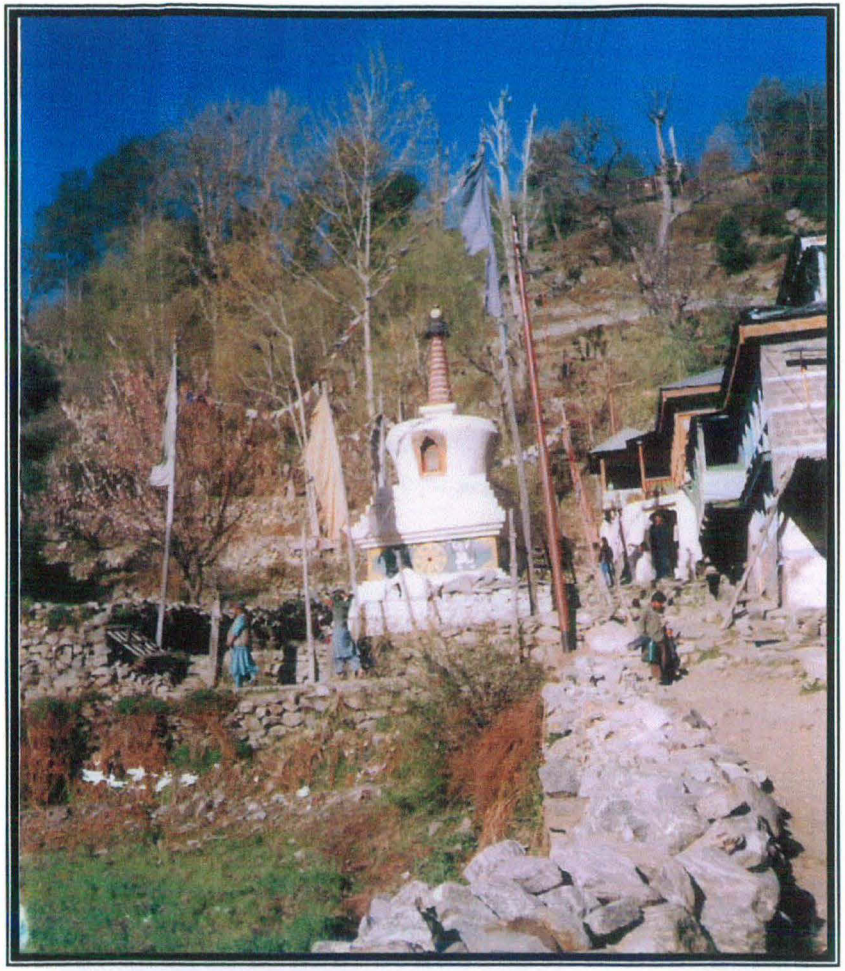


Plate III.5 A Chhokten built at western end of Kothi village. It is believed to ward off evil spirits and natural disasters.

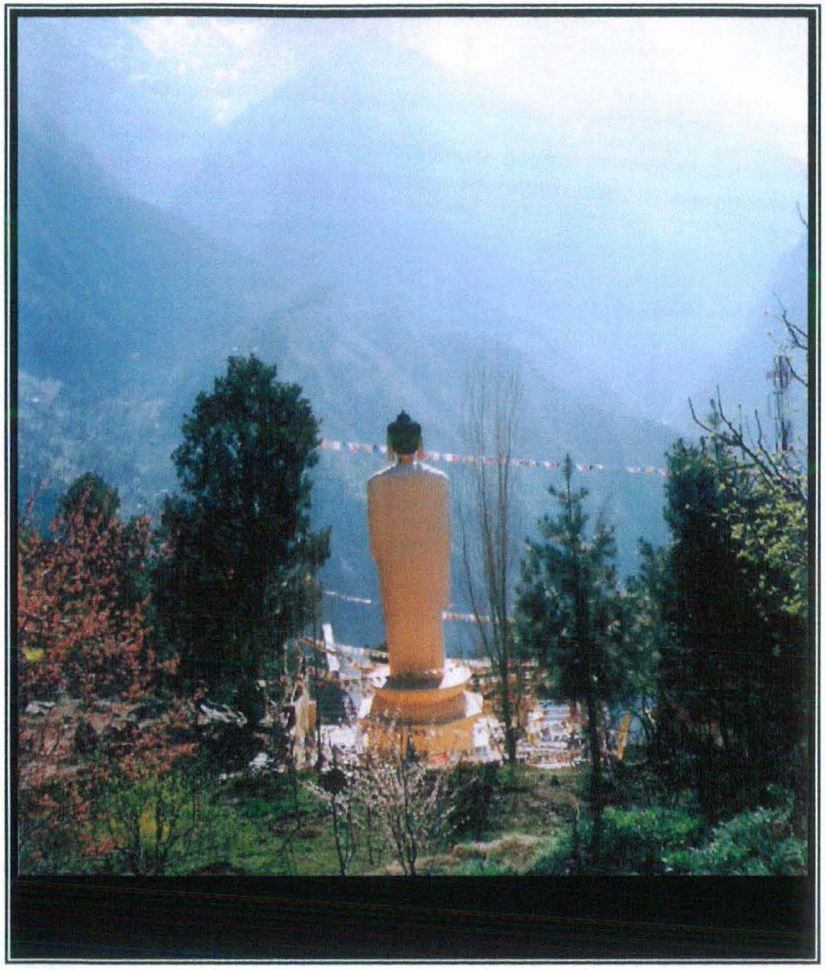


Plate III.6 Gaint of statue of Buddha overlooking monastery and settlements at Khunu Negi Ribboddhe education institute at Bre-Lingi village.

A *chhorten/chhokten/chosten/Riksmgonbo* is another important religious structure that resembles Stupa of Indian Buddhism initiated by Ashoka. Originally, the tern *Chhokten* stands for the place of worship; however, in society of Kinnaur, it plays some more functions. Kinnauras hold that *Chhokten* (Plate III.5) possess some tantric and magical powers which drives away all evil spirit of malevolent nature and associated ill effect. This belief is so strong among Kinnaurese, that they erect small *chhoktens* on top of their houses and big ones in all the four directions at the territorial limits of their villages. *Dongthin* is a type of *Chhokten* that contain ashes of a reputed Lama. Thus, *Dongthin* is a Buddhist shrine of higher importance than a *Chhokten.*

Boys and girls who don't marry, goes to monastery and nunneries respectively too learn Tibetan scriptures. Such boys become Lama and girls *Zomos/Jomos*. Lamas are either *gyolang* (celibate) or *durpu* (who marry but never shave the head). *Zomos* either do not marry or remain in the nunneries till they do not get a suitable match. This institution is in line with the problem of limited carrying capacity that is severely restricted by the harsh climatic conditions. Thus, monasteries and nunneries have been taking care of surplus members of family units.

III.11 (b) Hinduism :

Hinduism is present in lower and central Kinnaur. The influence of Hinduism is present even in Poo sub-division and Hangrang valley. The chief feature of Hinduism is the numerous God and Goddess and their hierarchical status according to administrative geographic boundaries of former Bushahr State. The deities concerned have control over population living in the influence zone of a deity. Therefore, starting from trade, migration of herds to celebration of ceremonies such as marriage birth etc. nothing is done without the prior consent of the concerned deity. The *Kimshu* is the household deity. Village deity has influence over the whole village *Ghori* is the combination of few villages which have their own deity. *Khunt* is the administrative unit of earstwhile Bushahr State and is consist of various *Ghoris* . The *Khunt* has its own presiding deity. Chandika

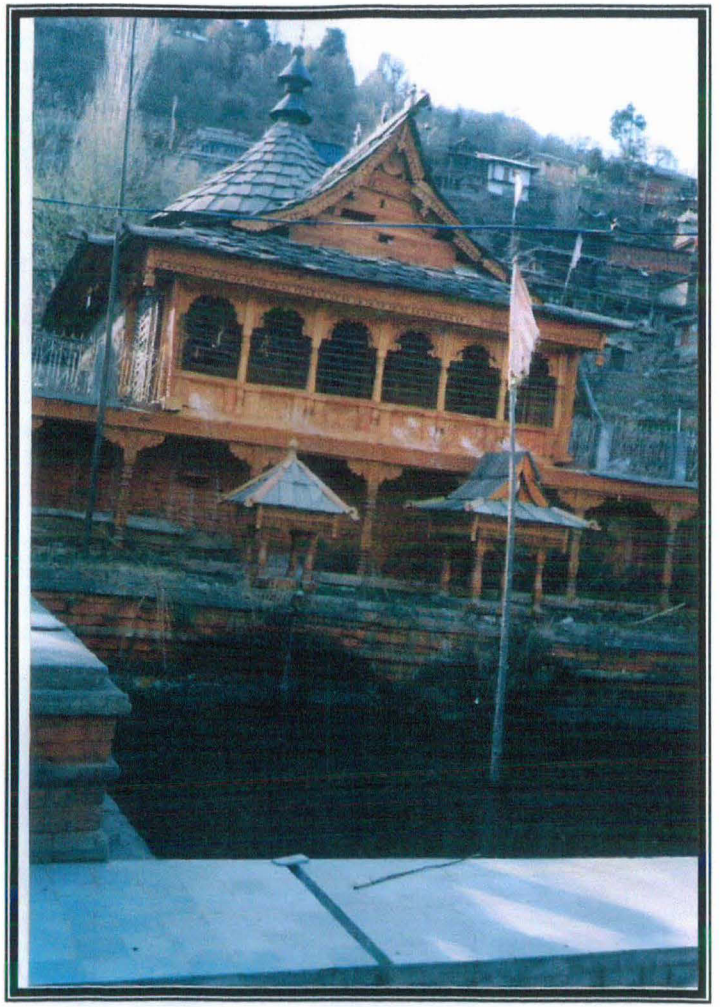


Plate III.7 Temple of supreme deity of Kinnaur- Devi Chandika. Pond in front of the temple is believed to be the gift of Pandavas to the people of Kinnaur.

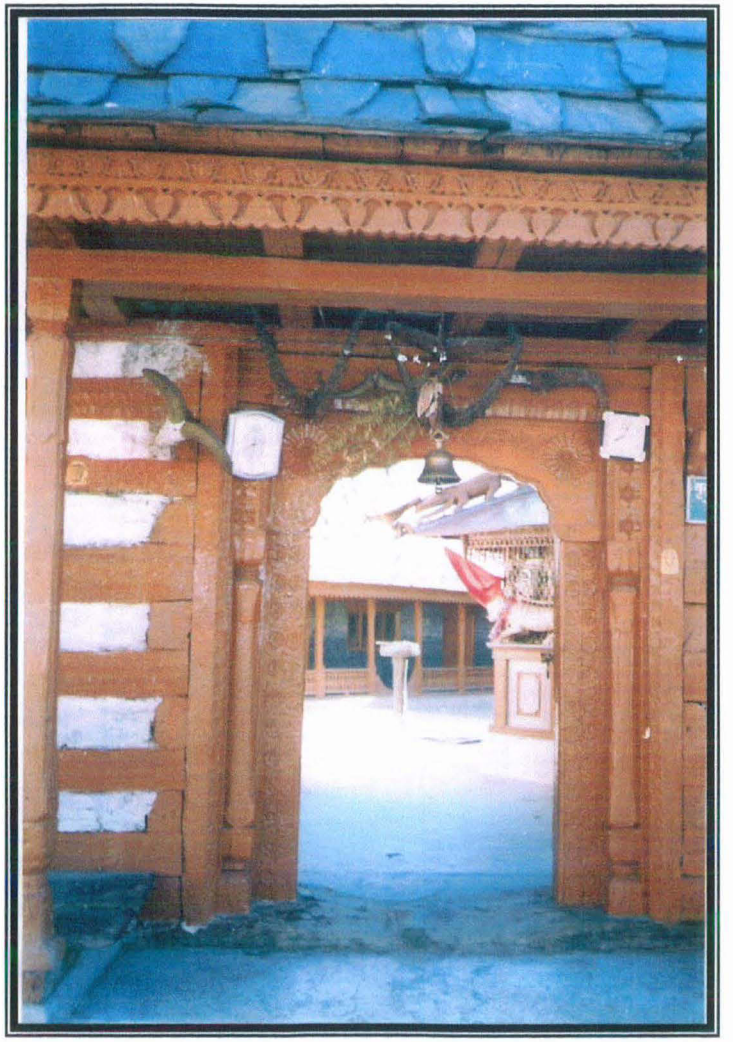


Plate III.7a Entrance of Durga temple at Kothi village. Kinnaurese hang horns at temples and houses entrance as they trust it to possess some mysterious power. Note the proficiency of the people at wood carving.

is the chief deity of Kinnaur and is established at village Kothi at Kalpa (see photograph).

Brahmanism has been absent from the district due to great stress on resources owing to the hostile conditions. However, the brahmincial practices infiltrated into villages of Kinnaur because people attached divinity to aristocracy of Bushahr State who were originally from plains. Raja's religious functionaries were Brahmins but his entire staff was from Kinnaur and in course of time people began to imitate and practice brahminical traditions[26]. Of course, Christianity is absent in Kinnaur, it deserve to be taken up because previously the district has witnessed some missionary works of Kotgarh Mission, Church Missionary society and Moravian mission at Poo and Chini etc. These missionaries were able to baptize only a handful of Kinnaurese who soon reverted back to their original faith. Though these missions could not achieve their desired result but they did two noteworthy things in Kinnaur. First is the opening up of schools and second is the introduction of handloom from Europe.

Harsh climate and difficult terrain has made Kinnaurese religious, fearful of natural forces and superstitious. Kinnaurese maintain that inaccessible places are associated with spirits and supernatural powers. As per the general belief in Kinnaur, hilltops are the abode of Goddesses Durga and Kali etc. People usually hang the horns of domestic or wild animals on the main entrance of their homes or temples (see photographs). They are of the view that these horns possess some mysterious power, which keeps away evil sprits and brings good omen. A journey around Kinner-Kailsh commands a great reverence (see photograph, Kinnaurese believes that circumambulation around Kinner-Kailash fulfills all wishes).

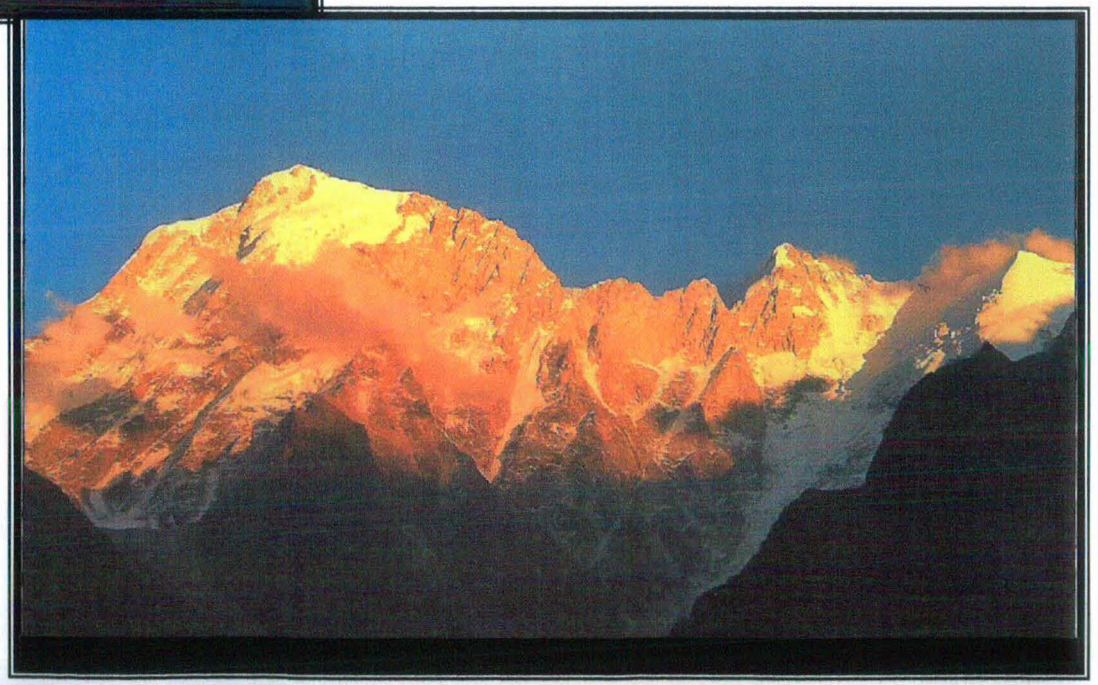
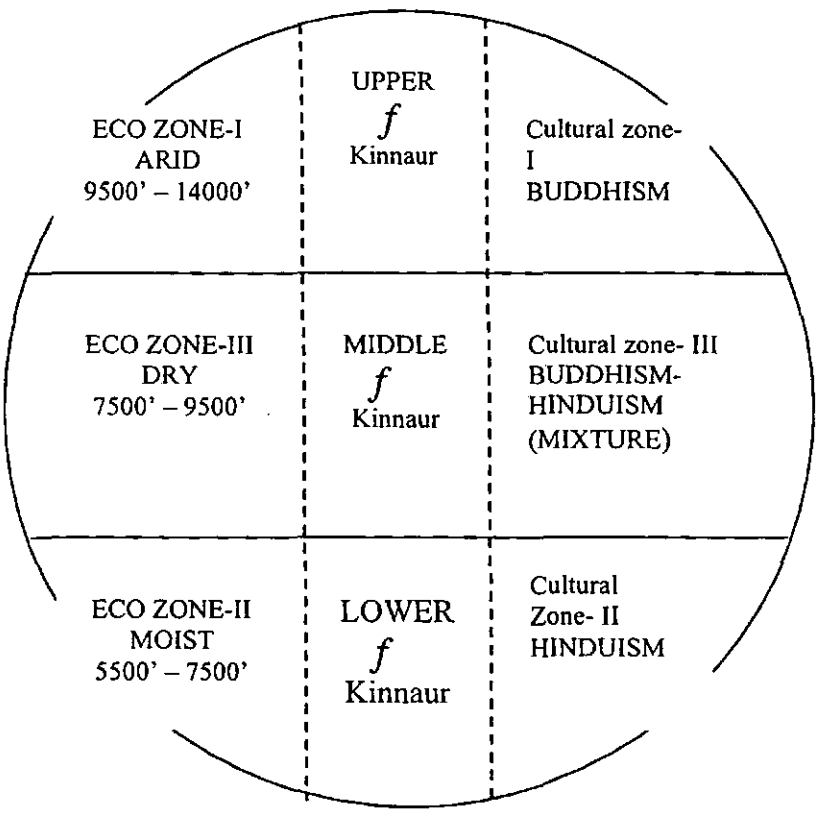


Plate III.8 Mount Kinner Kailash. Kinnaurese believe that circumambulation around Kinner Kailash fulfills all wishes.

Model 3.1

Interface of ecological zones the cultural zones.



Source: Raha: Economic, strategies, Religious Dualism etc.

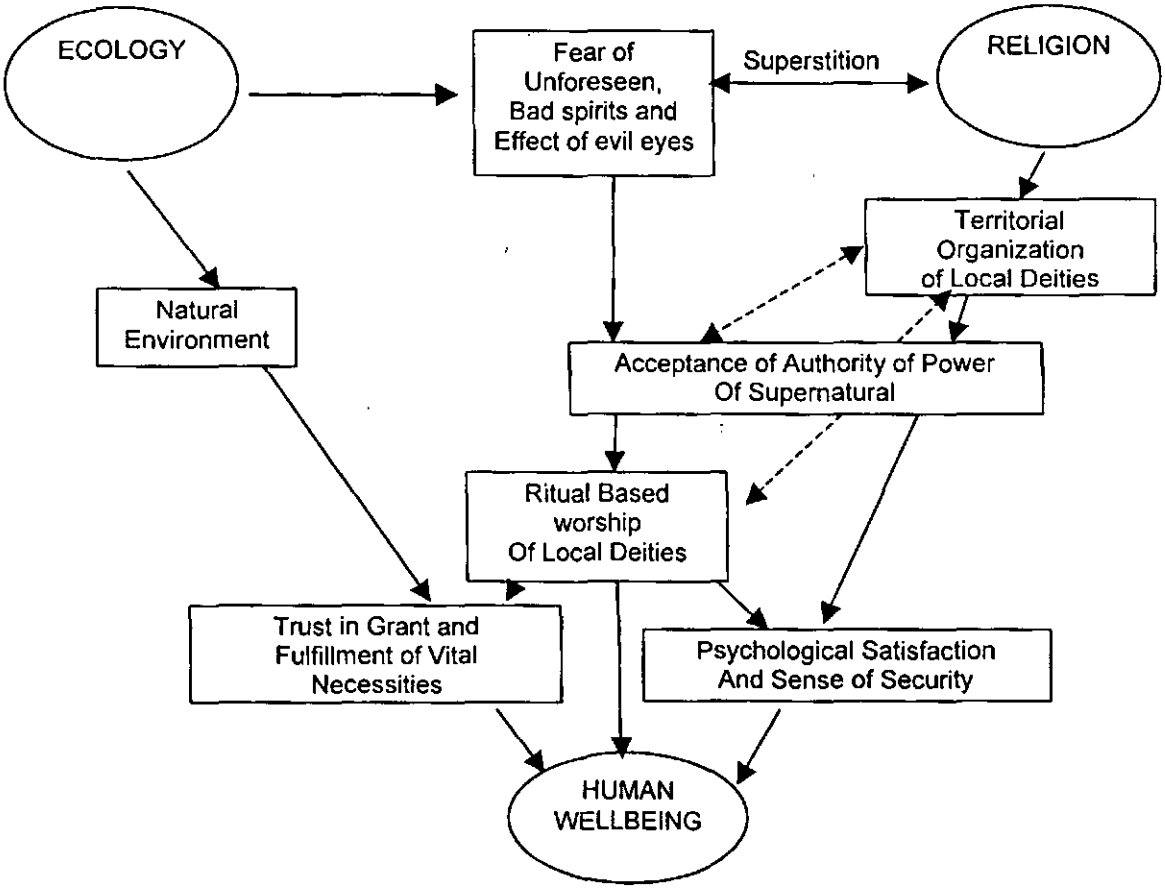
Buddhism is dominant in the cold-arid zone while moist zone has Hinduism as predominant religion. The dry zone has influence of both the religions. The area that have similar cold arid conditions like Tibet, embraced similar religion, which is Lamaistic Buddhism. It is because this form of religion has been evolved in harsh climatic conditions that were in response to the nature's subjectivities. Lamaistic Bhuddhism suited the people of upper Kinnaur as it imparted the inherent traditional technology to adjust in that type of environment. Thus, it can be maintained that religion and environment has a strong relationship. Lower Kinnaur does not have as hostile environmental conditions as upper Kinnaur and have greater influence of the nearby societies. In this zone individual takes the

center stage. As regions and zones have transition boundaries, mixing up of Bhuddhist and Hindu religious influence in the middle Kinnaur is but natural.

The life of a Kinnauri is interwoven around religion because "the harder is the living conditions the greater will be the faith in religion"[27]. As Kinnaurese with her/his passing age surrenders more and more to the might of environmental Condition, he/she becomes increasingly fearful of nature and natural processes and its products. Thus, Kinnaurese accept the authority of supernatural power and pins their greater belief in religion. This aspect has been summarized in the following model: -

Model 3.2

Interface between Ecology, Religion and Human-Beings



The Kinnauri traditions are not pluralistic rather bi-religious and of multicults. (A list of Cults in Kinnaur is given in the appendix). The two religious groups Buddhism and Hinduism do not coexist in shared social space due to accident of history rather these two religious entities co-existence is the product of an evolutionary history. This has contributed immensely to the emergence of related and rather similar identities, which have their common roots in the indigenous traditions dressing pattern, food habits language ethnicity etc. and the rather deterministic climatic conditions.

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Chapter-IV

Population and Change

Population in a region reflects in many ways the natural environment and resource base. As human beings have brought many changes over Earth surface, thus population parameters become important aspects of the present study. To fully comprehend the demographic personality as well as the totality of aerial factors, it is desirable that a synthesis of population attributes be attempted and regionalization arrived at, since the regional treatment is the focal concept of all geographic work[1].

Resource potential and climatic conditions influence the dynamics of population. These factors can make an area both attractive as well as unconducive for human beings. Areas having favourable environment and good resource base are generally densely populated. As against this, regions with harsh climate make the living difficult and have inadequate economic development harbours sparse population. Kinnaur is one such region of the country where the population density is low due to extreme cold and dry-arid conditions and inadequate resource endowment as well as its development. The natural environmental conditions determine land utilizations not only for economic pursuits but also for the way of living. People employ their traditional knowledge to select places that are suitable to human habitability and their perpetuation.

Previous chapter reflects that culture of Kinnaur is simple and closely attuned to the harsh climatic conditions and difficult topography of the area. These natural factors have so far been the prime cause for isolation and resultant insufficient development. The concentration of human settlements clearly indicates that the gradual process of peopling is confined to areas that have gentle slope, relatively flat land suitable for agriculture and other allied activities. Most of the Kinnaur is water stressed due to scanty precipitation. Therefore, the gentler slope, resultant flat land and suitable climatic conditions for cultivation, but also the

water resources influence settlement pattern and population distribution. The relatively lower and flatter land of river valleys, the water resources and the implementations of development programmes have influence population distribution in Kinnaur. The pursuance of planned development policies have given rise to some more economic latitudes to the people of Kinnaur as well as some new dimensions to the population. Establishment of number of government offices, implementation of development projects such as the National Satlej Water Project and deployment of scores of ITBP, Military and Paramilitary personnel have struck a definite change in the demographic personality of the district. A number of government offices have been established in different valleys of Kinnaur, resulting in coming in of many government employees. Establishment of these offices generated the need of office buildings and approach roads, thus, creating job opportunities for labourers in construction works. Consequently, people were attracted towards these construction sites leading to the increased growth rate of settlements near construction sites and along roads. As most of the government officials, project personnel and People in services are educated male; the changes in literacy rate and sex-ratio both are evident.

Table IV.1

Important Figures-2001

SUBJECT	TOTAL VILLAGE
No. of Villages	662
Total Area	623742
Total Population	78337
Population Density	12
Sex-Ratio	884
Literacy Rate	75.27
Male	30564
Female	20499
Inhabited Villages	234
Uninhabited villages	428

Source: Primary Census Abstract, Kinnaur.Census of India. Shimla, H.P

IV.1 Population Distribution:

Suitability of climatic conditions for humans and its facilitation for setting and practicing economic activities for their survival, determine the habitability of a region, population size and its distribution pattern.

The difficult living conditions of Kinnaur restricted the population size to 78337 persons in 2001, which constituted 1.27 percent of the total population of the state. The adverse role of harsh climate and undulating terrain is highlighted by the fact that Kinnaur is the second most thinly populated districted of Himachal Pradesh with a population density of 12 persons per square kilometers against the state average of 109 persons per sq.km. Agriculture and allied activities are the main source of livelihood in Kinnaur. Next is the government services, trade, construction work etc. Settlements and agricultural land is found in lower areas with relatively flatter land. River valleys are lower in altitude and are with relatively gentler slopes, settlements have sprung-up along the river channels and most of the remaining area of the district is uninhabited with semi-arid and cold desert like conditions.

Majority of villages are situated almost along the older Hindustan-Tibet Road and the new National Highway-22 is a little away from many of the villages. The villages of Kinnaur can be categorized into three types-

- Villages around a temple .e.g: Kothi, Rogi, Chirgaon, Sungra etc.
- Villages around a monastery. Such villages are basically in the semiarid regions of Kinnaur e.g.: Namgia, Sunam, Labrang, Kanam, Lippa, Sialkar etc.
- Villages around a trade center e.g.; Nichar, Kalpa, Pooh etc.

  Some of such villages have both a temple and a monastery. Examples of such villages are Sangla and Bre-Lingi etc. Some of the villages in upper Kinnaur also have both temple and monastery e.g: Chango, Pooh, Namgia, Kanam etc.

