

**SOCIO-ECONOMIC SETUP OF
BHOTIYA VALLEYS OF KUMAON**

*Dissertation submitted to the Jawaharlal Nehru University
in partial fulfilment of the requirements
for the award of the degree of*
MASTER OF PHILOSOPHY

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CERTIFICATE

This is to certify that the dissertation entitled:
SOCIO-ECONOMIC SETUP OF BHOTIYA VALLEYS OF KUMAON, Submitted
by DHARMENDRA KUMAR DUBE, in partial fulfillment of the
Degree of Master of Philosophy (M.Phil) of the University,
is his original work according to the best of our knowledge
and may be placed before the examiners for evaluation.

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*Dedicated to the People
of
Bhotiya Valleys*

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Dharmendra Kumar Dube

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Introduction

Chapter 1

Man, the best creation of nature, is not only an actor on the environmental stage but also the maker and shaper of his own world. This process of shaping each other is basically responsible for man's entire socio-economic and cultural development. The relationship of man with nature is as old as the man himself. It is because the nature is the main source of all primary resources which fulfil the basic needs of life. His interaction with fellow beings leads to forming social set up which is not just because of his gregarious attitude but of for the earnest need of his survival. The social relations are defined and developed within a society, which, to an extent, are influenced by the environment, mainly through, the way a group interacts with the nature. It is especially true in the early stages of development. Human interaction with the nature is not the same everywhere. "It is the diversity in nature and the varied needs of man that provide the basis for spatial interest."¹

Nature of spatial interaction depends upon several physical factors as well as socio-cultural aspects of the inhabitants. Surplus and deficit of a particular resource

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1. Butola, B.S. (1992): Political Economy of Under Development - A case study of Uttar Pradesh Himalya; Vikas Publication, New Delhi, P-12.

may play a decisive role in interaction. Resources are not equally distributed in all areas. The surplus of one commodity is exchanged with the deficit commodity from other social group. This process of exchange forms the basis of economic interaction.

The process of interaction is not always harmonious. Despite man's efforts to maintain normally, fluctuations always occur. A social group tries to maximise stability through strong socio-cultural bonds, positive economic exchange and continuously improving their technology. The stability may partially be achieved for a short period but the fact remains that no society is static and the change is inevitable. "There are forces at work in every society leading to the alteration and modification in the paternal system, aimed to reduce the conflict with environment".² If the process of change is gradual, then the society has time to readjust itself without disturbing the basic socio-economic structure. But if it is sudden or catastrophic then structure of society becomes the first victim.

The physical conditions in mountain regions are harsh. The nature provides limited resources and remoteness leaves

2. Prasad, R.R. (1989): Bhotiya Tribals of India, Gain Publishing House, New Delhi P- 1 .

a few options for economic activities. The principle of determination holds its sway and man is forced to follow the natural limits. It is also because these zones are still inherited by groups having simple technology and has not been influenced by the development. The sparse population in these areas exemplifies the extent to which man have achieved adaptation and stable interaction with different eco-systems. The Himalyas - the youngest and technically most active mountains have a fragile environment which is highly sensitive to human interference. This fragility increase with the increase in altitude. "The higher parts have a low carrying capacity and a very low degree of tolerance, accommodation and recovery form any damage, that man inflicts upon".³

The plant and animal life in the upper portion of the Himalayas have to face a continued struggle for survival due to long bitterly cold winters and relatively short summers. Plant cover has a poor natural regenerating capacity. The physical factor limits the choice of basic occupation for the inhabitants to subsistence farming or pastoral economy. It is again the physical factor which determines as to

3. Kalapsi, M.D. (1985): "Understanding Hinalyan Ecology", Interprated mountain Development (ed. Tejvir Sin gh, Jadish Kaur), Himalyas Book.

which of these two occupations will have a dominant role. Agriculture becomes main occupation in relatively broader valleys and grazing on hill slopes is taken up as a supplementary occupation.

Subsistence agriculture with few coarse grains and millets is the only way to feed population in these areas. Subsistence agriculture, also gives options for secondary occupations like livestock rearing and other house hold industries. These areas give rise to an agrarian economy with some other allied supplementary activities.

As altitude increases the slope become barren with limited pastures and nomadic pastoralism becomes the main source of livelihood. Here high altitude grasslands (Bogyab), are available for only a few months in a year. Rest of the time the slopes lie under snow and inhabitants are forced to go down to lower areas where they have their winter villages. This leads to regular seasonal immigration or "transhumance" with a typical life style of 'nomadic-pastoralism'.

The term 'pastoralism' is related to the pastures. The activity of pastoralism demands utilisation of pastures situated at different areas and in different seasons of a

year which requires movement. This type of pastoral activity can be termed as "Pastoral Manadism".⁴

Bhotiyas and their identity:

Bhotiya is a generic term used for designating several socially unrelated groups of people in Indo-Tibetan border land in the Himalayan and trans-Himalayan regions. In the Eastern Himalayas, the term includes group of people living in the vicinity of Darjeeling and the inhabitants of Bhutan. In fact, most of these have originally imigrated from Tibet or are their decedents. In Central Himalayan region of Garhmal and Kunaon, the northern non-Tibetan high landers are referred by this generic term, the people from plain hardly mark any distinction as they also refer to the Tibetans as Bhotiyas. Generally, the term Bhotiya is applied traditionally to all people "along the interfaces from the Sutilej to Bhutan associated with the now dispersed and varied that the term tends to become some-what randomly applied".⁵

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4. Gariford, J. (1981) ed: "Atlas of Man", Marshal Conventish, London, P-26.
 5. Brawn, C.W. (1987): "Ecology Trade and Former Bhotiya Identity", Himalayan Heritage (Ed) M.K. Rana, P- 125.

The areas from where Bhutiyas hail is called 'Bhot', specially in the Central Himalayan area. It may be mentioned that Tibet is locally known as 'Bod' and 'Bot' seems to be the corruption of 'Bod' . Popularization of the term seems to be in some way connected to British expansion from Bengal and Nepal to the Western Himalayas in the 18th and 19th Century A.D. The earliest British reference to the Bhotiyas is associated with Bhutan. This relates to the British-Bhutan war. The British records speak of an invasion of Cooch Bihar by the Bootea (Bhutanese) in 1772 A.D. It is interesting to note that "during the time of Hasting when contacts were first made by the British with Tibet proper Bhutan and Tibet were conceptualized together as 'Boutan' and the inhabitants called 'Bountanies' or Booteas"⁶ With the British expansion into the Himalyan region of Uttar Pradesh, the administrators once again confronted th problem. During this time the issue got further confused with the term 'Hundes' which refer to the Western Tibet (in Nga-ris) and forced the administrators to differtiate the Bhot of British territory from the Hundes of

6. Cammann, S. (1951): Trade through the Hinalayas (Bogle's Report 1879), Priceton University Press-Princeton, P 56.

Tibet. It seems the term 'Bhotia' was used by British without going into socio-anthropological aspects of it.

It is an irony that when the Government of India designated the Bhotiyas as Scheduled Tribe in 1967, the term was accepted without any debate or discussions. It provided legitimacy to the term and then onwards it came to be used more frequently. The Bhotiyas themselves don't like the term Bhotiya. They call themselves as 'Byansi', 'Chaundasi', 'Darmi', 'Johari', based on the valleys of their inhabitation. They also use a combined term 'Shauka' for themselves which they consider fit for their identity.

The History of Bhotiya Tribes:

It is believed that the legend of the Bhotiyas dates back to the vedic period. There is a popular folklore about 'Shankia Lama' and his disciples. Some scholars have also thrown light on the origin of the Bhotiyas and on their identity. Risley identifies northern and eastern frontier of India as the great Mongolian region. The contact along the frontiers lead to foreign influence which widens gradually from the west to east."⁷ Punjab has been left virtually untouched while Assam is unmistakably Mongoloid. The

7. Risley (1967): People of India, Oriental Books, New Delhi, P 42.

land of Kirat comprising the present Assam corresponds to Mongoloid area. The kirtas are referred to low and barbarian in the Mahabhartta. "As per the epic, the kirtas are found in the north-east and also near the sources of Ganges." ⁸ Manu "regarded the Kiratas as 'Kshatriya' who had been degraded to the status of Sudra." ⁹ It can be inferred that they probably entered the country through Assam and then went westward. Subsequently they might have moved along the Himalyan slopes as far West as uttar Pradesh Himalyas . These Kiratas perhaps came to be known to the vedic Aryans as cave dwelling people, from whom the Aryan obtained mountain-produc is like drugs, herb and 'soma plants'.

The Katyuries ruled Kumaon from 850 A.D. TO 1050 A.D. and Bhotiya region was under their rule. After the decline of katyuri kingdom, Bhotiya region became an independent unit. The king 'Ratan Chand' of Chand dynasty conquered the Bhotiya region in 1450 A.D.

8. Chattopadhyay, S. (1973): Racial Affinity of Early North Indian Tribes, Munishiram Mohanlal Press, New Delhi. P 72.

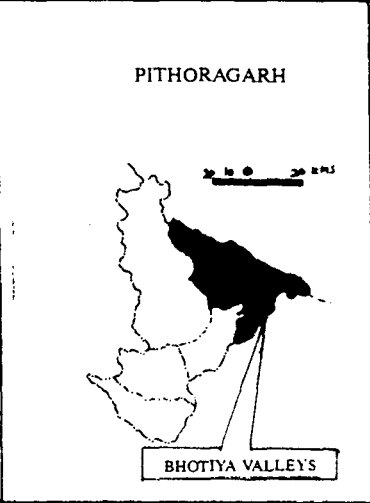
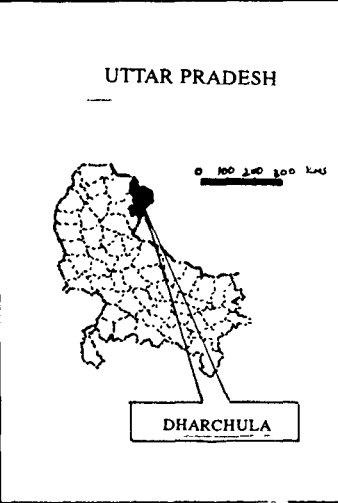
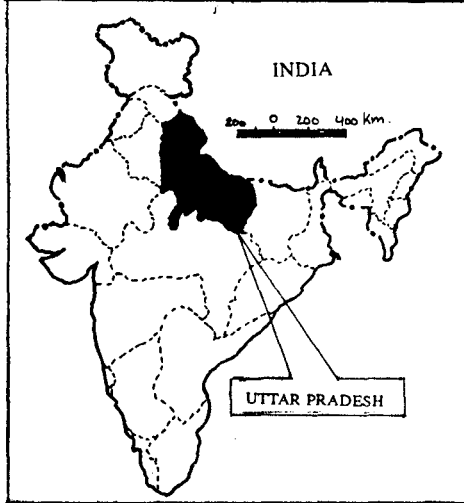
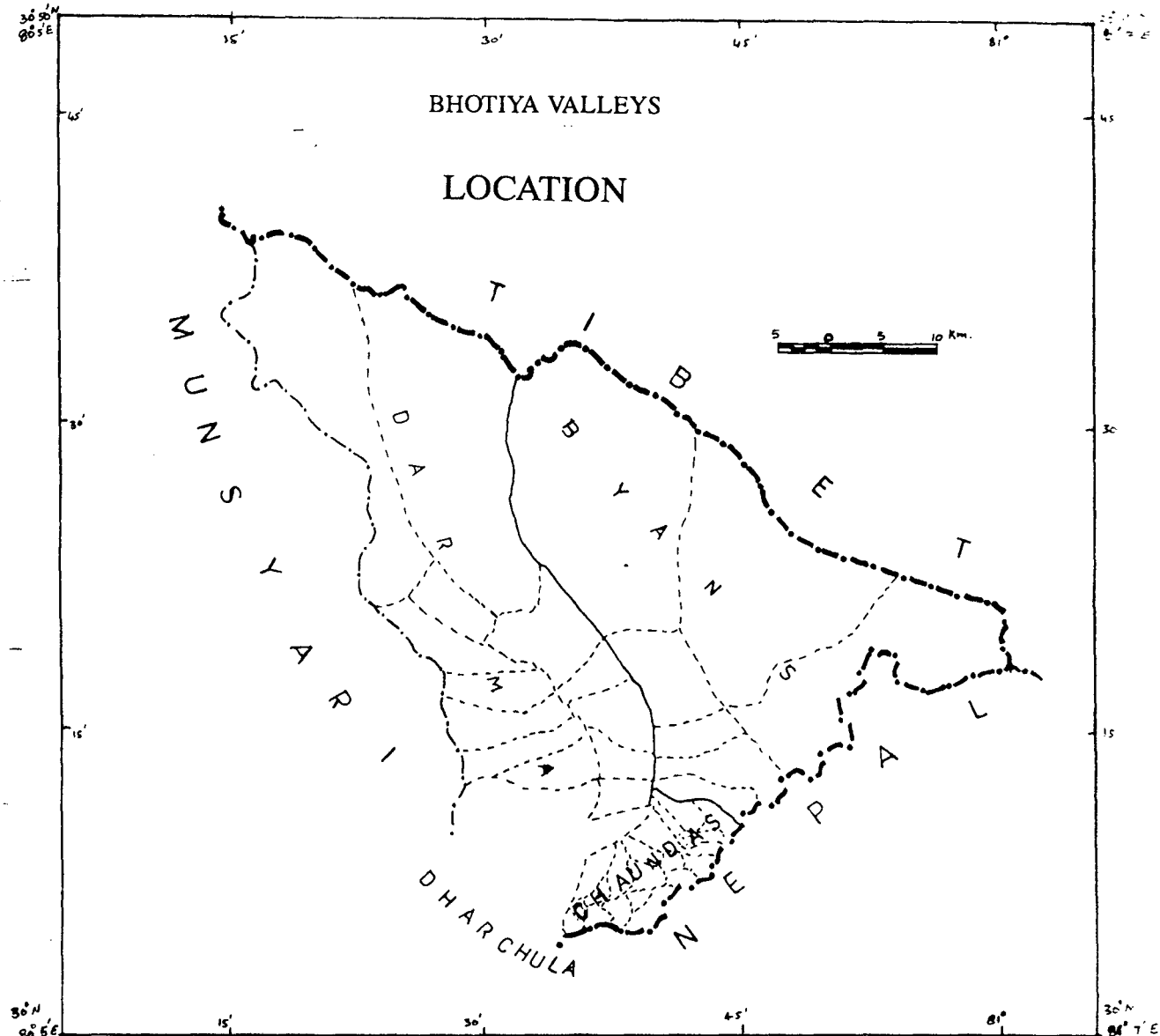
9. Ibid -P. 74. [Manusamhita, as quoted by S. Chattopadhyay P. 12.]

It was ruled for a long time by semi-independent 'Rajmaras of Askot' on behalf of 'Chand Rajas'. Baj Bahadur Chand attacked Tibet in 1670 A.D. and captured the important fort of 'Takalakot'. As a result, trade routes became safer from Tibetan robbers and all the taxes paid by Bhotiyas to Tibetans were suspended. The Gorkhas of Nepal conquered Kumaon in 1790 A.D. The Bhotiyas of Johar under the leadership of 'Jaspal Burha' resisted Gorkhas for ten years till they finally yielded, resulting in trade losses"¹⁰ The British, finally conquered Kumaon in 1815 and it was under their rule till 1947.

