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

Kinnaur has been a part of the larger Himalayan spiritual domain for religious people of the Indian mainstream and has never been densely populated. People for ages have lived here in small villages surrounded by either forest or wilderness of semi-arid and arid areas. However, all these settlements are confined to river valleys due to higher carrying capacity and more favorable climatic conditions.

Earlier Kinnauri society consisted of nomadic pastoralists and such. There was hardly any sign of modern development till a few decades ago. Nevertheless, as Kinnaurese had a closed society based on self-sufficiency, there was probably no need of 'development' until people from rest of India entered Kinnaur.

Mere entry of outsiders was not the harbinger of development and transformation of Kinnaur and of Kinnaurese. Though the people of Kinnaur are attuned to difficult topography and harsh climate, yet they have also been blessed with natural bounties and they probably did not require development. Instead, they just needed direction and catalyst for advancement.

As population of Kinnaur increased due to the combined effect of natural population growth and continued in-migration from the nearby areas, the natural resources started declining. Planning and perspective for the area was lacking even after independence. 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 served as physical shield of protection. Further, the closure of Kinnaur-Tibet trade added to economic hardship of Kinnaurese. Moreover,
the district gained tremendous strategic importance. These events helped in comprehending the necessity of development. It took about three decades to open the district to rest of India.

Kinnaur is diverse both in its physical and human aspects. Though the situation of Kinnaur has improved over the years, yet it still remains economically backward.

Main conclusions of the study are as follows;

I.1 Kinnaur has predominantly rugged mountainous terrain and is among the most remote border districts of India. It is entirely rural and possesses heterogeneous population with different cultural traits from the nearby areas.

I.2 The district is less developed. Geographically it is similar to some other parts of Western Himalayas. However, the district has its own unique physical and socio-economic characteristics.

I.3 Kinnaur experiences more snowfall than rainfall and remains cut off from rest of the country during the extreme winter months. Even the inter-valley interaction gets seriously hampered during winters.

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

I.5 Dramatic changes took place in Kinnaur due to Government initiatives after the Indo-China border dispute in October 1962. These led to spread of educational facilities, construction of roads and implementation of other developmental projects.

II.1 Formations of Kinnaur range from pre-Cambrian to Triassic and of recent geological periods. The major types of rocks in Kinnaur are Schist, Gneiss, Granites, Quartzites, phyllite and coral limestones. Presence of coral limestone
suggests the presence of marine fossils and the emergence of mountain ranges from sea.

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

II.3 Zanskar, Great Himalayan and Dhauladhar Ranges run nearly parallel to each other in Kinnaur. Zanskar and Dhauladhar Ranges mark Northern and Southern boundaries respectively. Great Himalayan Range acts as climatic divide, north of it lies arid and semi-arid areas.

II.4 Apart from the mountain ranges, river valleys form important geomorphic feature of the district. Main Satlej valley of Kinnaur is situated between altitude ranging from 1220 meters to 3050 meters above mean sea level. It is the height of leaving and entering points of Satlej River in the district. Extent of inhabited land is confined mainly to different river valleys: However, each valley to some extent has its own physical and socio-ecological distinctiveness.

II.5 Satlej is the master river and has largest valley. It flows in north-east to south-west direction. It originates on the southern face of Kailash Range and enters the district near Shipki-La pass. Further, it passes through Great Himalayan Range and Dhauladhar Range before leaving the district. Baspa and Spiti rivers are two major tributaries of Satlej River in the district. Meeting point of Satlej and Spiti Rivers is the point where Zanskar Range meets Great Himalayan Range.

II.6 Precipitation is more in the form of snow than rain. Snow-fed side streams and hill-rills provide water for irrigation because water of main streams cannot be used due to altitudinal differences between the rivers and agricultural fields.

II.7 Soil of Kinnaur is immature with shallow profile. Entisols, Histisols, Mollisols and Alfisols are four broad sub-groups of soils found in Kinnaur.

II.8 Lower Kinnaur has broad leaved to thick coniferous vegetation. Middle Kinnaur has coniferous vegetation on the slopes of mountain ranges. Most of the
vegetation is limited to the southern slopes of Great Himalayan Range and Dhauladhar Range. Northern slopes, being in the rain shadow area and due to unfavorable aspect to the sun, has less vegetation. Higher areas remain under perennial snow. Alpine meadows are found between snow line and tree line. These emerge after remaining six to eight months under snow. There are humid and sub-humid conditions in lower zone while cold and arid conditions prevail in upper Kinnaur. Here vegetation is mostly in the form of bushes, stunted Pines and seasonal grasses. Large part of upper Kinnaur is bare rocky area in the form of cold desert.