Table IV.2

Population distribution by villages -2001

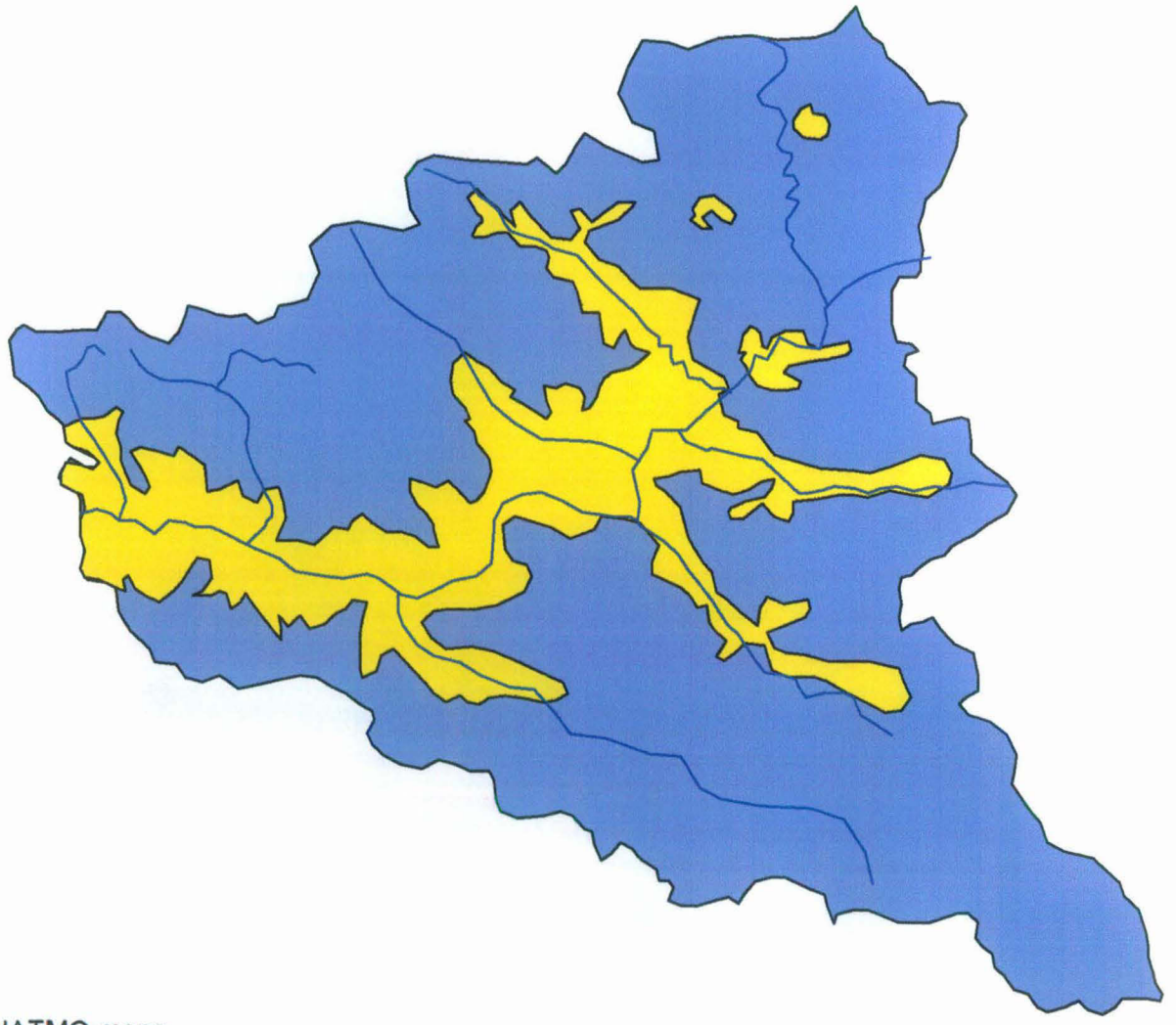
POPULATION	NO OF VILLAGES	PERCENT OF VILLAGES	CUMULATIVE %
Less than 50	61	26.1	26.1
51 to 100	20	8.5	34.6
101 to 200	33	14.1	48.7
201 to 300	22	9.4	58.1
301 to 400	23	9.8	67.9
401 to 500	21	9	76.9
501 to 1000	41	17.5	94.4
above 1001	13	5.6	100
Total	234	100	

Source: Computed from Primary census abstract (C.D), 2001, Series 9, Part XII-A & B, Himachal Pradesh.

Size wise distribution of villages shows maximum (Table IV.2) villages numbering 57 and 61 in1991 and 2001 respectively has population of less than 50 persons each. Thang-Karma lying in Zanskar Range is the smallest village in Hangrang sub-tehsil with six people. Up Mohal Foche with four people is the smallest village in the Poo tehsils and lies in Great Himalayan Range facing the Zanskar Range. Somodayan village with 3 persons is the smallest village of Morang tehsil. It lies in the cold- arid part of the Great Himalayan Range. With two inhabitants each the villages Panwa and Humzumkai are smallest in Kalpa Tehsil facing the Kinner-Kailash peak. D.P.S–72 (B) (45) and D.P.F-C (46) are two smallest villages in Nichar Tehsil with two persons each. These two villages lie in the Dhauladhar Range. In Sangla Tehsil Nagassaring is the smallest village with 2 persons in 2001 and is situated in Dhauladhar Range and faces Great Himalayan Range.

Ten villages of Kinnaur had population more than one thousand in 1991. Their number rose to thirteen, in 2001. None of these thirteen villages lie in the Zanskar Range. One such village Sungra with 3768 is located in the Dhauladhar Range and lies in Nichar Tehsils. Baring Poo village with 1057 person and Lippa-

KINNAUR
HABITABLE EXTENT



Source: NATMO maps

Khas village of Morang Tehsil with 1104 persons is located in the arid zone, rest are either in Kalpa, Sangla or Nichar Tehsils. These villages are situated in gentler sloping broader valleys. Villages of these Tehsils receive monsoonal rain apart from the unusual snowfall. These are located between the Dhauladhar Range the Great Himalayan Range. These villages are Yangpa, Dharmaling, Sungra, Punagkhas of Nichar Tehsil; Pangi, Khwangi, Kalpa, Rekong-peo and Kothi in Kalpa Tehsil; Sangla and Sapni-khas in Sangla Tehsil.

As stated earlier, largest proportion of villages had population less than fifty persons followed by villages with population ranging from 100 to 200 persons in 1991. As against this, villages with 500 to 1000 persons were the second most frequent group in 2001. Villages with less than 50 persons continued to be the most numerous group even in 2001. However, the groups of villages with 100 to 200 persons being 33 in number still formed a big group.

IV.2 Settlements

Settlement is the assemblage of persons settled more or less permanently in a locality. A settlement denotes the area of interaction of a given group of people and includes areas of residence and that for social and economic activities. Therefore, the idea of a settlement includes permanence, habitation and interaction.[2]. Site and situation are two important aspects of settlements. Site refers to the position on the ground with reference to physical conditions while situation encompass greater meaning which covers economy, culture and political importance of a place. Site of villages is the main factor affecting the growth of settlements rather than the situation because economy and morphology both are largely dependent on site. This becomes more so if the site happens to be in mountainous region like Kinnaur where the imprint of natural constraints is more visible on settlements.

Most settlements in Kinnaur follow the prime stream of the district – the Satlej and its tributaries (IV.1). Usually settlements are situated along the break points of southern and western slope. However, some settlements are sited at the confluence zone of streams and on relatively flat land of higher reaches. In the

Plate IV.1 Birds eye view of settlement at gentle sunfacing slope and overhanging valley of Satluj at Reckong-Peo.

valleys and other areas of gentler slopes where terraced agricultural fields are found, houses occupy an upper position in relation to the fields. Throughout Kinnaur settlements are formed of few small hamlets except the trade centers and tehsils/sub-tehsil headquarters such as Sangla, Nichar, Kalpa etc. Houses generally face the open side of the valleys and are built as separate units and almost never share common wall barring in some cases where a house has been divided into two.

IV.3 Population Growth

Growth of Population is to fertility, mortality and migration. Growth rates show greater changes in remote and isolated area like Kinnaur because the smaller change in population shows higher proportionate variation. Therefore, it becomes important to analyse the population growth rate of Kinnaur.

Table IV.3

Population Growth since 1901

YEAR	PERSONS	% DECADAL VARIATIONS
1901	27232	-
1911	28470	(+) 4.55
1921	28191	(-) 0.98
1931	30445	(+) 8.00
1941	33238	(+) 9.17
1951	34475	(+) 3.72
1961	40980	(+) 18.87
1971	49835	(+) 21.61
1981	59547	(+) 19.49
1991	71270	(+) 19.69
2001	78334	(+) 9.92

Source: Computed from District census handbook, Kinnaur, 1991; C.D of Primary census abstract, Himachal Pradesh, 2001.

Kinnaur has registered a gradual increase in population ever since 1901. However, it decreased marginally (0.98 Percent) owing to the spread of epidemics during 1911-21.

An overall look at the population data of Kinnaur suggests the growth of population to be rather slow in the first half of the previous century. It recorded an abrupt increase of 18.87 percent during 1951-61. The next decade (1961–71), registered a phenomenal increase of 21.61 percent which is the highest decadal population growth ever recorded for the district. This sharp increase in the population is probably due to the fact that the district was carved out in 1960. Indo-China border dispute of 1962 brought the district into strategic limelight. It resulted in opening up of the area and starting of many developmental activities. Consequently, a large number of departments were established. This was followed by momentum in developmental activities including the construction of National Highway–22. The combined effect of these necessitated in-migration of large number of construction workers and government officials. This created the opportunities for influx of male workers from surrounding areas who were engaged in support services. From 1981 onwards Kinnaur showed a trend towards stabilization of population and a progressive downward trend. The probable reason for this lies in the fact that bulk of the labour force employed in the NH–22 construction has already been shifted out of the district. Perhaps, growing awareness about the utility of family planning and preferences for smaller family is another factor behind slowing down of the population growth.

Table IV.4

Growth of population.

TEHSIL/SUB-TEHSIL	% DECADAL(71-81) VARIATION	% DECADAL (1981-91) VARIATION	% DECADAL (1991-2001) VARIATION
Haugrang (ST)	(+) 8.61	+ 17.91	1.50
Poo (T)	(+) 7.07	+ 18.54	6.53
Morang (T)	(+) 17.95	+ 12.20	5.35
Katpa (T)	(+) 17-99	+ 20.96	14.51
Sangla (T)	12.17	+ 13.60	9.23
Nichar (T)	(+) 33.27	+ 26.04	11.61
Kinnaur	(+) 19.49	+ 19.69	9.92

Source: Computed from C.D of Primary Census Abstract,1981, 1991, 2001

Table IV.4 makes it evident that Nichar tehsil with largest population recorded highest population growth during 1971-81 and 1981-91 with 33.27, 26.04 percent respectively. However, Kalpa Tehsil registered highest population growth rate of 14.51 percent during 1991-01. The most likely reason for the abnormal high growth rates in Nichar Tehsil is partly due to the peak activities of Bhabha and Nathpa-Jhakhrai projects that brought in large number of labourers.

Poo Tehsil and Hangrang sub-Tehsil registered low rates partly due to the severity of climate, which makes the population mostly seasonal, lack of job opportunities and maximum ruggedness of the area as compared to other tehsils of Kinnaur. There is considerable increase in the population growth rate from 7.07 in 1971–81 to 18.54 during 1981–91. It is due to the fact that resettlement operation was carried out in the district during 1985 and 1987. Prior to it a vast area of the district particularly upper Kinnaur had not been cadestically surveyed due to its difficult terrains.

Kalpa tehsil shows steady population growth during all the three decade because of having the district headquarters. It has been receiving government officials and new offices that also attract the support services. It is noted that some people from cold arid parts of Kinnaur have migrated to Kalpa. This has served two purposes for people of cold arid regions, first to realize the greater economic opportunities and second is to escape the inclement climatic conditions and its effects.

Population growth in Kinnaur highlights that:

1. Administrative Centre with government offices and related institutions are the area of higher growth rate.

2. Areas near Road and dams construction sites for hydroelectric power projects experience higher population growth.

3. Trade and service centers at the road junctions, which lead to the different valleys of Kinnaur, too have higher population growth rate.

IV.4 Sex-composition

The sex composition of population of a particular place is expressed in terms of sex ratio that is the number of females per thousand males. Biological, economic, social and religious personality etc of a region influences the sex ratio. Among these economic factors are most potent. People get attracted to areas offering greater economic security. In order to realize the greater economic opportunities, largely males migrate to such areas. Thus, bringing about changes in the sex ratio of both places of out-migration and in-migration. Unfavourable sex ratio is considered to be an important indicator of inequality between males and females in a society.

Like most of the other district of country male-female ratio has always been unfavourable to the females except in 1951 where female population has exceeded that of males (Table IV.5).

Table IV.5

Sex Ratio (1901-2001)

YEAR	AS PER 100 MALES	CHANGE IN NO. OF OS/'000
1901	911	--
1911	935	+ 24
1921	922	- 13
1931	941	+ 19
1941	910	-31
1951	1070	+ 160
1961	969	-101
1971	887	- 82
1981	885	- 2
1991	856	- 29
2001	884	+ 28

Source: Computed from Primary Census Abstract, 1991& 2002

The steady downward trend of female population ever since 1961 (TableIV.6) is probably due to the fact that the entire district is rural and there are no facilities for higher education for the wards of Government employees. Apart from the government officials, for army and paramilitary personnel too, the district serves as the non family station. That is why the sex-ration is declining from 1961 onwards even after an increase in the population. However, 2001 again registered an increase in it by 28 female per thousand males. It is probably because of improvement in infra-structural facilities for education and level of education.

Table IV.6

Sex Ratio by villages-2001

NO. OF FEMALES	NO. OF VILLAGES	% OF VILLAGES
> 800	80	34.4
800 – 900	22	9.4
900 – 1000	49	29.9
1000 – 1100	40	17.1
1100 – 1200	20	8.5
Above 1200	23	9.8
Total	234	100

Source: Computed from Primary Census Abstract,2002

Thirteen villages namely Taling, Toktoi Lapo, Thuwaring, Kutian, Swaling, Lambar, Kunokhas, Charang Pheyag Choden, Mebar, Burang, Busharang, Rock-Charang, Homte, D.P.F–78 and Goroden have more than 1200 females per thousand males. Only seven of such villages have population more than 100persons; out of which four villages Thiuwaring Kutian, Charang and Tokto is in Morang Tehsil. Homte and Baiyee are the other two villages that lie in Nichar Tehsil. The remaining one Goroden is in Sangla Tehsil. These villages are remote and have experienced male selective out migration for better economic activities. This is supported by the fact that Kutian, Charang, Baiyee and Goroden have registered a decrease in total village population. Cause of favorable sex ratio with

increase in population in Thuwaring and Homte villages are not known and further needs to be investigated. Lumbar village in Morang Tehsil have the highest sex-ratio 4000 females per thousand male. It has total population 30 persons with 24 female and 6 males. Other villages with high sex ratio are generally small in population size. About 40 villages have sex ratio 1000 to 1100 and 20 villages have sex ratio 1100 to 1200. These villages have small to medium population size. Porang Kanda village of Morang Tehsil has the lowest sex ratio of 121 female per thousand males. This village has 5 Female in total population of 46.

Thang-Karma, Foche, Gyamil, Yangti Kanda, Panso, Dundumka, and Mastrang villages have no female. These villages are of very low population and of migrant Nepali workers who work as construction labourers or runs roadside *Dhaba.* D.F.P–73 C is another such village but the migrant workers are from Bihar.

Study of the sex ratio of Kinnaur suggests that areas of higher sex ratio are usually found in the upper parts of the valleys of tributaries of the Satlej. Such valleys are higher in attitude narrower in extent with rugged terrain and inhospitable climate. Effect of these natural factors limits the dependency on the natural resources. Driven by the natural compulsions, young males out-migrate for livelihood to construction sites and administrative centers and to some extent for higher education. No clear pattern of higher sex-ratio-villages in Kinnaur is seen as such villages are haphazardly spread. However, there is a rather contiguous string of villages with low sex ratio along the National Highway-22 and other prominent communication arteries linking the administrative headquarters. It is because such villages host construction workers and government officials. These workers usually stay single as the tenants in villages close to the NH–22 and rarely bring in their families.

Recently Kinnaur has seen the labourers both males and females coming from states like U.P., Bihar and Jharkhand (Plate IV.2). But in-migration of such workers does not considerably affect the sex ratio of the region because:

i) These female workers are not considerable in number.

ii) Such workers are seasonal and highly fluid unlike the construction workers who stays in the district until the project in which they are engage are completed.

The analysis suggests that:

(a) More a village is remote higher is the sex ratio.

(b) Villages near the construction site and main communication roads have the lower sex ratio.

(c) Villages around the administrative centers also have low sex ratio.

IV.5 Literacy and Education

Development of a region brings in slow but definite transformation in thinking, perception, values and abilities etc. of people. Literacy is one such attribute that flows out from development and reinforces it as well. In the early stages of transformation of a society when people start their march on the path of development, literacy follow suit. However, in the later stage it is literacy and education of the inhabitant of an area that ensure development. Thus, the vehicle of transformation of society keeps moving.

Table IV.7

Percentage of Literates

YEAR	TOTAL LITERACY %	MALE LITERACY %	FEMALE LITERACY %
1961	15.35	26.45	3.90
1971	27.7	43.3	10.4
1981	36.8	51.1	20.7
1991	58.4	72	42
2001	75.27	84.44	64.77

Source: Computed from Primary Census Abstract, 1991& 2002

The commencement of Planned Development ensured a considerable rise in the literacy since 1961 (Table IV.7). Mere 15.35 percent of population was literate in 1961. There was a considerable gap between gender specific literacy rates. The male literacy of 26.45% percent was much higher than the female literacy of 3.90 percent. In the next decade i.e., 1971 there was increase in literacy by 12.6 percent taking the total literacy of Kinnaur to 27.7 percent. The 16.85 percent rise in the literacy rates among males increased their literacy percentage to 43.3 percent. However, female literacy rate grew only by 7.5 percent to make the figure of female literacy 10.4 percent in 1971.

A number of schools were established in Kinnaur during 1960-61 to 1972-73 (Table IV.8). This accelerated the pace of literacy in the district.

Table IV.8

Progress of Education in Kinnaur District, 1960—1973.

Institutions	1960-61 School, Students		1965-66 School, Students		1968-69 School, Students		1969-70 School, Students		1970-71 School, Students		1972-73 School, Students	
High Schools	00	385	4	539	6	1046	7	1174	8	1198	8	1236
Middle School	3	171	11	869	14	707	15	734	15	812	17	969
Primary including Pre-Primary School	62	1252	78	2386	80	1725	78	1646	29	1832	83	1884
Total	66	1808	93	3794	100	3478	100	3554	52	3842	108	4089

Source: Raha, M. K., The Kinnaurese in the Himalayas, anthropological survey of India.

The result of this was noticed in subsequent decades. There was not only near ten percent increment in the total male literacy but also female literacy grew by the same that was seen for the first time in Kinnaur. This was the period when Tribal Sub-Plan was formulated for Kinnaur and other scheduled tribal areas of Himachal Pradesh which had focus on education sector along with some other facilities for the well being of inhabitant of such areas. This initiative bore fruits in

the form of near 21 and 22 percent increase in male and female literacy respectively and increase in the total literacy rate by the same proportion during the decade 1981-91. The sustained efforts by the government bodies ensured progress in literacy level further which is seen in the figures of 2001. Gender specific disparity in literacy has been about 25 to 30 percent right from 1961 to 1991 that declined only in 2001. This can be noted from the fact that in 2001 the difference between male and female literacy rate is of 20.33 percent. This was the result of various plans and programmes formulated and implemented for girl child during the late two decades of twentieth Century.

The steady progress in the literacy in Kinnaur makes it pertinent to study the distribution pattern of literates. The general literacy rate of Kinnaur was 75.27 percent in 2001. Male and female literacy during the same period was 84.44 and 64.77 percent respectively.

Table.IV.9

Distribution of Village According to Literacy, 2001

LITERATES (%)	NO. OF VILLAGES	% OF VILLAGES
Less than 50	41	17.5
50 to 65	100	42.7
65 to 75	69	29.5
More than 75	24	10.3
Total	234	100

Source: Computed from Primary Census Abstract, 2002

Table IV.9 shows noticeable variations in literacy across the villages of Kinnaur. There are 41 villages with literacy of less than fifty percent. Lapo village in Morang Tehsil had the least literacy of 6.67 percent. This is a remote village with small population of fifteen persons out of which only one person is educated. This is probably because of out migration of educated persons as the sex ratio of 1500 females per thousand male is very high and difficult to comprehend in normal

cases. Literacy of D.P.F-72 village is zero because this village consists of two illiterate persons engaged in construction works. Horang Kanda is another such village with no literacy among its three inhabitants. Villages with literacy below 50 percent have extremely small population size. Generally, such villages are camps of construction workers, labourers and other such workers.

Largest chunk of villages i.e., 100 villages have literacy rates 50 to 65 percent particular. These villages are scattered throughout Kinnaur and the analysis does not reflect any specific reason behind the literacy status of these villages. Therefore, it needs to be further investigated. Twenty-four villages lie in the highest bracket of literacy that is more than seventy five percent. Such villages are either the administrative centers or have better educational facilities established earlier or even both. Apart from this some of the villages of migrant workers with extremely small population size also show high literacy. The Up Mohal Foche in Poo tehsil is one such village. It has a total of 4 people out of which 3 are literates. Mastrang village in Sangla tehsil and Paring-Khor as well as D.P.F.–73 C villages of Nichar tehsil have highest literacy that is cent percent. These villages are of educated migrant workers with no female except the Paring-Khor that has very low sex ratio of 500 females per thousand males.

The literates are highly concentrated in villages, which have sprung up as administrative centers, and in the villages around these centers. There are also a few other villages with higher literacy, which might have resulted from the earlier location of educational facilities in these villages. The villages having low literacy usually have labourers camps. However, some of such villages show very high literacy if these consists of a few inhabitants who are literates.

Male literacy

Male literacy in 60 percent of the villages numbering 141 villages (table IV.10) is between 50 to 65 percent. Twenty-four villages fall in the lowest literacy category of less than 50 percent male literates. In contrast to the total literacy rate, the lowest number of village does not fall under the highest or lowest literacy bracket but under the group comprising literacy of 65 to 75. This group has twenty-

three villages in all. The group of villages with literacy above seventy five percent has 46 villages. Such villages are either administrative centers or have educational facilities within its vicinity. Some of the villages with very small population either show cent percent or zero male literacy. Villages with one hundred percent literacy have extremely Small population of less than ten persons where female literacy is nil. Some of such villages are Mebar, Panwa, D.P.F.–187 and 188, Goli, Dumdumka etc. whereas village with zero male literacy are villages with population size below ten persons too. Nakal Kuwa village in Morang tehsil have only one literate that happens to be female because of out migration of young literate males for better economic prospects.

Table IV. 10

Distribution of Villages According to Percent Male Literacy,/2001

Literates (%)	No. of Villages	Percent of Villages
Less than 50	24	10.3
50 to 65	141	60.3
65 to 75	23	9.8
More than 75	46	19.7
Total	234	100

Source: Computed from Primary Census Abstract, 2002

The analysis shows that villages in and around administrative centers have higher male literacy. Remote villages and villages near construction sites have low male literacy.

Female Literacy:

There is considerable gap between male and female literacy (Table IV.10 and IV 11). About 73 percent of the villages of Kinnaur have female literacy below 45 percent. About 30 percent of the villages, which is 71 in number fall in the lowest bracket of female literacy, that is below 35 percent. There are 22 villages in

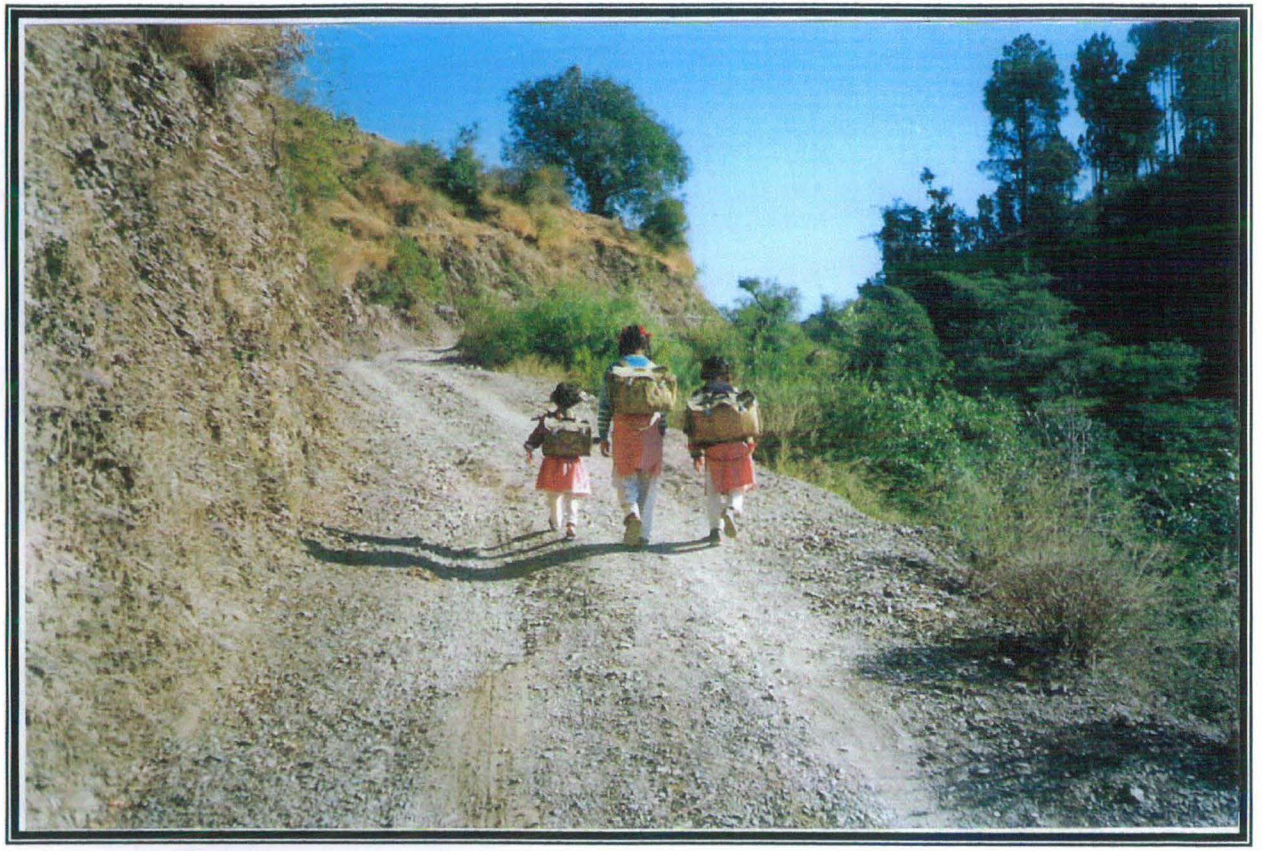


Plate IV.3 On way to brighter tomorrow; Young Kinnauri girls near Tranada village.

this group have no literate female. Out these 22 villages namely Gyamil, Up Mohal Foche, Thang-Karma, Yangti-Kanda, Panwa, mastrang, Dumduka, D.P.F-73C have no females. These villages are very small in population size and belong to migrant labourers. Dabling, Nakal-Kuwa, Swaling, Lambar, Kuno-khas, Hebar, Kagsthal, Charang-Khas are another group of small villages but with high female literacy

Table IV.11

Distribution of Villages According to Percent Female Literacy, 2001

Literates (%)	No. of Villages	Percent of Villages
Less than 35	71	30.3
35 to 45	101	43.2
45 to 55	54	23.1
More than 55	8	3.4
Total	234	100

Source: Computed from Primary Census Abstract, 2002

Out of these villages Nakal-Kuwa village has cent percent female literacy because the only literate person among 6 inhabitants is a female. All these villages are remotely located and have small population. Higher female literacy in these eight villages is because of male selective out migration where educated youth out–migrate for higher education and better job opportunities. Personal interaction with the Kinnaurese suggests that factor responsible for low female literacy in the district is because most of the young girls are engaged in household works and have high participation in farm activities. However, people of late, have become more receptive to modern education for their wards. Plate IV.3 indicates better literacy scenario for Kinnaurese females in near future.

IV.6 Educational Facilities

The table IV.12 shows 66 schools were in Kinnaur in 1961.

Table IV.12

Educational Facilities – 1961 – 2003

Year	Primary schools	No. of middle schools	No. of High schools	Sr. Sec. Schools	No. of Colleges
1961	62	3	1	-	-
1971	79	16	8	-	-
1981	-	-	-	-	-
1994	153	27	21	4	1*
2003	190	33	28	12	1

Note: Numbers of primary schools include pre-primary schools too.