Study Area

The study area comprises three Bhotiya valleys of Kumaon Himalayas. They are Darina, Byans and Chaundas, situated at altitude varying between 2000 meter to 4000 meter above the sea level. All the three valleys are situated in Dharchula Tehsil of Pithoragarh District of Uttar Pradesh. To the north of these valleys lies Tibet. The Kali river forms its eastern boundary with Nepal. The Johar valley of Goriganga basin is situated in the west and separated by panchachuli Range of Greater Himalayas. Askot

10. Tolia, R.S. (1988) "Murcraft and Johari" Smarika Johar Sanskriti Sangathan (Hindi) Lucknow, P. 16.



MAP NO.-1

Block of Darchula Tehsil lies south of the region. The Byans is situated on the upper reaches of river 'Kali' and is tributary of 'Kuthi-Yangti'. Darma is situated in the valley of river Dhaulī which is a tributary of the Kali . It lies parallel to Byans valley. Chaundas occupies the valley of river Kali situated below Bans valley. The Chaundas valley comes under the Greater Himalaya Range of Central Himalaya while Byans and Darma Valleys are located in Trans Himalayan region between Zaskar Range in the north and Great Himalayan Range in the South. It is the land of lofty snow-clad peaks, glaciers, deep gorges and green meadows (bugyal). "Nature here is in the most rugged and widest forms surrounding the awful solitude overwhelms".¹¹

Previous Works on the Bhotiya Valleys:

The Bhotiyas of these valleys are the fascinating tribe with interesting cultural characteristics, which show systematic variations from one valley to another . The change in their socio-economic setup in last few decades is a striking feature. Their present conditions show a long untiring struggle for readjustment and survival. The

11. Atkinson, E.T. (1882): The Hinalayan Districts of north West Province of india, Vol-I, Reprinted (Himalayan Gazetteer, 3 Vols, Cosmo Publication, New Delhi 1973, P-6)

struggle is not only restricted to their livelihood but also to their culture and their identity. The Bhotiya valley of Kumaon, so far, have not been studied in great details. This is especially true with reference to the change that is taking place there. Some scholars have tried to study a few aspects mainly historical, anthropological or sociological in nature. Studies based on detailed data and field works are either absent or of limited use. The work done, so far, is a scattered and scanty and is not of very high quality. They have focussed their attention either to only one valley or a few villages of a valley but have not studied all three valleys together. So far studies of these areas are concerned, they are confined to one ethnic group of the Bhotiya valley while rest non-Bhotiya population was ignored. A lot of materials are available in folklores and folksongs. Though these information have been passed from one generation to another, yet awaits scientific analysis. The earlier writings dealing with Bhotiya valleys belong to the late 19th century. These are very interesting on the general level but are of limited academic significance as these lack detailed analysis. The earlier census documents and administrative report of the land, settlements etc that belong to this category. Reports of travellers,

geographers, pilgrims and administration give some fascinating account of these people.

On the basis of time period, the available literature on Bhotiya valleys of Kumaon can be divided as follows:

- (i) Writing upto Gorkha period till 115 A.D.
- (ii) Writing of the British period from 115 A.D. to 1917 A.D.
- (iii) Writings of post independence period.

Writing upto the Gorkha Period

In the early history, socio-cultural life was very much compiled in folk tales , stories and songs. Folksongs are the strongest media to explore the earlier life style and rituals of the people. The famous old ballad of 'Rajula-Malushai' portrays the love story of Katyur Prince. It was the first source which gives the information of marital relations between the hill people of Kumaon and the Bhotiyas. A lot of information about Bhotiya valley is found in the documents of Katyur and Chand dynasty rulers. There are often in the form of manuscripts written on 'Bhoj-Patra' 'Tamra Patra' etc. The documents pertaining to Chand rule of Kumaon, Baj Bahadur Chand who entered into the trade agreements with Tibetans, give a lot of information about

Bhotiya of these valleys. No significant analytical work has been done on Bhotiyas during Gorkha period in Kumaon.

Writing of British Period (1815 to 1947 A.D.)

British defeated Gorkhas in Almora in 1815 and annexed Kumaon. This resourceful Himalayan Zone had an attraction for them and they gave same importance to it. The significance of this region grew further with the submission of reports by 'George Bogle' in 1776 A.D. and William Moorcraft in 1817 A.D. These reports highlighted the significance of trade with Tibet. This led to a study of this remote area by a number of administrators and scholars it was because of the fact that a number of trade routes passed through the region and it comprised many 'mandies' of salthool trade at that time. The then commissioner of Kumaon like Betten, Ramsey provided good information. The work of Trail was very important. Trail, a renowned trekker of his time, travelled widely through out the region. He, not only, gave information about trade, but also, highlighted physical and socio-cultural aspects of the Bhotiya valley in his reports.

The classic work of Sherring (1916)¹² focussed his attention on Chaudas, Byans and Darma Valleys. His book is a classic example of good description. The explorer Swenlteig wrote a detailed travelogue in 1913. The scholarly works of Atkinson (1882)¹³ was a step ahead in this direction. Atkinson produced a monumental work on Himalayas . It is an important and authentic source of information on Bhotiays. It gives a detailed information about physical environment and socio-economic life of these valleys.

Nain Singh Rawat (1920)¹⁴ and BadriDutta Pandey (1936)¹⁵ made a systematic beginning of modern historical writing on Kumaon and Bhotiya valleys . This gives a descriptive information about the administrative boundaries, the process, people and their genology. The writings on the Bhotiyas started becoming sharper, more focussed and discipline oriented from 1920 onwards. In this context the name of

12. The Western Tibet and British Borderland, London, 1914 Reprinted as Western Tibet and Indian Borderland Cosmo Publication New Delhi 1974.

13. The Himalayan Gazetterer, Cosmo Publication New Delhi 1974.

14. 'Kumaon Ka Itihas' (Hindi), Shakti Press, Almora (1937).

15. 'Itihas Rawat Kaun' (Hindi) (1920) Allahabad, Rejminted as Joharka Itihas, (Hindi), Johar , Sanskritik Sangthan Prakashan Mala, Lukhnow 1990.

S.D. Pant is worth mentioning. His book ¹⁶ (1993) deals with the economic aspects of these valleys and provide lucid description of the then prevailing trade and agriculture. Pannalal (1942)¹⁷ highlighted the practice of marriage and associated law prevailing then. He discussed a number of important cases which throw light on different customs of the people of these valleys.

Writing of Post Independence

The tradition of writing, which started in the second decade of 20th century, grew further, though not very vigorously. A number of scholarly contributions came out from authors like R.P. Srivastava (1953, 1950), R.P. Upreti (1968), H.C. Upreti (1968) and others. Srivastava contributed to social aspect and discussed their social practices like marriage, divorce, rengbang, tribe-castre mobility etc. H.P. Upreti's writing on the then prevalent dormitory system in Bhotiya is important.

16. `The Social Economy of Himalayans, Allen and Envin, London (1993).

17. `The Hindu Customary Law in kumaon', Allahabad (1920).

Native authors also paid attention to the various aspects of Bhotiya life. S.S. Pangti (1980)¹⁸ in his book described the socio-cultural aspects of these valleys. His work on the structure of Bhotiya family is important. Other noted contributors on socio-cultural aspects are R.S. Raip (1973) and on social aspects, I.S. Rawat (1971), U.S. Rawat (1956) etc. Bhotiya valleys were also discussed by various travelers, mountaineers and pilgrims, especially those who were going to Kailash. Moreover, Swami Praranand (1953) has discussed religious aspects of Bhotiya valleys.

Despite all these, the number of studies are small and lack detailed analysis. The main reasons for the slow growth of scientific studies on Bhotiya valleys are that,

- (i) the Bhotiyas live in difficult places and
- (ii) security clearance has to be obtained from the Ministry of Home and Defence for visiting the border areas in Himalayas where they reside.

Objectives:

In the light of the above and to understand the impact of various factors that accelerated interaction and changes

18. Madhya Himalaya ki Bhotiya Janjati (Hindi) Tokshila Prakashan, New Delhi (1992).

in the socio-economic structure, the following objectives have been set for the present study.

- (i) Understanding the environment of Bhotiya valleys of Uttar Pradesh Himalayas and the impact of physical factors on social, cultural and economic aspects.
- (ii) Changing demographic scenario of Bhotiya valley and its impact on the total socio-economic set up of Bhotiya society.
- (iii) The impact of literacy on changing socio-economic conditions and vice versa.
- (iv) Characteristics of work force and its participation in different economic section from 1961 to 1991 .

Data Base

In order to achieve the said objectives of the study , data has been collected from the following sources.

1. **Primary Source-** A field survey, with the help of a questionnaire, has been conducted to comprehend the ecological setting and socio-economic life of the inhabitants of Bhotiya valleys. The three villages surveyed during field - work were Sirkha

in Chandradas valley, 'Nepalchyon' in Byans valley and 'Dugtu' in Darma valley. These villages were selected as these were more prominent, relatively easily accessible, larger in size and have been historically important. One is conscious of the fact that the criteria chosen is not very sound and the number of villages should more be representing different ecological zones. But it could not be done due to paucity of time and the preliminary nature of the study. However, a more comprehensive and indepth survey is proposed to be undertaken for Ph. d. dissertation at a later stage.

2. **Secondary sources** include the census of India report for 1961, 1971, 1981 and 1991 (unpublished). The census data has been used to analyse demography, workforce participation and literacy. The published and unpublished data, was collected from Tehsil and District headquarters, Government museums at Almora and the National Achieves of New Delhi.

Methodology

To assess and analyse the objectives, following methods have been used.

The distribution of workforce, population distribution, growth, sex-ratio, literacy have been shown with the help of tables, while comparison has been done through percentages. These have been represented through various cartographic methods such as bar diagrams, and choropleth maps.

Field Work

One and a half month long field survey during September-October 1994 was undertaken, covering the valley of Darma, Byans and Chaundas. The main objectives of the field trip were;

- (i) To get acquainted with the physical conditions and diversity there and human adjustment to the nature.
- (ii) To study customs and rituals and to get a picture of their socio-cultural environment. The period for field work was fixed, keeping in mind the time of important festivals, fairs of Byans valley and Darma valley.

The questionnaire comprised questions aimed to collect information on house-holds regarding population, migration, land holdings and cropping patterns, animal husbandry, cottage industry and literacy.

In order to get complete picture of the valleys, village Gunji, kuti, Mibidhary, Juling Carg, Begang were also visited. The survey involved crossing some high passes like Shimla Pass situated at 1800 feet, Linking Byans and Darma valleys.

Organisation of material:

The pastoral nomadic-cum-semi agricultural Bhotiya society residing in very difficult terrains, under harsh climatic conditions and with low accessibility in the trans Himalayan area of Kumaon Himalayan, is the subject of the study. Before proceeding to other aspects, it is important to get acquainted with the theoretical frame work. So the introductory chapter deals with these aspects and presents the concept of transhumanace and Bhotiya identity. It also includes objectives, data base, introduction to literature and methodology of the study.

After introduction, it is necessary to introduce the physical setting . The nature plays a dominant role and put

forward a severe challenge for survival in these remote valleys. Here it is important to know how man, with available resources and technology, is trying his best to adjust to his environment. Keeping all these in mind, the second chapter has been devoted to the geographical setting of the region.

After knowing the physical aspects of the area, it is important to understand human beings. The population, growth, structure, literacy and migration are important as these, to some extent, influence the changes in the manenvironment relations. Therefore, the third chapter deals with the 'Demographic and social set up of Bhotiya valleys.'

The demographic structure and environmental setting are closely linked with the economy. It is also necessary to know about the workforce. The change in the geo-political factors was a blow on the economy of Bhotiya. The fourth Chapter, thus, provides information on the economy and changes.

Finally a summary of conclusions have been provided.



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Natural Setting

Chapter 2

Nature plays deterministic role in remote mountainous areas inhabited by simple societies. It has a tremendous influence on the day to day life of the inhabitants and on their socio-economic setup. Thus, it becomes important to understand the natural setting of such regions. The Bhotiya valleys of the Kumaon is one such area where inhabitants are significantly influenced by the environment. The physical factor plays important role in shaping their socio-cultural life as well as in the economic pursuits. The study of the following physical aspects, therefore, has the great significance for the region.

- (i) Physiography
- (ii) Drainage
- (iii) Climate and
- (iv) Vegetation.

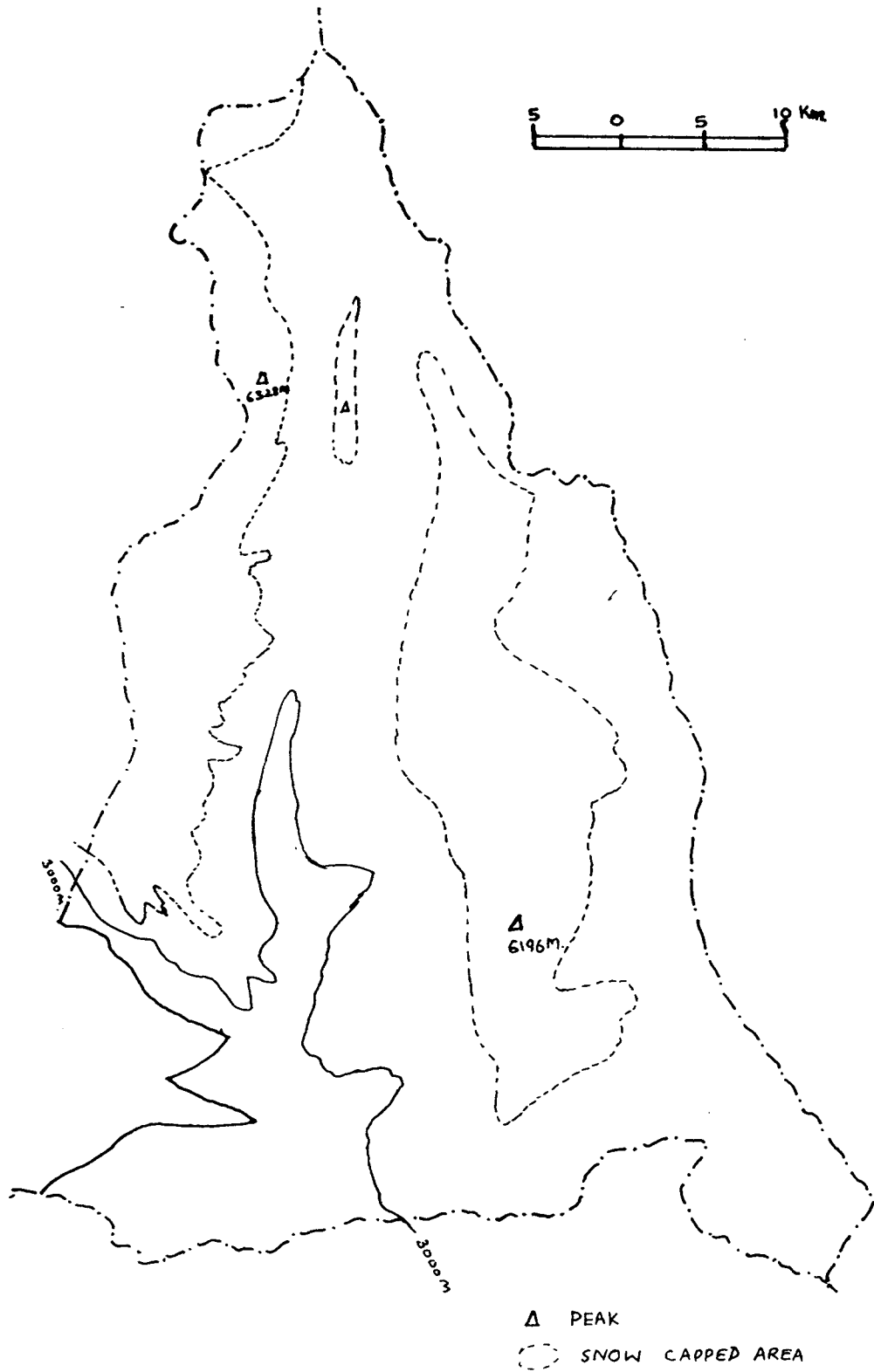
The above mentioned aspects are interrelated. It is essential to analyse their interrelationships to have an idea of natural environment in its entirety.

Physiography

The study of physiography or landforms is helpful in understanding the process of man-nature interaction. It exerts considerable influence on the pattern of human

BHOTIYA VALLEYS

RELIEF



activities. The mountainous terrain always poses hurdles in communication, trade and transport. It is especially so in the early stages of development.

The Bhotiya valley have the following prominent physiographic units.

- (a) Mountain ranges
- (b) River valleys
- (c) Passes.

The Bhotiya valleys are enclosed by the Zanskar range in the north and the Great Himalayan range in the South. Generally, the altitude increases from South to North. Here it is desirable to describe both the range separately.