III.1 Kinnaur has mixed stock of people. Different racial groups entered Kinnaur at different points of time. Most people came from Ladakh, Tibet and Kashmir. The area has also evidences of early entry of central Asian nomads Shakas/Scythians. Ethnically people belong to 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 have predominance of Indo-Aryan stock. They are divided into two broad social groups viz. Kanets and Beru.

III.2 There is diversity in dialects. These are different from Pahari spoken in many other parts of Himachal Pradesh. Tibetan is spoken in Hangrang sub- tehsil likewise, dialects spoken are also location specific. Hindi is second language of Kinnaurese.

III.3 Recent decades have seen preference for rice and wheat as diet over traditional cuisines prepared from coarse grains. Distillation of alcoholic drinks at household level is very common. These appear to have emerged in response to prevailing cold conditions and wild fruit especially apricot. People wear woollen cloths throughout year.

III.4 Traditional houses are constructed as separate units using locally available construction material. Upper Kinnaur used to have houses made up of stones and
mud while middle and lower Kinnaur had wooden houses. After devastation of 1971 earthquake, people started using wood along with stones even in upper areas. Food is prepared in the main living room in winters and outside the house in summer months.

III.5 Nearly all the festivals have religious aspects and are timed according to rhythm of agricultural operations. Dances, songs as well as fairs and festivals present cultural diversity of Kinnaur. Main purpose of festivals is either to appease God for good harvest or social mixing up and enjoyment during winter which is agriculturally off season hence, a leisure time.

III.6 Elaborate ceremonies are observed at birth and death. Polyandry used to be prevalent which has now given way to monogamy. Divorce is permissible in the society. Sorority is not very common, but permissible.

III.7 Cultural zones match ecological zones. Arid zone and semi-arid zone have Lamaistic and Tantrik Buddhism whereas the moist zone of lower Kinnaur has Hinduism as the dominant religion. In between is the transition zone with influence of Buddhism as well as Hinduism.

IV.1 Harsh environmental conditions influence distribution and size of population. Most area of the district is uninhabited. Population is confined mainly to lower portions of river valleys. The district is sparsely populated barring a few pockets. Gentler slope 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 slope. Realizations of strategic location of Kinnaur have brought many development projects and Army, ITBP as well as Para-military forces to the district.

IV.2 District has different pockets of high and low sex ratio. Kinnaur is experiencing sex-selective migration. Out migration of young males from remote villages of
Kinnaur makes sex ratio of these villages quite high. In-migrating government officials and labourers make sex ratio low. Therefore, administrative centers and construction sites have low sex ratio.

IV.3 Kinnaur has registered considerable rise in literacy 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 many others engaged in some other economic activities.

IV.4 Low carrying capacity of land limits the population size of villages. However, administrative centers and other nodal villages have higher population.

IV.5 Maximum in-migrants in Kinnaur are from Nepal. Jharkhand accounts for highest in-migrants to Kinnaur among Indian states. Maximum in-migrants from within Himachal Pradesh to Kinnaur are from Shimla district followed by Mandi district. About seventy percent of Kinnauri out-migrants within the states live in Shimla and Solan districts.

V.1. Due to difficult living conditions and short growing season, people rely a great deal on animal rearing to supplement their household income. They rear both big and small animals. Proportion of big animals is more in lower zone as against that of small animals in higher zone.

V.2 Dependence on livestock resources increases with increasing altitude. Lower zone have maximum proportion of smaller herds with size of 1-5 animals per households while higher and middle zone have more herds of 11-20 animals.

V.3. Cattle are mostly cross-breed of cow and Yak as summers are too hot for yak and winters are too cold for cows. The cross breeds of the two animals are suited to prevailing environmental conditions.
V.4. Pastures have always been an economic resource for Kinnaurese. Of late, there has been more pressure of land. Thus, pastures and other grass growing areas are increasingly being brought under plough. This has resulted in shortage of fodder for winter stall-feeding. Thus, there has been change in composition of livestock holdings as well as reduction in herd size at household level.