Sources: (1) Primary Census Abstract, Kinnaur, 1971

(2) Statistical outline of Tribal Areas, 1995

(3) Institutions Report, Office of Deputy Commissioner, Reckong-peo, June 2003.

Out of these, only three were middle schools and one was upto matric level. There was considerable increase in the number of school in 1971 as 13 new middle schools and seven new high schools were set-up. However, there was no senior secondary school till then.

Sharp increase in the number of primary schools was registered in 1993-94 when the number of primary schools rose to 153. By this time Kinnaur had four senior secondary schools. The only college of Kinnaur at Rekong–peo was established in 1996. Twelve senior secondary schools were registered in Kinnaur in 2003. This increase in senior secondary schools suggests the increasing acceptability of higher education among Kinnaurese.

The analysis of demographic personality of Kinnaur highlights the influence of harsh natural environment and the low availability of natural resources as well as the range of economic activities. Population is concentrated in areas suitable for agriculture. However, developmental activities have brought about some transformation in this pattern by generating economic opportunities not related to agriculture. Such works have rendered males more mobile thereby bringing about change in literacy, sex ratio and other aspects of population.

Notes & References:

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[1] Broek, Jan O.M: (1965) *geography: Its scope and Spirit*, Columbia. P.p,58 in "Population regions of o Trans- Himalayan Tribal Tract etc"., Chib, S.S (1991) *Indian Journal of Regional Science*, Vol.XXIII, No.2 p.p,

[2] Ghosh, Sumita., (1998) Introduction to settlement Geography. Orient Longman, Hyderabad.

Chapter V

Economy, Transformation and Levels of Settlements

Climate, physiography along with socio-cultural traits and resource base of a region are the factors determining nature of economy. Economy of a region is not only the indicator of peoples' aspiration for their will-being but also, the level of development and thereby transformation. In a mountainous region where the forces of nature are inhospitable, human efforts for unlocking more resources have pronounced natural checks and balances. The rugged terrain and the limited choices for Kinnaurese to appropriate their local resources had made them an 'isolated' and 'closed' society. Behavioural beat of the people shows that they have always been the passive component of 'Human-Nature system'. The nature has served as the active guiding force behind the socio-economic activities of Kinnaur. Like other mountainous areas, the distinct is also a place where economic structure is influenced by human resources rather than technology.

There is not much information about the traditional economy of Kinnaur. However, a few old travelogues, gazetteers etc. give little information through which idea about the economy can be formed. Such documents suggest that agriculture; trade, sheep and goat rearing were the traditional economic activities of Kinnaur. Ecology had great influence on the traditional economy. Different parts of the district professed different economic activities. In Nichar and Kalpa tehsils agriculture was the main occupation because of higher precipitation. Most part of Poo tehsil is cold arid, people practiced pastoralism and trade as the possibility of agriculture is rather limited. Besides, proximity of Poo to Tibet facilitated the trade with the people of formerly forbidden land. The rich pastures of Tibet attracted shepherds with their herds. Setting-out for such grazing lands, they used to take minor trade items from Kinnaur. Shepherds on their return journey too, used to carry back some articles like wool and salt for trading either in their villages or at Rampur during Luvi fair. Rearing of sheep, goat and thereby the development of wool spinning handlooms in this area is in line with the unique ecology of the Great Himalayan and the other trans-Himalayan ranges. Closure of the border with Tibet after Indo-China

border dispute of 1962 and construction of National Highway-22 are two main factors which influenced economy of Kinnaur in the recent decades "Fraser as early as 1820 reported that the production of this area was salt, woolen cloths, dried grapes, currents, chilgoza and various other things, besides very little of grains from their agricultural fields, and in exchange of all these they use to take cereals of different kinds from neighboring more fertile areas[1]".

Pastoralism and trade continued till 1960, as border with Tibet was open till then. However, the blockade of Tibet border stopped access of the people of Kinnaur to better grazing grounds and to trades opportunities. It brought sea changes in the economy.. In order to have a broad idea about economy of Kinnaur in recent time it is important to study the occupational structure.

V.1 Occupational structure

Work participation is the prime factor of production. Participation of worker in various sectors of economy gives idea about the direction and the rate of advancement of a society. The geographical, economic technological factors determine occupational structure a region. In remote and high mountainous region like Kinnaur, work participation rate is usually quite high and economic diversification is low.

Table-V.1

Share of workers in each industrial category to total workers in the District, (per cent)

Kinnaur	I	II	III	IV	Va	Vb	VI	VII	VIII	IX
1971	62.72	5.74	6.65	-	4.08	0.50	5.24	1.16	0.49	13.42
1981	61.97	5.31	3.74	0.02	2.35	1.50	7.22	1.48	0.87	15.54

Note: (I) cultivators; (II) Agricultural, Forestry, Fishing, Hunting and Plantation Orchards & allied activities; (IV) Mining and Quarrying; (Va) Manufacturing, Processing, Servicing and Repairs in Household Industry; (Vb) Manufacturing, Processing, Servicing and Repairs in other than Household Industry; (VI) Constructions; (VII) Trade and Commerce; (VIII) Transport, Storage & Communications; (IX) Other Services.

Due to definitional change in workers in 1971, the data of workers in 1961 and 1971 are not directly comparable. However, the data can still impart general idea about the workforce in 1961. As per 1961 census about 66 percent of the workers in Kinnaur were cultivators with 15.10 percent workers engaged in household industry. It becomes the second most important categories of workers. Construction works employed 7.09 percent workers while other services and agriculture labourers registered 4.81 and 3.5 percent of total workers respectively.

Table V.1 shows 62.72 and 61.79 percent of total workers for the respective years were cultivators 13.42 percent workers were employed in other services in 1971. In 1981 this proportion increased to 15.54 percent workers.6.65 percent workers were in livestock, forestry, orchards while 4.08 percent workers were engaged in household industry in 1971. Figures for the same categories in 1981 are 3.74 percent and 2.35 percent in that order.

The decrease in proportion of cultivators during 1961 to 1981 is probably due to shifting of male workers to various constructions and developmental works which were initiated after 1961. This was the time when a large proportion of male workforce got engaged in construction work and other services. General increase in proportion of work force in construction and other services as well as the decrease in cultivators' proportion corroborate the fact.

Table-V.2

Work participation Rates 1981 - 1991

	1981	1991
Population		
Total	59547	71,270
Male	31598	38,394
Female	31598	32,876
Main Workers		
Total	54.67	57.32

Male	61.65	58.85
Female	43.77	33.84
Marginal Workers		
Total	2.59	5.10
Male	1.10	1.23
Female	4.28	9.64
Total Workers		
Total	57.26	52.42
Male	62.75	60.08
Female	51.05	43.48
Non- workers		
Total	42.74	47.58
Male	37.25	39.92
Female	48.95	56.61

Source: District census Hand Books Vill & Town Directory, Kinnaur, 1981& 1991. Director of Census Operations, Shimla, H.P.

Table V.2 shows that there is decrease in proportion of total workers to total population and main workers as well in years 1981 and 1991. This decrease was on account of increase in total as well as of male, female marginal and non-workers.

The general decrease in the workers could be due to introduction of a new category of marginal workers. This could be a reason for exclusion of some workers. Moreover, the administrative up gradation and introduction of developmental programmes induced the establishment of schools, which probably directed younger population to school. This could also have worked for decline in the number of workers. The higher fall in female work participation rate was probably because of new developmental projects opened the opportunities to other economic activities, which mostly absorbed males. Apart from this, people began to divert from the tilling of land to non-primary sectors that raised hard cash. The cash made it possible to acquire subsidized ration from PDS booths that were superior in quality as compared to local produce. This enabled older population to retire from

taxing work of agriculture. It is rather a trend that with rise in income some females are withdrawn from the primary sector while school enrollment rise reducing the number of younger workers. So, it becomes necessary to analyse the distribution patterns of workers to know the areas of change.

Table-V.3

Share of total Workers to Total Population in Villages 2001

Percent of total workers	No. of villages	Percent of Villages
Less than 40	7	3
40 to 50	20	8.5
50 to 60	70	29.9
60 to 70	69	29.5
70 to 80	37	15.8
More than 80	31	13.2
Total	234	100

Source: C.D. Primary census abstract, 2001 .

Table V.3 shows that there was seven villages with work participation rate lower than 40 percent of total population of the villages. Some of such villages are D.P.F–188. Bre-Lingi, Yusaring etc. Out of these seven villages, Yusaring has the lowest work participation rate that is only 22.65 percent. Some of these villages have higher proportion of marginal workers. Carrying capacity of land is low in these villages. These have generally higher proportion of marginal workers. Carrying capacity of land is low in these villages and people do not depend solely on land. They work in agricultural fields and to supplement their income also they work as porters or labourers. Thus, there is problem of including these people in some specific category of workers. Increase in the proportion of marginal workers also suggests the same.

One hundred and seven villages lay between categories 60 to 70 and 70 to 80 percent of workers to total population. Some of these villages are Nako, Leo, Chango, Shalkar, Samodyan in the former category while Taling, Ka, Theropa, Tashi Gang, Holdang, Rispa etc. belong to the second category. These villages are administrative centres or adjoining villages. However, 31 villages show work participation rate of more than 80 percent. Yangthang, Yangti-Kanda, Nakal-Kuwa, Gyamil, Up Mohal Foche, etc. fall in this category. All these villages are very small villages and populated mainly during summer. The table V.3 shows clear clustering in distribution of workers between 50 + 70 percent.

Table-V.4: Percentage of male workers to total workers 2001

Percent of male workers	No. of villages	Percent of Villages
Less than 40	8	3.1
40 to 50	77	30.2
50 to 60	75	29.4
60 to 70	30	11.8
70 to 80	18	7.1
More than 80	26	10.2
Total	234	91.8

Source: Computed from Primary Census Abstract, 2001

Table V.4 shows that male work participation is below 40 percent in eight villages. Most of these villages correspond to those villages that have lower work force.

About 26 villages lie in bracket above 80 percent of male work force. These villages are small in population size and are of migrant workers. However, 18 villages fall

in category of 70 to 80 percent of male work force. Even these villages share the same internal set-up. However, seven villages have a moderate population size and are the administrative centers.

Analysis of occupational structure reveals that cultivation of land is the main occupation of the people in Kinnaur. It therefore is essential to study the principal components of agriculture. These include land-use pattern, availability of land for cultivation, irrigation, principal crops and production etc. Since livestock form an integral part of agricultural activities especially in mountainous regions so it also forms a part of the analysis.

V.2 Land Use

Land use pattern of an area is the index of natural environment. Besides, the land utilization pattern of a village, block and district indicates the efficiency by which these scarce resources are being utilized.

All land is not suitable for agricultural practices. Land for cultivation must be leveled, fertile with adequate soil cover and moisture or should have source of irrigation as well as favourable temperature. How does human being use land also depends upon the technology, tenures and size of holdings, government policies and various infrastructure facilities. Two main forces govern the anthropogenic and natural factors, namely, climate of a place and physiography. Thus, the land use pattern of an area is the spatial index of the natural environment. If a region like Kinnaur has inhospitable natural environment, it is all the more expressed in the general land use pattern. Kinnaur had a total geographical area of 655300 hectares in 1996-97 (Table V.5) Out of this a very large proportion of 19068 hectares i.e. 59.0 percent was under permanent pastures and grazing lands. Land put to non-agricultural use occupied the second largest proportion with 51183 hectares i.e. 15.8 percent. With 37850 hectares i.e. 11.7 percent, forests are the third largest group in land use pattern of Kinnaur. It is followed by barren and uncultivated land with 26614 hectares i.e. 8.2 percent of total area of the district. It was only 11054 hectares in 1970-71, which comprised mere 1.7 percent of total area.

Land use

Table-V.5

Classes	1996-97		1997-98		1998-99		1999-00		2000-01	
	Area	%of total	Area	%of total	Area	%of total	Area	%of total	Area	%of total
By Prof survey	655300	100	655300	100	655300	100	655300	100	655300	100
Forests	37850	11.7	319116	9.4	35836	5.7	36609	5.8	37172	5.9
Barren Uncultivable land	26614	8.2	90645	22.1	182730	29.3	142267	22.8	134449	21.0
Land N_agrl	51183	15.8	51183	15.8	70408	11.3	113414	18.1	121053	20.09
Pasture and grazing land	19068	59.0	218803	52.1	381950	51.6	318352	51.0	318027	50.08
Land under miscellaneous tree crop	737	0.2	52	0.01	55	0.002	79	0.01	60	0.009
Culturable waste	6440	2.0	6926	1.5	3312	0.5	3487	0.5	3649	0.49
Other fallow land	115	0.0064	144	0.003	316	0.05	127	0.02	112	0.01
Current fallow	1714	0.5	1714	0.5	1596	0.4	1601	6.2	1634	0.30
Net area sown	7537	2.3	7609	1.8	7517	1.2	7806	1.2	7534	1.23
Area sown more than once	1943	0.6	1991	0.5	1837	0.3	1253	0.2	1742	0.28
Total cropped area	9480	2.9	9588	2.3	9357	1.5	9059	1.4	9328	2.01

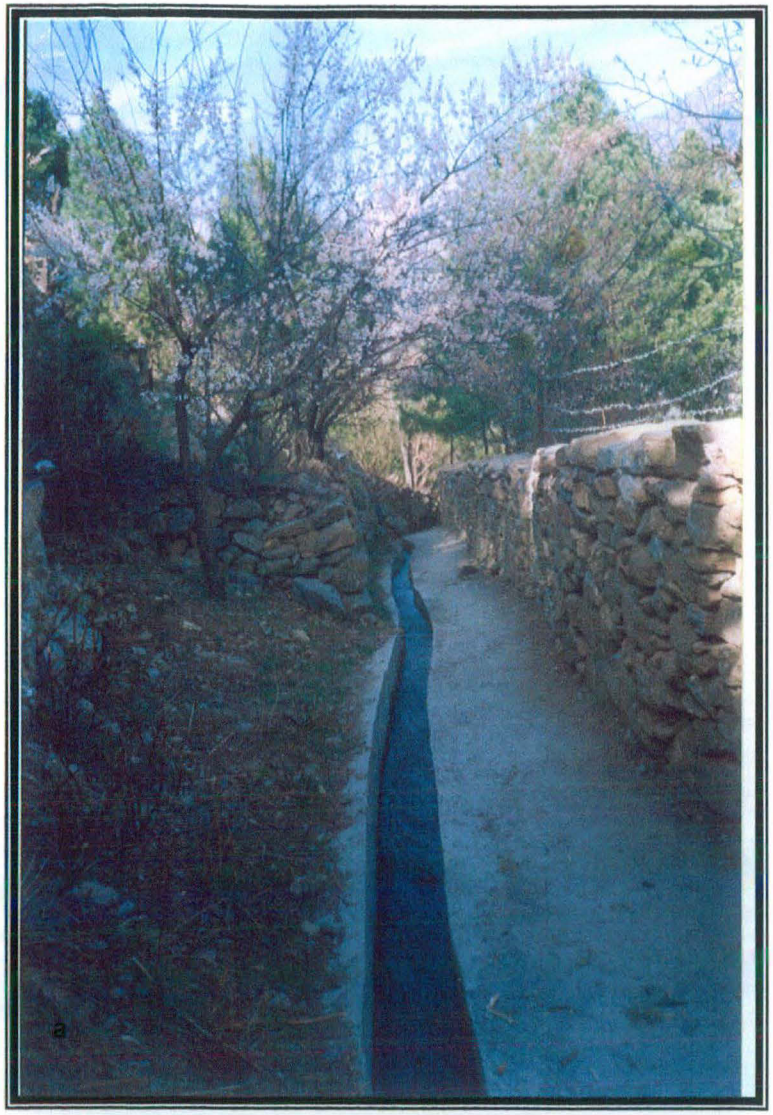
Source: Land Use Reports, 1996-97, 1997-98, 1998-99, 1999-00, 2000-01. Directorate of Land Use Records,Shimla. Himachal Pradesh

The table V.5 indicates that there has been a general decrease in forests during 1996-97 to 2000-2001. This is probably due to Construction of various subsidiaries of Nathpa-Jhakhri Hydroelectric projects and other developmental activities as well as the large influx of outsiders into Kinnaur. This appears to have led to increased stress on land

resources. Barren and uncultivable land as well as the land put to non-agricultural use has increased during the same period. Out of these two, the increase in the first category is due to better survey resulting in compilation of accurate data. However, the increase in the extent of land put to non-agricultural use is due to the influence of the outsiders in Kinnaur and better integration of the Kinnaurese economic life to the outside world. Data of 1998-99 show a remarkable increase in barren and uncultivated land viz., 7.2 from that of 1997-98 as well as decrease of about four percent in land put to non-agricultural use. This could be due to the adjustment of land between the two Categories. The current follow land has also registered an increase in the real extent during 1996-97 to 2000-2001.

However, the net sown area declined from 2.3 percent to 1.23 percent. Total cropped area followed the same trend. This can again be attributed to the adjustment between current fallow land and Net area sown. It may be mentioned that the changes in the figures of land-use do not show the real change in the land use because of differences and ambiguities in the various aspects of land-use classification by the Department of Land-Use. Many of the area classified as pastures actually have forest cover that is used as grazing land. Like wise barren uncultivated land is also included under forestland and pastures.

The study of the land-use pattern reveals that 91 percent of the land is in barren uncultivated land, land put to non-agricultural use as well as permanent pasture and other grazing land. Only about eight percent of the land belongs to total cropped area and forests. Thereby it is clear that there is scarcity of arable land and land suited to the growth of forest. This supports the fact that Kinnaur has extremely harsh climate and rugged terrain.



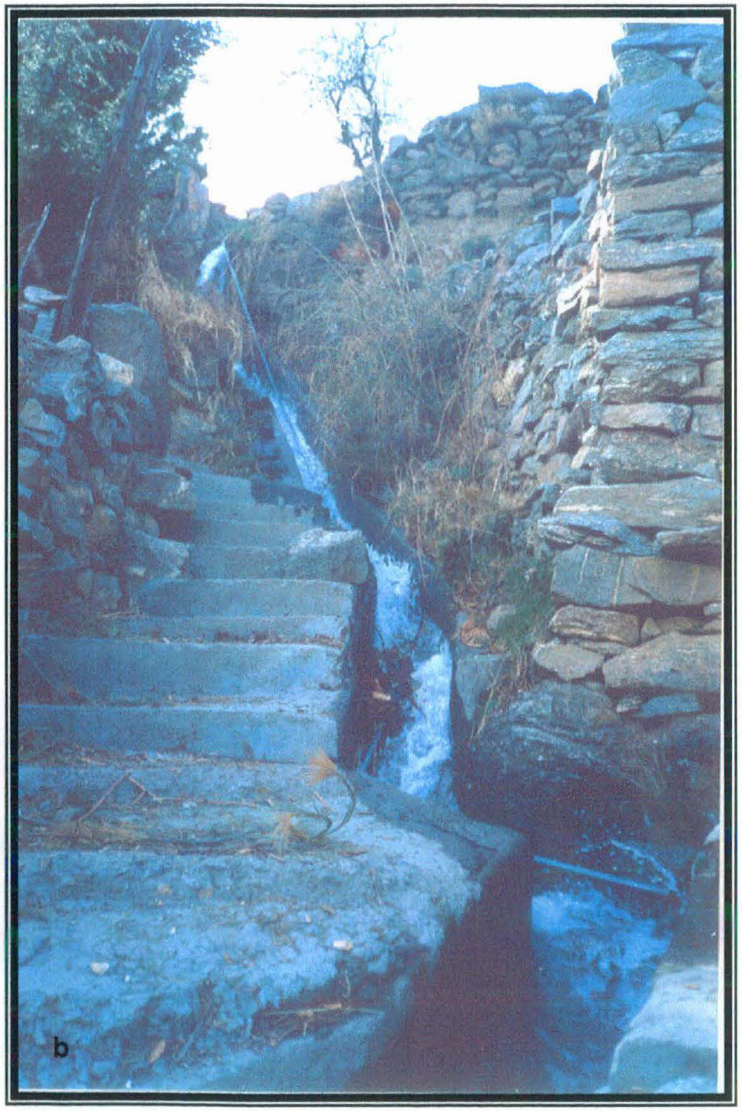


Plate V.1a & b Pucca Khuls diverting snow melt water to agricultural fields at Kalpa and Bre-Lingi villages respectively.

V. 3 Irrigation:

Table-V.6

Irrigation

No. of *Kuhls*	1996-97	1997-98	1998-99	1999-2000	2000-2001
Govt.	322	322	322	322	322
Private	348	348	348	348	348
Total	670	670	670	670	670
Net Area irrigated by Govt. of Pvt. Kuhls (in hect.)	4337	4335	4294	4690	4448
%- net area irrigated to net area sown	57.5%	57.9	56.6	60.00	58.02
Area irrigated more than once in same year	1391				
Total gross irrigated area	5728	5558	5414	5490	5727
% of tot gross irrigated area	60.4	57.9	59.09	60.7	60.87

Source: Directorate of land records, Shimla, Annual and Seasonal crop reports-96-97, 97-98, 98-99, 99-00.

Precipitation is scanty in Kinnaur. It is needless to mention that it is either absent or insufficient during the agriculture season. Crops cannot survive without moisture. Therefore, irrigation is needed. The fact that the economy of Kinnaur is predominantly agrarian makes the role of irrigation vital. Cultivated fields are irrigated by construction of channels known as *Kuhls*(V.1*)*. The snowmelt water is utilized through *Kuhls* because river-channels are lower in altitude than the agricultural fields.

TableV.6 shows that more number of *Kuhls* are privately constructed and managed than by the government. The table also highlights that about 60 percent of the Cultivation is done by artificially supplying moisture to agricultural fields.

Table-V.7

Distribution of Villages According to Land Use

Name of C.C.Block	No. of inhabited villages	Total area (in hectares)	Percentage of cultivable area to total area	Percentage irrigated area to total cultivable area
1	2	3	4	5
Poo	80	23,483	2,124 (9.04)	1.870 (88.04)
Kalpa	63	14,045	2,587 (18.42)	2,064 (79.78)
Nichar	85	19,350	2,584 (13.35)	294 (11.38)
District	228	56,878	7,295 (12.83)	4,228 57.96)

Source: District census Handbook, village town Directory, Kinnaur (1991) series-9. Part XIII – A and B. Director Census Operations. Shimla. (H.P.)

Table V.7 shows that out of 56878 hectares which is total area of the district, 7,295 hectares amounting to twelve percent is cultivable. Further out of this, 4228 hectares has irrigation that plays very significant role in economy of Kinnaur as more than 55 percent of the agricultural activities are dependent on irrigational facilities- the *Kuhls.* The figures of poo, Kalpa and Nichar for irrigated to total cultivated area suggest that in Nichar the role of *Kuhls* is not so important. This is because Nichar lies in zone up to where monsoonal winds reach and cause enough rainfall. However the rain is scanty in Kalpa and very low in Poo. Therefore, cultivation cannot be done without irrigation.

It is clear from the above analysis that irrigation plays significant role in agriculture in Kinnaur. Majority of the villages have irrigation facility on most part of cultivated land.

V.4 Crops

Winter in Kinnaur is very severe. Whole of Kinnaur district gets precipitation in the form of snow in winter. Therefore, cultivation is possible only during summer. The main food crops of Kinnaur are wheat, buckwheat, barely, maize, millets and pulses. Non-food crops are mainly commercial crops including potato, peas, Kauth, crops oil seeds etc. Apart from these, vegetables are also grown. Some crops such as wheat and barley are sown in winters but the seed lies buried under show. This sprout only in spring season wheat is also sown in April and May and is harvested during September and October. All types of farmers in all parts of the district grow maize. It is sown in May and June and reaped during October. After the harvest of Barley in June, Buckwheat is sown which is harvested in September. Potato is sown in the months of April and June and the crop becomes ready by September and October.

A number of other crops are also grown in the district. But data for such crops is not available.

Table V.8

Area and production of principal crops

Crops	Area under crops	Production of major crops In Tonnes.	Yield tones/Hect
Rice	22	29	1.31
Wheat	502	756	1.50
Maize	431	827	1.91
Barley	1441	2400	1.66
Common millets	2764	1227	0.44
Pulses	1071	506	0.47
Total food grains	6231	5745	0.92
Potato	255	2750	10.78
Edible oil	34	3	0.08

Source: District in figures 1999. Department of Economics and statistics. Himachal Pradesh Shimla.

Table V.8 shows that gross cropped area in Kinnaur was 6231 hectares in 1998-1999 and the total food grain production was only 5745 tonnes and yield 0.92 tonnes per hectares. Wheat covers 502 hectares with production of only 756 tonnes and per hectares yield of 1.50 tones. Maize was sown on 431 hectares, which produced 827 tonnes of corn with 1.91 tonnes yield per hecta4res. Production of Barley was 2400 tonnes on 1441 hectares that yield in Kinnaur is very low. It is basically due to traditional methods of agriculture as well as harsh climate. Though there has been introduction of High Yielding Varieties of seeds and other technological inputs but the yield remains to be at lower side. This is because horticulture rather than agriculture received technological inputs on an appreciable scale.

V.5 Livestock

There is limited land for cultivation in Kinnaur. This combined with low yield of crops makes it necessary for people to supplement their income through animal husbandry. Therefore, livestock form an integral part of agriculture in Kinnaur. Almost every household rear one livestock or the other.

Table-V.9

Livestock

Livestock	Buffalo	Cattle	Breedable cows	Sheep	Goat	Pigs	Others	Total	Poultry
Number	3	20935	6855	57723	28568	82	5597	112908	5795
Percentage to total	0.002	18.54	6.07	51.12	25.30	0.07	4.95	100.00	-

Source: Computed from Districts in figures 1999. Himachal Pradesh: Department of economics and statistics, as per livestock census 1992.

It may be seen from table V.9 that sheep which accounts for about 51 percent of total livestock in Kinnaur. It is the most commonly reared animal of Kinnaur. Goats make the second largest group of animals. Sheep and goat together comprises about 76 percent

Plate V.2 Cross breed of Yak and cow- *Dzo* used in ploughing field. A separate store house for agricultural produce is in the background. Its basement is used as cattle shed in winter and the adjacent temporary shed is used in summer.

of total livestock of the district. This is because these animals are most suited to rugged high altitude terrain where pastureland is limited. People keep yak for breeding, *dzo* (Plate V.2) for milk and ploughing agricultural fields. Poo tehsil of Poo block has the highest number of livestock because avenues for cultivation are very limited. Sheep and goats are reared for wool and meat. They are also used as beast of burden in Kinnaur. As livestock forms the integral component of Kinnaur economy, great care of them is taken during the severe winter months. Animals are kept inside the house on ground floor built for this purpose (PlateV.2). In prosperous settlements, people employ shepherds who take animals of every household for grazing and in wage get one kilogram of grain from every household besides his daily meals. But households of not so prosperous settlements send their animals to the same pasture where one member of every household goes to the pasture turn by turn. Poor and landless people, who generally own flocks of sheep and goats, are unable to provide sufficient-feed other than grazing in open pastures. For the extraction of maximum potential capacity out of the sheep and goats, these require to remain on rich and nutritious pastures, which are not easily available in Kinnaur.[2] Therefore, shepherds migrate with their herds to lower areas of Shimla, Solan, Kangra and UttarKashi districts.

Goat and Yak hair is used for making mats and ropes. Along with sheep wool goat hair is used for making woolen garments. Largely the woolen garments are prepared for self-use. However, some of the households sell it to Government employees and at times also to visitors.

Table-V.10

Availability of veterinary Facilities

Veterinary services	Number
I. Veterinary Dispensaries	37
II. Mobile central vet. Dispensaries	2
III. Sheep wool Ext. Centre	1
IV. Sheep breading Farm	1

Source: Institution Report, 30th June 2003. Office of Deputy Commissioner, Reckong-Peo, Kinnaur

The table shows that there were thirty-seven veterinary dispensaries in Kinnaur in June 2003. Sheep is the most important livestock in Kinnaur. It is given more importance in government plans and policy of animal husbandry. District has a sheep and wool extension center as well as a sheep-breeding farm.

The overall analysis of economic structure shows agriculture to be most important activity. The use of modern agricultural inputs is not common, and production of crops is low. Cultivation of inferior cereals is widespread. That is why people keep cross bread animals to supplement their income and nutrition form farm produce. The size of livestock is small because of the following two factors-

(a) Animals have to be kept inside the house and stall fed during severe winter

(b) Limited carrying capacity of the area or due to shortage of pasture and other grazing lands

Government agencies have formulated and employed various schemes and aids. People are getting employed in Government jobs and in other service sectors to supplement income from farm. All there are taking the economic of Kinnaur on slow but steady course to diversification.