The Zanskar range is situated along the northern boundary. Its southern slope forms the part of the region. This is a high attitude zone where attitude varies between 4850 meter to 6000 meter. Topography comprises crests of high ranges covered with glaciers, ice-pinaccles and icewalls. The range is characterised by rocky, barren and steep slopes. It is totally uninhabited. Two of its spurs are inclined southwards and reach upto the Greater Himalayan Range. One of the spur forms the western boundary of this region whereas the other divides the mere region into two,

in almost equal parts. The western spur connects the Zaskar range with peaks of Panchachuli group of Greater Himalaya range. The another spur connects it with the Yirgnajang ridge of the Greater Himalaya. Zaskar range also act as a water divide between Bhotiya valleys and Tibet. The water divide which stretches in the east to west lies almost perpendicular to the valleys. It attains an elevation of 4850 meter and goes up to 6000 meter. The Greater Himalayan range lies to its south and the two are connected by lateral ridges. There are many unnamed peaks in this range. A number of important passes also lie in this range which provide access into Tibet. Many important trade routes passed through these passes. These routes were extensively used in the past. Neodhura and Kachn Passes can be reached following the upper course of river Dhauli through Darma valley. The Kali and Kuti Yangti, the north west tributary of Kali, in Byans valley leads to Lumpiya Lekh (5500m), Mankshange lekh and the Lipu lekh (5085m) passes.

As stated above the Great Himalayan Range is situated in southern part of the region and extends from east to west. The attitude of the Range, in this part, does not exceed 6500 meters. Compared to Zaskar range, this range is less steep and rocky. Its southern slopes are gentler than the northern slopes. Many settlements are situated on the

middle parts of the southern slopes. The important peaks found in this range are those belonging to Panchachuli group; which are most important. These are found close to the western boundary of the Bhotiya valleys. Out of five peaks of Panchachuli group, Panchachuli II (6904m) is the highest. Chiringwee (6559m), Raja Ramba (6537m), Nagling (6041m), Yirgnajang (6141m) are other important peaks in this region. Hardeol (7151m) peak lying on the left side is the highest peak of entire Bhotiya valleys of Kumaon.

There are a number of inter-valley passes which leads from Byans valley to Darma valley and from Darma to Johar valley. Among the inter-valley passes 'Jhuling Yankti', phula Yankti, Barjikang Dhura are important. All these passes are quite difficult and dangerous to cross. A few of these are not even used in the present times. Most frequently used inter valley pass is Shimla Pass (5455m) linking Joling Kong (Byans Valley) with Bedang (Darma Valley).

The Darma valley is situated in between the two spurs of the Zaskar range on the western side. The valley is drained by Dhauli Ganga river, a tributary of river Kali. A number of stream run-down from the glaciers of the spurs and add to the volume of the river. There are about 13

settlements in the valley inhabited by 1561 persons. The settlements are found situated along the breakpoint points of the slope and on the terraces. The Darma valley covers largest area.

The Byans Valley situated on the eastern side of the region, is bound by a spur of the Zaskar range on the west and by river Kali on the east. River Kuti Yankti, another tributary of river Kali, flows through this valley. It has only a few sub-tributaries, originating mainly from the glaciers found on the spur. There are about 7 settlements in this valley, having population of 1161 persons.

The Chaundas valley is situated on the southern slopes of the Great Himalayan Range. This valley has relatively milder climate so it has larger number of settlements and the population size of settlements is also bigger. There are 17 inhabited settlements with a population of 5317 persons.

From above discussions it can be inferred that Bhotiya valleys of Kumaon are basically intermontane valleys, lying between Zaskar Range in the north and the Great Himalayan Range in the south. The inter valley passes provide main linkages between the valleys and with Tibet situated in the

north. The routes generally follow the bank of the rivers and the streams. Generally villages situated with the same valley have greater interaction. Hence, the study of drainage of the region became important.

Drainage

Drainage mainly refers to the network of the natural streams and their characteristics. The study of drainage takes into account many important aspects like the drainage pattern, stream order, bifurcation ratio etc. Drainage plays a significant role in spatial interaction. This gains importance in terms of its physical attributes as well as its role in the life of the people living in these mountainous regions. It is evident from the map that the region is drained by river Kali, Dhauliganga and their tributaries. River Dhauliganga and Kali originate from the Zaskar range and form deep gorges in the Great Himalaya range before their confluence at Tanaglet in the south of the region. The origin of the river Kali is the, from the springs of the Kalapani, near Nainital in Byans valley. After coming down to Nainital, it meets Kuti Yankti river. The river Kuti-Yankti originates from mountain near village Kuti, at the elevation of 4300 meters. River Dhauliganga of Darma valley originates from mountains near Utan Dhura.

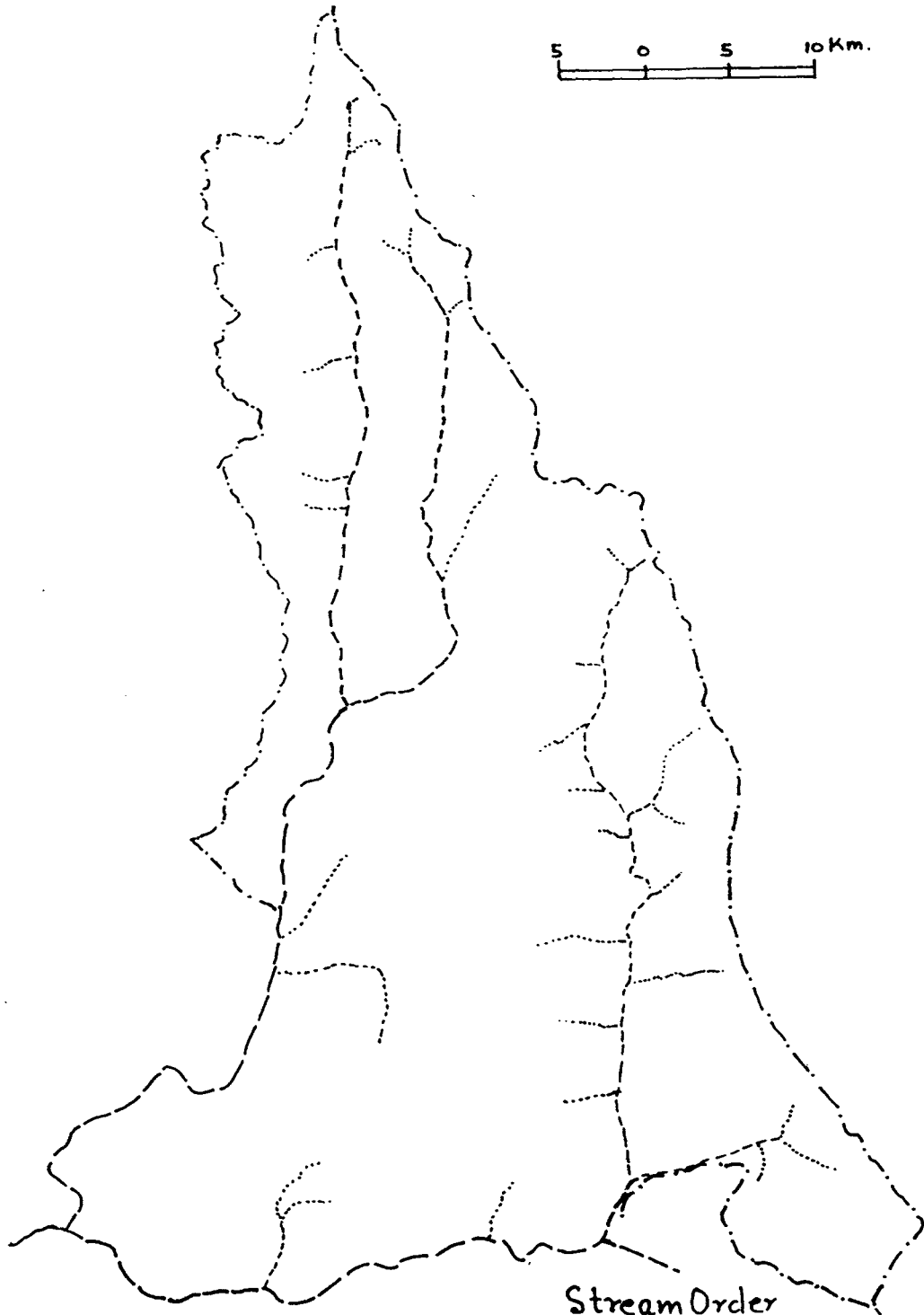
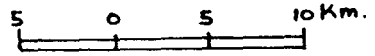
A number of streams comes down from the snow clad higher slopes and join these rivers from both sides. As a whole these form a dendritic pattern. River Dhauli East and Kali are discordant to the structure and seem to be the cases of antecedent drainage. There are numerous important tributaries of river Kuti-Yankti. Pecho and Hikong streams meeting near village Kuti, Dhanghang-Yankti near village Rongkong and Peryankti near Napal Chyan are important among these. Kuti Yankti and Dhauli East are the tributaries of Kali and a few other tributaries include Pangla stream which going Kali near Bundi and Changru near Garbyang. Dhauli East also has a few tributaries. Among these Marchagad near Marcha village, and Dugtugad near Dugtu village are important.

Table 1: Bifurcation Ratio (for River Kali)


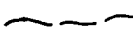
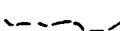
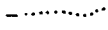
Stream order	No. of streams	Bifurcation Ratio Rs.
1.	28	5.6
2.	5	2.5
3.	2	2.0
4.	1	
average bifurcation ratio	Rs.=	3.5

BHOTIYA VALLEYS

DRAINAGE



Stream Order

-  4th
-  3rd
-  2nd
-  1st

The Table no.1 shows the bifurcation ratio between different order of streams. It shows the ratio of 5.6 between first and second order streams which means the number of first order stream is more than 5 times of second order streams. It shows the role of steep slope in a geologically uniform region. The average bifurcation ratio for river Kali is 3.5.

Table 2 Gradient of River Kali

From	upto	distance	total	Rate	Location
LipuLekh	Garbyang	13	1500	115.4	Trans Himalayas
Garbyang	Dharchula	77	1800	23.4	Greater Himalaya

Source: R.L. Singh (1971), (ed.) India: A Regional Geography, National Geographical Society of India, p.451). The aspects related to the gradient of valleys and the rate of falls are important characteristics of any drainage system. Table No.2 shows the rate of fall of river Kali is 115.4 meter per kilometer in Trans Himalayas which is very high. Whereas it is 23.4 mkm in the Great Himalayan range.

From above, it can be summarised that the drainage of the Bhotiya valley is greatly influenced by the physiography

of the region. The important rivers originate from snow clad zones of Trans Himalayas. The climatic factors thus cannot be ignored.

Climate:

Climate is an important element of the physical environment. It influences human life considerably in mountainous regions. The variation in different elements of climate like temperature, precipitation and wind etc. has bearing on socio-economic set up. These distribution of population, food habits, house type and economic activities to name a few. The importance of climate may be realised as the main regulatory force of nature and also an important physical factor that limits the freedom of man in the process of interaction with nature. It is especially so in the societies like of Bhotiyas who are at the low level of development.

The Greater Himalayan part of Bhotiya valleys falls in the Mesothermal regime.¹ The higher parts have a typical mountain type of climate due to physiographic variations. It is expected that the precipitation will be low in Trans

1. Rathor H.S. and Singh, S.H. "Climate Regions of Uttar Pradesh" National Geographic Journal of India, Vol.117, Part A March 1971, p.6-30.

Himalayan area but unfortunately data of this region is not available.

The climate of Bhotiya region is highly affected by the height and expansion of mountain ranges. The temperature and the precipitation are affected by the mountain topography which creates a variety in climate of the region. In turn the climate also influences terrain, vegetation and soil.

Temperature is an important element of climate. No data is available of temperature and rainfall for the Bhotiya valleys. Two observation station are each at Dharchula and Munsiyari, set up by Meterological Department of India, are situated quite close to the region and a few inferances can be drawn from this data.

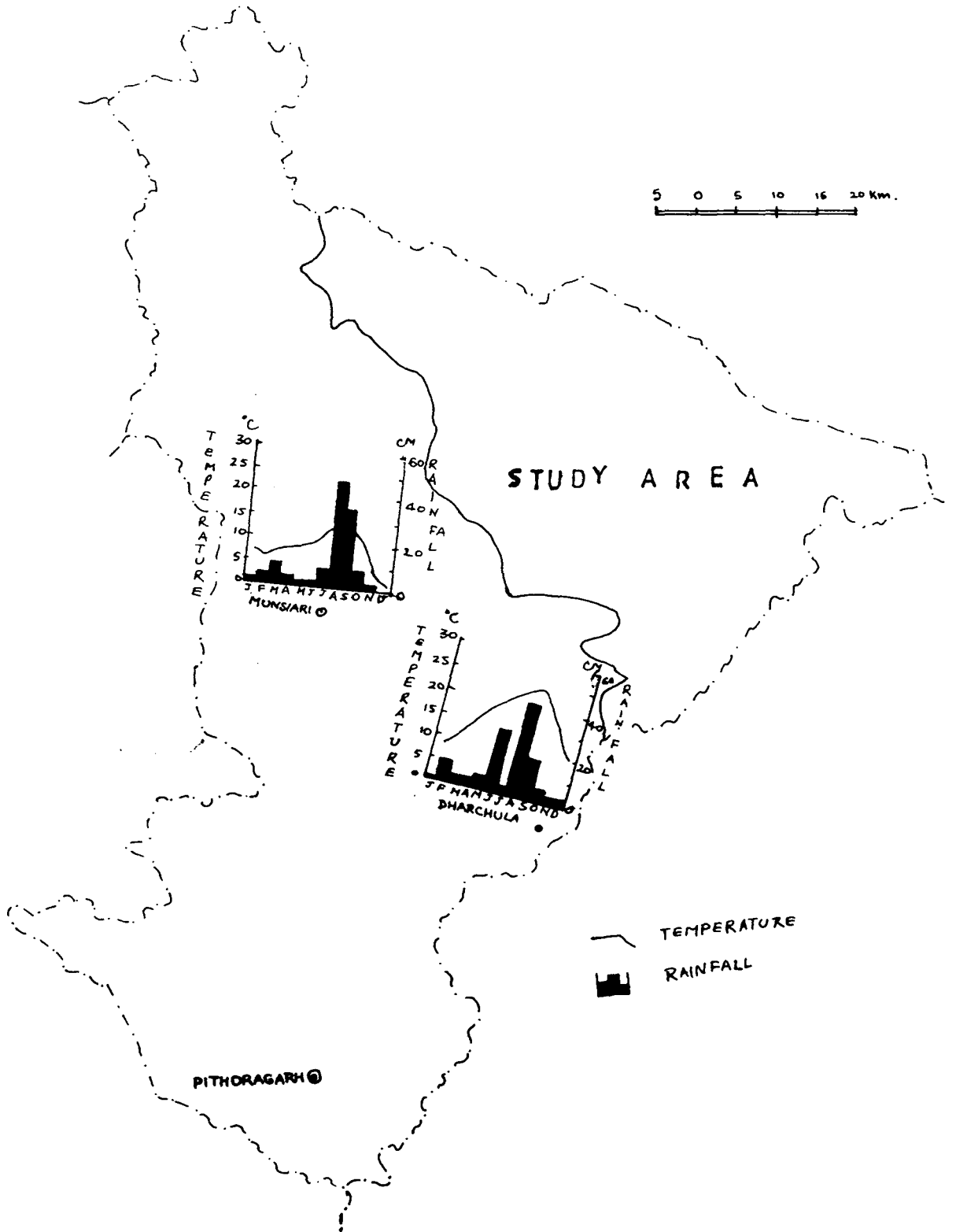
**Mean Monthly Rainfall in cm and
Table 23 Mean Monthly Temperature in °c**

Observation Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total Annual precipitation (cms)
Munsiyari													
°c	7.8	5.6	6.6	7.2	7.8	11.5	16.7	14.1	9.4	3.2	0.2	4.0	
Cm	data M.A.												94.1
Dharchula													
°c	8.3	13.0	16.1	19.0	22.5	23.8	24.4	25.3	24.4	19.4	15.6	10.6	
Cm	0.9	8.7	2.3	2.3	11.1	38.0	5.8	51.9	18.2	5.7	3.0	2.5	150.4

Source: Climatological Table of observatories in India (unpublished) India Meterological Department, Mauam Bhavan, New Delhi.

BHOTIYA VALLEYS

DISTRIBUTION OF RAINFALL & TEMPERATURE



These observatories are located south and south west of the Bhotiya valleys. So can have a rough idea about temperature and rainfall of the region. Because as we go towards north in the Bhotiya valley, temperature goes down due to increase in altitude and rainfall is scant, as it lies in the rain shadow area of the Greater Himalayas. Table 2.3 shows that winter season prevails during October to March with average monthly temperature of below 8°C at Munsyari. Picture, however, is different for Dharchula where temperature is higher due to its lower elevation. From this it can be said, that low temperature in winter season compels inhabitants of Byans and Darma to their winter villages. As per table, the rainfall occurs between July to September. It is true for Chaundas valley which lies in the Greater Himalayan zone. But in case of Darma and Byans Monsoon is not very effective.