V.5 Sequential pattern of grazing has evolved over centuries. It takes care of both animals as well as pastures. After winters, animals are weak and unable to take long arduous march to higher pastures. So, they are grazed for about a month in lower pastures first to regain their lost vigour. This period also allows thawing of soils at higher pastures. Thereafter, herds are taken to higher pastures for two to three months. This period allows grasses at lower pastures to re-grow.

V.6 Households with larger operational land holdings tend to rear bigger herds as they get more by-products from farms and depend less on pastures to amass fodder for stall-feeding. Proportion of households with bigger herds is highest in higher zone.

V.7 Fodder for winter is collected from various sources. About 32 percent of the surveyed households with livestock holdings spend up to thirty working days in fodder collection. This comprises the highest proportion of households engaged in fodder collection for stall feeding across all zones.

V.8 Though, there has been general decrease in livestock rearing, it is still important in supplementing household income.

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

VI.2 Land for cultivation is scarce still agriculture is chief occupation of people. Agriculture employs about sixty percent of the work force. Larger area of district is lies as barren and uncultivable land as well as pastures and other marginal lands.
A good proportion of land has been put to non-agricultural use. Area under forest is meager. Net sown area covers less than two percent of the total land of the district. Agriculture is constrained by short growing period.

VI.3 Role of irrigation in agriculture is very important. Irrigation facilities are present for about sixty percent of cultivated land. Fields are irrigated by *kutcha* and *pucca* *kuhls* (gravitation channels) that bring water from hill streams or from springs.

VI.4 Increasing population pressure resulted in increased demand of land for cultivation. Thus, many portions of lower pastures and marginal lands are being put to plough. Initially, newer terraced fields were carved out within villages. But this was not sufficient and people started moving to village outskirts; still it did not suffice. Hence, people have now turned to lower pastures and vulnerable marginal land with steep slope for cultivation.

VI.5 Agricultural activities on steep slopes and intensive ploughing of pasture land are rendering more and more land degraded and damaged, turning people to more hazardous slopes. As lower zone has greater population pressure, damaged land is more in this zone.

VI.6 Overall land suffered more damage due to rain than avalanches. About 53 percent of all degradation was due to torrential rain while avalanches accounted for 37.1 percent of all degraded land. Heavy rain is main agent of degradation in lower and middle zones. Even little rain brings considerable damage in middle Kinnaur. Avalanches are more damaging in higher zone of Kinnaur.

VI.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.

VI.8 Socio-Economic index of development reflects low level of development in most of the villages as well as considerable variations across villages. Administrative
centres and other nodal settlements functioning as service centers show higher development.

VI.9 Index of infrastructure indicates higher variations than the Socio-Economic index. Infrastructural facilities are largely confined to in and around administrative centers and other villages functioning as service centers. Villages populated by seasonal in-migrants and remote villages with small population size are mostly without such facilities. Administrative and market centers are located mostly in lower part of river valleys because such places have relatively flat land for economic activities. Settlements on steeper slopes have small population size and poor socio-economic and infrastructural facilities.

VI.10 Five orders of settlements have been worked out according to the index of overall development. About 55 percent of settlements are of fourth order. This is followed by third order of settlements which comprises about 30 percent. Their higher ranks can be attributed to the higher participation ratio of main workers in other services, high literacy and better infrastructural facilities.

Though the region remains economically and socially under developed, social factors have started changing for better. As the notion of geographical distances is decreasing with introduction of more efficient communication modes, improvement in local economy, though slowly, is beginning to be visible. 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 years before Kinnaur is likely to have improved social and economic facilities. However, there are few areas which require immediate attention to ward off probable ecological disasters. These are;

1. Non-concretised gravity channels for irrigation can trigger land-slides on steep slopes due to water seepage. So, all such channels must be concretised.
2. Topographic sequencing in agriculture ought to be given priority. Wherever feasible higher slopes should have trees plantation followed by development of pastures and trees in middle slopes. Plantation and agriculture should be practiced at lower slopes.

3. Inaccessibility is the main cause for under-development of the area. Hence, improvement in connectivity is imperative.

Presently, border trade through Shipki-La pass is negligible. In the light of traditional links with Tibet, trade and tourism related movement across border on improved scale through diplomatic processes must be taken up with China. This will not only provide greater opportunity for trade and tourism but also a window for spiritual and cross-cultural currents between the two regions. This in turn will also attract better infrastructure and more economic opportunities as well as other resources to Kinnaur.

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