V.6 Transformation and hierarchy of settlements:

Change, which matures into transformation, is an unquestionable cultural and economic reality. No society in this world can ever remain static. Transformation is a gradual process that is even slower and longer in an isolated mountainous region like Kinnaur. Like other societies, Kinnaurese have started their partly conscious and partly unconscious journey. This is the journey of transformation from traditional, hierarchic, resource-stressed isolated society to modern, equalitarian affluent and integral sub-society within the main stream. Besides observing the transformation in the society it is important to know why and from where it is initiating.

An index of change is needed in order to measure transformation. Some villages due to physical/historical have seen more transformation compared to others in Kinnaur.

Thus, the index needs to be at the Village level. It necessitates the need of selection of indicators to decipher complex process of transformation. Transformation is a succession of events whereas society and its socio-economic forces a complex network of activities. Therefore, a single indicator cannot understand this process. So the following nine indicators belonging to the socio-economic and infrastructural variables have been chosen. Some of these indicators are, of course, not directly related to the process of transformation. However, the indicators indirectly show the change. Unfortunately, the availability of relevant data is very limited and these indicators are probably the best those could be squeezed out of limited data.

Table-V.11

Variables and Respective Indicators of Transformation

Set	Variable	Indicator
Population	(a) Population	Size of the population of village
	(b) Sex Ratio	Sex-ratio (Negative)
Diversification of economy	(a) Participation rate	%age of total workers to total population
	(b) Workers in other services	%age of workers engaged in other services to total workers of village
Literacy Status of population	(a) Literacy	%age of literates to total population of village
	(b) Literacy	%age of literate females to total females of villages
Availability of infrastructural facilities	(a) Medical	Ayurvedic health centre, Homeopathy health center, Primary health sub-center, Primary health center, community health center, District Hospital
	(b) Education	Primary school, Middle school, High school, Senior secondary school, college
	(c) Post	Head post office, Post office, post office (Double Handed). Post office (single Handed), post office under Jeori (SO)

V.7 Quantification of transformation

Socio economic transformation is multidimensional, complex and qualitative phenomena. Therefore, quantifying it is a difficult proposition to arrive at. An attempt has been made to work out the transformation through the index of transformation, which is an indirect method. Selection of the indicators was done analytically in the light of the objective of the study rather than mere mathematical logic.[3]

The population size is a significant indicator of development and economic diversification in hill areas. This is more so in Kinnaur because of inhospitable living conditions are responsible for limited manpower. Large population of a village is suggestive of presence of general infrastructure and human resource itself. Population size is also the index of carrying capacity of land, which is rather limited in rugged mountainous regions. Thus, the very size of population suggests advantage/disadvantage of site.

Sex ratio is a negative indicator in areas like Kinnaur that have been chronically suffering from male out-migration due to limited economic avenues. It suggests that higher the sex ratio more is the backwardness. More females per thousand males are due to sex-selective migration. It is observed that males of the villages out migrate if the area is plagued with economic hardship. Thus, higher sex ratio is suggestive of backwardness and less transformation.

Higher percentage of workers in village shows contribution of more number of people towards prosperity of village. High participation can also be due to high participation of children in work force. Therefore, to avoid this shortcoming and to show the diversification of economy percentage of main other workers to total workers have also been taken. Non-primary activities in backward areas are generally linked to diversification of economy. Thus, the share of workers in "other services" in the villages of Kinnaur does not suggest economic change.

Literacy shows the level of cultural and technological advancement.[4] It serves as both a factor and a product of development. Villages with higher literacy rate experience

stronger wind of change. It is more in rugged regions like Kinnaur where for long isolation, the level of awareness is low on one hand and establishment of educational infrastructure is difficult due to hostile environment on the other. The role of female literacy in remote areas is even greater as a literate female plays role in the development of entire family. High female literacy is indicative of social awareness resulting from general progress of a region.

Socio-economic amenities have direct link with the process of development and with the ability of settlement to produce impulses of advancement in its zone of influence. A village with socio-economic amenities starts serving as service center. Thus, develop the whole area under its influence. The role of these amenities is even greater in hill areas as the number of amenities is rather low. The data on socio-economic amenities are available in terms of its presence absence as well as of different levels. Consequently, there is problem of converting these attributes into variables. To achieve and to make ordering of the amenities, weights had to be assigned in the following manner.

Table-V.12

Weights of Amenities

S. No.	Health	Weights
a.	Ayurvedic health center	1
b.	Homeopathic health Centre	2
c.	Primary health sub-centre	3
d.	Community health center	4
e.	District Hospital	5

S. No.	Education	Weights
a.	Primary School	1
b.	Middle School	2
c.	High School	3
d.	Senior Secondary School	4
e.	College	5

S. No.	Postal Service	Weights
a.	Post Office working under Jeori (SO)	1
b.	Post office (Single handed)	2
c.	Post Office (Double Handed)	3
d.	Post office H.O.	4
e.	Post office H.O. HSG.	5

In order to rank the villages according to transformation, composition of the values was needed. Indicators chosen for the study are not comparable because of being in different scales. Therefore, the values were made scale free by dividing values of each column by their respective mean. The scale free values, thus, obtained were added to

construct composite indices of socio-economic characteristics, infrastructural amenities as well as the transformation. The index of transformation has been constructed by summing up the former two indices. The value of each column shows the relative position of different villages in the related aspect whereas the rows are suggestive of importance of an individual village in the composite indices but in relative terms.

The formula used for the exercise is _____

$$\text{Composite index of transformation} = \sum_{J=1}^{m} \frac{Xij}{Xj}$$

Xij = Value of the j^{th} variate for i^{th} village

m = Number of variables.

The final stage in the exercise is the categorization of the settlements in hierarchical fashion. Taking Standard Deviation as a class interval from the mean has made categories.[5] In order to know the relative position f socio-economic and infrastructure variables cross comparison between villages has been attempted. There after the index of transformation has been analysed. Before looking into the composite scores, position of villages in respect of each set of variables has been discussed separately.

In the course of the analysis it is important to take note of the fact the whole region is developed and has experienced at least some degree of change. The exercise has been undertaken to know the degree of transformation across the villages of Kinnaur. The relative levels of villages hardly share any comparison to outside. Therefore, it is not comparable to villages outside the region.

V.8 Basic Demographic and Socio–economic variables:

The variables of socio-economic characteristics guide the development of an encapsulated region like Kinnaur. Thus, such variables are responsible for the transformation of the area. The group of socio-economic variables includes total population, total and female literacy rates as well as sex ratio, the last variable is a

negative variable because the higher sex ratio is the indicator of lower level of development and thus little transformation. So the inverse of sex-ratio values was worked out to make it positive indicator

Table-V.13

Composite index of Socio-Economic Transformation

Category	Value of C.I	Rank	No of villages	Percent of villages
More than Mean + 2 S.D	> 11	I	8	3.4
Mean + 1 S.D to Mean + 2 S.D	8.61 - 11	II	19	8.1
Mean to Mean + 1 S.D	6.22 - 8.61	III	65	27.8
Mean - 1 S.D to Mean	3.83 - 6.22	IV	127	54.3
Less than mean - 1 S.D	< 3.83	V	15	6.4

Note: To avoid clustering of settlements in rank IV, villages have been categorized into five ranks only for the socio-economic variables. The ranking according to the infrastructural facilities is only into four categories, because the value of the fifth rank is in negative.

Source: Computed from Primary Census Abstract, 2001

Table V.13 Shows eight villages have been assigned the first rank and have index value of more than Mean +2 Standard Deviation. These villages are Jariyo, Sungra, Reckong-Peo, Tikrang, Punang-Khas, Palingi, Khwangi and Hollang. Such villages include administrative centers having offices, adjoining villages and villages occupying the central position in the dispersed settlements. Thus, these villages are the service centers also.

The settlements of second category comprise of nineteen villages which makeup 8.1 percent of the inhabited villages of Kinnaur. Another 65 villages belonging to the third rank of settlement hierarchy have index value of Mean to Mean +1 Standard Deviation.

The settlement group ranking IV has the largest number of villages i.e., 127, which is more than fifty percent. Villages having middle values are scattered in the different river valleys and over relatively level land. The last category with 15 villages having the index value less than mean minus one Standard Deviation is the group, which had undergone least socio-economic transformation. This is because such villages are situated towards the head of river valleys where the impulses of development got delayed and filtered out. A few villages with low index value are located in the lower valley areas. Such villages are inhabited by seasonal in-migrants from nearby areas.

The analysis suggests that the nodality of the villages is responsible for the greater degree of socio-economic transformation. Villages with moderate level of transformation are mostly the villages adjoining the nodal villages. Along with the nodal villages the adjoining villages are spatially patterned in lower river valleys where the climatic conditions are wilder. The table V.13 suggests that majority of the villages in Kinnaur have undergone moderate transformation of socio-economic nature. The Jareyo village is the most socio-economically transformed village. Sungra and Reckong-Peo villages follow it respectively. However, Morang–Kanda village is least transformed.

5.9 Variables of Infrastructure:

Table-V.14

Composite index of transformation due to Infrastructure Development

Category	Value of C.I	No of Villages	Percent of Villages	Rank
More than Mean + 2 S.D	> 11.88	10	4.3	I
Mean + 1 S.D to Mean + 2 S.D	7.65 - 11.88	28	12	II
Mean to Mean + 1 S.D	3.42 - 7.65	38	16.2	III
Less than Mean	< 3.42	158	67.5	IV

Source: Computed from Primary Census Abstract, 2001

Presence of health, education and postal facilities have been taken into account to show the overall development and thereby the change. The presence of infrastructure is vital in predominantly agrarian society like Kinnaur.

The table V.14 clearly shows that there are 67.5 percent of villages i.e. 158 villages have composite index value of less than 3.42. Out of these, 86 villages have none of the three infrastructural facilities. All these villages are seasonal and remote. Some of these villages are temporary villages of migrant construction workers. Ten villages rank first with index value of more than mean plus 2 Standard Deviation i.e., the index value of more than eleven. These villages are Hango, Kilba-Khas, Urnikhas, Katgaon, Lippa Khas, Chango Nichla, Tapri, Up Mohal Poo and Reckong-Peo. Villages of the category are mainly administrative centers and nodal villages, which are centrally located. The second category comprises of villages with C.I. value of 7.65 to 11.88. Twenty-eight villages fall under this group. Some of these are Jangi, Asrang, Kalpa, Nesang, Rakchham, Sungra, Sangla, Shango, Kothi, Rispa, Nako, Charang and Rogi etc. Majority of these villages are religious centers or are sites of developmental projects such as hydroelectric projects etc. Third ranking villages are thirty-eight in numbers. These villages are situated in higher altitude and have extremely rugged terrain. Such factors are responsible for difficulties in laying down good infrastructural facilities in villages of categories three and four. Overwhelming majority of villages fall in very low infrastructure development category.

The analysis suggests that there is variation in the distribution of development of infrastructure so is the change associated to it. Administrative centers and adjoining villages have higher concentration of infrastructural facilities. Religious centers and villages where developmental projects are located have moderate level of infrastructure. There is complete absence of facilities in temporary as well as remote settlements with extremely small population size.

V.10 Hierarchy of Settlements

Composite index of transformation

The values of the two indices were added to work out the composite index of transformation. This index shows the overall level of transformation across the villages of Kinnaur and the relative position of various settlements.

Table-V.15

Composite index of Transformation

Category	Value of C.I	No of villages	Percent of villages	Rank
More than Mean + 2 S.D	> 15.32	34	14.5	I
Mean + 1 S.D to Mean + 2 S.D	9.52 - 15.32	49	20.9	II
Mean to Mean + 1 S.D	4.14 - 9.52	136	58.1	III
Below Mean	< 4.14	15	6.4	IV

Source: Computed from Primary Census Abstract, 2001

Table-V.15 shows that there are 34 villages ranking first in terms of transformation. Some of such villages are Chango, Lippa, Kanam, Kothi, Poo, Jangi, Kalpa, Sungra, Tapri, Reckong-Peo etc. Their higher ranks can be attributed to the higher participation ratio of main other workers, high literacy rate and better infrastructure facilities.

There are 49 villages with composite scores more than Mean + two S.D. Some such villages are Rispa, Thangi, Chuling, Shalkar, Spiloo, Ragi, Chhitkul etc. and belong to rank second. It is observed that 136 villages fall in the third rank, which has the C.I. score of 4.14 to 9.52.

The last category has the C.I. Value below mean i.e. below 4.14. This group comprises of only 15 settlements. Out of the fifteen villages which are least transformed, some of these are Nagassaring, Kagsthal, Shuthanang, Basharang, Phayag Choden, Rawa, Rall Santhang etc. The factors influencing the values of the composite index are the same as those shown in previous analyses. Settlements with higher score of the index are administrative headquarters and settlements with moderate scores are adjoining villages to the nodes as well as settlements, which works as service centers for the dispersed villages. However, the settlements with low score of C.I. of transformation are situated at higher attitude and experience harsher climate. The impulse of development is filtered out to a great degree due to remoteness of such villages. Thus, the group of villages has witnessed lesser change. The last two categories in all comprising 151 villages have witness low level of transformation.

The analysis shows uneven change across the villages of Kinnaur. This unevenness is due to certain geographical and historical factors. The nodal settlements are situated mostly in lower river valleys because such places have relatively flat land for economic activities while the settlements in steeper slope have small population size and poor socio-economic and infrastructural facilities.

The poor accessibility is linked to the restriction in occurrence of nodal places. Therefore, the factors like population density, sex ratio, literacy rate, female literacy rate, other workers, and infrastructure such as health; education, postal facilities etc. are determining forces of distribution of nodal places in Kinnaur. Apart from this the site of nodes are also governed by the physical milieu of an area.

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Chapter VI

Summary of Conclusion

Like other border districts of the Himalayas, Kinnaur has been structurally neglected on account of its remoteness and inclement environment. Till a recent past, the district was visited only by traders, pilgrims or traversed by former campaigners of adjoining princely states, explorers and government officials.

Kinnaur has been a part of the larger Himalayan spiritual fort for the religious minded people of the mainstream and has never been densely populated. People for ages have lived here in small clusters surrounded by either forest or the wilderness of the semi-arid conditions. However, all these settlements are confined to different river valleys due to greater carrying capacity and favourable climatic conditions.

Earlier Kinnauri society was made up of nomadic pastoralists. There was no sign of 'development' till few decades ago. Nevertheless, as the Kinnaurese had a closed society of self-sufficiency, there was probably no need either for the 'development' until people from rest of India entered Kinnaur.

The mere entry of outsiders into Kinnaur was not the harbinger of development and transformation of Kinnaur and the Kinnaurese. Though the people of Kinnaur brave the difficult topography and harsh climate, they have been blessed with natural bounties too and they probably did not require the engine of development. Instead, they just need direction and catalyst for advancement.

As the population of Kinnaur multiplied due to the combined effect of natural population growth and continued immigration from the nearby areas, the natural resources saw continuous decline. Still development was a mere subject matter of benevolence of missionaries who were not so successful. Even after independence, planning and perspective for the area was lacking. The border dispute between India

and China in 1962 jolted the Government of India to the harsh reality that in the light of modern technological marvels, the Himalayas no longer serve as the physical shield of protection. Further, the end of Kinnaur-Tibet trade added to the economic hardship of the Kinnaurese. These two prime events helped the sinking of idea about necessity of introducing developmental work.

Kinnuar is diverse both in its physical and human aspects. The situation in Kinnaur, though has improved over the years, it is still not up to the mark. The district remains administratively in inadequate focus.

I.1 Kinnaur is predominantly rugged mountainous and one of the most remote border districts in the country. It is entirely rural and possesses heterogeneous population with distinct cultural traits from the nearby areas.

I.2 The district is inadequately developed and geographically it is by and large a representative of higher reaches of the Himalayas and Trans-Himalayas, but with its own tinge.

I.3 As the district experience more snowfall than rainfall, Kinnaur remains cut-off from rest of the country during the extreme winter months. Even the intra-valley interaction is also seriously hampered during winters.

I.4 Kinnaurese are one of the least known ethnic people of India and is the third largest ethnic group of Himachal Pradesh. Till a recent time, they had 'backward' and 'closed' society.

I.5 Long isolated history of Kinnaur was halted by the dramatic change in the Government initiatives after the Chinese aggression in October 1962, when spread of educational facilities, construction of roads and implementation of other developmental projects saw the light of the day.

II.1 Geological formations of Kinnaur range from pre-Cambrian to Triassic-Rhaetic period. The major types of rocks in Kinnaur are Schist, Gneiss, Granites,

Quartzites, phyllite coral limestones. Presence of coral limestones suggests the presence of marine fossils and the emergence of the mountain ranges from sea.

II.2 Kinnaur is formed of great masses of mountain spurs. Valley of Baspa is the only area where the slope gradient is gentler.

II.3 The Zanskar, the Great Himalayan and Dhauladhar Range run near parallel to each other in Kinnaur. The Zanskar and Dhauladhar Range mark the northern and Southern boundaries respectively. Highest peak Leo in Kinnaur belongs to Zanskar Range. The third highest peak is at the Satlej-Spiti divide and it belongs to the Great Himalayan Range.

II.4 Apart from the mountain ranges, river valleys form very important geomorphic feature of the area. The main valley Kinnaur is situated between the altitudinal ranges of 1220 meters to 3050 meters above mean sea level. It is the height of entering and leaving point of Satlej River. Extent of inhabited land is confined to different river valleys; however, each valley has its own geographical and socio-ecological distinctiveness.

II.5 The Satlej River is the chief river of Kinnaur and has largest valley having general direction from northeast to southwest. After originating from southern face of the Kailash Range, it makes its way into the district after cutting through Great Himalayan Range. Finally, it passes through Dhauladhar Range and comes out of the district. Baspa and Spiti rivers are the two major tributaries of the Satlej River in the district. The meeting point of Satlej and Spiti Rivers is the point where Zanskar Range meets Great Himalayan Range.

II.6 Climate is harsh with cold-arid conditions. Moisture laden wind reaches uptil Kalpa tehsil only where the mighty Great Himalayan Range stops it. That is why Upper Kinnaur is a semi-arid zone and does not experience much of precipitation. This zone does receive some precipitation in the form of snow due to western disturbances.

II.7 Snow fed side streams and hill-rills form water resources for irrigation because the water of main streams cannot be used due to the greater altitudinal difference between the river streams and higher agricultural fields.

II.8 Soil of Kinnaur is immature with shallow profile. Entisols, Histisols, Mollisols and Alfisols are the four broad sub-groups of soils found in Kinnuar.

II.9 Lower Kinnaur has thick coniferous vegetation. Middle Kinnaur has such vegetation largely on both banks of Satlej River and its tributaries. It is limited to the southern slopes and lower elevation of the Great Himalayan Range and the Dhauladhar Range. Northern faces of these ranges are poor in vegetation and the higher areas remain under perennial snow. Alpine meadows reappear after remaining six to eight months under snow. Humid and sub-humid conditions of lower and middle Kinnaur becomes cold arid in upper Kinnaur where vegetation is represented only by bushes, stunted Pines and grasses. Large part of upper Kinnaur is bare rocky area in the form of a cold desert.

III.1 Kinnaur has mixed stock of people. Different racial groups entered Kinnaur at different times. Most of the people came from Ladakh, Tibet and Kashmir. The area has also experienced the entry of central Arian nomads Shakas/Scythians.

Ethnically people belong to the two groups viz. Tibeto-Mongoloid and Indo-Aryan. The former group is dominant in Upper Kinnaur. Middle and lower Kinnaur consisting of Kalpa and Nichar blocks and have predominance of Indo-Aryan stock. Kinnaurese are divided into two broad social groups viz. *Khasia* and *Beru*.

III.2 There is diversity of language. The dialects of Kinnaur are different from *Pahari* dialect, which is spoken in many other parts of Himachal Pradesh. Tibetan language is spoken in sub-tehsil Hangrang. Hindi is second language of the Kinnaurese.

III.3 People consume coarse type of cereals, which are grown easily in the cold climate of Kinnaur. Women in almost every household distil spirit. Use of

alcohol is wide spread but Kinnaur women seldom take it. People use woolen cloths throughout the year. *Thepang* is the characteristic dress of Kinnaur and is worn by nearly every Kinnauri male and female.

III.4 Houses are constructed as separate units and using locally available raw materials. Houses in upper Kinnaur used to be constructed with stones. Use of wood was not prevalent because of absence of vegetation. But in modern constructions, use of wood along with stones is widespread even in the cold-arid areas of the district. Houses do not have provision for separate kitchen. Food is prepared in the main living room in winters and outside the house in summer months.

III.5 Dances, songs as well as fairs and festivals present cultural face of Kinnaur. The main purpose of such fairs is to promote social mixing up and enjoyment during leisure. Nearly all the festivals have religious aspects.

III.6 Elaborate ceremonies are observed on birth of child. Kinnaurese cremate their dead. Bodies of children who up to two years are buried and children of 2 to 5 years are put into river. Polyandry has given way to monogamy and there are four types of marriages. Divorce is permissible in the society. Sorority is permissible too; where a man can marry his wife's sister. But this practice is not frequent.

III.7 Ecological zones match cultural zones. Arid zone of i.e. upper Kinnaur has Lamaistic Buddhism whereas the moist zone has Hinduism as the dominant religion. The middle zone has influences of both the religions.

IV.1 Natural environment being hostile exercise a strong influence upon the distribution pattern as well as upon size of population. Most of the area of Kinnaur is uninhabited. Population is confined to lower portions of river valleys. The district is sparsely populated barring a few pockets. Gentler slopes for agriculture and sources for irrigation are the two factors that determine the

pattern and site of settlements. Settlements have come-up mainly on southern and western slopes. The realizations of strategic location of Kinnaur have brought many development projects and military, ITBP as well as Para-military personnel. This increased population growth rate of Kinnaur.

IV.2 Different pockets can be identified on the basis of high and low sex ratio because Kinnaur experience sex-selective migration. Out migration of young males from remote villages of Kinnaur makes the sex ratio of villages quite high. Whereas the in-migrating government officials and labourers make the sex ratio low. Therefore, administrative centers and construction sites have low sex ratio.

IV.3 Kinnaur has registered considerable rise in literacy rate and educational facilities in recent decades. However, there is still a significant gap between male and female literacy. This problem is partly due to the fact that the region serves as the 'non-family station' for educated government officials and for people in the defense services.

V.1 The hostile natural environment has marked influence over the economy of Kinnaur. Agriculture is the mainstay of the economy. There is considerable increase in the proportion of workers engaged in other services. People engaged in other services are largely outsiders.

V.2 Land for cultivation is scarce still agriculture is the chief occupation of people. Agriculture employs about sixty percent of the work force. Larger area of district lies as barren and uncultivable land as well as permanent pastures and other grazing lands. A good proportion of land has been put to non-agricultural use. Area under forests is meager. The total cropped area cover about two percent of the total land of the district.

V.3 Low carrying capacity of the land limits the population size of the villages. However, administrative centers and other nodal villages have higher population pressure.

V.4 Role of irrigation in agriculture is very important. Irrigation facilities are present to about sixty percent of cultivated land. Fields are irrigated by *kutcha* and *pucca kuhls* that bring water from hill rills or from melting snow.

V.5 Harsh climate with longer winter has restricted the length of agricultural season; winter is agriculturally off-season. If wheat and Barley are sown in un-irrigated area it is done so right before the onset of winter. Seeds remain under snow till the snow melts in sprig season. Wheat and Barley are the major cereal crops of Kinnaur. Potato is another important crop. Traditional method of cultivation is still prevalent, so productivity is low. Agriculture is of subsistence type.

V.6 Kinnaurese rear sheep, goat and *dzo*. The first two animals are kept for wool and meat. *Dzo* is milked and bulls of the *dzo* stock are used for ploughing farms. These animals are used as beasts of burden too.

V.7 Efforts have been made to provide postal facilities to serve most of the villages in order to improve communication. Educational institutions have been established for better awareness. Health facilities of low order are provided to cure simple ailments.

V.8 Socio-Economic index of transformation reflects low level of change with variations among villages. Administrative villages and other nodal settlements show higher transformation.

V.9 Index of infrastructure indicates higher variations than the Socio-Economic index. Infrastructural facilities are largely confined to in and around administrative and other nodal villages. Villages populated by seasonal in-migrants and remote villages with small population size are mostly without such facilities. The nodal settlements are situated mostly in lower river valleys because such places have relatively flat land for economic activities. While the settlements on steeper slopes have small population size and poor socio-economic and infrastructural facilities.

V.10 There are four orders of settlements according to the index of transformation. Maximum numbers of settlements are third order settlements. Reckong-Peo, Poo, Kalpa, Jangi, Sungra, Lippa and some others presents first order settlements. Their higher ranks can be attributed to the higher participation ratio of main other workers, high literacy rate and better infrastructural facilities.

Though the region remains to be economically and socially under developed, the social factors have started transforming to betterment. As the notion of geographical distances is decreasing with introduction of efficient communication modes, there is every chance of improvement in the economic conditions of the people. The greater market facilities for the horticultural produce of Kinnaur and the resultant diversification of economy are in the offing. Besides, the region has also started to figure on the tourism map of Himachal Pradesh. Thus, it is only a matter of time that the new social and economic order will sees the light of the day in Kinnaur. However, there are few areas which require immediate attention to ward off inducement of ecological disasters are –

a) The *Kuhls* must be pucca or lined to avoid seepage to the nearby areas prone to landslides.

b) Topographic sequencing in agriculture is needed as given -

- Higher slopes should have trees plantation.
- Intermediary slopes needed to develop Pastures with trees.
- Lower slopes should have Plantations and agriculture.

c) Inaccessibility is the major source of problem. So, connectivity needs to be improved.

In the light of traditional proximity of trade and culture with Tibet, the border trade on limited scale through Kinnaur should be negotiated with the Chinese. This

will not only provide greater spiritual and cross-cultural currents between the two regions but will also attract better infrastructure and more economic opportunities as well as other resources for Kinnaur.

APPENDICES

Plate Appendix 1 Workers of Mahila mandal in courtyard of Durga temple just after performing phulech pooja.

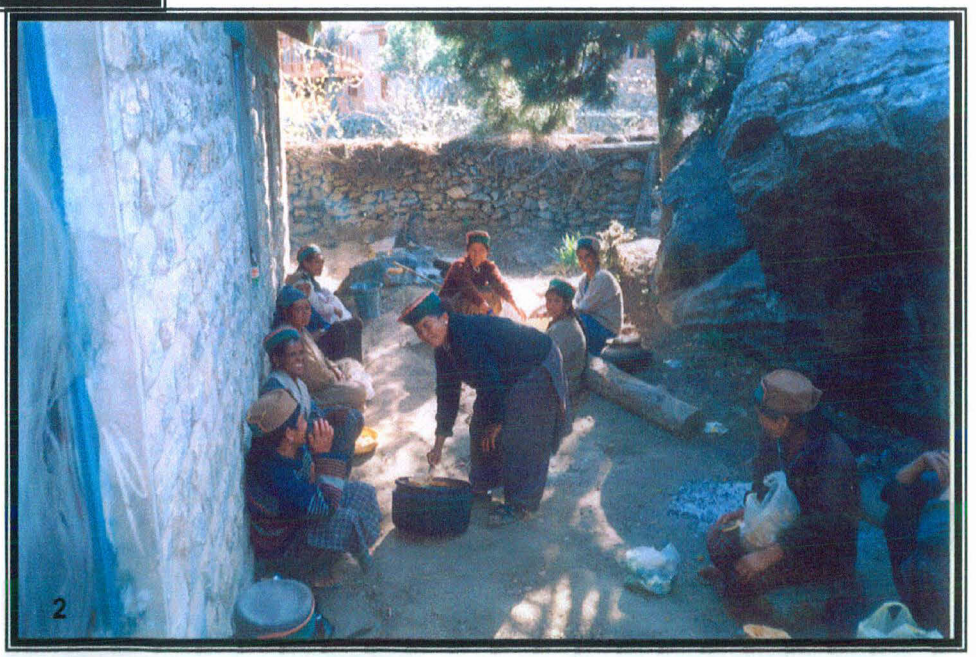

Plate Appendix 2 Women of Bre-Lingi village serving prasad of *Halwa* and *Du* after performing phulech pooja for better harvest of fruits and other crops.