It is quite obvious that altitude plays a dominating role in the temperature fluctuation of the region. The climate of a region significantly influences the plant and animal life. Here it is important to analyse the nature of natural vegetation.

Natural Vegetation

Natural vegetation portrays the combined effects of climate, physiography and soil of an area. Though not much details about natural vegetation is available, but on the basis of area under forest in different valleys give some idea about forest cover in the region.

Table 2.4 shows that only 9.83 percent of the total area is under forest. The proportion of forest covered area is highest in the case of Darma valley (13.47%) while it is lowest in Byans valleys covering only 6.26 percent of the total area. The reason can be attributed to scant rainfall and very cold climate. It is interesting to note in Table 2.5, that 19 villages out of 38 villages, do not have forest cover at all. Only 6 villages have, forest cover, ranging 20 to 30 percent of their total area. Out of these, 4 villages are in valley.

The vegetation found at different altitude is given in the table as under Table No. 2.5

Source census of India 1991

Table 2.4a Area under Forest (Percent)

Darma Valley	Byans	Chaundas	All three Valleys
13.47	6.26	9.36	9.83

Table no.2.4b Distribution of area under forest at village level (in Percent)

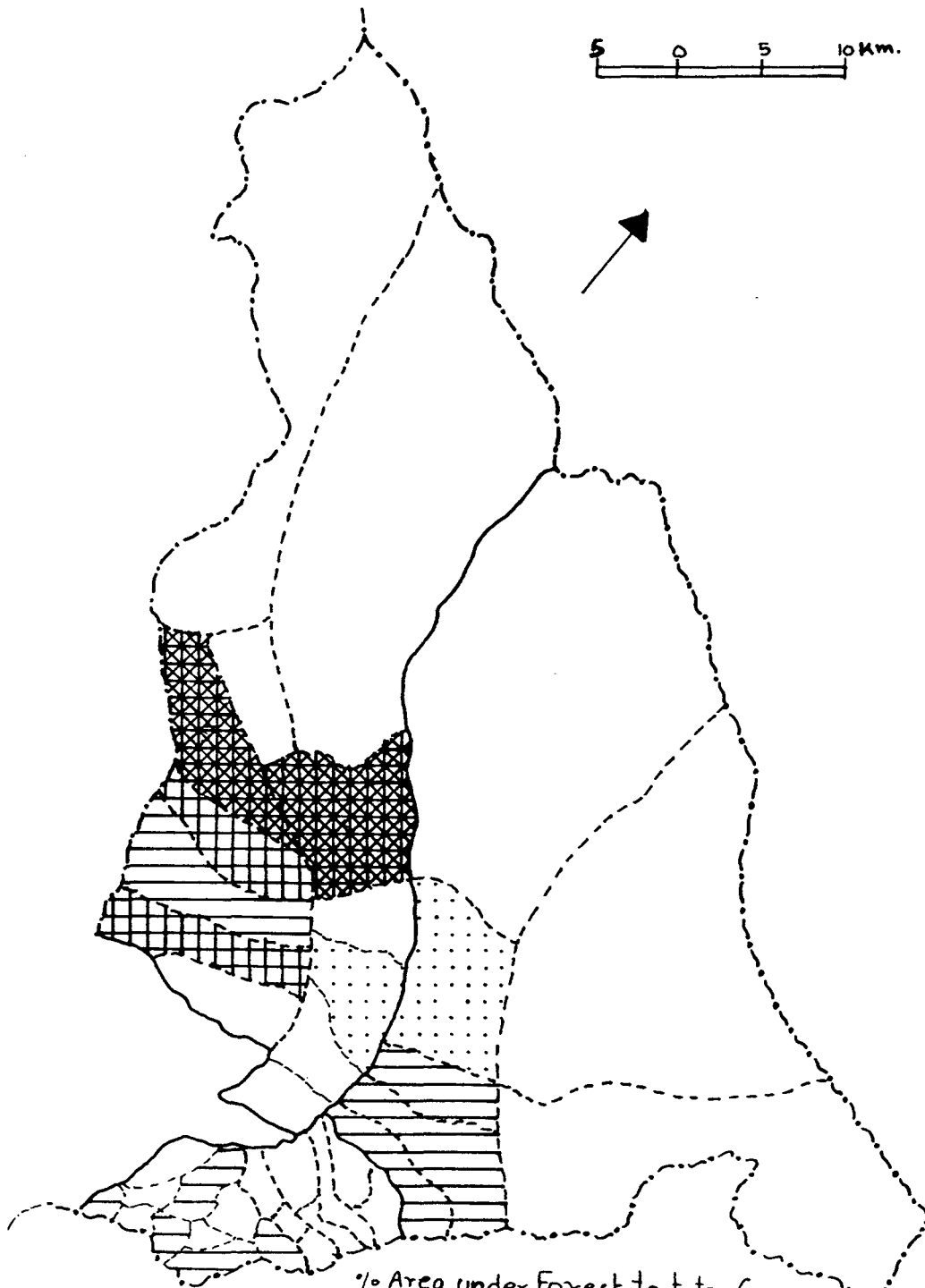
Area under Forest (Percent)	DARMA VALLEY		BYANS VALLEY		CHAUNDAS VALLEY	
	No. of Villages	Name of Villages	No. of Villages	Name of Villages	No. of Villages	Name of Villages
0	7	Sipu, Khimling, Marcha, Filam, Chal Nagling, Sela.	3	Kuti, Navi, Gunji	9	Jebti, Takula, Sirdang, Chhalmactilaron, Dharpangu, sosa, Pinlobhatka, Sangari Dhakdona, Tantagaon Ronto.
0-5	1	Baun	1	Rongkong	0	-----
5-10	1	Dugtu	1	Bundi	2	Bung Bung, Sirkha.
10-20	2	Dantu, Baling	2	Napalchyon Garbyang	2	Jyunoti Pangu, Himkhola.
20-30	2	Tidang, Goe	0	---	4	Galagar, Jee, Rung, Pangla.

Source census of India 1991.

BHOTIYA VALLEYS


AREA UNDER FOREST


1981





5 0 5 10 Km.

% Area under Forest to total Geographical Area.

 20 - 30

 10 - 20

 5 - 10

 0 - 5

 Nil

Table.2.5 **The Vegetation Map of The Bhotiya Region**

Height	Vegetation
Upto 1000 ft	Sal, Haldu, tun, sai, Dhauri
Upto 5000 ft	Pine in excess.
Upto 6000 ft	Limital Deodar begins, Red Rhododendron
Upto 7000 ft	Pine, Oak, Rhododendron, Cyprus in excess, sand, Angu, Walnut.
Upto 8000 ft	Oak vanishes, Hard Oak starts, Himalayan Silver Fir, Khania, Tilouni Kharsu, Kinsu, horse chestnut, walnut, Tasing.
Upto 9000 ft	Tilong, Kinsu, Kharsu, Horse Chestnut, salnut, Tasing.
Upto 10000 ft	Saika more, Rhodendron, horse chestnut, startal grass sloper.
Upto 11000 ft	Excess of grass, Himalayan silver fir, Babli, Kotbali Khail, Thaner.
Upto 12000 ft	Birch
Upto 13000 ft	Thorny bushes and milky arass (Nuram)
Upto 14000 ft	No begetation.

Source - Raipa, R.S.-Seemavarti Janjati, p-13.

The general distribution of natural vegetation can be seen on the basis of following attitudinal zones.

Areas of Bhotiya valleys situated above 3900 meters lies above the show line. Perpetual snow is found here. The higher parts of the Greater Himalayan range in the south and the Zanskar in the north come under this zone. These generally lie beyond the limit of human habitation and natural vegetation. It represents the glacial region of the Bhotiya valleys.

The next zone situated between 2900 to 3900 meters is free from snow for six months. This covers upper reaches of river Dhauli East, Kuti Yankti and Kali valleys. Here one crop is grown atleast in a year. Presence of Alpine meadows (Bugyal or Gwar) has special significance for the inhabitants. These grasslands are traditionally used for grazing purposes by the pastoral Bhotiyas. Rich conifer forest is found upto 3315m village Navi in Byans is an example of this Birch grows between 3000 to 3500m. Walnut, Yew, Pangar, Nepla, Khamia trees are found below 3000 mtrs. This area is also rich of Nigal bushes.

The area lying between 1500m to 2700m represents broadly the lower area of rivers Darma and Kali. This zone is inhabited by migrating Bhotiyas even during harsh winter season. Some part of Chaundas valley also falls in this category. Oak forest is common in the upper reaches while Chirpine predominate in the lower parts. Oak trees are dense and full of undergrowth while Chirpine are devoid of it.

It is very much clear from the above discussion that the picture regarding natural regetation is not very encouraging. Even then alpine meadows locally called

bugyals play a vital role for grazing. Both scarce forest and natural pastures are being used by the inhabitants of the Bhotiya valleys for maintaining their self-subsistence economy.

It can be summarised that the topography is rugged and climate with very low temperature and scanty rainfall is harsh. Perennial rivers originating from the snow clad Zaskar range having a sharp gradient and natural vegetation varying between semitemperate Chirpine to alpine meadows, characterise the Bhotiya region in general.

Demographic and Social Structure

Chapter 3

The Demographic Structure and Socio-economic set up are very much inter-related. Areas with better economic base are generally densely populated while poor regions suffer from out migration. There are three factors of population change. These are fertility, mortality and migration. Births and deaths result in natural change and the movement of the people bring in change wrong migration of any are, for a given population size. The demographic structure has its influence on the socio-economic aspects.

The social and cultural practices form the social environment. Natural environment has considerable influence on social aspects especially in early stages of development. The type and location of settlements, dwellings, dress and food habits reflects these. The inhabitants of Bhotiya valley have a distinct social practices. In order to get a full picture of demographic and cultural aspects, it is very much essential to study the followings :

- i. Distribution of population which gives an idea about the inhabited area. This is even more important in mountainous areas where rugged and cold environment seriously restrict land for living purposes and also affect the carrying capacity.

- ii. The Growth or change of population which again is closely related to socio-economic changes, availability of health facilities and other dynamics of the society.
- iii. Sex ratio as it indirectly gives an idea about migration which is inter related with economic structure.
- iv. Literacy is an agent of change as well as an indicator of development. Its study is even more important in an economically backward regions like that of Bhotiya valleys.
- v. Settlements and house types reflect extent of external influence on the one hand and the human adjustment to environment on the other.
- vi. Finally the social attributes like ethnicity, religion, language and dialects and dress and food habits which again are closely related to historical processes, and manenvironment interaction.

Population Distribution

As stated earlier, the distribution of population, especially in areas having hostile environment and inhabited by simple societies, is greatly influenced by the carrying capacity of land. High mountainous regions with rugged

terrain and severely cold climate have low carrying capacity and hence small size of population. Populations tend to get concentrated in more favourable livable areas which are only a few and are distant apart. It is therefore, not surprising to note that the distribution of population in such areas is highly uneven and the villages are generally small in size. Since such areas have economy based on subsistence farming and animal rearing, therefore, whatever, little population is living there that is found other closer to culturable land or pastures. Thus, we find concentration of population in valleys especially on alluvial fans, river terraces and valley floor or on lower slopes of mountains where grazing land is available particularly during summer months.

The total population of the three Bhotiya valleys was 10214 persons in 1991. The largest population of 4158 persons comprising 40.7 per cent of the total population was living in Chaundas valley. The total population of Byans valley was 3355 persons which constituted 33.74 percent of the total population of all the three valleys. The rest of the 2701 persons were living in Darma valley which accounts 26.44 per cent of the total population.

POPULATION DISTRIBUTION

Table No-3.1

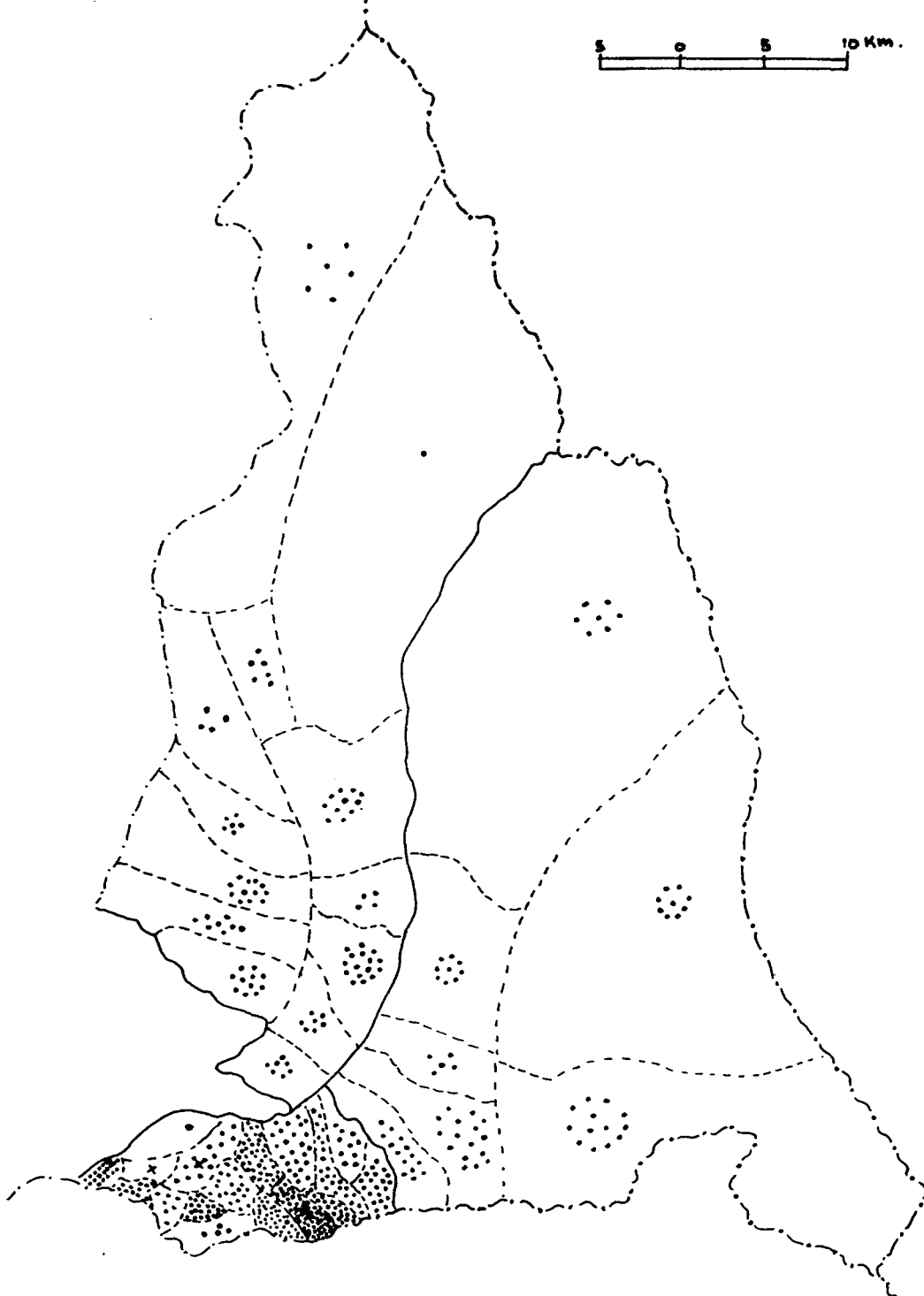
POPULATION SIZE	DARMA VALLEY		BYANS VALLEY		CHAUNDAS VALLEY	
	No.Of Village	Name of Village	No.of Village	Name of Village	No.of Village	Name
< -25	1	Khimling	0	-	1	Sagari Dhakdhanna
25-100	5	Sipu Marcha Tidang Dantu Philan	1	Napalchyon	1	Punlabhatka
100-200	6	Geo,Dugtu,Baling, Chal,Nagling,Sela	3	Kuti, Navi Rang Kong	3	Galagar, Dharpangu,
200-300	1	Boun	3	Garbyang, Bundi, Gunji	3	Himkhola, Jyanti Pangu Tanta gron Ronto.
300-400	0	-	0	-	6	Bung Bung,Jibti,Takula, Sosa,Sirkha,Chhalmachhilason
> -400	0	-	0	-	3	Pangla, Sirdang, Jec.

Source : - Census of India 1991

Table No. 3.1 show that 6 villages in Darma valley had a population less than 100 persons each out of which one village namely khimling had a population of only 20 persons. These villages are mostly situated on the upper part of the valley, This occupy higher altitude. Population size of six villages was between 100 and 200 persons. Most of these villages are situated in the lower part of the valley where

BHOTIYA VALLEYS

POPULATION DISTRIBUTION
1991



ONE DOT (·) = 16 PERSONS

climatic conditions are milder. The only village in 200 to 300 population category was Baun where 253 persons were living. This village is situated in the lower part of the valley where land has relatively gentler slope. NapoalChyon with a population of 80 persons was the smallest village in Byans valley. It is situated in a narrow side valley where expansion of settlement is difficult. Three villages falling in the category of 100-200 population have relatively more land to support the livelihood. The three villages with a population between 200 to 300 persons, are situated along an old trade route in area having less severe climate. The population size of village, ranges between 80 and 240 persons in Byans valley. The village size varies between 16 persons to 728 persons in Chaundas valley. Village Sagri Dhakdhauna with the smallest population size is situated in very high altitude area. The other small village namely Punala Bhatka with a population of 58 persons having is situated in rugged part along Nepal border. All the villages with a population of more than 300 persons are found in the central and lower parts of the Chaundas valley. These areas are relatively more developed. The largest village of Pangla having population of 728 persons is also found in this valley. The table 1 and the Map No. clearly shows that larger villages are situated in the Chaundas

valley as it has lower elevation and provide better living conditions. In Darma and Byans valleys population goes on decreasing towards north which also happens to be the direction where altitude increases.

It is clear from the above discussion that population of Bhotiya valleys is largely concentrated in Chaundas valley. The lower parts of Darma and Byans valleys are moderately populated whereas the upper parts of both valley have very sparse population.

Population Change

An increase or a decrease in population is the result of the three factors which are fertility, mortality and migration. Higher fertility and lower mortality results into an increase while higher mortality and lower fertility brings a decline in population. In the present context, the mortality rate has been to some extent controlled. The third factor of migration is more responsible for a sharp increase or decrease in population in such areas. The main factors responsible for migration are the climatic and economic. Areas having milder climatic conditions and better economic opportunities experience a gain in the number of people living there and the situation is reversed in regions of harsh natural environment and limited

employment opportunities. The latter is true in case of the Bhotiya valleys.

Population Change-Valley level.

Table No-3.2

Year Valleys	1961-71	1971-81	1981-91
Darma	-1.29	-16.99	-30.32
Chaundas	0.8	32.78	30.29
Byans	-21.63	-30.58	-36.38
All Three Valleys	-7.27	1.18	-15.68

Source : Census of India.

Table 3.2 shows that the population of Bhotiya valleys has declined during 1961-91 but there are some fluctuations in some decades. Population went down from 10214 to 9471 persons during 1961-71 registering a fall of 7.24 percent. Subsequently there was a small increase of 1.18 percent in the population during 1971-81, - 15.68 percent between 1981 and 1991. The valley wise population figures present a little varied picture. The total population of Darma, Byans and Chaundas valleys was 2,701, 2,666 and 1,542 persons respectively in 1961. There was a gain of 0.5 percent in the population of Chaundas valley during 1961-71 whereas

Darma and Byans valleys experienced a loss of population amounting to, - 1.29 percent and -2.63 percent respectively. It may be mentioned that due to the closure of Indo-Tibetan trade the people involved in such activities started looking for other sources of livelihood and many started out migrating. Byans valley seems to be affected more than the other two valleys because two major trading routes passed through it. Majority of the villages in Darma valley gained population (table 4) but the increase in number was not significant. The higher percentage increase is due to the small size of population in the base year. Similar is the case with three villages showing declining population. All villages except one in Byans valley also show decrease in their respective populations but Nepal Chyon had a population growth of 0.88 percent; seven villages registered a growth rate upto 25 percent in Chaundas valley. The equal number of village show decline in population whereas there was no change in the population size of two villages namely Sirkha and Nimkhola during 1961-71. Map clearly shows that villages with declining population are largely concentrated in the eastern and southern parts.

The population scenarios of 1971-81 shows that the rate of population decline increased to - 16.99 percent and -

30.58 percent respectively in Darma and Byans valleys but Chaundas valley shows a growth Rate of 32.78 per cent. As a result of it the respective population of Darma, Byans and Chaundas valleys became 2,213, 1,825 and 5,545 persons in 1981. It seems that with the closing of trade, the people could not find attractive sources of livelihood in this area of cold climate and rugged terrain. So, they started outmigrating to lower areas. Apart from this the younger people also seems to have went out to avail better educational facilities. This also seems to be the cause of population increase in Chaundas valley which has milder climate and relatively better land and higher level of development.

POPULATION CHANGE - 1961-91

Table No.-3.3

1961-71

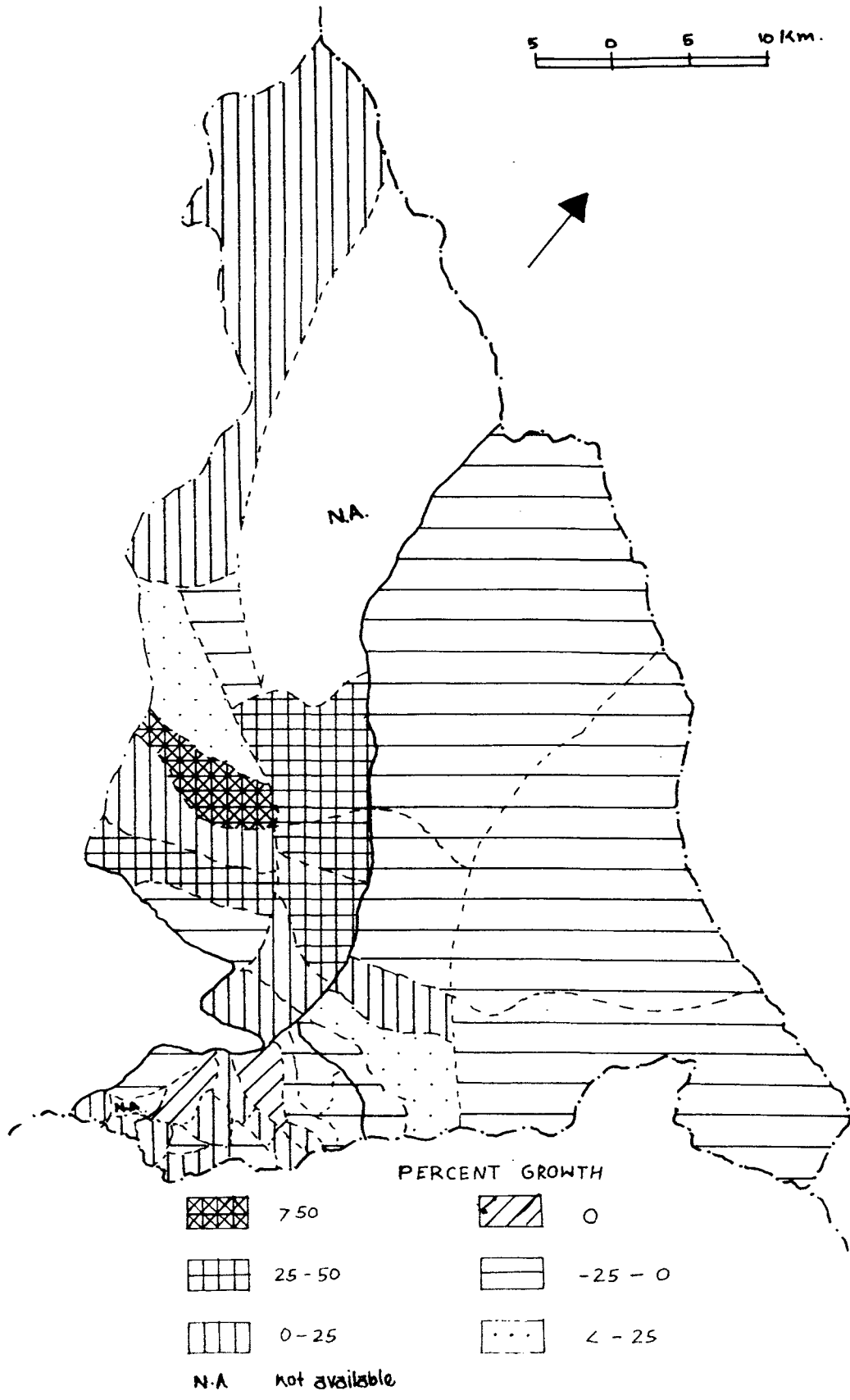
Percent Change	DARMA		BYANS		CHAUNDAS	
	No.of Village	Name of Villages	No.of Village	Name of Villages	No.of Village	Name of Villages
> - 50	1	Dantu	0	-	0	
25 to 50	4	Goe, Philam, Baun Boling	0	-	0	
0 to 25	4	Sipu, Baling, Chat, Sela	1	Napalchyon.	7	Takula, Rung, Pangla Sirdang, Sosa, Punla Bhatka, Tanta Gaon Ronto.
0	0	-	0	-	2	Sirkha, Myunkhola
0 to 25	2	Marcha, Nagling	5	Kuti, Navi, RangKong	6	Jibt, Galagar, Bung-Gung Jee Jyanti Pangu, Chhalma chilason
< - 25	1	Tedang	1	Garbyang	1	Dharpangu.

1971-81

Percent Change	DARMA		BYANS		CHAUNDAS	
	No.of Village	Name of Villages	No.of Village	Name of Villages	No.of Village	Name of Villages
>-75	0	-	0	-	2	Hyunkhola, Sangari Dhakdhona,
50 to 75	0	-	0	-	4	Bung Bung, Sirdang, Dhar Pangu Punla Bhatka.
25 to 50	0	-	0	-	3	Jibt, Galagar, Pangla.
0 to 25	2	Marcha, Nagling	0	-	4	Sirkha, Rung, Jee, Tanta Gaon Ronto.
0 to 25	2	Siput, Sela	3	Rangkong, Gunii, Napalchyon	2	Takula, Sosa
< - 25	8	Tidang, Goe, Pholam, Baun, Dantu, Dungtu Baling chal	4	Kuti, Navi, Gorbyang, Bundi	0	-

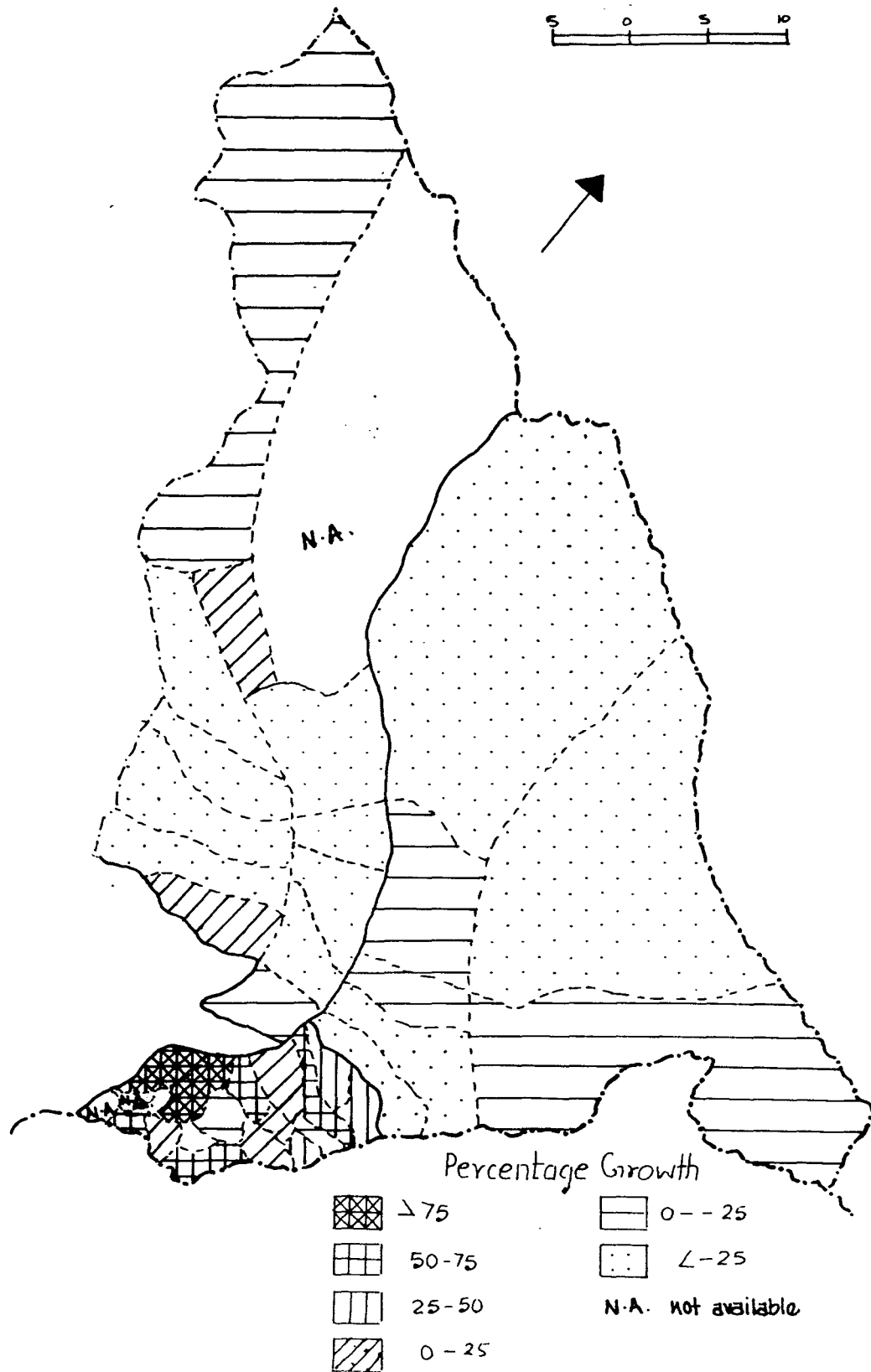
BHOTIYA VALLEYS

GROWTH OF POPULATION (1961-71)



BHOTIYA VALLEYS

GROWTH OF POPULATION
(1971-81)