Name of villages	X1/X1^{-}	X2/X2^{-}	X3/X3^{-}	X4/X4^{-}	X5/X5^{-}	X6/X6^{-}	X7/X7^{-}	X8/X8^{-}	X9/X9^{-}
Sumra (45)	0.72	0.86	0.97	1.03	1.20	0.70	4.42	1.12	2.06
Thang Karma (29/4)	0.02	0.00	0.83	0.00	1.54	1.83	0.00	0.00	0.00
Shalkar (35/1)	1.14	0.83	0.81	0.90	1.03	0.60	4.42	3.36	2.06
Chango Uperla (29/1)	1.88	0.94	0.96	1.14	1.03	0.84	0.00	0.00	0.69
Chango Nichla (29/2)	1.76	0.81	0.94	1.01	0.98	0.37	5.89	5.60	2.74
Malling Dogri (20/2)	0.11	1.64	0.89	0.98	0.87	2.61	0.00	0.00	0.69
Malling (20/1)	0.75	0.85	0.92	0.98	1.14	0.43	0.00	3.36	0.69
Nako (21/1)	1.48	0.81	0.92	0.99	1.07	0.64	4.42	1.12	2.74
Yangthang (21/2)	0.18	2.19	1.29	1.25	1.36	2.67	0.00	0.00	0.69
Leo (19/1)	1.86	0.97	1.08	1.17	1.07	0.64	0.00	1.12	3.43
Hango (7/1)	0.91	0.86	0.93	0.92	0.74	0.45	4.42	5.60	2.06
Dung (19/3)	0.18	1.37	0.98	0.97	1.03	0.80	0.00	0.00	0.00
Hangmat (7/2)	0.35	1.00	0.89	0.85	0.86	0.51	0.00	0.00	0.69
Chuling (8)	0.70	1.14	1.07	1.01	1.19	0.56	0.00	3.36	2.74
Ka (21/3)	0.10	0.89	0.49	0.50	1.22	0.41	0.00	0.00	0.69
Up Mohal Thoropa (43/2)	0.16	3.47	0.46	0.19	1.23	3.66	0.00	0.00	0.69
Up Mohal Ropakhas (43/1)	1.26	0.81	0.92	0.98	0.87	0.37	0.00	3.36	0.69
Up Mohal Sumtat (43/3)	0.38	1.02	0.89	0.97	0.99	0.27	0.00	0.00	0.69
Up Mohal Giabong Khas (39/1)	1.45	1.23	1.17	1.29	1.04	1.34	2.94	0.00	3.43
Up Mohal Giabong Parla (39/3)	0.66	0.87	0.98	1.12	0.90	1.15	0.00	0.00	0.69
Up Mohal Taling (13/2)	0.18	0.62	0.98	1.06	1.11	1.00	0.00	0.00	0.69
Up Mohal Rush Kulang (13/1)	1.08	0.94	0.97	1.21	0.87	0.90	0.00	0.00	0.69
Up Mohal Sanam Khas (15/1)	2.15	0.82	0.91	0.98	0.94	1.10	2.94	1.12	3.43
Up Mohal Dhup Hang (15/2)	0.13	1.36	0.65	0.87	0.93	0.70	0.00	0.00	0.00
Up Mohal Chelit (16)	0.11	3.67	0.78	0.91	1.33	3.42	0.00	0.00	0.00
Up Mohal Labrang Khas (3/1)	2.01	0.75	1.04	1.16	1.01	0.50	0.00	3.36	2.06
Up Mohal Namkalang (3/2)	0.10	2.77	0.90	0.79	1.17	2.78	0.00	0.00	0.00
Up Mohal Foche (1/2)	0.01	0.00	1.24	0.00	1.54	3.66	0.00	0.00	0.00
Up Mohal Spiloo Khas (1/1)	2.47	1.22	1.01	1.15	1.10	1.92	0.00	3.36	0.69

Name of villages	X1/X1¯	X2/X2¯	X3/X3¯	X4/X4¯	X5/X5¯	X6/X6¯	X7/X7¯	X8/X8¯	X9/X9¯
Up Mohal Kanam Khas (6/1)	1.82	0.89	1.10	1.17	0.87	0.50	2.94	4.48	2.74
Up Mohal Kanam Nichla (6/2)	0.98	0.83	1.09	1.16	0.86	0.44	0.00	0.00	2.06
Up Mohal Gyamil (6/4)	0.18	0.00	1.57	0.00	1.54	3.66	0.00	0.00	0.00
Up Mohal Shyaso (17)	0.35	0.84	0.98	1.17	0.92	0.84	2.94	0.00	0.00
Up Mohal Danmochhe (31/3)	0.87	1.55	1.34	1.54	0.87	3.14	0.00	0.00	0.00
Up Mohal Labrang (31/2)	1.13	1.85	1.33	1.46	1.02	2.63	2.94	1.12	5.49
Up Mohal Poo (31/1)	3.16	1.14	1.20	1.33	0.78	2.38	8.83	5.60	3.43
Up Mohal Khabo (32/1)	0.22	1.11	0.83	0.86	0.90	0.87	0.00	0.00	0.69
Up Mohal Namgia Khas (35/1)	1.31	1.14	1.09	1.24	0.93	1.75	4.42	1.12	2.74
Up Mohal Tashi Gang (35/3)	0.30	1.08	0.80	1.01	1.09	1.02	0.00	3.36	0.69
Up Mohal Yangti Kanda (30/4)	0.02	0.00	1.45	0.00	1.54	3.20	0.00	0.00	0.00
Up Mohal Dubling (30/1)	0.99	0.92	1.03	1.17	0.64	1.87	0.00	3.36	2.06
Up Mohal Dabling (30/2)	0.11	0.64	0.87	1.25	0.57	0.52	0.00	0.00	0.69
Porang Kanda (7/3)	0.14	7.27	0.58	0.00	1.37	0.00	0.00	0.00	0.00
Tokto (7/2)	0.45	0.70	0.86	0.87	1.01	0.11	0.00	0.00	0.69
Lippa Khas (16/1)	3.30	0.82	1.02	1.14	1.13	0.34	4.42	5.60	3.43
Lapo (16/2)	0.04	0.59	0.11	0.00	0.92	3.66	0.00	0.00	0.69
Asrang Khas (7/1)	1.04	1.04	1.02	0.99	1.10	0.19	4.42	4.48	2.06
Sheelapur (34/6)	0.31	0.89	1.13	1.35	0.92	0.12	0.00	0.00	0.00
Swaden (34/7)	0.37	0.87	1.15	1.31	0.94	0.34	0.00	0.00	0.69
Kutang (28/2)	0.08	1.42	0.76	0.64	0.71	2.74	0.00	0.00	0.69
Nakal Kuwa (64/7)	0.02	1.77	0.28	1.06	1.54	0.00	0.00	0.00	0.00
Samodayan (65)	0.01	1.77	1.10	2.12	1.03	1.83	0.00	0.00	0.00
Horang Pawa (78/2)	0.38	1.77	0.56	0.25	1.14	1.81	0.00	0.00	0.00
Nesang Khas (78/1)	1.06	0.75	1.09	1.26	1.27	0.41	2.94	4.48	2.74
Thuwaring (64/5)	1.19	0.72	1.16	1.30	1.06	0.44	0.00	0.00	0.00
Gramang (64/6)	1.48	0.77	1.04	1.12	0.87	0.33	0.00	0.00	3.43
Jangi Khas (28/1)	2.37	0.92	0.99	1.08	0.97	1.24	4.42	4.48	2.74
Khadura (34/2)	0.86	1.05	0.95	1.04	0.96	1.04	0.00	0.00	0.69

Name of villages	X1/X1¯	X2/X2¯	X3/X3¯	X4/X4¯	X5/X5¯	X6/X6¯	X7/X7¯	X8/X8¯	X9/X9¯
Rarang Khas (34/1)	2.30	0.93	1.22	1.38	1.12	0.20	0.00	0.00	0.69
Parga (40/2)	0.38	0.98	0.92	0.95	1.31	0.07	0.00	0.00	0.00
D.P.F-187 (42)	0.01	1.33	0.33	0.00	0.92	2.44	0.00	0.00	0.00
D.P.F-188 (41)	0.02	0.89	0.55	0.00	0.51	1.83	0.00	0.00	0.00
Kutian (40/3)	0.61	0.65	0.88	0.95	1.31	0.04	0.00	0.00	0.00
Ribba Khas (40/1)	2.40	0.80	1.07	1.25	1.33	0.13	0.00	5.60	3.43
Holdang (40/4)	2.15	1.31	1.03	1.17	1.13	0.70	0.00	0.00	0.00
Skiba (48/4)	0.89	1.06	1.05	1.21	1.07	1.04	0.00	0.00	0.69
Akpa Khas (33/1)	1.61	0.93	1.00	1.10	0.82	1.92	2.94	3.36	2.06
Holdang (48/3)	0.07	6.50	1.46	1.41	1.42	0.16	0.00	0.00	0.00
Rispa Khas (48/1)	1.49	1.08	0.96	1.04	1.15	0.08	2.94	3.36	2.06
Lijing (48/2)	0.09	2.33	0.97	0.53	1.38	0.00	0.00	0.00	0.00
Khokpa (64/2)	1.18	1.04	0.99	1.02	0.90	0.69	0.00	0.00	0.69
Shiling Khas (64/1)	1.43	1.24	1.11	1.13	1.05	1.63	0.00	0.00	0.00
Roowang (64/3)	0.42	1.17	0.54	0.57	0.91	2.72	4.42	0.00	0.69
Swaling (53/4)	0.02	0.44	1.38	1.59	0.51	0.00	0.00	0.00	0.00
Lambar (53/3)	0.09	0.22	0.99	1.06	0.72	0.26	0.00	0.00	0.69
Thangi Khas (53/1)	1.83	0.90	1.24	1.37	1.03	0.31	4.42	1.12	2.74
Piwar (53/2)	0.05	0.89	1.03	0.79	0.87	0.41	0.00	0.00	0.69
Kurpo (40/5)	0.01	1.33	0.66	1.06	0.92	0.00	0.00	0.00	0.00
Kuno Khas (60/1)	0.27	0.52	0.95	1.17	0.86	0.44	0.00	3.36	0.69
Charang Khas (59/1)	0.61	0.60	1.13	1.36	0.92	0.51	4.42	1.12	2.06
Ragura (6/2)	0.63	0.98	1.01	1.04	1.17	0.18	0.00	0.00	0.00
Khwanta (6/6)	2.57	0.83	1.10	1.24	1.29	0.08	0.00	0.00	0.69
Mebar (6/8)	0.01	0.89	0.41	0.00	0.77	3.66	5.89	0.00	0.69
Panwa (13/5)	0.01	0.00	0.83	0.00	1.54	1.83	0.00	0.00	0.69
Boktu (6/7)	0.08	1.11	0.43	0.53	0.91	3.43	0.00	0.00	0.00
Pangi (6/1)	3.13	0.89	1.10	1.18	1.02	0.11	5.89	1.12	2.74
Purbani Khas (42/1)	1.19	0.80	0.88	0.97	0.88	0.37	5.89	1.12	2.06

Name of villages	X1/X1^{-}	X2/X2^{-}	X3/X3^{-}	X4/X4^{-}	X5/X5^{-}	X6/X6^{-}	X7/X7^{-}	X8/X8^{-}	X9/X9^{-}
Rawa (42/2)	0.16	1.16	1.19	1.29	0.84	0.13	0.00	0.00	0.00
D.P.F. C - 179 - 180 (49)	0.57	1.15	0.93	1.02	0.75	0.98	0.00	0.00	0.00
Pawari (41/1)	1.38	1.32	1.14	1.10	0.79	2.47	5.89	0.00	2.06
Telingi (13/1)	0.72	0.94	1.23	1.38	1.39	0.30	0.00	0.00	0.69
Tarkhwa (13/3)	1.08	0.86	1.14	1.39	1.30	0.39	0.00	0.00	0.00
Maki Mrang (13/2)	1.17	1.26	1.26	1.43	0.73	2.21	0.00	0.00	0.00
Khwangi (14/1)	4.92	1.16	1.13	1.20	0.81	2.31	5.89	0.00	0.69
Kothi (15/1)	3.54	1.09	1.29	1.50	0.90	1.14	5.89	0.00	2.74
Duni (17/1)	1.50	0.96	1.10	1.25	1.00	1.42	4.42	0.00	0.00
Kashmir (15/2)	1.48	0.75	0.89	1.00	0.83	0.68	0.00	0.00	0.69
Goli (17/3)	0.01	3.55	0.99	0.00	1.23	0.00	0.00	0.00	0.00
Dumdumka (19/2)	0.01	0.00	0.83	0.00	0.77	3.66	0.00	0.00	0.00
Radule (20/2)	0.60	0.76	1.07	1.30	0.94	0.87	0.00	0.00	0.00
Kastyo (30/3)	0.01	1.33	0.99	1.06	1.23	0.91	0.00	0.00	0.00
Dakhaye (30/4)	0.22	1.05	1.01	0.96	1.20	0.07	0.00	0.00	2.06
Talangcho (30/2)	0.46	0.83	0.96	0.94	1.17	0.09	0.00	0.00	0.69
Rogi (30/1)	0.94	0.79	0.91	1.00	1.05	0.46	4.42	1.12	2.06
Shuda Rang (20/4)	1.48	0.88	1.23	1.46	0.93	0.37	0.00	0.00	0.00
Saryo (20/3)	1.05	0.98	1.09	1.19	1.06	0.69	0.00	0.00	0.69
Jangal Mehfuza Mehduda C-242 (22)	0.26	0.77	1.09	1.17	0.87	0.59	0.00	0.00	0.00
Kalpa (20/1)	3.54	1.00	1.20	1.33	0.93	1.21	0.00	4.48	6.18
Brelingi (17/2)	1.72	1.00	1.11	1.27	0.48	1.11	0.00	0.00	0.69
Reckong Peo (18)	8.87	1.55	1.36	1.58	0.76	3.54	7.36	10.08	6.86
Yuwaringi (19/1)	2.51	1.06	1.22	1.41	0.64	2.47	0.00	0.00	0.69
Raang (21)	1.05	0.83	1.01	0.96	0.92	1.31	0.00	0.00	0.69
Yusaring (37/2)	1.71	0.83	1.14	1.35	0.35	0.51	0.00	0.00	0.00
Rali (33/2)	1.14	0.82	1.13	1.29	0.79	0.37	0.00	3.36	2.06
Phayag Choden (33/3)	0.01	0.44	1.10	1.06	1.03	0.00	0.00	0.00	0.00
Mebar (33/1)	0.12	0.73	0.66	0.87	0.69	3.25	0.00	0.00	0.69

Name of villages	X1/X1^{-}	X2/X2^{-}	X3/X3^{-}	X4/X4^{-}	X5/X5^{-}	X6/X6^{-}	X7/X7^{-}	X8/X8^{-}	X9/X9^{-}
Barang (37/1)	1.44	0.83	1.06	1.21	1.10	0.28	5.89	1.12	2.74
Tangling (41/2)	1.39	0.88	1.05	1.07	0.79	0.34	0.00	4.48	2.74
Majhgaon (1/2)	1.65	0.83	1.18	1.35	0.99	0.27	0.00	0.00	0.00
Nainsaring (1/5)	0.02	0.89	1.10	0.71	0.77	1.22	0.00	0.00	0.00
Shagarcha (1/4)	0.49	0.92	0.91	0.97	0.86	0.32	0.00	1.12	2.06
Dabling (1/7)	0.22	0.78	1.17	1.27	0.86	0.26	0.00	0.00	0.69
Pashpa (1/9)	0.12	0.89	0.79	0.95	1.19	0.24	0.00	0.00	0.00
Burang (1/10)	0.27	0.71	0.77	0.81	0.82	0.15	0.00	0.00	0.69
Hurba (1/8)	0.34	0.90	1.07	1.12	0.84	0.06	0.00	0.00	0.69
Shorang (7/1)	0.14	0.89	0.93	1.15	0.96	0.12	0.00	0.00	2.74
Gharshu (14/1)	0.46	0.81	0.99	1.13	0.99	0.18	0.00	0.00	0.69
D.P.F.C-96 (10)	0.02	5.32	1.42	2.12	0.66	0.00	0.00	0.00	0.00
Basharang (8/1)	0.07	0.53	0.90	0.99	0.83	0.28	0.00	0.00	0.00
Chhota Kamba (8/2)	1.05	0.76	1.06	1.04	0.91	0.48	1.47	2.24	2.74
Bara Kamba (7/3)	1.18	0.88	0.95	0.91	0.97	0.24	0.00	4.48	2.06
Salaring (14/4)	0.06	1.33	0.58	0.26	1.00	0.28	0.00	0.00	0.69
Rock Charang (14/2)	0.16	0.65	0.92	0.92	0.98	0.33	0.00	0.00	0.69
Kachrang (14/5)	0.38	0.91	1.03	1.04	0.90	0.15	0.00	3.36	0.00
Kandar (17)	0.74	0.89	0.90	0.92	1.13	0.80	0.00	1.12	2.06
Nathpa (16)	1.76	1.67	1.07	0.91	1.07	1.96	4.42	1.12	2.06
Homte (30/2)	0.40	0.73	1.03	1.15	1.15	0.33	0.00	0.00	0.69
Kafnu (30/1)	2.11	0.87	1.09	1.16	1.04	0.50	0.00	3.36	2.06
Yangpa (30/6)	3.65	0.93	1.07	1.18	0.89	0.07	0.00	3.36	2.06
Huri (30/3)	0.30	0.71	1.20	1.43	0.93	0.49	0.00	0.00	0.69
Masrang (30/4)	0.09	1.77	1.32	0.85	1.33	1.83	0.00	0.00	0.00
Katgaon (30/7)	2.07	1.07	1.14	1.22	0.87	1.27	4.42	5.60	3.43
Karaba (30/13)	0.69	0.79	0.94	0.99	0.94	0.29	0.00	0.00	0.00
Surcho (30/14)	0.16	1.21	1.18	1.35	0.98	0.22	0.00	0.00	0.69
Shango (30/12)	1.18	0.85	1.02	1.14	0.65	0.74	4.42	4.48	0.69

Name of villages	X1/X1¯	X2/X2¯	X3/X3¯	X4/X4¯	X5/X5¯	X6/X6¯	X7/X7¯	X8/X8¯	X9/X9¯
Baiyee (30/10)	0.34	0.73	1.18	1.38	0.95	0.31	0.00	0.00	0.69
Rarang (30/11)	0.19	1.82	0.65	0.00	0.89	3.66	2.94	1.12	0.69
Kangarang (30/15)	0.13	1.21	0.92	0.89	0.99	0.13	0.00	0.00	0.69
Puje (31/10)	1.84	0.92	1.06	1.18	0.82	0.22	0.00	0.00	0.69
Agade (31/ 7)	0.58	2.62	1.19	0.78	1.09	3.55	0.00	0.00	0.00
Linge (31/6)	0.34	1.92	1.09	1.00	1.01	2.10	0.00	0.00	0.00
Garade (31/8)	1.40	0.94	1.14	1.22	0.97	1.00	0.00	0.00	0.00
Kashpo (31/9)	1.09	1.04	1.04	1.09	1.02	1.11	0.00	0.00	0.00
Nigani (31/5)	1.36	0.97	1.36	1.58	0.94	0.55	0.00	0.00	0.69
Somo (31/2)	0.02	1.77	1.10	0.00	1.54	0.00	0.00	0.00	0.00
Paring Khor (31/1)	0.03	1.77	1.66	2.12	1.03	0.00	0.00	0.00	0.00
Kangosh (33)	1.70	0.97	0.95	1.05	1.10	0.41	0.00	0.00	2.74
D.P.F.-78 (57)	0.04	0.44	1.10	1.06	0.92	1.22	0.00	0.00	0.00
Sungra (32/4)	11.26	1.29	1.20	1.32	0.79	2.60	4.42	3.36	2.06
Punaspa (32/3)	1.02	1.52	1.25	1.33	0.90	2.67	0.00	0.00	0.00
Saki Charang (32/1)	1.63	2.04	1.10	0.98	1.22	2.05	0.00	0.00	0.69
Baro (32/2)	0.52	0.80	0.84	0.94	0.99	0.46	4.42	4.48	2.74
Solding (35/1)	0.36	0.92	1.09	1.31	0.76	0.49	0.00	0.00	0.69
Palingi (34/1)	2.60	2.67	1.23	1.08	1.03	3.39	0.00	0.00	0.69
Ponda (34/2)	0.58	1.28	1.30	1.40	0.93	1.91	4.42	3.36	0.69
Ralpa (34/3)	0.22	1.04	1.01	1.06	1.08	1.34	0.00	0.00	0.00
Change (35/2)	1.45	1.01	0.99	1.06	0.93	0.69	0.00	0.00	0.00
Gramang (35/4)	1.30	0.83	1.00	1.00	0.87	0.10	0.00	0.00	0.00
Rawa (35/5)	0.01	0.59	0.33	0.00	1.54	0.00	0.00	0.00	0.00
Nigul Sari (36/6)	1.80	1.12	1.08	1.23	0.89	1.07	1.47	1.12	2.74
Thachh (36/7)	0.36	0.79	1.08	1.16	0.84	0.44	0.00	0.00	0.69
Chaura (37/1)	0.68	1.16	1.26	1.33	1.23	0.64	1.47	3.36	0.00
Kafaur (37/2)	0.49	0.96	1.02	1.21	1.19	0.31	0.00	0.00	0.69
Shilani (37/3)	0.42	1.11	0.96	1.11	0.94	0.50	0.00	0.00	0.69

Name of villages	X1/X1¯	X2/X2¯	X3/X3¯	X4/X4¯	X5/X5¯	X6/X6¯	X7/X7¯	X8/X8¯	X9/X9¯
Tikrang (36/5)	0.07	8.86	0.53	0.00	1.33	2.50	0.00	0.00	0.00
Chhonda (36/4)	0.30	1.02	1.02	0.99	0.91	0.30	0.00	0.00	0.69
Nanaspo (36/3)	0.74	0.90	0.99	1.14	0.93	0.29	0.00	0.00	0.00
Karape (36/2)	0.61	2.96	1.15	0.81	1.22	2.84	0.00	0.00	0.00
Tranda (36/1)	0.86	0.76	1.12	1.29	1.10	0.59	1.47	3.36	1.37
D.P.F-72(B) (45)	0.01	0.89	0.00	0.00	1.54	0.00	0.00	0.00	0.00
D.P.F-73 C (46)	0.01	0.00	1.66	0.00	1.54	3.66	0.00	0.00	0.00
Burcha (67/3)	0.54	1.73	1.17	1.36	1.38	1.98	0.00	0.00	0.00
Joktaring (67/2)	0.62	0.98	0.98	1.09	1.20	0.56	0.00	0.00	0.00
Panwi Khas (67/1)	1.54	0.85	1.13	1.42	0.94	0.28	4.42	3.36	2.06
Yashang Dhar (93)	0.03	3.10	0.55	0.00	1.54	0.00	0.00	0.00	0.00
Shakamrang (91/6)	0.20	1.12	0.68	0.71	1.00	0.33	0.00	0.00	0.00
Raag Panung (91/4)	0.18	0.78	0.94	1.13	0.97	0.39	0.00	0.00	0.00
Urabaning (91/2)	0.04	1.33	0.99	1.06	1.03	1.46	0.00	0.00	0.00
Tapri (91/3)	2.39	1.11	1.13	1.18	0.87	1.65	8.83	5.60	0.69
Dharmaling (91/1)	3.18	0.93	1.05	1.16	0.90	0.09	0.00	0.00	0.00
Yashang (91/5)	0.85	0.94	1.14	1.27	0.87	0.45	0.00	0.00	0.00
Rall Santhang (100/3)	0.08	1.37	1.01	0.39	1.10	0.00	0.00	0.00	0.00
Urni Khas (100/1)	1.82	0.89	1.14	1.32	0.82	0.10	4.42	5.60	3.43
Yulla Khas (102/1)	1.32	0.91	1.03	1.27	0.89	0.53	4.42	3.36	2.06
Kutano (100/2)	1.15	0.82	1.04	1.20	0.71	0.95	0.00	0.00	0.00
Meeru Khas (104/1)	1.58	0.81	0.91	1.02	0.92	0.16	4.42	4.48	2.74
Ghumaruning (104/3)	0.08	0.95	0.86	0.65	0.86	0.00	0.00	0.00	0.69
Runang Uperla (111)	0.02	0.89	0.55	0.00	1.03	0.00	0.00	3.36	0.69
Runang Nichla (104/4)	0.34	1.00	0.84	0.52	0.98	0.25	0.00	0.00	0.69
Cholling (104/2)	1.36	2.89	1.31	0.89	1.18	2.53	0.00	0.00	0.00
Kagsthal (75/2)	0.03	0.89	0.83	1.27	0.46	0.00	0.00	0.00	0.00
Jani (86/1)	1.51	0.84	0.99	1.02	0.94	0.28	0.00	1.12	2.06
Ramni Khas (75/1)	1.46	0.99	1.05	1.15	0.78	0.39	0.00	1.12	2.06

Name of villages	$X1/X1^{-}$	$X2/X2^{-}$	$X3/X3^{-}$	$X4/X4^{-}$	$X5/X5^{-}$	$X6/X6^{-}$	$X7/X7^{-}$	$X8/X8^{-}$	$X9/X9^{-}$
Shuthanang (75/3)	0.04	1.60	0.59	0.42	0.88	0.00	0.00	0.00	0.00
Morang Kanda (75/4)	0.01	0.44	0.00	0.00	1.03	0.00	0.00	4.48	1.37
Punang Khas (90/1)	3.01	2.88	1.39	1.47	1.19	2.80	0.00	0.00	0.00
Thikru (2/2)	0.35	0.86	1.16	1.40	0.84	0.35	0.00	0.00	0.69
Kilba Khas (2/1)	2.20	0.90	1.31	1.64	1.05	0.52	4.42	4.48	3.43
Kanahi-Khas (6/1)	0.85	1.42	1.15	1.10	0.86	1.99	0.00	3.36	0.69
Sapni Khas (13/1)	3.22	0.79	0.99	1.02	0.62	0.45	4.42	5.60	2.74
Shenan Den (13/2)	0.19	1.18	1.13	0.94	1.05	1.45	0.00	0.00	0.00
Baturi (13/3)	0.61	0.80	1.10	1.19	0.77	0.29	0.00	4.48	0.69
Barua Khas (19/1)	2.53	0.81	0.99	1.08	0.89	0.11	4.42	0.00	0.69
Dhar Wadang (26)	0.10	2.04	1.05	1.06	0.93	3.47	0.00	0.00	0.00
Shobre Yanang (27/2)	0.01	0.59	0.66	0.71	0.92	1.22	0.00	0.00	0.00
Nagassaring (19/2)	0.01	0.89	0.83	0.00	1.54	0.00	0.00	0.00	0.69
Shaung Khas (27/1)	1.61	0.91	1.01	1.03	0.94	0.41	0.00	0.00	2.74
Limoden (32/2)	0.06	1.22	0.70	0.26	1.54	0.96	0.00	0.00	0.00
Chasu Khas (32/1)	1.48	0.84	1.02	1.10	0.98	0.96	2.94	3.36	2.06
Jareyo (32/3)	1.94	12.51	1.43	1.18	1.44	3.53	0.00	0.00	0.00
Sangla (34/1)	6.13	0.88	1.12	1.24	0.81	0.79	0.00	5.60	3.43
Kupa (33/2)	1.41	0.82	1.20	1.43	0.81	0.88	0.00	0.00	0.69
Kamru Khas (33/1)	2.87	0.89	1.11	1.21	0.78	0.97	2.94	0.00	2.06
Lachonden (33/4)	0.01	3.55	0.66	2.12	0.62	0.00	0.00	0.00	0.00
Goroden (33/5)	0.58	0.69	1.01	1.17	0.81	0.61	0.00	0.00	0.00
Thapa Saring (34/2)	0.88	0.78	1.10	1.14	0.87	0.68	0.00	0.00	0.69
Panpo Kanda (34/3)	0.08	1.77	0.61	0.24	1.31	0.95	0.00	0.00	0.00
Boning Saring (34/4)	2.02	0.88	1.05	1.17	0.93	0.79	0.00	0.00	2.06
Batseri (43/1)	1.60	0.94	0.96	1.16	0.98	0.89	2.94	0.00	2.74
Seringche (43/2)	0.30	0.84	1.16	1.35	0.82	1.42	0.00	0.00	0.69
Kharogla (59/2)	0.11	0.80	0.83	1.06	0.73	0.41	0.00	0.00	0.69
Rakchham (59/1)	2.05	0.92	1.09	1.21	0.77	0.74	2.94	4.48	2.74