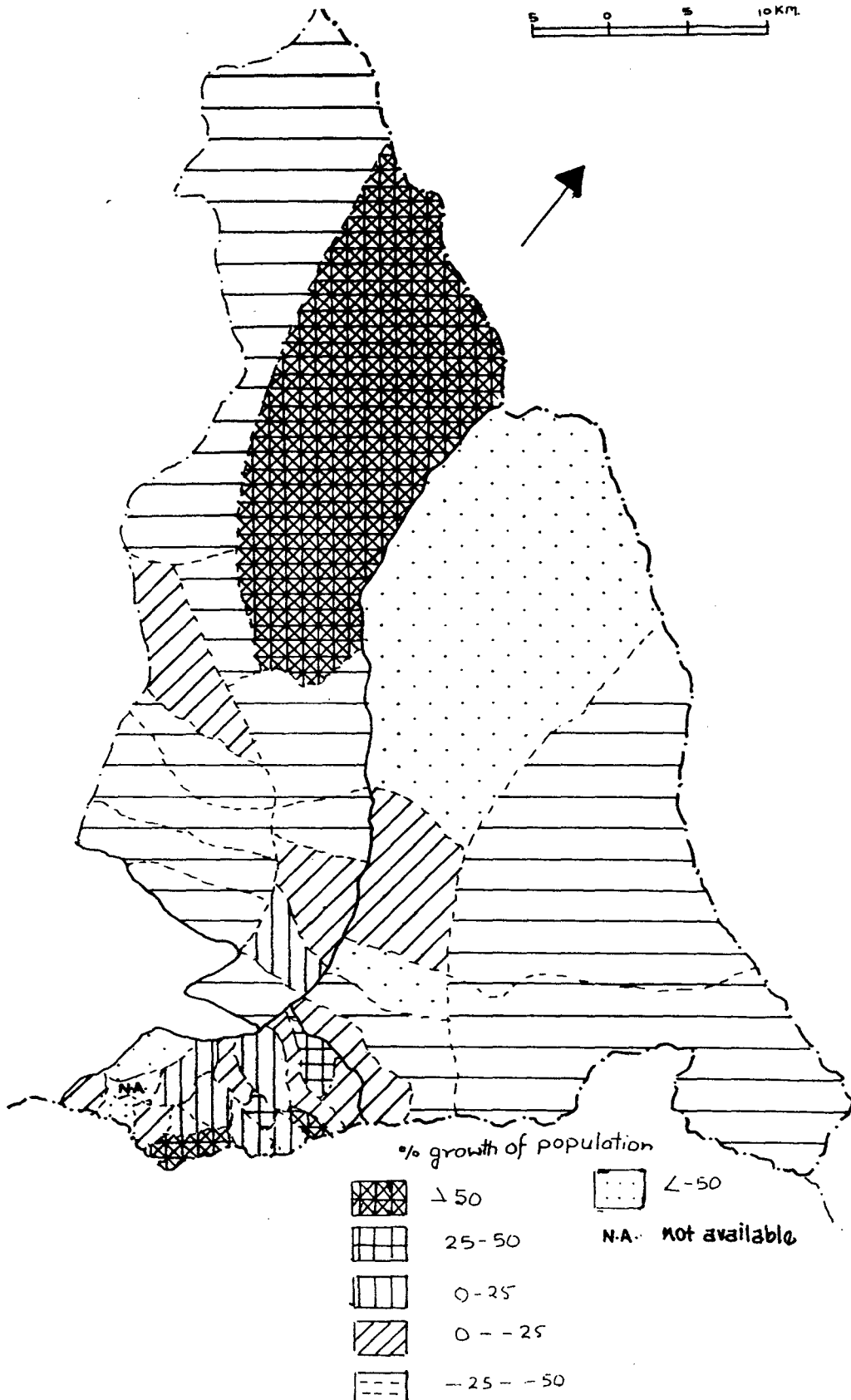
1981-91

Percent Change	DARMA		BYANS		CHAUNDAS	
	No.of Village	Name of Villages	No.of Village	Name of Villages	No.of Village	Name of Villages
> - 50	1	Khimling	0	-	2	Takula, Punala Bhataka
25 to 50	0	-	0	-	1	Galagar
0 to 25	1	Chal	0	-	6	Sirkha, Pangla, Jee, sosa, Hyankhola, Chhalrma Chihilason.
0 to 25	2	tedang Baun	2	Rong Kong Bundi	6	Jibti, Rong-Kong, Rung, Sirdang Jyanti Pangu, Tantagaon Ronto.
25 to 50	9	Sipu, Marcha, Goe, Filan, dantu, Dugtan Baling, Nagling sela	3	Navi, Gunji Garbyang	0	-
< -50	0	-	2	Kuti, Napalchyon.	2	Dhar Pangu, sangari Dhakhona.

Table-3.3 shows that except three villages of Darma valley all its other villages as well as of Byans valley had declining population during 1971-81. The two villages of Marcha and Magling in Darma valley had a growth rate of 2.14 percent and 3.6 percent respectively but the actual increase in their respective population was 3 and 10 persons only. On the other hand only two villages of Chaundas valley namely Takula and Sosa lost their population which has - 11.67 percent and - 1.41 percent respectively but the decrease in the number of persons was 20 and 5 only. Most of the villages of this valley show a high growth rate and

BHOTIYA VALLEYS

GROWTH OF POPULATION (1981-91)



the increase in the population size was also significant except village Jyonti Pangu which had a growth rate of 3.57 percent. The highest growth rate of 93.80 percent was found in Himchola village situated on a relatively flatter area. Map clearly shows a large cluster of depopulating villages spread over northern, central and eastern parts.

It is clear from above discussion that people living in severe climatic conditions on the one hand and limited economic opportunities on the other hand migrated to the areas providing better livelihood. The range of migration has largely limited upto the adjacent areas. As a result the former types of areas experienced a declining population and latter a gain.

Again this situation changed during 1981-91 (see Table 4) and the whole region was hit by the process of increasing depopulation when the total population decreased by - 30.32 percent. It is notable that there is a complete reversed process of population change in Chaundas valley. Here the growth of population was 32.78 percent in the previous decade but population declined by - 30.29 percent in this decade. The population decline rate was - 30.32 percent in Darma valley and - 36.38 percent in Byans valley. It suggests that first the people of Darma and Byans valley

found comparatively better working atmosphere in Chaundas valley but it was not strong enough to support the increasing influx of population. Consequently the process of outmigration started from this valley too. It may also be due to increasing awareness which come with the development of better transport network in the U.P. Himalayas during the last decade.

Village khimling of Darma valley shows a very high growth rate. Its population became 20 persons in 1991 from 1 person in 1981, which seem to have migrated from adjacent villages. There was an increase of 1 person in the population of village chal. No declining village of this valley had a decrease in population of less than - 18 percent which was found in village Baun and more than - 42.65 percent found in village Philam. The population on of all the villages of Byans valley declined where this rate was between - 13.6 percent in village Bundi and - 56.98 percent in village Nepal Chyon. About half of the villages of Chaundas valley show an increase in their respective populations but most of the villages have an insignificant increase in absolute terms. Only one village Takula showing a growth rate of 7.85 percent and of gained 135 persons.

Map doesn't show a clearly identified cluster of growing villages except a small patch in the Central part. Declining villages have a almost continuous stretch over northern, middle and eastern parts whereas such villages are into the scattered form in the southern parts.

Migration in Sample villages (In last 20 year)
Table No. 3.4

	Village Dughtin (DARMA VALLEY)			Village Nepalchyoan (Byans)			Village Sirkha (CHUNDAS)		
	Population Migrated	Percent of Village total popn.	Percent of total migra	Population Migrated	Percent of total pop.of the village	Percent of male/female	Popn. Migrated	Percent of village total popn among migration	Percent of male/female
M	46	38.33	59.1	55	56.12	57.99	68	43.31	69.39
F	32	28.07	41	40	41.23	42.11	30	20.12	30.61
T	78	33.33	100	95	48.72	100.00	98	32.03	100

Source - Primary data, (field survey)

Above discussion suggests that perhaps reason for declining population is out migration. In order to have a clearer view primary data of three village was analysed. The Table 5 shows that the number of people outmigrated from Sirkha village of Chaundas valley is highest and that of Dughtu village in Darma valley is lowest. The larger proportion of outmigrants consists of males. Though they are not residing permanently in their native villages but they send money and whenever find time visit back their families staying at their native places.

This can be generalised from the discussion that when a region undergoes changes in economy not based on the local resources like trading at the first instance, people try to depend on the local resources. But if those resources are insufficient to fulfill their needs, they move out from the region in search of better economic pursuits. Intervening opportunities make them to stay in adjacent areas for sometime but due to the increasing load of population these also fail to support their livelihood. So they move further into the areas capable of supporting larger populations. This kind of migration is possible for those who can adjust themselves in the new areas and are in the economically productive age group. It involves only young people that too largely males. The old people and most of the young females stay at their native places. The youngmen working outside send back money to their families which gives rise to money order economy. Traditional values do not allow them to marry outside region so they marry the females at their native places and take their spouses with them. This further enhances out migration. Thus the process of depopulation goes on increasing.

Sex Ratio:

The ratio between male and female population is affected by many factors mainly biological, social and economic. Biological factor do not create large imbalances but social factors like the use of gender specific infanticides and economic factors enhancing gender specific migrations. The infanticide is not very common among the people of Bhotiya valleys but as seen previously these valley are experiencing outmigration. So it becomes important to study the sex-ratio of villages of Bhotiy valleys.

SEX-RATIO. Valley level

Table No.-3.5

(Females per 1000 males)

Years Valleys	1961	1971	1991
DARMA	996	871	1001
BYANS	886	898	938
CHAUNDAS	892	953	990
ALL THREE VALLEY	917	912	983

Source : Census of India.

Table-3.5 shows that the number of females per thousand of males was 917 in 1961 in Bhotiya valleys. It decreased

to 912 in 1971 and again rose to 983 females in 1991. It clearly shows that the sex-ratio is low in Bhotiya valleys but the difference has decreased considerably. The male and female population in Darma was almost equal in 1961. The number of females declined sharply in 1971 but again it became almost equal to the number of females in 1991. On the other hand, there is a continuous increase in the number of females per thousand of males during 1961-91 in Byans valley as well as in Chaundas valley. The overall increase in the sex-ratio suggests male dominant out migration from Bhotiya valleys. As discussed previously that after the closer of trade with Tibet, economy of traders got a set back and they migrated to the places where they could find better opportunities.

The above discussion indicates differentials in the sex-ratio of these valleys so it raises the need of analysing the spatial pattern of sex-ratio and bring out the pockets of high as well as of low sex-ratio. Table-7 shows that there were six villages in Darma valley where the number of females per thousand males was more than 1050. The highest number of females per thousand of males was found in Dugtu village which was 1410. All these villages are economically backward and young men go out of the valley for education as well as for better economic opportunities.

Remaining seven villages of this valley have less than 950 females per thousand of males. The lowest sex-ratio of 250 females per thousand of males was found in khimling village where there were 4 females living in a population of 20 persons only.

SEX RATIO Village Level-1991

Table No 3.6

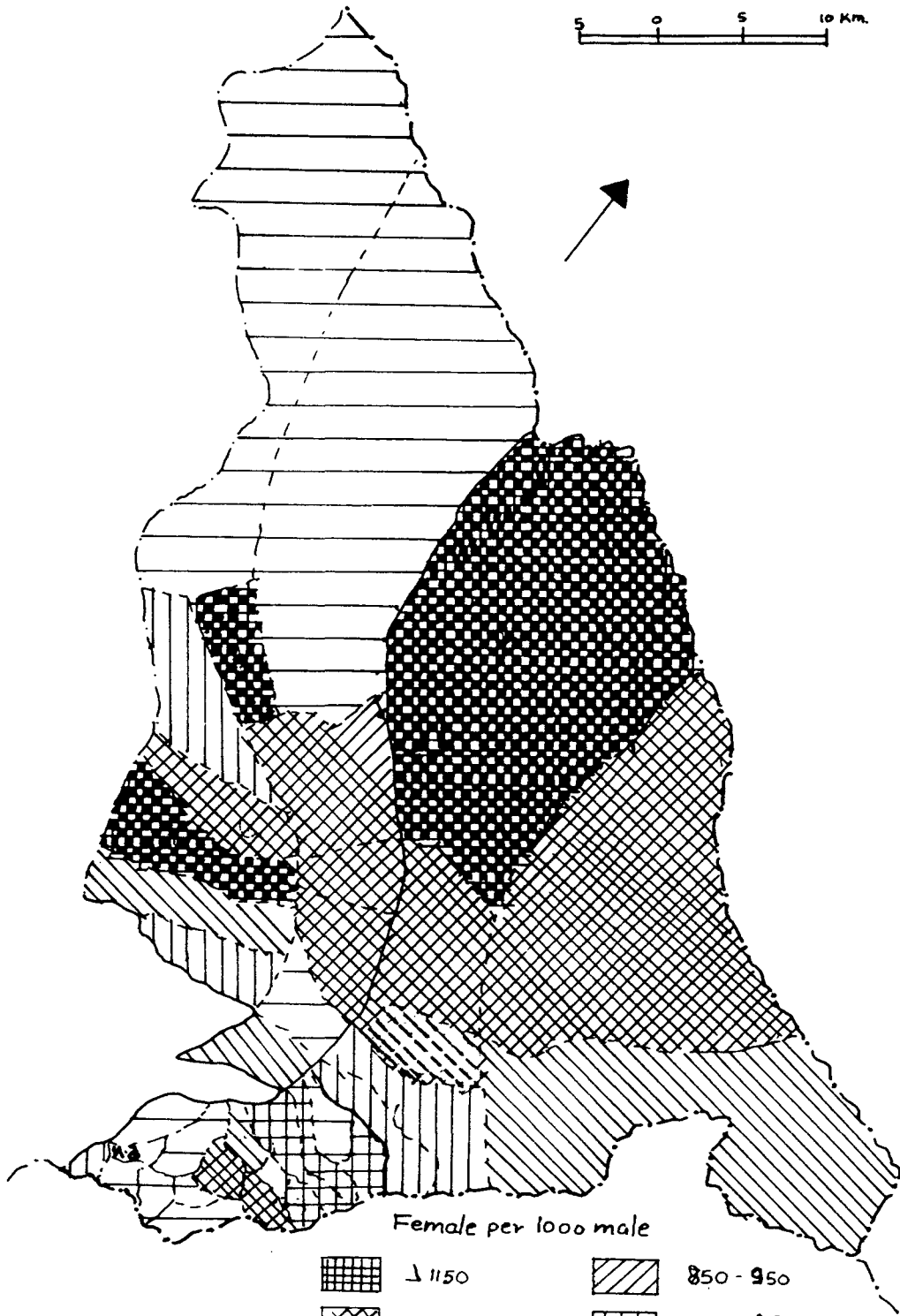
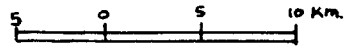
No. of Females	DARMA		BYANS		CHAUNDAS	
	No.	Name of Villges	No.	Name	No.	Name
< 700	2	Khimling Chal.	0	-	5	Himkhola, Sangari Dhakhona, tantagaon Ronto, Chhalmachalaton Purla Bhtka
700-800	3	Sipu, Tidang, Nagling	1	Garbyang.	0	-
800-900	0	-	2	Gunji, Bundi	2	Galagar, Dharpanju,
900-1000	2	Baling, Sela	1	Napelchyon.	1	Jyunti Pangu.
1000-1100	1	Dasntu	0	-	1	Sirdang.
> - 1100	5	Goe, Philam, dugtu, Boun Marcha	3	Kuti, Navi, Rongkong.	8	Buny Buny, Jipti, Jee Takula, Sirkha, Pangla Sosa Rung.

Infact all the villages have small population size fro where young males go out with their wives for working in the lower areas and young girls are married outside the valley.

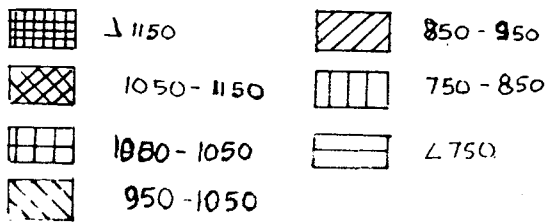
BHOTIYA VALLEYS

SEX RATIO

1991



Female per 1000 male



n.a. not available

Thus the number of out migrating females exceeds that of males and results into low sex-ratio.

The only village with perfect sex-ratio i.e. equal number of males and females was village Napalchyon in Byans valley. Two villages namely Navi and Raung Kong respectively had 1119 and 1127 females per thousand of males. The highest sex-ratio was found in Kuti village where the number of females per thousand of males was 1164. All these villages are situated in the upper part of the valley where the population size of village is small. The differences in male female population are not so high but it shows a high sex-ratio only due to the small population. Similar is the case with the villages showing low sex-ratio. Rung in Chaundas valley had 1164 females per thousand of males whereas there were only 31 females exceeding the male population A large number of villages had less than 750 females per thousand of males out of which two villages namely Punala Bhataka and Sangri Bhakaona, the actual difference between male female population was 6 and 10 respectively. In other villages of low sex-ratio, there is one or the other government office or institution where the employees are usually rules. The map shows that high sex-ratio villages are largely concentrated in the middle part

where as the villages having low sex-ratio are scattered in northern, southern and eastern parts.

Litracy :

Apart from the natural environment and availability of economic opportunities there are a number of other factors influencing the movement of people out of which literacy seem to be significant. The range of movement and the kinds of job people get has a close bearing with their level of education. So it becomes important to study the level and pattern of literacy in Bhotiay valleys.

LITERACY (VALLEY LEVEL) 1991.

Table No. 3.7

Percent Literacy to total Population.

Name of the Valleys.	1961			1971			1991		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
DARMA	18.10	33.93	2.26	26.80	44.90	6.03	35.80	46.09	24.17
BYHANS	27.60	47.05	5.08	36.40	56.82	13.66	35.06	73.71	26.29
CHAUNDAS	22.29	36.76	6.52	30.62	46.02	14.47	33.38	46.52	20.33
ALL THREE VALLEYS	22.92	39.48	4.87	32.28	48.06	11.70	34.08	46.95	20.24

Note Data for 1981 was not Published.