Name of villages	$X1/X1^{-}$	$X2/X2^{-}$	$X3/X3^{-}$	$X4/X4^{-}$	$X5/X5^{-}$	$X6/X6^{-}$	$X7/X7^{-}$	$X8/X8^{-}$	$X9/X9^{-}$
Chhitkul (63)	1.68	0.82	1.22	1.32	1.10	0.54	2.94	1.12	2.74
Mastrang (59/3)	0.15	0.00	1.66	0.00	1.54	3.66	0.00	0.00	0.00

x1 total population
x2 Sex ratio
x3 total literacy rate
x4 Female literacy rate to total female population
x5 Total workers to total population
x6 Total Main other workers to total population
x7 Postal facilities
x8 Health facilities
x9 Educational facilities

Rank of Villages according to Infrastructure facilities

NAME	Infra_C.I	NAME	Infra_C.I
Reckong Peo (18)	24.30	Tranda (36/1)	6.20
Up Mohal Peo (31/1)	17.86	Chuling (8)	6.10
Tapri (91/3)	15.11	Morang Kanda (75/4)	5.85
Chango Nichla (29/2)	14.23	Batseri (43/1)	5.69
Lippa Khas (16/1)	13.44	Up Mohal Labrang Khas (3/1)	5.42
Katgaon (30/7)	13.44	Up Mohal Dubling (30/1)	5.42
Urni Khas (100/1)	13.44	Rali (33/2)	5.42
Sapni Khas (13/1)	12.76	Kafnu (30/1)	5.42
Kilba Khas (2/1)	12.32	Yangpa (30/6)	5.42
Hango (7/1)	12.07	Nigul Sari (36/6)	5.34
Jangi Khas (28/1)	11.64	Baturi (13/3)	5.16
Baro (32/2)	11.64	Roowang (64/3)	5.10
Meeru Khas (104/1)	11.64	Barua Khas (19/1)	5.10
Asrang Khas (7/1)	10.95	Kamru Khas (33/1)	5.00
Kalpa (20/1)	10.65	Chaura (37/1)	4.83
Up Mohal Kanam Khas (6/1)	10.17	Rarang (30/11)	4.75
Nesang Khas (78/1)	10.17	Leo (19/1)	4.55
Rakchham (59/1)	10.17	Duni (17/1)	4.42
Shalkar (35/1)	9.83	Malling (20/1)	4.04
Sungra (32/4)	9.83	Up Mohal Ropakhas (43/1)	4.04
Panwi Khas (67/1)	9.83	Up Mohal Spiloo Khas (1/1)	4.04
Yulla Khas (102/1)	9.83	Up Mohal Tashi Gang (35/3)	4.04
Pangi (6/1)	9.75	Kuno Khas (60/1)	4.04
Barang (37/1)	9.75	Runang Uperla (111)	4.04
Shango (30/12)	9.58	Kanahi-Khas (6/1)	4.04
Up Mohal Labrang (31/2)	9.55	Gramang (64/6)	3.43
Purbani Khas (42/1)	9.06	Kachrang (14/5)	3.36
Ribba Khas (40/1)	9.03	Shagarcha (1/4)	3.18
Sangla (34/1)	9.03	Kandar (17)	3.18
Kothi (15/1)	8.63	Jani (86/1)	3.18
Ponda (34/2)	8.46	Ramni Khas (75/1)	3.18
Akpa Khas (33/1)	8.36	Up Mohal Shyaso (17)	2.94
Rispa Khas (48/1)	8.36	Shorang (7/1)	2.74
Chasu Khas (32/1)	8.36	Kangosh (33)	2.74
Nako (21/1)	8.28	Shaung Khas (27/1)	2.74
Up Mohal Namgia Khas (35/1)	8.28	Up Mohal Kanam Nichla (6/2)	2.06
Thangi Khas (53/1)	8.28	Dakhaye (30/4)	2.06
Pawari (41/1)	7.95	Boning Saring (34/4)	2.06
Sumra (45)	7.59	Chango Uperla (29/1)	0.69
Charang Khas (59/1)	7.59	Malling Dogri (20/2)	0.69
Rogi (30/1)	7.59	Yangthang (21/2)	0.69
Nathpa (16)	7.59	Hangmat (7/2)	0.69
Up Mohal Sanam Khas (15/1)	7.49	Ka (21/3)	0.69
Tangling (41/2)	7.22	Up Mohal Thoropa (43/2)	0.69
Chhitkul (63)	6.81	Up Mohal Sumtat (43/3)	0.69
Mebar (6/8)	6.57	Up Mohal Giabong Parla (39/3)	0.69
Khwangi (14/1)	6.57	Up Mohal Taling (13/2)	0.69
Bara Kamba (7/3)	6.54	Up Mohal Rush Kulang (13/1)	0.69
Chhota Kamba (8/2)	6.46	Up Mohal Khabo (32/1)	0.69
Up Mohal Giabong Khas (39/1)	6.37	Up Mohal Dabling (30/2)	0.69

	Rank of Villages according to Infrastructure facilities		
Tokto (7/2)	0.69	Up Mohal Dhup Hang (15/2)	0.00
Lapo (16/2)	0.69	Up Mohal Chelit (16)	0.00
Swaden (34/7)	0.69	Up Mohal Namkalang (3/2)	0.00
Kutang (28/2)	0.69	Up Mohal Foche (1/2)	0.00
Khadura (34/2)	0.69	Up Mohal Gyamil (6/4)	0.00
Rarang Khas (34/1)	0.69	Up Mohal Danmochhe (31/3)	0.00
Skiba (48/4)	0.69	Up Mohal Yangti Kanda (30/4)	0.00
Khokpa (64/2)	0.69	Porang Kanda (7/3)	0.00
Lambar (53/3)	0.69	Sheelapur (34/6)	0.00
Piwar (53/2)	0.69	Nakal Kuwa (64/7)	0.00
Khwanta (6/6)	0.69	Samodayan (65)	0.00
Panwa (13/5)	0.69	Horang Pawa (78/2)	0.00
Telingi (13/1)	0.69	Thuwaring (64/5)	0.00
Kashmir (15/2)	0.69	Parga (40/2)	0.00
Talangcho (30/2)	0.69	D.P.F-187 (42)	0.00
Saryo (20/3)	0.69	D.P.F-188 (41)	0.00
Brelingi (17/2)	0.69	Kutian (40/3)	0.00
Yuwaringi (19/1)	0.69	Holdang (40/4)	0.00
Raang (21)	0.69	Holdang (48/3)	0.00
Mebar (33/1)	0.69	Lijing (48/2)	0.00
Dabling (1/7)	0.69	Shiling Khas (64/1)	0.00
Burang (1/10)	0.69	Swaling (53/4)	0.00
Hurba (1/8)	0.69	Kurpo (40/5)	0.00
Gharshu (14/1)	0.69	Ragura (6/2)	0.00
Salaring (14/4)	0.69	Boktu (6/7)	0.00
Rock Charang (14/2)	0.69	Rawa (42/2)	0.00
Homte (30/2)	0.69	D.P.F. C - 179 - 180 (49)	0.00
Huri (30/3)	0.69	Tarkhwa (13/3)	0.00
Surcho (30/14)	0.69	Maki Mrang (13/2)	0.00
Baiyee (30/10)	0.69	Goli (17/3)	0.00
Kangarang (30/15)	0.69	Dumdumka (19/2)	0.00
Puje (31/10)	0.69	Radule (20/2)	0.00
Nigani (31/5)	0.69	Kastyo (30/3)	0.00
Saki Charang (32/1)	0.69	Shuda Rang (20/4)	0.00
Solding (35/1)	0.69	Jangal Mehfuza Mehduda C-242 (22)	0.00
Palingi (34/1)	0.69	Yusaring (37/2)	0.00
Thachh (36/7)	0.69	Phayag Choden (33/3)	0.00
Kafaur (37/2)	0.69	Majhgaon (1/2)	0.00
Shilani (37/3)	0.69	Nainsaring (1/5)	0.00
Chhonda (36/4)	0.69	Pashpa (1/9)	0.00
Ghumaruning (104/3)	0.69	D.P.F.C-96 (10)	0.00
Runang Nichla (104/4)	0.69	Basharang (8/1)	0.00
Thikru (2/2)	0.69	Masrang (30/4)	0.00
Nagassaring (19/2)	0.69	Karaba (30/13)	0.00
Kupa (33/2)	0.69	Agade (31/ 7)	0.00
Thapa Saring (34/2)	0.69	Linge (31/6)	0.00
Seringche (43/2)	0.69	Garade (31/8)	0.00
Kharogla (59/2)	0.69	Kashpo (31/9)	0.00
Thang Karma (29/4)	0.00	Somo (31/2)	0.00
Dung (19/3)	0.00	Paring Khor (31/1)	0.00

Rank of Villages according to Infrastructure facilities

D.P.F.-78 (57)	0.00	Dharmaling (91/1)	0.00
Punaspa (32/3)	0.00	Yashang (91/5)	0.00
Ralpa (34/3)	0.00	Rall Santhang (100/3)	0.00
Change (35/2)	0.00	Kutano (100/2)	0.00
Gramang (35/4)	0.00	Cholling (104/2)	0.00
Rawa (35/5)	0.00	Kagsthal (75/2)	0.00
Tikrang (36/5)	0.00	Shuthanang (75/3)	0.00
Nanaspo (36/3)	0.00	Punang Khas (90/1)	0.00
Karape (36/2)	0.00	Shenan Den (13/2)	0.00
D.P.F-72(B) (45)	0.00	Dhar Wadang (26)	0.00
D.P.F-73 C (46)	0.00	Shobre Yanang (27/2)	0.00
Burcha (67/3)	0.00	Limoden (32/2)	0.00
Joktaring (67/2)	0.00	Jareyo (32/3)	0.00
Yashang Dhar (93)	0.00	Lachonden (33/4)	0.00
Shakamrang (91/6)	0.00	Goroden (33/5)	0.00
Raag Panung (91/4)	0.00	Panpo Kanda (34/3)	0.00
Urabaning (91/2)	0.00	Mastrang (59/3)	0.00

Rank of villages according to Composite index of Socio-Economic characteristics - 2001

Jareyo (32/3)	22.04	Rarang (30/11)	7.20
Sungra (32/4)	18.44	Masrang (30/4)	7.20
Reckong Peo (18)	17.65	Nigul Sari (36/6)	7.19
Tikrang (36/5)	13.29	Rarang Khas (34/1)	7.16
Punang Khas (90/1)	12.73	Khwanta (6/6)	7.11
Palingi (34/1)	12.00	Malling Dogri (20/2)	7.11
Khwangi (14/1)	11.54	Sapni Khas (13/1)	7.09
Holdang (48/3)	11.02	Mastrang (59/3)	7.00
Sangla (34/1)	10.96	Ribba Khas (40/1)	6.98
Up Mohal Chelit (16)	10.22	Lachonden (33/4)	6.96
Cholling (104/2)	10.16	Up Mohal Gyamil (6/4)	6.95
Up Mohal Poo (31/1)	9.97	Up Mohal Sanam Khas (15/1)	6.89
Agade (31/ 7)	9.81	D.P.F-73 C (46)	6.86
Karape (36/2)	9.60	Boning Saring (34/4)	6.84
D.P.F.C-96 (10)	9.54	Chango Uperla (29/1)	6.79
Kothi (15/1)	9.44	Leo (19/1)	6.79
Up Mohal Labrang (31/2)	9.41	Kafnu (30/1)	6.77
Porang Kanda (7/3)	9.35	Rakchham (59/1)	6.77
Yuwaringi (19/1)	9.31	Nigani (31/5)	6.76
Up Mohal Danmochhe (31/3)	9.30	Thangi Khas (53/1)	6.70
Kalpa (20/1)	9.21	Brelingi (17/2)	6.69
Up Mohal Thoropa (43/2)	9.16	Chhitkul (63)	6.68
Saki Charang (32/1)	9.00	Garade (31/8)	6.67
Yangthang (21/2)	8.93	Up Mohal Dubling (30/1)	6.63
Up Mohal Spiloo Khas (1/1)	8.88	Paring Khor (31/1)	6.60
Punaspa (32/3)	8.68	Kupa (33/2)	6.56
Dhar Wadang (26)	8.66	Batseri (43/1)	6.53
Up Mohal Namkalang (3/2)	8.51	Boktu (6/7)	6.49
Nathpa (16)	8.45	Up Mohal Labrang Khas (3/1)	6.46
Tapri (91/3)	8.31	Up Mohal Foche (1/2)	6.45
Pawari (41/1)	8.21	Barua Khas (19/1)	6.41
Burcha (67/3)	8.14	Kashpo (31/9)	6.40
Maki Mrang (13/2)	8.05	Chasu Khas (32/1)	6.37
Samodayan (65)	7.86	Kutang (28/2)	6.35
Kamru Khas (33/1)	7.83	Up Mohal Kanam Khas (6/1)	6.34
Yangpa (30/6)	7.80	Shuda Rang (20/4)	6.34
Lippa Khas (16/1)	7.75	Skiba (48/4)	6.33
Katgaon (30/7)	7.65	Mebar (33/1)	6.32
Kilba Khas (2/1)	7.62	Roowang (64/3)	6.31
Shiling Khas (64/1)	7.60	Chaura (37/1)	6.30
Jangi Khas (28/1)	7.58	Majhgaon (1/2)	6.26
Up Mohal Giabong Khas (39/1)	7.52	Up Mohal Yangti Kanda (30/4)	6.21
Holdang (40/4)	7.50	Kangosh (33)	6.17
Linge (31/6)	7.46	Tarkhwa (13/3)	6.17
Up Mohal Namgia Khas (35/1)	7.46	Panwi Khas (67/1)	6.16
Pangi (6/1)	7.43	Change (35/2)	6.12
Akpa Khas (33/1)	7.39	Urni Khas (100/1)	6.09
Ponda (34/2)	7.39	Raang (21)	6.08

Kanahi-Khas (6/1)	7.37	Saryo (20/3)	6.06
Dharmaling (91/1)	7.31	Puje (31/10)	6.03
Duni (17/1)	7.24	Telingi (13/1)	5.96

Rank of villages according to Composite index of Socio-Economic characteristics - 2001

Up Mohal Rush Kulang (13/1)	5.96	Charang Khas (59/1)	5.12
Yulla Khas (102/1)	5.95	Bara Kamba (7/3)	5.11
Shenan Den (13/2)	5.94	Gramang (35/4)	5.10
Barang (37/1)	5.92	Up Mohal Shyaso (17)	5.09
Urabaning (91/2)	5.92	Surcho (30/14)	5.09
Shaung Khas (27/1)	5.91	Purbani Khas (42/1)	5.09
Horang Pawa (78/2)	5.91	Malling (20/1)	5.08
Nako (21/1)	5.91	Huri (30/3)	5.06
Khadura (34/2)	5.90	Shilani (37/3)	5.05
Seringche (43/2)	5.89	D.P.F-187 (42)	5.04
Yusaring (37/2)	5.88	Ragura (6/2)	5.01
Kutano (100/2)	5.87	Nanaspo (36/3)	4.99
Chango Nichla (29/2)	5.87	Swaden (34/7)	4.98
Thuwaring (64/5)	5.87	Panpo Kanda (34/3)	4.97
Khokpa (64/2)	5.84	Thikru (2/2)	4.94
Nesang Khas (78/1)	5.84	Up Mohal Taling (13/2)	4.94
Ramni Khas (75/1)	5.80	Solding (35/1)	4.92
Rispa Khas (48/1)	5.79	Baiyee (30/10)	4.89
Goli (17/3)	5.79	Goroden (33/5)	4.86
Ralpa (34/3)	5.75	Hango (7/1)	4.80
Mebar (6/8)	5.74	D.P.F.-78 (57)	4.79
Tranda (36/1)	5.72	Homte (30/2)	4.79
Up Mohal Giabong Parla (39/3)	5.69	Up Mohal Khabo (32/1)	4.78
Chuling (8)	5.67	Baturi (13/3)	4.76
Kashmir (15/2)	5.63	Rawa (42/2)	4.76
Gramang (64/6)	5.61	Jangal Mehfuza Mehduda C-242 (22)	4.76
Jani (86/1)	5.59	Limoden (32/2)	4.74
Shango (30/12)	5.58	Sheelapur (34/6)	4.71
Kastyo (30/3)	5.54	Nainsaring (1/5)	4.70
Rali (33/2)	5.53	Thachh (36/7)	4.67
Yashang (91/5)	5.53	Nakal Kuwa (64/7)	4.67
Radule (20/2)	5.52	Up Mohal Dhup Hang (15/2)	4.65
Tangling (41/2)	5.51	Karaba (30/13)	4.64
Sumra (45)	5.48	Parga (40/2)	4.60
Thapa Saring (34/2)	5.45	Gharshu (14/1)	4.57
Joktaring (67/2)	5.44	Dabling (1/7)	4.56
D.P.F. C - 179 - 180 (49)	5.41	Baro (32/2)	4.55
Meeru Khas (104/1)	5.39	Chhonda (36/4)	4.55
Kandar (17)	5.39	Up Mohal Sumtat (43/3)	4.52
Asrang Khas (7/1)	5.38	Dakhaye (30/4)	4.50
Up Mohal Kanam Nichla (6/2)	5.36	Shagarcha (1/4)	4.47
Dung (19/3)	5.33	Talangcho (30/2)	4.45
Lapo (16/2)	5.33	Hangmat (7/2)	4.45
Shalkar (35/1)	5.31	Somo (31/2)	4.43
Chhota Kamba (8/2)	5.30	Kutian (40/3)	4.43
Up Mohal Tashi Gang (35/3)	5.30	Kachrang (14/5)	4.42

Lijing (48/2)	5.29	Raag Panung (91/4)	4.38
Dumdumka (19/2)	5.26	Hurba (1/8)	4.33
Yashang Dhar (93)	5.22	Kangarang (30/15)	4.28
Up Mohal Ropakhas (43/1)	5.22	Kuno Khas (60/1)	4.21
Kafaur (37/2)	5.20	Thang Karma (29/4)	4.21
Rogi (30/1)	5.15	Panwa (13/5)	4.20

Rank of villages according to Composite index of Socio-Economic characteristics - 2001

Shorang (7/1)	4.19	Phayag Choden (33/3)	3.64
Pashpa (1/9)	4.17	Basharang (8/1)	3.60
Shobre Yanang (27/2)	4.12	Ka (21/3)	3.60
Shakamrang (91/6)	4.04	Shuthanang (75/3)	3.53
Piwar (53/2)	4.04	Burang (1/10)	3.53
Tokto (7/2)	4.00	Salaring (14/4)	3.52
Kurpo (40/5)	3.99	Kagsthal (75/2)	3.48
Up Mohal Dabling (30/2)	3.97	Ghumaruning (104/3)	3.40
Rock Charang (14/2)	3.96	Lambar (53/3)	3.34
Rall Santhang (100/3)	3.94	Nagassaring (19/2)	3.26
Swaling (53/4)	3.94	Runang Uperla (111)	2.48
Kharogla (59/2)	3.93	Rawa (35/5)	2.48
Runang Nichla (104/4)	3.93	D.P.F-72(B) (45)	2.43
D.P.F-188 (41)	3.80	Morang Kanda (75/4)	1.48

Rank of villages according to Composite Index of Transforamation - 2001

Sumra (45)	13.08	Nakal Kuwa (64/7)	4.67
Thang Karma (29/4)	4.21	Samodayan (65)	7.86
Shalkar (35/1)	15.14	Horang Pawa (78/2)	5.91
Chango Uperla (29/1)	7.48	Nesang Khas (78/1)	16.00
Chango Nichla (29/2)	20.10	Thuwaring (64/5)	5.87
Malling Dogri (20/2)	7.79	Gramang (64/6)	9.04
Malling (20/1)	9.12	Jangi Khas (28/1)	19.21
Nako (21/1)	14.19	Khadura (34/2)	6.58
Yangthang (21/2)	9.62	Rarang Khas (34/1)	7.85
Leo (19/1)	11.34	Parga (40/2)	4.60
Hango (7/1)	16.87	D.P.F-187 (42)	5.04
Dung (19/3)	5.33	D.P.F-188 (41)	3.80
Hangmat (7/2)	5.14	Kutian (40/3)	4.43
Chuling (8)	11.78	Ribba Khas (40/1)	16.01
Ka (21/3)	4.29	Holdang (40/4)	7.50
Up Mohal Thoropa (43/2)	9.85	Skiba (48/4)	7.01
Up Mohal Ropakhas (43/1)	9.26	Akpa Khas (33/1)	15.75
Up Mohal Sumtat (43/3)	5.20	Holdang (48/3)	11.02
Up Mohal Giabong Khas (39/1)	13.90	Rispa Khas (48/1)	14.15
Up Mohal Giabong Parla (39/3)	6.38	Lijing (48/2)	5.29
Up Mohal Taling (13/2)	5.63	Khokpa (64/2)	6.53
Up Mohal Rush Kulang (13/1)	6.64	Shiling Khas (64/1)	7.60
Up Mohal Sanam Khas (15/1)	14.39	Roowang (64/3)	11.41
Up Mohal Dhup Hang (15/2)	4.65	Swaling (53/4)	3.94
Up Mohal Chelit (16)	10.22	Lambar (53/3)	4.03
Up Mohal Labrang Khas (3/1)	11.88	Thangi Khas (53/1)	14.98
Up Mohal Namkalang (3/2)	8.51	Piwar (53/2)	4.72
Up Mohal Foche (1/2)	6.45	Kurpo (40/5)	3.99
Up Mohal Spiloo Khas (1/1)	12.92	Kuno Khas (60/1)	8.26
Up Mohal Kanam Khas (6/1)	16.51	Charang Khas (59/1)	12.71
Up Mohal Kanam Nichla (6/2)	7.42	Ragura (6/2)	5.01
Up Mohal Gyamil (6/4)	6.95	Khwanta (6/6)	7.79
Up Mohal Shyaso (17)	8.03	Mebar (6/8)	12.31
Up Mohal Danmochhe (31/3)	9.30	Panwa (13/5)	4.89
Up Mohal Labrang (31/2)	18.96	Boktu (6/7)	6.49
Up Mohal Poo (31/1)	27.83	Pangi (6/1)	17.18
Up Mohal Khabo (32/1)	5.47	Purbani Khas (42/1)	14.15
Up Mohal Namgia Khas (35/1)	15.74	Rawa (42/2)	4.76
Up Mohal Tashi Gang (35/3)	9.34	D.P.F. C - 179 - 180 (49)	5.41
Up Mohal Yangti Kanda (30/4)	6.21	Pawari (41/1)	16.16
Up Mohal Dubling (30/1)	12.05	Telingi (13/1)	6.65
Up Mohal Dabling (30/2)	4.66	Tarkhwa (13/3)	6.17
Porang Kanda (7/3)	9.35	Maki Mrang (13/2)	8.05
Tokto (7/2)	4.68	Khwangi (14/1)	18.11
Lippa Khas (16/1)	21.19	Kothi (15/1)	18.08
Lapo (16/2)	6.01	Duni (17/1)	11.66
Asrang Khas (7/1)	16.33	Kashmir (15/2)	6.31
Sheelapur (34/6)	4.71	Goli (17/3)	5.79
Swaden (34/7)	5.67	Dumdumka (19/2)	5.26
Kutang (28/2)	7.04	Radule (20/2)	5.52

Rank of villages according to Composite Index of Transforamation - 2001			
Kastyo (30/3)	5.54	Linge (31/6)	7.46
Dakhaye (30/4)	6.56	Garade (31/8)	6.67
Talangcho (30/2)	5.14	Kashpo (31/9)	6.40
Rogi (30/1)	12.74	Nigani (31/5)	7.44
Shuda Rang (20/4)	6.34	Somo (31/2)	4.43
Saryo (20/3)	6.75	Paring Khor (31/1)	6.60
Jangal Mehfuza Mehduda C-242 (22)	4.76	Kangosh (33)	8.92
Kalpa (20/1)	19.86	D.P.F.-78 (57)	4.79
Brelingi (17/2)	7.38	Sungra (32/4)	28.27
Reckong Peo (18)	41.95	Punaspa (32/3)	8.68
Yuwaringi (19/1)	9.99	Saki Charang (32/1)	9.69
Raang (21)	6.76	Baro (32/2)	16.19
Yusaring (37/2)	5.88	Solding (35/1)	5.60
Rali (33/2)	10.95	Palingi (34/1)	12.69
Phayag Choden (33/3)	3.64	Ponda (34/2)	15.85
Mebar (33/1)	7.00	Ralpa (34/3)	5.75
Barang (37/1)	15.68	Change (35/2)	6.12
Tangling (41/2)	12.74	Gramang (35/4)	5.10
Majhgaon (1/2)	6.26	Rawa (35/5)	2.48
Nainsaring (1/5)	4.70	Nigul Sari (36/6)	12.53
Shagarcha (1/4)	7.65	Thachh (36/7)	5.36
Dabling (1/7)	5.25	Chaura (37/1)	11.13
Pashpa (1/9)	4.17	Kafaur (37/2)	5.88
Burang (1/10)	4.22	Shilani (37/3)	5.74
Hurba (1/8)	5.01	Tikrang (36/5)	13.29
Shorang (7/1)	6.94	Chhonda (36/4)	5.23
Gharshu (14/1)	5.25	Nanaspo (36/3)	4.99
D.P.F.C-96 (10)	9.54	Karape (36/2)	9.60
Basharang (8/1)	3.60	Tranda (36/1)	11.92
Chhota Kamba (8/2)	11.75	D.P.F-72(B) (45)	2.43
Bara Kamba (7/3)	11.65	D.P.F-73 C (46)	6.86
Salaring (14/4)	4.20	Burcha (67/3)	8.14
Rock Charang (14/2)	4.64	Joktaring (67/2)	5.44
Kachrang (14/5)	7.78	Panwi Khas (67/1)	15.99
Kandar (17)	8.57	Yashang Dhar (93)	5.22
Nathpa (16)	16.05	Shakamrang (91/6)	4.04
Homte (30/2)	5.47	Raag Panung (91/4)	4.38
Kafnu (30/1)	12.19	Urabaning (91/2)	5.92
Yangpa (30/6)	13.22	Tapri (91/3)	23.43
Huri (30/3)	5.74	Dharmaling (91/1)	7.31
Masrang (30/4)	7.20	Yashang (91/5)	5.53
Katgaon (30/7)	21.10	Rall Santhang (100/3)	3.94
Karaba (30/13)	4.64	Urni Khas (100/1)	19.53
Surcho (30/14)	5.78	Yulla Khas (102/1)	15.78
Shango (30/12)	15.16	Kutano (100/2)	5.87
Baiyee (30/10)	5.58	Meeru Khas (104/1)	17.03
Rarang (30/11)	11.95	Ghumaruning (104/3)	4.09
Kangarang (30/15)	4.96	Runang Uperla (111)	6.53
Puje (31/10)	6.72	Runang Nichla (104/4)	4.62
Agade (31/ 7)	9.81	Cholling (104/2)	10.16

Rank of villages according to Composite Index of Transforamation – 2001			
Kagsthal (75/2)	3.48		
Jani (86/1)	8.77		
Ramni Khas (75/1)	8.98		
Shuthanang (75/3)	3.53		
Morang Kanda (75/4)	7.33		
Punang Khas (90/1)	12.73		
Thikru (2/2)	5.63		
Kilba Khas (2/1)	19.95		
Kanahi-Khas (6/1)	11.41		
Sapni Khas (13/1)	19.85		
Shenan Den (13/2)	5.94		
Baturi (13/3)	9.93		
Barua Khas (19/1)	11.51		
Dhar Wadang (26)	8.66		
Shobre Yanang (27/2)	4.12		
Nagassaring (19/2)	3.95		
Shaung Khas (27/1)	8.66		
Limoden (32/2)	4.74		
Chasu Khas (32/1)	14.73		
Jareyo (32/3)	22.04		
Sangla (34/1)	19.99		
Kupa (33/2)	7.24		
Kamru Khas (33/1)	12.83		
Lachonden (33/4)	6.96		
Goroden (33/5)	4.86		
Thapa Saring (34/2)	6.14		
Panpo Kanda (34/3)	4.97		
Boning Saring (34/4)	8.89		
Batseri (43/1)	12.22		
Seringche (43/2)	6.58		
Kharogla (59/2)	4.62		
Rakchham (59/1)	16.94		
Mastrang (59/3)	7.00		
Chhitkul (63)	13.49		

Rank of villages according to Transformation index

NAME	Transf_C.I	NAME	Transf_C.I
Reckong Peo (18)	41.95	Palingi (34/1)	12.69
Sungra (32/4)	28.27	Nigul Sari (36/6)	12.53
Up Mohal Poo (31/1)	27.83	Mebar (6/8)	12.31
Tapri (91/3)	23.43	Batseri (43/1)	12.22
Jareyo (32/3)	22.04	Kafnu (30/1)	12.19
Lippa Khas (16/1)	21.19	Up Mohal Dubling (30/1)	12.05
Katgaon (30/7)	21.10	Rarang (30/11)	11.95
Chango Nichla (29/2)	20.10	Tranda (36/1)	11.92
Sangla (34/1)	19.99	Up Mohal Labrang Khas (3/1)	11.88
Kilba Khas (2/1)	19.95	Chuling (8)	11.78
Kalpa (20/1)	19.86	Chhota Kamba (8/2)	11.75
Sapni Khas (13/1)	19.85	Duni (17/1)	11.66
Umi Khas (100/1)	19.53	Bara Kamba (7/3)	11.65
Jangi Khas (28/1)	19.21	Barua Khas (19/1)	11.51
Up Mohal Labrang (31/2)	18.96	Roowang (64/3)	11.41
Khwangi (14/1)	18.11	Kanahi-Khas (6/1)	11.41
Kothi (15/1)	18.08	Leo (19/1)	11.34
Pangi (6/1)	17.18	Chaura (37/1)	11.13
Meeru Khas (104/1)	17.03	Holdang (48/3)	11.02
Rakchham (59/1)	16.94	Rali (33/2)	10.95
Hango (7/1)	16.87	Up Mohal Chelit (16)	10.22
Up Mohal Kanam Khas (6/1)	16.51	Cholling (104/2)	10.16
Asrang Khas (7/1)	16.33	Yuwaringi (19/1)	9.99
Baro (32/2)	16.19	Baturi (13/3)	9.93
Pawari (41/1)	16.16	Up Mohal Thoropa (43/2)	9.85
Nathpa (16)	16.05	Agade (31/ 7)	9.81
Ribba Khas (40/1)	16.01	Saki Charang (32/1)	9.69
Nesang Khas (78/1)	16.00	Yangthang (21/2)	9.62
Panwi Khas (67/1)	15.99	Karape (36/2)	9.60
Ponda (34/2)	15.85	D.P.F.C-96 (10)	9.54
Yulla Khas (102/1)	15.78	Porang Kanda (7/3)	9.35
Akpa Khas (33/1)	15.75	Up Mohal Tashi Gang (35/3)	9.34
Up Mohal Namgia Khas (35/1)	15.74	Up Mohal Danmochhe (31/3)	9.30
Barang (37/1)	15.68	Up Mohal Ropakhas (43/1)	9.26
Shango (30/12)	15.16	Malling (20/1)	9.12
Shalkar (35/1)	15.14	Gramang (64/6)	9.04
Thangi Khas (53/1)	14.98	Ramni Khas (75/1)	8.98
Chasu Khas (32/1)	14.73	Kangosh (33)	8.92
Up Mohal Sanam Khas (15/1)	14.39	Boning Saring (34/4)	8.89
Nako (21/1)	14.19	Jani (86/1)	8.77
Rispa Khas (48/1)	14.15	Punaspa (32/3)	8.68
Purbani Khas (42/1)	14.15	Shaung Khas (27/1)	8.66
Up Mohal Giabong Khas (39/1)	13.90	Dhar Wadang (26)	8.66
Chhitkul (63)	13.49	Kandar (17)	8.57
Tikrang (36/5)	13.29	Up Mohal Namkalang (3/2)	8.51
Yangpa (30/6)	13.22	Kuno Khas (60/1)	8.26
Sumra (45)	13.08	Burcha (67/3)	8.14
Up Mohal Spiloo Khas (1/1)	12.92	Maki Mrang (13/2)	8.05
Kamru Khas (33/1)	12.83	Up Mohal Shyaso (17)	8.03
Rogi (30/1)	12.74	Samodayan (65)	7.86
Tangling (41/2)	12.74	Rarang Khas (34/1)	7.85

Punang Khas (90/1)	12.73	Khwanta (6/6)	7.79
Charang Khas (59/1)	12.71	Malling Dogri (20/2)	7.79
Kachrang (14/5)	7.78	Shilani (37/3)	5.74
Shagarcha (1/4)	7.65	Swaden (34/7)	5.67
Shiling Khas (64/1)	7.60	Thikru (2/2)	5.63
Holdang (40/4)	7.50	Up Mohal Taling (13/2)	5.63
Chango Uperla (29/1)	7.48	Solding (35/1)	5.60
Linge (31/6)	7.46	Baiyee (30/10)	5.58
Nigani (31/5)	7.44	Kastyo (30/3)	5.54
Up Mohal Kanam Nichla (6/2)	7.42	Yashang (91/5)	5.53
Brelingi (17/2)	7.38	Radule (20/2)	5.52
Morang Kanda (75/4)	7.33	Homte (30/2)	5.47
Dharmaling (91/1)	7.31	Up Mohal Khabo (32/1)	5.47
Kupa (33/2)	7.24	Joktaring (67/2)	5.44
Masrang (30/4)	7.20	D.P.F. C - 179 - 180 (49)	5.41
Kutang (28/2)	7.04	Thachh (36/7)	5.36
Skiba (48/4)	7.01	Dung (19/3)	5.33
Mebar (33/1)	7.00	Lijing (48/2)	5.29
Mastrang (59/3)	7.00	Dumdumka (19/2)	5.26
Lachonden (33/4)	6.96	Gharshu (14/1)	5.25
Up Mohal Gyamil (6/4)	6.95	Dabling (1/7)	5.25
Shorang (7/1)	6.94	Chhonda (36/4)	5.23
D.P.F-73 C (46)	6.86	Yashang Dhar (93)	5.22
Raang (21)	6.76	Up Mohal Sumtat (43/3)	5.20
Saryo (20/3)	6.75	Talangcho (30/2)	5.14
Puje (31/10)	6.72	Hangmat (7/2)	5.14
Garade (31/8)	6.67	Gramang (35/4)	5.10
Telingi (13/1)	6.65	D.P.F-187 (42)	5.04
Up Mohal Rush Kulang (13/1)	6.64	Hurba (1/8)	5.01
Paring Khor (31/1)	6.60	Ragura (6/2)	5.01
Khadura (34/2)	6.58	Nanaspo (36/3)	4.99
Seringche (43/2)	6.58	Panpo Kanda (34/3)	4.97
Dakhaye (30/4)	6.56	Kangarang (30/15)	4.96
Runang Uperla (111)	6.53	Panwa (13/5)	4.89
Khokpa (64/2)	6.53	Goroden (33/5)	4.86
Boktu (6/7)	6.49	D.P.F.-78 (57)	4.79
Up Mohal Foche (1/2)	6.45	Rawa (42/2)	4.76
Kashpo (31/9)	6.40	Jangal Mehfuza Mehduda C-242 (22)	4.76
Up Mohal Giabong Parla (39/3)	6.38	Limoden (32/2)	4.74
Shuda Rang (20/4)	6.34	Piwar (53/2)	4.72
Kashmir (15/2)	6.31	Sheelapur (34/6)	4.71
Majhgaon (1/2)	6.26	Nainsaring (1/5)	4.70
Up Mohal Yangti Kanda (30/4)	6.21	Tokto (7/2)	4.68
Tarkhwa (13/3)	6.17	Nakal Kuwa (64/7)	4.67
Thapa Saring (34/2)	6.14	Up Mohal Dabling (30/2)	4.66
Change (35/2)	6.12	Up Mohal Dhup Hang (15/2)	4.65
Lapo (16/2)	6.01	Rock Charang (14/2)	4.64
Shenan Den (13/2)	5.94	Karaba (30/13)	4.64
Urabaning (91/2)	5.92	Kharogla (59/2)	4.62
Horang Pawa (78/2)	5.91	Runang Nichla (104/4)	4.62
Yusaring (37/2)	5.88	Parga (40/2)	4.60
Kafaur (37/2)	5.88	Somo (31/2)	4.43
Kutano (100/2)	5.87	Kutian (40/3)	4.43
Thuwaring (64/5)	5.87	Raag Panung (91/4)	4.38
Goli (17/3)	5.79	Ka (21/3)	4.29

Surcho (30/15)	5.78	Burang (1/10)	4.22
Ralpa (34/3)	5.75	Thang Karma (29/4)	4.21
Huri (30/3)	5.74	Salaring (14/4)	4.20
Pashpa (1/9)	4.17		
Shobre Yanang (27/2)	4.12		
Ghumaruning (104/3)	4.09		
Shakamrang (91/6)	4.04		
Lambar (53/3)	4.03		
Kurpo (40/5)	3.99		
Nagassaring (19/2)	3.95		
Rall Santhang (100/3)	3.94		
Swaling (53/4)	3.94		
D.P.F-188 (41)	3.80		
Phayag Choden (33/3)	3.64		
Basharang (8/1)	3.60		
Shuthanang (75/3)	3.53		
Kagsthal (75/2)	3.48		
Rawa (35/5)	2.48		
D.P.F-72(B) (45)	2.43		

Rank of villages according to Socio-Economic Characteristics-2001

NAME	C.I	NAME	C.I
Jareyo (32/3)	22.04	Kanahi-Khas (6/1)	7.37
Sungra (32/4)	18.44	Dharmaling (91/1)	7.31
Reckong Peo (18)	17.65	Duni (17/1)	7.24
Tikrang (36/5)	13.29	Rarang (30/11)	7.20
Punang Khas (90/1)	12.73	Masrang (30/4)	7.20
Palingi (34/1)	12.00	Nigul Sari (36/6)	7.19
Khwangi (14/1)	11.54	Rarang Khas (34/1)	7.16
Holdang (48/3)	11.02	Khwanta (6/6)	7.11
Sangla (34/1)	10.96	Malling Dogri (20/2)	7.11
Up Mohal Chelit (16)	10.22	Sapni Khas (13/1)	7.09
Cholling (104/2)	10.16	Mastrang (59/3)	7.00
Up Mohal Poo (31/1)	9.97	Ribba Khas (40/1)	6.98
Agade (31/ 7)	9.81	Lachonden (33/4)	6.96
Karape (36/2)	9.60	Up Mohal Gyamil (6/4)	6.95
D.P.F.C-96 (10)	9.54	Up Mohal Sanam Khas (15/1)	6.89
Kothi (15/1)	9.44	D.P.F-73 C (46)	6.86
Up Mohal Labrang (31/2)	9.41	Boning Saring (34/4)	6.84
Porang Kanda (7/3)	9.35	Chango Uperla (29/1)	6.79
Yuwaringi (19/1)	9.31	Leo (19/1)	6.79
Up Mohal Danmochhe (31/3)	9.30	Kafnu (30/1)	6.77
Kalpa (20/1)	9.21	Rakchham (59/1)	6.77
Up Mohal Thoropa (43/2)	9.16	Nigani (31/5)	6.76
Saki Charang (32/1)	9.00	Thangi Khas (53/1)	6.70
Yangthang (21/2)	8.93	Brelingi (17/2)	6.69
Up Mohal Spiloo Khas (1/1)	8.88	Chhitkul (63)	6.68
Punaspa (32/3)	8.68	Garadc (31/8)	6.67
Dhar Wadang (26)	8.66	Up Mohal Dubling (30/1)	6.63
Up Mohal Namkalang (3/2)	8.51	Paring Khor (31/1)	6.60
Nathpa (16)	8.45	Kupa (33/2)	6.56
Tapri (91/3)	8.31	Batseri (43/1)	6.53
Pawari (41/1)	8.21	Boktu (6/7)	6.49
Burcha (67/3)	8.14	Up Mohal Labrang Khas (3/1)	6.46
Maki Mrang (13/2)	8.05	Up Mohal Fochc (1/2)	6.45
Samodayan (65)	7.86	Barua Khas (19/1)	6.41
Kamru Khas (33/1)	7.83	Kashpo (31/9)	6.40
Yangpa (30/6)	7.80	Chasu Khas (32/1)	6.37
Lippa Khas (16/1)	7.75	Kutang (28/2)	6.35
Katgaon (30/7)	7.65	Up Mohal Kanam Khas (6/1)	6.34
Kilba Khas (2/1)	7.62	Shuda Rang (20/4)	6.34
Shiling Khas (64/1)	7.60	Skiba (48/4)	6.33
Jangi Khas (28/1)	7.58	Mebar (33/1)	6.32
Up Mohal Giabong Khas (39/1)	7.52	Roowang (64/3)	6.31
Holdang (40/4)	7.50	Chaura (37/1)	6.30
Linge (31/6)	7.46	Majhgaon (1/2)	6.26
Up Mohal Namgia Khas (35/1)	7.46	Up Mohal Yangti Kanda (30/4)	6.21
Pangi (6/1)	7.43	Kangosh (33)	6.17
Akpa Khas (33/1)	7.39	Tarkhwa (13/3)	6.17

Ponda (34/2)	7.39	Panwi Khas (67/1)	6.16
Change (35/2)	6.12	Lijing (48/2)	5.29
Urni Khas (100/1)	6.09	Dumdumka (19/2)	5.26
Raang (21)	6.08	Yashang Dhar (93)	5.22
Saryo (20/3)	6.06	Up Mohal Ropakhas (43/1)	5.22
Puje (31/10)	6.03	Kafaur (37/2)	5.20
Telingi (13/1)	5.96	Rogi (30/1)	5.15
Up Mohal Rush Kulang (13/1)	5.96	Charang Khas (59/1)	5.12
Yulla Khas (102/1)	5.95	Bara Kamba (7/3)	5.11
Shenan Den (13/2)	5.94	Gramang (35/4)	5.10
Barang (37/1)	5.92	Up Mohal Shyaso (17)	5.09
Urabaning (91/2)	5.92	Surcho (30/14)	5.09
Shaung Khas (27/1)	5.91	Purbani Khas (42/1)	5.09
Horang Pawa (78/2)	5.91	Malling (20/1)	5.08
Nako (21/1)	5.91	Huri (30/3)	5.06
Khadura (34/2)	5.90	Shilani (37/3)	5.05
Seringche (43/2)	5.89	D.P.F-187 (42)	5.04
Yusaring (37/2)	5.88	Ragura (6/2)	5.01
Kutano (100/2)	5.87	Nanaspo (36/3)	4.99
Chango Nichla (29/2)	5.87	Swaden (34/7)	4.98
Thuwaring (64/5)	5.87	Panpo Kanda (34/3)	4.97
Khokpa (64/2)	5.84	Thikru (2/2)	4.94
Nesang Khas (78/1)	5.84	Up Mohal Taling (13/2)	4.94
Ramni Khas (75/1)	5.80	Solding (35/1)	4.92
Rispa Khas (48/1)	5.79	Baiyee (30/10)	4.89
Goli (17/3)	5.79	Goroden (33/5)	4.86
Ralpa (34/3)	5.75	Hango (7/1)	4.80
Mebar (6/8)	5.74	D.P.F.-78 (57)	4.79
Tranda (36/1)	5.72	Homte (30/2)	4.79
Up Mohal Giabong Parla (39/3)	5.69	Up Mohal Khabo (32/1)	4.78
Chuling (8)	5.67	Baturi (13/3)	4.76
Kashmir (15/2)	5.63	Rawa (42/2)	4.76
Gramang (64/6)	5.61	Jangal Mehfuza Mehduda C-242 (22)	4.76
Jani (86/1)	5.59	Limoden (32/2)	4.74
Shango (30/12)	5.58	Sheelapur (34/6)	4.71
Kastyo (30/3)	5.54	Nainsaring (1/5)	4.70
Rali (33/2)	5.53	Thachh (36/7)	4.67
Yashang (91/5)	5.53	Nakal Kuwa (64/7)	4.67
Radule (20/2)	5.52	Up Mohal Dhup Hang (15/2)	4.65
Tangling (41/2)	5.51	Karaba (30/13)	4.64
Sumra (45)	5.48	Parga (40/2)	4.60
Thapa Saring (34/2)	5.45	Gharshu (14/1)	4.57
Joktaring (67/2)	5.44	Dabling (1/7)	4.56
D.P.F. C - 179 - 180 (49)	5.41	Baro (32/2)	4.55
Meeru Khas (104/1)	5.39	Chhonda (36/4)	4.55
Kandar (17)	5.39	Up Mohal Sumtat (43/3)	4.52
Asrang Khas (7/1)	5.38	Dakhaye (30/4)	4.50
Up Mohal Kanam Nichla (6/2)	5.36	Shagarcha (1/4)	4.47
Dung (19/3)	5.33	Talangcho (30/2)	4.45
Lapo (16/2)	5.33	Hangmat (7/2)	4.45
Shalkar (35/1)	5.31	Somo (31/2)	4.43
Chhota Kamba (8/2)	5.30	Kutian (40/3)	4.43

Up Mohal Tashi Gang (35/3)	5.30	Rall Santhang (100/3)	3.94
Kachrang (14/5)	4.42	Swaling (53/4)	3.94
Raag Panung (91/4)	4.38	Kharogla (59/2)	3.93
Hurba (1/8)	4.33	Runang Nichla (104/4)	3.93
Kangarang (30/15)	4.28	D.P.F-188 (41)	3.80
Kuno Khas (60/1)	4.21	Phayag Choden (33/3)	3.64
Thang Karma (29/4)	4.21	Basharang (8/1)	3.60
Panwa (13/5)	4.20	Ka (21/3)	3.60
Shorang (7/1)	4.19	Shuthanang (75/3)	3.53
Pashpa (1/9)	4.17	Burang (1/10)	3.53
Shobre Yanang (27/2)	4.12	Salaring (14/4)	3.52
Shakamrang (91/6)	4.04	Kagsthal (75/2)	3.48
Piwar (53/2)	4.04	Ghumaruning (104/3)	3.40
Tokto (7/2)	4.00	Lambar (53/3)	3.34
Kurpo (40/5)	3.99	Nagassaring (19/2)	3.26
Up Mohal Dabling (30/2)	3.97	Runang Uperla (111)	2.48
Rock Charang (14/2)	3.96	Rawa (35/5)	2.48
		D.P.F-72(B) (45)	2.43
		Morang Kanda (75/4)	1.48

Rank of villages according to Infrastructural Facilities

NAME	Infra_C.I	NAME	Infra_C.I
Reckong Peo (18)	24.30	Tranda (36/1)	6.20
Up Mohal Poo (31/1)	17.86	Chuling (8)	6.10
Tapri (91/3)	15.11	Morang Kanda (75/4)	5.85
Chango Nichla (29/2)	14.23	Batseri (43/1)	5.69
Lippa Khas (16/1)	13.44	Up Mohal Labrang Khas (3/1)	5.42
Katgaon (30/7)	13.44	Up Mohal Dubling (30/1)	5.42
Urni Khas (100/1)	13.44	Rali (33/2)	5.42
Sapni Khas (13/1)	12.76	Kafnu (30/1)	5.42
Kilba Khas (2/1)	12.32	Yangpa (30/6)	5.42
Hango (7/1)	12.07	Nigul Sari (36/6)	5.34
Jangi Khas (28/1)	11.64	Baturi (13/3)	5.16
Baro (32/2)	11.64	Roowang (64/3)	5.10
Meeru Khas (104/1)	11.64	Barua Khas (19/1)	5.10
Asrang Khas (7/1)	10.95	Kamru Khas (33/1)	5.00
Kalpa (20/1)	10.65	Chaura (37/1)	4.83
Up Mohal Kanam Khas (6/1)	10.17	Rarang (30/11)	4.75
Nesang Khas (78/1)	10.17	Leo (19/1)	4.55
Rakchham (59/1)	10.17	Duni (17/1)	4.42
Shalkar (35/1)	9.83	Malling (20/1)	4.04
Sungra (32/4)	9.83	Up Mohal Ropakhas (43/1)	4.04
Panwi Khas (67/1)	9.83	Up Mohal Spiloo Khas (1/1)	4.04
Yulla Khas (102/1)	9.83	Up Mohal Tashi Gang (35/3)	4.04
Pangi (6/1)	9.75	Kuno Khas (60/1)	4.04
Barang (37/1)	9.75	Runang Uperla (111)	4.04
Shango (30/12)	9.58	Kanahi-Khas (6/1)	4.04
Up Mohal Labrang (31/2)	9.55	Gramang (64/6)	3.43
Purbani Khas (42/1)	9.06	Kachrang (14/5)	3.36
Ribba Khas (40/1)	9.03	Shagarcha (1/4)	3.18
Sangla (34/1)	9.03	Kandar (17)	3.18
Kothi (15/1)	8.63	Jani (86/1)	3.18
Ponda (34/2)	8.46	Ramni Khas (75/1)	3.18
Akpa Khas (33/1)	8.36	Up Mohal Shyaso (17)	2.94
Rispa Khas (48/1)	8.36	Shorang (7/1)	2.74
Chasu Khas (32/1)	8.36	Kangosh (33)	2.74
Nako (21/1)	8.28	Shaung Khas (27/1)	2.74
Up Mohal Namgia Khas (35/1)	8.28	Up Mohal Kanam Nichla (6/2)	2.06
Thangi Khas (53/1)	8.28	Dakhaye (30/4)	2.06
Pawari (41/1)	7.95	Boning Saring (34/4)	2.06
Sumra (45)	7.59	Chango Uperla (29/1)	0.69
Charang Khas (59/1)	7.59	Malling Dogri (20/2)	0.69
Rogi (30/1)	7.59	Yangthang (21/2)	0.69
Nathpa (16)	7.59	Hangmat (7/2)	0.69
Up Mohal Sanam Khas (15/1)	7.49	Ka (21/3)	0.69
Tangling (41/2)	7.22	Up Mohal Thoropa (43/2)	0.69
Chhitkul (63)	6.81	Up Mohal Sumtat (43/3)	0.69
Mebar (6/8)	6.57	Up Mohal Giabong Parla (39/3)	0.69
Khwangi (14/1)	6.57	Up Mohal Taling (13/2)	0.69
Bara Kamba (7/3)	6.54	Up Mohal Rush Kulang (13/1)	0.69

Chhota Kamba (8/2)	6.46	Up Mohal Khabo (32/1)	0.69
Up Mohal Giabong Khas (39/1)	6.37	Up Mohal Dabling (30/2)	0.69
Tokto (7/2)	0.69	Up Mohal Namkalang (3/2)	0.00
Lapo (16/2)	0.69	Up Mohal Foche (1/2)	0.00
Swaden (34/7)	0.69	Up Mohal Gyamil (6/4)	0.00
Kutang (28/2)	0.69	Up Mohal Danmochhe (31/3)	0.00
Khadura (34/2)	0.69	Up Mohal Yangti Kanda (30/4)	0.00
Rarang Khas (34/1)	0.69	Porang Kanda (7/3)	0.00
Skiba (48/4)	0.69	Sheelapur (34/6)	0.00
Khokpa (64/2)	0.69	Nakal Kuwa (64/7)	0.00
Lambar (53/3)	0.69	Samodayan (65)	0.00
Piwar (53/2)	0.69	Horang Pawa (78/2)	0.00
Khwanta (6/6)	0.69	Thuwaring (64/5)	0.00
Panwa (13/5)	0.69	Parga (40/2)	0.00
Telingi (13/1)	0.69	D.P.F-187 (42)	0.00
Kashmir (15/2)	0.69	D.P.F-188 (41)	0.00
Talangcho (30/2)	0.69	Kutian (40/3)	0.00
Saryo (20/3)	0.69	Holdang (40/4)	0.00
Brelingi (17/2)	0.69	Holdang (48/3)	0.00
Yuwaringi (19/1)	0.69	Lijing (48/2)	0.00
Raang (21)	0.69	Shiling Khas (64/1)	0.00
Mebar (33/1)	0.69	Swaling (53/4)	0.00
Dabling (1/7)	0.69	Kurpo (40/5)	0.00
Burang (1/10)	0.69	Ragura (6/2)	0.00
Hurba (1/8)	0.69	Boktu (6/7)	0.00
Gnarsiu (14/1)	0.69	Rawa (42/2)	0.00
Salaring (14/4)	0.69	D.P.F. C - 179 - 180 (49)	0.00
Rock Charang (14/2)	0.69	Tarkhwa (13/3)	0.00
Homte (30/2)	0.69	Maki Mrang (13/2)	0.00
Huri (30/3)	0.69	Goli (17/3)	0.00
Surcho (30/14)	0.69	Dumdumka (19/2)	0.00
Baiyee (30/10)	0.69	Radule (20/2)	0.00
Kangarang (30/15)	0.69	Kastyo (30/3)	0.00
Puje (31/10)	0.69	Shuda Rang (20/4)	0.00
Nigani (31/5)	0.69	Jangal Mehfuza Mehduda C-242 (22)	0.00
Saki Charang (32/1)	0.69	Yusaring (37/2)	0.00
Solding (35/1)	0.69	Phayag Choden (33/3)	0.00
Palingi (34/1)	0.69	Majhgaon (1/2)	0.00
Thachh (36/7)	0.69	Nainsaring (1/5)	0.00
Kafaur (37/2)	0.69	Pashpa (1/9)	0.00
Shilani (37/3)	0.69	D.P.F.C-96 (10)	0.00
Chhonda (36/4)	0.69	Basharang (8/1)	0.00
Ghumaruning (104/3)	0.69	Masrang (30/4)	0.00
Runang Nichla (104/4)	0.69	Karaba (30/13)	0.00
Thikru (2/2)	0.69	Agade (31/ 7)	0.00
Nagassaring (19/2)	0.69	Linge (31/6)	0.00
Kupa (33/2)	0.69	Garade (31/8)	0.00
Thapa Saring (34/2)	0.69	Kashpo (31/9)	0.00
Seringche (43/2)	0.69	Somo (31/2)	0.00
Kharogla (59/2)	0.69	Paring Khor (31/1)	0.00
Thang Karma (29/4)	0.00	D.P.F.-78 (57)	0.00
Dung (19/3)	0.00	Punaspa (32/3)	0.00

Up Mohal Dhup Hang (15/2)	0.00	Ralpa (34/3)	0.00
Up Mohal Chelit (16)	0.00	Change (35/2)	0.00
Gramang (35/4)	0.00	Rall Santhang (100/3)	0.00
Rawa (35/5)	0.00	Kutano (100/2)	0.00
Tikrang (36/5)	0.00	Cholling (104/2)	0.00
Nanaspo (36/3)	0.00	Kagsthal (75/2)	0.00
Karape (36/2)	0.00	Shuthanang (75/3)	0.00
D.P.F-72(B) (45)	0.00	Punang Khas (90/1)	0.00
D.P.F-73 C (46)	0.00	Shenan Den (13/2)	0.00
Burcha (67/3)	0.00	Dhar Wadang (26)	0.00
Joktaring (67/2)	0.00	Shobre Yanang (27/2)	0.00
Yashang Dhar (93)	0.00	Limoden (32/2)	0.00
Shakamrang (91/6)	0.00	Jareyo (32/3)	0.00
Raag Panung (91/4)	0.00	Lachonden (33/4)	0.00
Urabaning (91/2)	0.00	Goroden (33/5)	0.00
Dharmaling (91/1)	0.00	Panpo Kanda (34/3)	0.00
Yashang (91/5)	0.00	Mastrang (59/3)	0.00

CULT IN KINNAUR DEOTAS AND THERE LOCATION

1. Badrinath, at Kamru or mone village
2. Bhimakali, at Kamru or Mone villate (Also at Sarahan).
3. Chhakoling Dambar, at Labrang village in pargana Shuwa.
4. Chcndika, at Ropa village in Shuwa pargana, Gangyul ghori. Also at yawaring village, Shuwa pargana.
5. Ghhwedung, at Chango village in Shuwa pargana.
6. Dabla, at Kanam Dabling, Dubling, Lio, Spuwa or Poo, Shyasho, in Upper Kanaur.
7. Deodum, at Kako, in Shuwa pargana
8. Gyangmagyum, at Jangi, in Shuwa pargana.
9. Kasurajas, at Rirang or Ribba, in Inner Tukpa pargana.
10. Khormo, at Pilo or Spilo, in Shuwa pargana
11. Kulyo, at Richpa or Rispa, in Inner Tukpa pargana.
12. Maheshras, at Shugra or Grosnam in Tharabis pargana, at Gramang or Kathgaon, in Bhaba pargana, and at Chugaon or Tholang in Rajgaon pargana.
13. Markaling, at Khwangi in Shuwa pargana
14. Mathi, at Chhitkul, in Outer Tukpa pargana
15. Milakyum, at Akpa village in Shuwa pargana.
16. Nages, at Barang, Bruang.* Chasang, Chhota Kamba, Kilba, Mewar, Miru, Sangla, Sapni or Rapang villages.
17. Nagin, at Bari village in Tharabis pargana.
18. Narayan, at Barsering village in Outer Tukpa pargana.
19. Narenas, at Awrang Chini, Shohang, Urni, and Yula Villages; and also at Chugaon, gramang and Shungra, with the three Maheshras.
20. Orming, at Morang or Ginam village in Inner Tukpa pargana.
21. Pathoro, at Rarang and Punnam villages. Shuwa and Rajgaon parganas.
22. Rogshu, at Rogi village in Shuwa pargana.
23. shankras, at Pawri or Por village in Inner Tukpa pargana.
24. Shanshras, at Rakchham village in Outer Tukpa pargana.
25. Sheshering, at Pangi village in Shuwa pargana
26. Rapukch, at Thangi village in Inner Tukpa pargana.
27. Shuwang Chandika, at Kostampi or Kothi village in Shuwa pargana.
28. Tarasang, at Tranda village in Tharabis pargana.
29. Teras at Rupi village in Pandrabis pargana.