The regions had only 22.92 percent (see table-3.7) of its population as literate in 1961. Against the highest literacy rate of 27.60 percent in Byans valley, the lowest 18.10 percent was in Darma valley. Only 22.29 percent of the population living in Chaundas valley was able to read and write a message with understanding. There was a considerable rise in literacy and it became 22.28 percent in 1971. Literacy increased between 8 and 9 percent in all the three village. Still their relative position remained the same as that of previous decade. the 1991 figures show a different pattern when the overall literacy increased by 1.8 percent and rose to 34.08 percent. This increase in Darma and Chaundas valley is 9 and 2.76 percent respectively. But a decline of 1.4 percent brought down the literacy of Byans valley at 35.06 percent. But if the literacy is calculated over a population above six years of age, as done by the census of India for 1991, it comes out to be 48.61 percent in Darma valley, 42.39 percent in Byans valley and 48.61 percent in Chaundas valley. The overall pattern of literacy between 1971 and 1991 indicates substantial rise in literacy which is due to the availability of many new educations facilities such as setting up of schools etc.

LITERACY - 1991
Total Population
Table No. 3.8

Literacy in Percent	DARMA		BYANS		CHAUNDAS	
	No.Of Village	Name of the village	No.of Village	Name of Villages	No.of Village	Name of the village
15-30	0	-	27	Rungkong, Napaichyon	1	Himkhola
30-45	5	Danti, Dugtu, Baun, Chal Sela	2	Navi, Gunji	5	Galagar, Jibti, Takula DharPangu, Chhalma Chhilason,
45-60	5	Sipu, marcha, Tidang Goe, Philam Baling, Nagling Khimling	3	Kuti, Garbyang, Bundi	9	Bug Bung, Sirkha, Rung, Jee, Saganichakhona, Punala Bhataka, Jyunti Pangu, Sirdang.
> 60	0	-	0	-	2	Sosa, Tanta gaon Ronto.

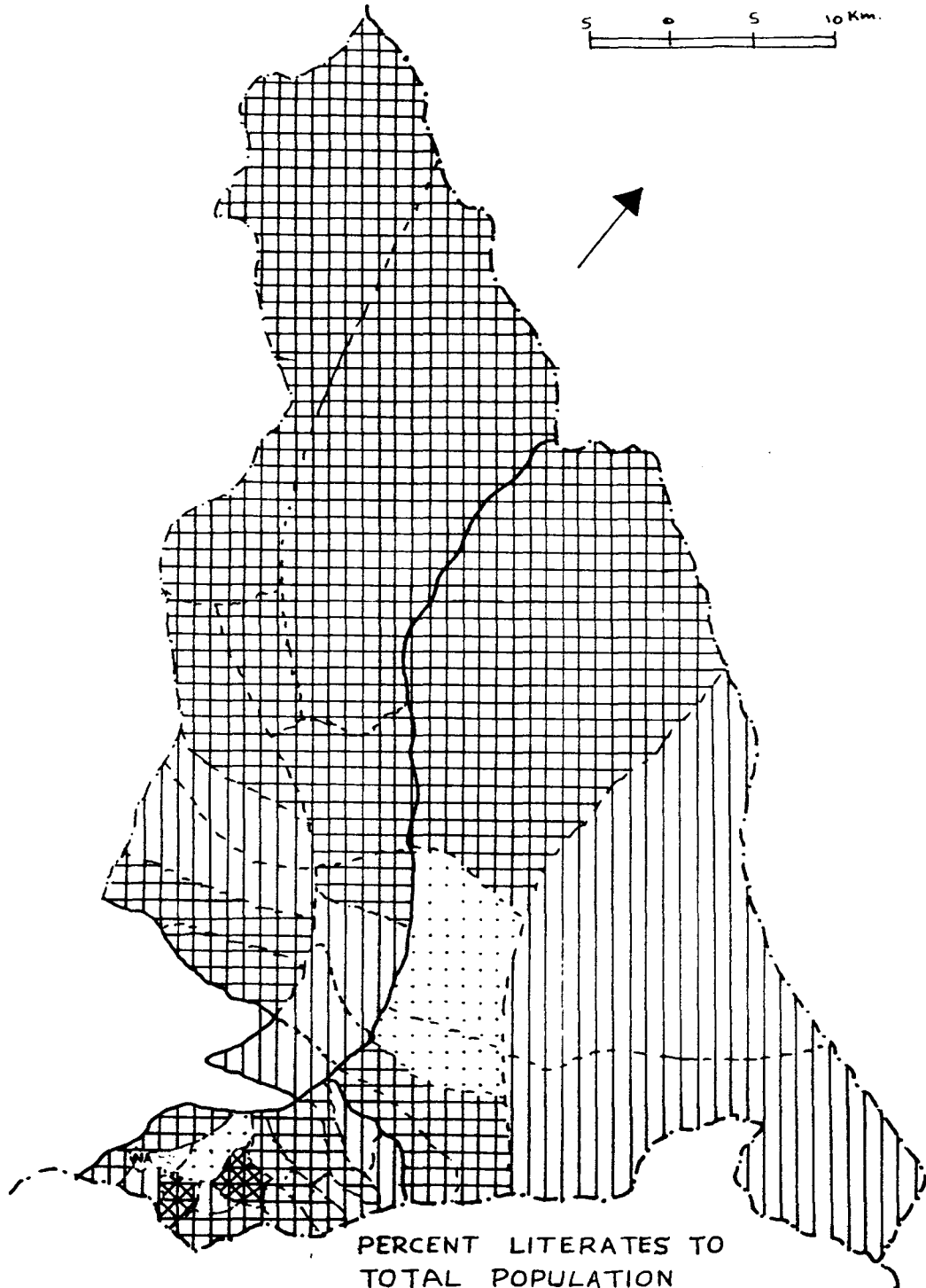
Male Literacy

Literacy in Percent	DARMA		BYANS		CHAUNDAS	
	No.Of Village	Name of the Village	No.of Village	Name of Villages	No.of Village	Name of the village
< 25	0	-	0	-	0	-
25-50	2	Dantu, Dugtu,	2	Rungkong, Napaichyon	3	Jibti, Himkhola.
50-75	8	Sipu, Tidang, Philam, Baun, Chal, Nagling, sela	4	Gunji garbyang, Bundi Navi	12	Panla Bhatka, Bung Bung Galagar, takula, Sangri Dhakhona, Jyuntipangu, Dhar Pangu Chhalm Chhilason, Sorkha Pung, Sirdong, Tontagaon
> 75	3	Marcha, Goe, boling	1	Kuti	3	Pangla, Sosa, Jee

BHOTIYA VALLEYS

TOTAL LITERACY

1991



PERCENT LITERATES TO
TOTAL POPULATION



> 60



30 - 45



45 - 60



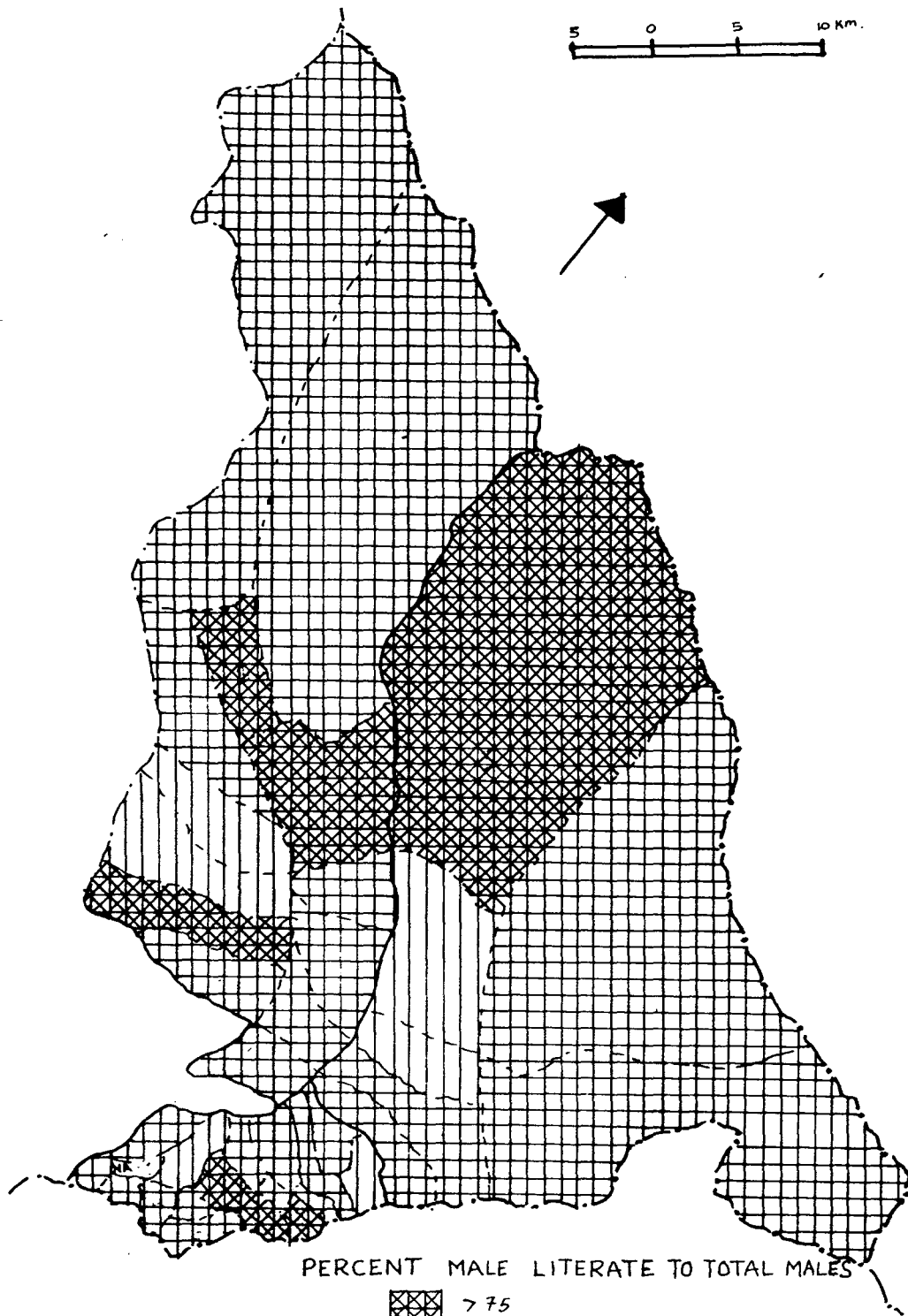
15 - 30

N.A. not available


BHOTIYA VALLEYS


MALE LITERACY


1991



PERCENT MALE LITERATE TO TOTAL MALES

 > 75

 50-75

 25-50

N.A. not available

Female Literacy

Literacy in Percent	DARMA		BYANS		CHAUNDAS	
	No.Of Village	Name of the Village	No.of Village	Name of Villages	No.of Village	Name of the village
< -10	1	Chal	1	Napelchyon	0	-
10-20	1	Sela	1	Napelchyon	3	Jibti, Himkholas, Punela Bhatka.
20-30	mk 6	Dantu, Philam, Baun, Balin Nagling Khimling	4	Kuti, Navi, Gunji, Bundi	9	Bang Bung, Galagar, Takule sagani Dhakdhona Jee Jyunti Pangu, Pan- gla, Dhar Pangu Chhalma- cchilsom.
30-40	4	Sipu, Tidang, Goe, Dugtu	1	GARBYANS	3	Sirkha, Stodang Tonta- gaon Ronto.
40	1	Marcha	0	-	2	Rung kong, Sosa.

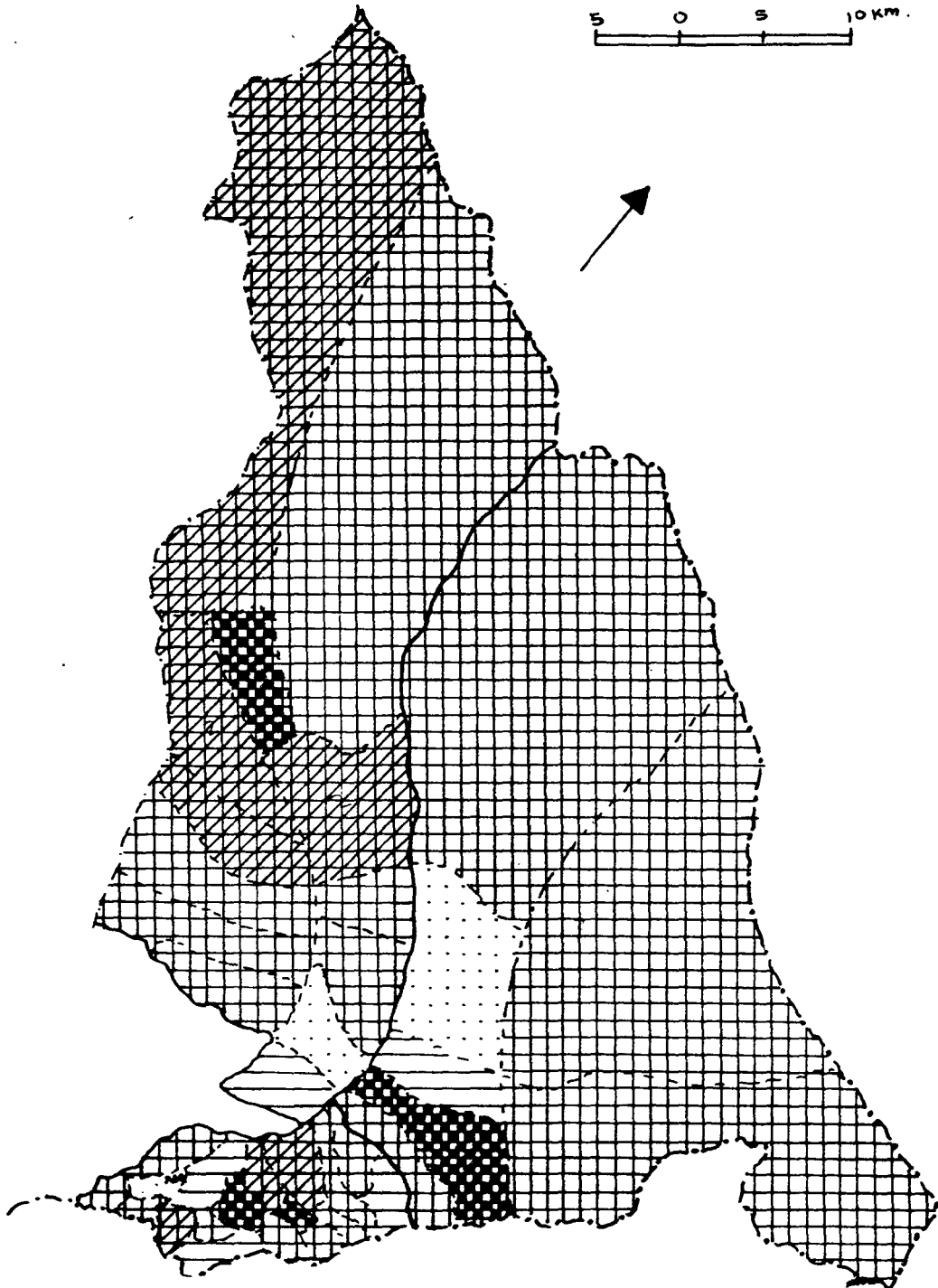
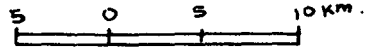
Source - Consus of India 1991.

Table -3.8 show that none of villages of Bhotiya valley had literacy rate below 15 percent and most of the village have above 30 percent of their respective population as literates. It is also clear that there is no village in Darma and Byana valleys where literacy level is more than 60 percent. On the other hand, a large number of villages in Chaundas valley show more than 45 percent literate population. As explained earlier that the former two valley are relatively backward and undergoing the process of outmigration, so the literacy level is also lower than

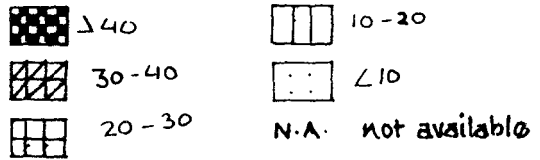
BHOTIYA VALLEYS

FEMALE LITERACY

1991



Percent Female Literacy to the total Females



are relatively backward and undergoing the process of outmigration, so the literacy level is also lower than Chaundas valley. The map clearly show a cluster of low literacy villages in the middle part and higher literacy village situated in the northern and southern parts.