30. Tungma Dambar, at Gyabung village in Shuwa pargana.

31. Ukha, at Nachar and Bara Kamba villages, Tharabis and Pandrabis parganas.

32. Yulsha, at Sunnam village in Shuwa pargana.

* According to field interaction and *Kinnaur in the Himalayas* by Bajpai, S.C.

A chronological list of the Buddhist Religious observances (in Kinnaur)

1.	Viangso	Hom, Pija, path are offered by buddlist nuns and lamas; in almost every temple throughout Kinnaour on 8th, 10th, 12th, 14th of the bright half, and on the full moon as well as on '*amawas,* of each month.
2.	Zinshok	Observed at kanauj village on the 8th of bright half, as well as on the 0ull moon of every month, includes *amawas* too.
3.	Torgya	Celebrated at Kanauj village on the 14th of the bright half and again on the full moon of *Phagun.*
4.	The Tona	At Kanauj on 11th of chait (one day celebration).
5.	The Tibaugma	At Kanuaj on the 20th of *Pusa.*
6.	The *Namgang*	Hom, Puja, Path at Kannaur by Zomos and lamas (two days celebration).
7.	The Kutimf	On 13th of phahun at Kanauj village.
8.	The Shibrat	Hindust Buddhists both celebration 14th of the dark half of Phagun people worship Shiva who is known as Lojan here.
9.	The shopnetang (wirsguo if sawn)	At Gramang/Kathgaon in Bhobha valley on the full moon of sawan. About a dozen men, Carrying cooked food for about three days, embark upon a journey to loftiest snow peaks to fetch wild flowers and plants. On their return they get a warm musical welcome from their fellow villages. They garland which they bring from their journey is offered to the deity, thereafter men and women dance together.
10.	The Lama-Paza	At Labrang og Shuwa pargana; a Buddhist religions right celebrated on the answer of chat. In the worship of chhakoling Dambar, lamas Zomos devote themselves, while common folks both men women give enthusiastic dance performance.
11.	The Jargo (Jagaraua/Vigit)	Throughout Kinnaur on 20th of Bhadon with music, all though the might, singing and dance is performance in worship of deity in almost every temple.

Fairs Held in Kinnaur

1.	The LOSAR (new year's day)	A three day function held from Paush Shudi 13th till the full moon of Psush. People gathers before lamas to know their yearly horoscopic forecast. LOSAR is the most important fair of Kinnaur and its highlight is dance performance by members of both sexes. On the occasion feast is organized for friends family.
2.	The ukhyang	Most remarkable fair of Kinnaur. People venture into high ranges to gather wild flowers leaver, they offer large garland of the collected materials to the village deity. Men and women in their new garments give singing and dancing performances.
3.	The Jokhya-Kushiming	Jokhya-chhugshiming ayt Kanauj; festivals for visiting relatives and friends on the 13th and 14th gate of Magh (January).

4.	The Ganga fair	Men, women and children climb into the change rang forest obove lippa in shuwa pargona on the full moon of Kortik. Singing, dancing, eating and drinking is the features of the fair.
5.	The Kangyur-zalmo	Kanauj ; on 15th gate of Har (Ashadh). People pay a visit to the Tibetan library, Kangyur-tangyur.
6.	The Khwakeha	Kanauj; five-day celebrations whichlasts from the 20th gate of Magh to the 25th. People dance and sing throughout the night before the temple of Dabla daily.
7	The Menthako	Two day fair at Kanauj on 20th gate of Bhadon (August). Dance, music, feasting, drinking and pouj race is the highlight of the festival fair.
8.	The Mang	At richpa (Rispa) in inner Tukpa and lasts for a week from 18th of Magh. Lamas and zomos worship Buddha while common folks dance and sing throughout the fair.
9.	The Agtarang	At Richpa (one day fair). People from nearby villages gather and dance and sing before the temple of Kulyo deity.
10.	The yungnas (Jungnas)	At Richpa in Paush; a five-day fair, According to their convenience, Zamindars fixes the exact day of the fair. Buddha is worshiped eating, drinking, dance, singing etc. works the celebrations.
11.	The Sherkan	At Kanauj on the 3rd of Kortik; this one day fair.
12.	The Shogheh	Help at chini (5-day fair); from Manger Shudi 10th to the full moon of the month. People from the surrounding villages gather in festive mood to dance and sing.
13.	The Rathis	This fair too is help at chini; on 1st of Paush. Dancing and singing is associated with it too.
14.	The Dumgyur-Zalmo	At Kwalda in Shuwa Pargana. Exact day in Har (Asharh) is fixed by Zamindars. The people visit the huge praying wheel and term it round to the right.
15.	The Kailash-Zalmo	(Visit to the Kailash mountain). Worship of kailash mountain with dance and songs. One day celebration at Pilo or Spile in Shuwa Pargana on any day in Har which is fixed by Zamindars.
16.	The Khepa	A three day Pan-Kinnauriauj fair; from Manger badi saptami to Manger badi dasmi. People collect thorns cling it the entrance of their homes in order to word off evil spirit and on 3rd day they take out all the thorns out side the village and burn it in symbolic manner of pruning evil spirits. Music and dance are the main feature.
17.	The Ras-Kaying	Celebrated throughout Shimla hills (where it is known as Bishu) and Kinnaur on the 1st of Baisadh. While washing and decoration of houses are done. In lower Kinnaur it is known as Bushu.*

18.	The Labrang-Zalmo	On 17th of Jeth at Kanauj. People dance and sing before the temple deity Dabla.
19.	The chhokten-Zalmo	At labrang in Shuwa forgama on the 15th of Har. People dance and sing and worship at chhokten temple.
20.	The Suskar	At Kothi/Kostamipi and other places; lasts about a weak from 9th of phogun. Groups of young men and women fight each other with snow balls. People dance and sing before the goddess shewang chandika.
21	The Jaugang	At Kothi on the 3rd of Magh; one day fair worship of deity is followed by song and dance.
22.	The Bang-Kayang foo	At Grawang or Kathgoon in Bhudha valley; on the full moon of Paush. All the people of the valley gathers in Mahishra temple and worship him. This is followed by dace and songs.
(*)	Cults in Kinnaur	For appendices.

FAIRS AND FESTIVALS WITH THEIR LOCATION AND DURATION

Fair Festivals	Village	Tahsil/ Sub-tahsil	Dates and duration
Chatrol	Chini	Kalpa	Either on Tuesday or Saturday during the first week of the month
-do-	Khawangi	-do-	In the bright half of the moon
-do-	Kothi	-do-	-do-
-do-	Pangi	-d-	One day (on Amawas or new moon)
Chishu	Sumra	Leo	One day
Shupyat	Jangi	Morang	One day during dark half
Sarimating	Morang	-do-	One day during bright half, no fixed date
Chatrol	Rarang	-do-	One day (fourteenth, bright half)
Jithu	-do-	-do-	One day, on 7th chaitra
Rokhu Puja	Ribba	-do-	One day, on Saturday
Chatrol	Chagaon	Nachar	On full moon day
-do-	Kanam	Poo	Occasionally in the month
-do-	Kamru (Mone) Sangla		Two days, on Saturday on Tuesday during Navratras
Navratra	Rakchham	-do-	One day on 1st Navratra
Chatrol	Sangla	-do-	For two days, no fixed date
Vaisakha (April-May)			
Beesh	Barang	Kalpa	Two days, on 1st and 2nd
Beesh	Chini	-do-	On 1st
-do-	Duni	-do-	Two days, on 1st and 2nd
-do	Khawangi	-do-	On 1st
-do-	Kothi	-do-	-do-
-do-	Pangi	Kalpa	-do-

Phloring	-do-	-do-	One day (after flowering of chuli and baimi)
Beesh	Pawari	-do-	Two days, one 1st and 2nd
-do-	Roghi	-do-	Two days, 1st and 2nd
Jyaistha (May-June)			
Urgin Gyalja	Hango	Leo	Two days (during bright half)
Laitahsi	-do-	-do-	One day, following Urgin
Beesh	Jangi	Morang	Two day, on 1st and 2nd
-do-	Lippa	-do-	-do-
-do-	Morang	-do-	-do-
Kulang Shuyan	-do-	-do-	One day
Saringkora	Nesang	-do-	-do-
Beesh	Rarang	-do-	One day, on 1st
-do-	Ribba	-do-	Two days, one 1st and 2nd
-do-	Rispa	-do-	One day, on 1st
Remnes	-do-	-do-	On full moon day
Beesh	Thangi	-do-	One day, on 1st
Bishu	Chagaon	Nachar	-do-
Beesh	Chauhra	Nachar	One day, on 1st
-do-	Catgaon (Gramang)	-do-	Two days, on 1st and 2nd
-do-	Natpa	-do-	Three day, 1st to 3rd
Bishu	Rupi	-do-	-do-
Beesh	Giabong	Poo	One day, on 1st
-do-	Kanam	-do-	Three days, 1st to 3rd
Labhrang Zalma	-do-	-do-	For one day
Giza	Poo	-do-	Seven days, during bright half
Beesh	Ropa	-do-	One day, one 1st
Beesh	Sangnam	-do-	Five days, from 1st
-do-	Kamru (Mone)	Sangla	Three days, from 1st
-do-	Kiba	-do-	One day, on 1st
-do-	Rakchham	-do-	-do-
-do-	Sangla	-do-	-do-
-do-	Shaung	-do-	Two days, on 1st and 2nd
Raskayang	___	_____	Throughout Kinnaur
Purchun	Khawangi	Kalpa	In the bright half of the moon
-do-	Kothi	-do-	-do-
Jeshtang chhecha	Pangi	-do-	One day (10th of bright half)
Ramnes	Pawari	-do-	One day on full moon day
Jehtang Songa	Roghi	-do-	One day on 15th
Chishu	Sumrah	Leo	One day
Pita Paza	Monang	Morang	One day
Giza	Nesang	-do-	One day, on full moon day
Dumgyurja	Raring	-do-	One day (Buddha Purnima)
Ramnes	Ribba	-do-	Two days, on 14th and 15th of bright half
-do-	Rispa	-do-	One day, on full moon day

Jeshtang Songa	Thangi	-do-	One day, no fixed date
Airatang	Chagaon	Nachar	On twenty-fifth
Jeshtang	Katgaon	-do-	One day, on 1st
Sankranting	(Gramang)		
Sankranging	Natpa	-do-	-do-
Jangyachen	Giabong	Poo	One day
Labrangjalma	Kanam	-do-	-do-
Jangyachen	Ropa	-do-	-do-
Rola Chhango	Kamru (Mone)	Sangla	Every night from 1st to 15th
Jeshtang Songa Sangla		-do-	...
Asadha (June-july)			
Ashletang	Kothi	Kalpa	One day, during bright half
Jeshtang (Sankranting)	Telangi	-do-	On 1st
Bumkar	Shyalkhar	Leo	One day, on full moon
Dumgyur	Jangi	-do-	One day, on 1st and 12th
Jalkha			
Kangyur jalkha	Lippa	Morang	Two days, on 1st and 2nd
Ramnes	Morang	-do-	One day, on 8th or 9th of bright half
Nazal	Nesang	Morang	One day, on 10th of bright half
Ramnes	Ribba	-do-	One day, during bright half
Ponasing	Rispa	-do-	Two days, on 14th and 15th of bright half
Bhojang	Rarang	-do-	One day (date determined by the deity)
Bagh Jatrang	Thangi	-do-	One day, no fixed date
Ashletang	Chagaon	Nachar	On full moon day
Surpa Gunfa Jalma	Kanam	Poo	One day, on 7th
Kangyur	-do-	-do-	One day, on 15th
Dumgyour Jalma	Spilo	-do-	...
Chhokten Jalma	Labrang	-do-	...
Rangjun	Poo	-do-	Tow days
Giza	-do-	-do-	...
Kailash Jalma	Spilo	-do-	...
Shushtan	Kamru (Mone)	Snagla	One day, on 14th of bright half
Marja	Rakchham	-do-	Two days, commencing either on Saturday or Tuesday
Sravana (July-August)			
Udaneyang	Brelangi	Kalpa	...
Dakhrain	Chini	-do-	On 1st
-do-	Khawangi	-do-	-do-
Udaneyang	-do-	-do-	In the dark half of moon
Dakhrain	Kothi	Kalpa	On 1st
Udaneyang	Kothi	-do-	In the dark half of moon
Shonetang	-do-	-do-	One day, during bright half

Koshme Shukud	-do-	-do-	Date is fixed by Chandika Devi
Dakhrain	Pangi	-do-	For three or five days
-do-	Pawari	-do-	One day, on 1st
-do-	Roghi	-do-	-do-
-do-	Telangi	-do-	-do-
Namganchuan	Chango	Leo	One day
-do-	Shyalkhar	-do-	Two days
Dakhrain	Jangi	Morang	Two days, on 1st and 2nd
-do-	Lippa	-do-	-do-
-do-	Morang	-do-	One day, on 1st
Rangkoching	-do-	-do-	On 14the and 15th of bright half
Dakhrain	Raring	-do-	Three days, from 1st
-do-	Ribba	-do-	One day, on 1st
-do-	Rispa	-do-	-do-
Sawanang santhang	Thangi	-do-	Throughout the month on alternate rights
Dakhrain	Chagaon	Nachar	On 1st
Dakhlaini	Chauhra	-do-	One day
Shonetang	Kashpo (Nachar)	-do-	One day, on 15th
Dakhrain	Katgaon Gramang	-do-	One day, on 1st
Shonechang	-do-	-do-	Seven days, during bright half
Dakhrain	Natpa	Nachar	One day, on 1st
-do-	Rupi	-do-	Three days, from 1st
-do-	Kanam	Poo	One day, on 1st
-do-	Kamru (mone	Sangla	Two days, from Saturday or Tuesday
-do-	Kilba	-do-	One day, on 1st
Shonetang	Rakchham	-do-	One day, on 20th
Dakhrain	Sangla	-do-	…
-do-	Shaung	-do-	Two days, no fixed date
Bhadra (August-September)			
Ukhyang	Barang	Kalpa	Five days, commencing on 19th
Penssing	Chini	Kalpa	On 7th
Jagro	-do-	-do-	…
Homang	Khawangi	-do-	…
-do-	Kothi	-do-	Two days, on 20th and 21st
Panasing	-do-	-do-	One day, during bright half
Bhadrang Songa	Pawari	-do-	One day, on 15th
Koshme	Telangi	-do-	During first week
Namgan	Hango	Leo	Five days, from 18th
Manthoke or Jagtog	-do-	-do-	….
Namgan	Leo	-do-	Five days, commencing from 18th
Namganchunan	Nako	-do-	Four days
Namganchheya	-do-	-do-	Two days on 27th and 28th

Namganchuan	Sumra	-do-	Three days
Rangkorang	Jangi	Morang	Two days (once in three years)
Changmang	Lippa	-do-	...
Jagro	Morang	-do-	Two days, on 4th and 5th
Niza	Nesang	-do-	One day, on 20th
Ponas or Ponasing	Raring	-do-	One day, on 14th of bright half
Jeu Ukhyang	Ribba	-do-	One day, on 10th
Niza	-do-	-do-	One day, on 20th
Ukhyang	-do-	-do-	From 28th
Niza (Jagro)	Rispa	-do-	One day
Rangkorang	Thangi	-do-	Two days, on 17th or 18th
Ponasing	Katgaon	-do-	One day, on full moon day
Ukhyang	Punang	-do-	Four days, from 20th
-do-	Ramni	-do-	-do-
-do-	Rupi	-do-	Five days, from 7th
Do	Giabong	Poo	Two days on 20th and 21st
Menthoko	Kanam	-do-	One day, on 19th or 20th
Shuktuk	Namgya	Poo	Three days, from 14th
-do-	Poo	-do-	Two days
-do-	Ropa	-do-	Two days, on 20th and 21st
Ukhyang	Rushkalang	-do-	Five days from 20th
Menthoko	Sanganam	-do-	Five days, from 20th
Janam Ashtmi	Kamru	Sangla	One day
Ukhyang	-do-	-do-	Three days, from 19th
-do-	Kilba	-do-	Four days, from 20th
Usko (Ukhyang)	Rakchham	Sangla	Four days, from 20th
Ukhyang	Sangla	-do-	...
-do-	Sipni	-do-	Eight days, from 16th
-do-	Shaung	-do-	Three days, from 19th
Jagro	-do-	-do-	One day, on Tuesday or Saturday
Asvina (September-October)			
Ukhyang	Chini	Kalpa	On Dussehra day
-do-	Khawangi	-do-	Five days, from 10th of bright half
-do-	Kothi	-do-	-do-
-do-	Pangi	-do-	Three days, from Dussehra
-do-	Pawari	-do-	Three days from 1st
-do-	Roghi	-do-	Three days, after Dussehra
-do-	Telangi	-do-	On Dussehra day
Namgan chhetpo	Shyalkhar	Leo	One day
Namgancha	Sumra	-do-	Two days
Ukhyang	Jangi	Morang	Four days, from 20th
-do-	Morang	-do-	Seven days, from 1st
Shirkan	Nesang	-do-	-do-
Ukhyang	Rarang	-do-	Three days, from 20th
-do-	Rispa	-do-	Five days, form 1st
-do-	Thangi	-do-	-do-

-do-	Chagaon	Nachar	25th to 31st
-do-	Chauhra	-do-	Three days, from 20th
-do-	Natpa	-do-	-do-
Namkyangma Ukhyang	Kanam	Poo	…
Ukhyang	Kamru (Mone)	Sangla	Three days from 19th
Dang Ukhyang	Kamru	Sangla	Two days, no fixed date
Jagro	Rakchham	-do-	One day, on 20th
Gato Ukhyang or Dang Ukhyang	Sangla	-do-	…
Kartika (October – November)			
Diwali	Roghi	Kalpa	One day, on Amawas
Namgancha	Chango	Leo	Three days
Rofu	Hango	-do-	….
Ganga fair	Changmang (above Lippa)	Morang	…
Shurgurich	Jangi	-do-	Two days, on 10th and 11th
Ukhyang	Lippa	-do-	Three days, from 3rd
Jai ukhyang	Morang	-do-	Two days, on 1st and 2nd
Ukhyang	Jani	Nachar	Three days, from 1st
-do-	Katgaon	-do-	Seven days, from 10th
-do-	Giabond	Poo	…
Shirkan	Kanam	-do-	Five days, from 7th
-do-	Namgya	-do-	Three days, from 7th
-do-	Poo	-do-	Seven days, from 1st
Ukhyang	Ropa	-do-	…
Shirkan	Rushkalang	-do-	Five days, from 1st
Jagro	Kamru (Mone)	Singla	Two days, no fixed date
Rig Diwal	-do-	-do-	One day, on Amawas
-do-	Sangla	-do-	…
Agarahayana (November – December)			
Diwal	Barang	Kalpa	…
-do-	Chini	-do-	On Amawas
Shogch	-do-	-do-	This takes place in annual turns
Rathin	-do-	-do-	-do-
Pathoran Samyan	-do-	-do-	-do-
Diwal	Khawangi	-do-	Two days, during dark half
Khaning	-do-	-do-	Two days
-do-	Kothi	-do-	-do-
Diwal	Pangi	-do-	Five days, during dark half
Khaning	-do-	-do-	One day, (date determined by Chandika of Kothi)
Diwal	Pawari	Kalpa	One day, on 15th of dark half
-do-	Telangi	-do-	In the dark half of the moon
Lowar	Chango	Leo	Three days

-do-	Shyalkhar	-do-	On 13the and 14th of bright moon
Diwal	Morang	Morang	Two days, from Amawas
Sholing	Raring	-do-	Three days, from 13th
Diwal	-do-	-do-	One day before Amawas
Khepa	-do-	-do-	One day
Diwal	Ribba	-do-	11th of dark half
-do-	Rispa	-do-	One day, on 15th of dark half
Duiyal	Thangi	-do-	One day, on 15th of dark half
Diwal	Chagaon	Nachar	On Amawas
Deoli	Chauhra	-do-	One day, (date determined by Sungra Maheshras)
Manu	Katgaon	Nachar	One day, (date determined by 'Maheshras of Bhabha)
Diwal	Napta	-do-	One day, no fixed date
Deoli	Rupi	-do-	Three days, (date determined by the local deity)
Khawangi	Kanam	Poo	Three days, from 5th of the bright half
Khepa	-do-	-do-	Three days, from 9th of dark half
Diwal	Kamru	Sangla	One day, (one month after Diwali)
-do-	Kilba	-do-	One day, on Amawas
-do-	Rakchham	-do-	-do-
-do-	Sangla	-do-	...
-do-	Shaung	-do-	One day, on Amawas
Pusa (December – January)			
Rathin	Chini	Kalpa	...
Khepa	Khawangi	-do-	Two days, on Amawas, and a day earlier
Khepa	Kothi	Kalpa	One day, (date determined by the Chandika of Kothi)
-do-	Pangi	-do-	-do-
Parkooning	Pawari	-do-	One day, no fixed date
Khepa	Roghi	-do-	Commences either on Tuesday or Saturday in the dark half of moon
-do-	Telangi	-do-	On the date determined by the Chandika of Kothi
Losar	Hango	Leo	Three days, from 1st
-do-	Leo	-do-	-do-
Lowar	Noko	Leo	Three days
-do-	Sumra	-do-	-do-
-do-	Jangi	Morang	Three days, from 19th of bright half
-do-	Lippa	-do-	-do-
-do-	Morang	-do-	Two days, on 7th and 8th of bright half
Khepa	-do-	-do-	On 7th and 8th of the dark half
Losar	Norang	-do-	Six days, from 13th of the dark half
-do-	Raring	-do-	Two days, on 9th and 10th
Khepa	Rispa	-do-	Three days, from 15th of bright half
Ponasing	Changaon	Nachar	On full moon day
Ragul	-do-	-do-	-do-
Khepa	Katgaon (Gramang)	-do-	No fixed date
Losar	Giabang	Poo	Five days, during bright half
-do-	Kanam	-do-	-do-
-do-	Namgya	-do-	Three days, during bright half
-do-	Poo	-do-	Seven days
-do-	Sangnam	-do-	-do-

Khepa	Kamru	Sangla	Three days, from 14th of the dark half
Khepa	Rakchham	Sangla	One day, on Amawas
-do-	Sangla	-do-	One day
-do-	Shaung	-do-	One day, on 14th of the dark half
Aitang (Agitarang)	Rispa	Morang	One day, during dark half, no fixed date
Magha (January – February)			
Sazo	Chini	Kalpa	On 1st
-do-	Khawangi	-do-	-do-
Mang Sanga	-do-	-do-	One day, on 15th
Jagang	-do-	-do-	One day, during bright half
Ratingahukun	-do-	-do-	One day, (date determined by Chandika of Kothi)
Sazo	Kothi	-do-	One day, on 1st
Mang Songa	-do-	-do-	One day, on 15th
Jagang	-do-	-do-	One day, during bright half
Ratingahukun	-do-	-do-	One day, (date determined by Chandika of Kothi)
Sazo	Pangi	-do-	One day, on 1st
-do-	Pawari	-do-	Two days, on 1st and 2nd
-do-	Roghi	-do-	One day, on 1st
-do-	-do-	-do-	-do-
Lamoche	Hango	Leo	Three days
Yum	Leo	-do-	Seven days, from 8th
Ngana	Nako	-do-	Four days, from 13th of bright half
Rofu	-do-	-do-	Three days, (end of Magh)
Guru	Sumra	-do-	Three days, from 19 bright half
Sazo	Jangi	Morang	One day, on 1st
-do-	Lippa	-do-	-do-
Mangh Shirang	-do-	-do-	Two days
Urmig	Morang	-do-	Eight days, from 10th of bright half
Lamoche	Nesang	-do-	Seven days, (after a month of Tapsya)
Sazo	Raring	Morang	One day, on 1st
Suskar	Ribba	-do-	One day
Saxo	Rispa	Morang	As at Morang
Mango	-do-	-do-	...
Mangh Santhang	Shangi	-do-	Eight days, from 10th of bright half
Sazo	Chagaon	-do-	On 1st
Mangh Songa	-do-	-do-	On 15th
Sazo	Chauhra	Nachar	Two days, on 1st and 2nd
-do-	Katgaon (Gramang)	-do-	One day, on 1st
Mangh Songa	-do-	-do-	One day, on 15th
Shujarch	Rupi	-do-	Twenty days, no fixed date
Mangh Songa	Kanam	Poo	Five days, from 15th
Sazo	-do-	-do-	One day, on 1st
Jakhya Kushimig or Jokhya Chhugshimig	-do-	-do-	Five days
Sazo	Kamru	Sangla	One day, on 1st

Jagang	Kilba	-do-	Three days commencing on Tuesday or Saturday during bright half
Mangh Songa	Rakchham	-do-	One day, on 15th
Sazo	Sangla	-do-	One day
-do-	Shaung	-do-	One day, on 1st
Mangh Songa	-do-	-do-	One day, on 15th
Phalguna (February – March)			
Suskar	Chini	Kalpa	In the bright half of the moon
-do-	Khawangi	-do-	For fourteen days, one month after jagang
-do-	Kothi	-do-	-do-
-do-	Pangi	-do-	For eight days (date determined by Chandika Devi)
-do-	Pawari	-do-	Eight days, no fixed date
-do-	Roghi	-do-	On 7th of bright half of moon
Suskar	Telangi	Kalpa	On a day fixed by the Chandika Devi
Rofu	Chango	Leo	One day
Laitashi	Nako	-do-	-do-
Jithu	Sumra	-do-	Three days
Lamoche	Jangi	Morang	One day
Urmig	Lippa	-do-	Eight days, from 7th of dark half
Shupyat	Morang	-do-	Four days, from 14th of dark half
Khepa	Nesang	-do-	Two days, in bright half
Jagang	Raring	-do-	One day, on 12th or 13th of bright half
Lamoche	-do-	-do-	Two days, no fixed date
Shupyach	-do-	-do-	Three days, no fixed date
Lamoche	Ribba	-do-	One day
Phagul	Chagaon	Nachar	In the bright half starting from Monday and lasting for six days
Shivrat	-do-	-do-	On Amawas
Phagul	Chauhra	-do-	Six days, (date determined by Nachar Ukha)
-do-	Katgaon (Gramang)	-do-	Nive days, (date determined by Maheshras)
-do-	Natpa	-do-	Five days, no fixed date
Phaguli	Rupi	-do-	Four days, (date determined by the deity)
Suskar	Giabong	Poo	Five days, during bright half
Chunglong	-do-	-do-	Two days, on 20th and 21st
Lamat	Kanam	-do-	Three days, from 4th of bright half of the moon
Lamoche	Namgya	-do-	Four days, during bright half of the moon
Suskar	Ropa	-do-	Eight days, during bright half
Phagul	Kamru (Mone)	Sangla	Twelve days
-do-	Sangla	-do-	...
-do-	Shaung	-do-	Commencing of Holi for five days

* Based on field interaction and inputs from *Kinnaur in the Himalayas: Mythology to modernity*.

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