Table and map show that none of the villages of Bhotiya valleys have a male literacy less than 25 percent and most of the villages have more than 50 per cent. Male literacy rate of two villages in each of Darma, Byans and Chaundas valleys was between 25 and 50 percent. Three villages each in Darma and Chaundas valleys and one village in Byans valley, showing a male literacy more than 75 percent, have one or the other type of government office or institution where the employees are educated and add to the literacy

Literacy in Sample Villages, (1994)

TABLE No. 3.9 Literacy Total

Literacy in Percent	Village Dughi (DARMA VALLEY)	Village Napakhyon (BYANS VALLEY)	Vill. Sirkha (CHAUNDAS VALLEY)	Total All three Village
0	7	5	9	21
25-50	13	8	11	32
50-75	9	6	8	23
> 75	9	7	15	31
	38	26	43	107

Literacy Male

Literacy in Percent	Village Dughi (DARMA VALLEY)	Village Napakhyon (BYANS VALLEY)	Vill. Sirkha (CHAUNDAS VALLEY)	Total All three Village
0	7	5	10	22
25-50	3	1	5	9
50-75	3	3	2	8
> 75	24	16	25	65

Literacy Female

Literacy in Percent	Village Dughi (DARMA VALLEY)	Village Napakhyon (BYANS VALLEY)	Vill. Sirkha (CHAUNDAS VALLEY)	Total All three Village
0	19	11	16	46
25-50	12	5	7	24
50-75	1	2	7	10
> 75	6	5	11	22

source - Primary data (field survey)

The female literacy in most of the villages very between 20 and 40 percent. (Table 3.9) One village each in Darma and Byans valleys have less than 10 percent of the total female population as literate. Most of the literate female go outside the region from these villages for

availing better educational facilities or are married outside. Rung village of Chaundas valley has a high school and village Sosa lies in its close proximity due to which girls need not to go outside the region for school education.

The household level analysis indicates that there are no large disparities in the general literacy level. Household showing lower literacy level are generally those from where a large number of literates have outmigrated and those showing higher level are generally smaller in size. SO lesser number of literates account for a higher proportion. Household level male literacy has found higher in the families where the number of elderly persons was more who had a very low level of education. In some houses the number of school going male children was more. In the case of house hold level of female literacy, the pattern was determined by the number of females in the family. In the families having lesser number of female even one literate female constituted a high proportion and vice-versa.

Settlements

All the demographic factors are concerned with population and population lives in settlements. So far

having a better understanding of the demographic structure it is important to understand the pattern of settlements. The location of settlements in Bhotiya valleys is guided by many factors like climatic conditions, availability of land for agriculture and sources of water. Trade routes have also played an important role in the settlement pattern.

There are a total number of 37 settlements in Bhotiya valley out of which 13 are situated in Darma valley, 7 in Byans valley and the remaining 17 in chaundas valley. The settlements in Darma and Byans valleys are generally situated along the break points of hill slopes on the both sides of the rivers, flowing through these valleys. In chaundas valley the settlements are found mostly on the southern slopes of the great Himalayan range. As compared to the northern, southern slopes get direct sun rays throughout the year. The map clearly shows that the settlements are distantly spaced in Byans valley whereas in Darma valley this spacing is moderate. The settlements are closely spaced in Chaundas valley. Most of the settlements are found in compact form having single hamlet and the house sharing common walls though some houses have been built as single units. All the houses face toward the open side of the valleys. The fields are located, generally, down side the houses, on the flatter land by cutting terraces. A few

settlement like Napal Chyon have linear pattern as the areas o their locations are narrow.

Since the region suffers from the severely cold winter so most of the population migrates to lower areas outside the region during winters. This factors is more prominent in Darma and Byans valleys as compared to Chaundas valley. The map clearly shows that the settlements are largely situated in the southern half of the region and the number of settlements goes on decreasing gradually from south to north due to the severety of cold climate and limited availability of land for cultivation.

House type

House building is an importunate element through which man establishes his permanent relationship with land. It also reflects the conditions natural environment prevailing in a region as well as the available building material. When a house form is found repeating it self over geographical space it becomes the house type of the region. Division of space and its functional use are the other important aspects of a house type.

The house in BHotiya valleys are generally rectangular double storeyed houses with gabled roofs. Some houses have

third storey also. Every house has a courtyard in its front which contain an okhali (martu) for pounding grains. A stair also leads from courtyard to the upper storey at the house.

The material used for construction consists of stone for wall; wood for doors and windows and slate for upper roof. The walls are made with stone and mud. Roof and first floor is made by fixing wooden plants on joints which also serves as the floor of upper story. The roof of upper storey. The roof of upper storey is made by fixing wooden-gables on central beam and by fixing planks on gables. Since the valleys are prone to fast blowing chilly winds during winters the slates are fixed by spreading a layer of kneaded mud over the planks. It prevents the chilly winds from entering inside the house and saves slates from breaking.

Lower storey contains animal pens, grain store and fuel wood store. It is divided into two section (Figure No-1). The front half is used for storing grass and fuel wood. The back half is divided into two small rooms one for penning bigger animals and the other for small animals. Upper storey is divided into four sections. The two parts of front half are a living room and a lobby where stairs opens

up. The back half is divided into two parts. One in kitchen and other living room. If there is a third storey it is used for storing grains and other household articles. The slanting roof doesnot let the snow to accumulated for long.

It is clear that environmental conditions have influenced the socio-cultural life of the people of Bhotiya valleys. The use of woolen clothes; consumption of coarse grains, dried meat and alcoholic drinks; and gabled roof house all are adopted in response to the cold climatic conditions prevailing in the region.

SOCIAL ASPECTS

Different human groups have varied social and cultural practices which they evolve to make the best possible fit with their surrounding natural as well as social environment. Natural environment affects their dwellings, dress and food habits where as social environment influences social organisations, religion, language. All these factor have influences in plural societies of isolated backward regions like Bhotiya valleys where different groups of people live in social harmony. So it is important to understand the aspects like ethnicity, social

stratification, religion, language dress food habits and the type of house at the Bhotiya valleys.

Generally the term Bhotiya is referred to all the inhabitants of these valleys but all of them are not Bhotiyas ethnically. The valleys are known after Bhotiyas because they are the early settlers in this valleys and are dominant in population. The population is composed of two racial groups. Bhotiyas are of Indo-Tibetan affinity and others known as purohits, shilpkars and mirasis are from Indo-Aryan descent. The Bhotiyas have a typical mogoliod feature short stature big head, round face, round and flat nose, small narrow eyes, with scanty growth of beard and moustache.

It is believed that the legend of the Bhotiyas dates back to vedic period. As a popular folk lore has it, that sage kashyap had two spouses whose children had conflict. To resolve the conflict the Shakiya Lama, sent his disciples for their defence. In the name of the sage 'shkya Lama' the inhabitants of this regions come to be known as shaukas (Bhotiyas).

They have been described as yellow-golden people in the Indo-Aryan literature. It is believed that different races varying from Kinnar, Kirat, Nag, Talesha and Dam used to

occupy this part of the land uptill 200 BC.. It seems that ancestors of the Bhotiyas were the result of the enter mixing of this lot.

There is no population of purohits in Darma and Byans valleys and they are found in CHaundas valley only. They are Brahmins who migrated from Garhwal and Banaras.

The people of Bhotiya valleys have a stratified society. As explained earlier the population of Bhotiya valleys is composed of four groups namely Bhotiyas, purohits, shilpkars and mirasis. Purohits and Bhotiyas form the groups of higher castes and the other two groups are of lower order. Bhotiyas and Shilpkars are further divided into sub-groups. Bhotiyas have two subgroups known as Nitvals and Shankas. Nitwals are believed to have emerged from the priestly class of Bhotiyas Again each of Bhotiya sub-group is divided into class inhabiting a separate territory name after the class. The shilpkars have profession based sub-groups which includes Lohari (Black smiths) Dholi (Drummers) Bhul (oil seed crusher), Bajela (who makes basket etc. from a kindal bamboo known as Niggle) and Oohars (Masons). Mirasion play musical instruments and dance on special occassions. Inter-marriages and eating

together does not take place between the higher and lower caste groups.

Religiously all the people of Bhotiya valleys are Hindus but their religious practices show the influence of Animism and Lamaistic Buddhism. Apart from worshipping the gods and goddesses of Hindu mythology they also worship a few local deities. The symbolic features of Buddhism like chortens, Dhaja (strips of white cloth swaying in air) and Darcha (a tree trunk with few branches at its top) form the part of cultural land shape of Bhotiya villages. They also worship their ancestors on special occasions. Thus the Hinduism followed by these people is very much different from the Hinduism traditionally followed in Uttar Pradesh Himalayas. Almost every village has a temple known as Saitan. Temples are small in size and lord Shiva is the most worshiped god.

Dialect or the spoken language used by the people of Bhotiya valleys belong to the Tibetan Branch of Himalayan group of Tibet Burman linguistic family. This language was introduced with the spread of Lamaistic Buddhism in the border area of Uttar Pradesh Himalaya. At that time no systematic script was developed to depict this language so the original language underwent many changes after coming in

contact with the various regional languages. As a result of this, different Bholiya groups speak different types of dialects in different valleys. Now a days it is written in Devnagari script but due to limited phonetic symbols in devnagri script the words cannot be pronounced in the same way as these are spoken originally by Bhotiyas. So the original language is again undergoing change.

Dress :-

As for as the dress of the people of Bhotiya valley in concerned it is stitched from locally made woolen cloth. Females put on a full sleeved short shirt known as Angri and a lehnga (a big petticoat) A cloth called kamala in used to cover waist and shoulders. Khonpi (a finely embroidered long white scarf) is tied around the head one end of which hangs over the plait up to waist. A long broad shawl is pinned around the waist. Black coloured angra (waist coat) is also common. They wear woolen socks and long shoes made of woolen cloth known as Baukch, sole of which is made from rope. Males too wear shirts, woolen trousers known as Bhonta and a waist coat. They put on a long-coat called Bakhu-Bokhla and a turban known as Pagra. They use the foot wear similar to those used by females. Bhotiyas are in the habit of keeping a number of things like knife, spoon,

tweezer scissors, packing needles, flute etc tied with a chain pinned on waist-cloth. Males also generally carry a tobacco pouch.

Food Habits :-

The harsh environment conditions have influenced the eating and drinking habit of the people of Bhotiya valleys. Owing to these conditions they grow inferior kinds of crops [Nepal, Palti, Phapar etc] and consume these in various forms like Dhalang, Sattu etc. The people are non vegetarians and eat the flesh of sheep and goats. After slaughtering a sheep or goat they dry up the meat and consume some part almost every day. Due to cold climate it does not get spoiled. The consumption of locally made alcoholic drinks is a part of every day food. They make two kinds of drinks from rice. Rice is put for fermentation and some water is added after it is femented. Some part of this is consumed undistilled which is called Jan and some part is put for distillation which is known as Daru or Chakti. Infact alcoholic drinks form an important item of consumption on all occassions like birth, death marriage and worship.

It can be concluded from the discussion that the demographic and social structure of Bhotiya valley have been

affected by the prevailing harsh natural environment and lack of economic resources. The closure of Indo-Tibetan trade has worsen the situation further. The northern half of the region is sparsely populated and southern parts more dens. There is a continuous decline in the population of the region as well as that of the valleys in different periods of time. There is a considerable progress in literacy but due to the lack of better educational facilities and that of economic opportunities, literates having higher educational level are largely migrating outside the region.

Economic Setup

Chapter 4

"The word economic pertains to all the activities in which people exchange, the world over, in the production, exchange (or distribution), and consumption of goods and services. Anything people buy, barter, or work to produce, consume, or exchange is an economic item".¹ Infact economy is the axis of must socio-economic activities of a society. It not only determines the occupational structure but also bring modification in it. Social life of a society is highly influenced by the prevailing mode of economy, and any change in magnitude and dimension gets reflected in the socio cultural set up.

The economy is generally responsive to internal and external factors. That is why the economy is very dynamic and the economic statistics change more rapidly in the society than others. This is because that these are affected by all kind of economic, political, social, physical and human forces. New developments, new crops, new technology, changing geo-political situations, all affects the production, exchange and distribution of products and therefore lead to economic changes.

1. Harshorn, A.R. and Alexander, J.W. (1988) Economic Geography, perentice Hall of India Private Limited, P.

A Tribal Economy generally depicts features which are specific to a given locality. As such it shows the factors which determine the economic standards and activities of these people in a society during a period of time. It includes the income sources and expenditure pattern of the tribal community and the underlying problems. It is these characteristics which attribute the tribals a specific economic culture and has kept them aloof from a higher levels of economic life.

A Tribal economy generally shows a low level of change. Thus presents a contrast with the rest of the fast growing world economies. Mostly tribal economy represents an economic culture of antiquity of pre-industrial era with a seemingly restricted scale of production and consumption and very less or no capital investment. It is often seen as a primitive economy based on forest and subsistence farming and is largely devoid of infrastructure.

Transition in tribal economy is an important phenomenon. Almost all tribal communities have experienced some economic change during past decades of the present century. The degree of change, however, have been different in different tribal regions.

Looking at the tribal economy of the Bhotiyas, it is seen that many of these changes also occurred there. Bhotiyas have been traversing high and difficult mountain passes leading into Tibet. They have been purchasing goods from the development markets of India and selling these in Tibet. Therefore, despite the fact that Bhotiya region has a very difficult access, the economy of Bhotiya has never been an isolated one. In the light of above, it becomes important to understand the following to comprehend the economy of the Bhotiya valleys;

- (i) The traditional economy of the Bhotiya valleys and the changes therein.
- (ii) The present situation as reflected by the work force and the occupational structure.
- (iii) The activities of the primary sector such as agriculture and pastoralism etc. and
- (iv) The level and the nature of non-primary sector of the economy.

The Traditional Economy of Bhotiya Valleys

The Bhotiya's economy is an aggregation of many elements such as trade, agriculture, pastoralism and household industry etc. Of these trade with Tibet by the Bhotiyas has

been a major feature of the economy. The other economic elements were largely dependent and associated with it. The Bhotiyas carried on trade with Tibet for last several centuries. But due to the Sino-Indian border conflict of 1962, the Bhotiyas' trade, assiduously built up and passed from generation to generation, got disrupted. This has forced them to reorient the course of their socio-economic life.

Physiography and climatic factors of Bhotiya valleys have a strong bearing on Bhotiya economy. Due to the severe cold climate in this area, agricultural activity is confined to less than 6 months in a year. The rugged mountainous terrain and high rate of weathering, confine the land available for economic pursuits to 30.23 percent of the total geographical area. Its location on the Northern side of the Great Himalayas Range puts the area in the rainshadow zone receiving scanty rainfall. All these factors forced the people to supplement their income through other economic activities like trade and pastoralism.

Pastoralism was an important aspect of the economy. It was an arduous task with less profit. Hence it was not seen as a solution for the livelihood for the growing population. Under these conditions trade emerged as an important economic activity. The situation of the valleys near passes

leading into Tibet, gave rise to this trade. Their accessibility to the lower parts of Kumaon and parts of plains was due to the location of their winter villages in the lower hills. The practice of transhumance which was very much in tune with the trade, was also an outcome of their adjustment with the harsh climate.

Trade with Tibet

Trade with Tibet is believed to be there even in the beginning of the first century. This was the period when Kushanas overcame the unpopular Kumindas' reign and added considerably to the expansion and development of Indo-Tibetan trade by adopting anti-dacoity and anti-burglary measures along trade routes leading from India to Tibet and India to Central Asia.² The Bhotiya trade developed vigorously by the fourth century, when the Katyuri king took the reign of Kumaon as descendants of Kushanas³. The Mughal reign was a period of degeneration for Bhotia trade.⁴ Because less attention was paid on trade routes, hence robbery had increased that time which adversely affected the

2. Pargiter, G. (1984): Dynasties of Kali Age, Oxford Press London, p.5*.

3. Ibid., p.

4. Rahul.S. (1959): Kumaon, Saraswati Prakashan, P-86.

trade. The trade once again showed the signs of recovery in the 16th century under the Chand Dynasty. In this context, reference of king Baj Bahadur Chand is worth noting. He included Johar into his kingdom and looked after the proper maintenance of all the passes leading to Tibet⁵. Kumaon fell under the Gorkhas in 1790 who ruled the region till the end of 1815. This was the period of terror, restrictions and all kinds of excesses on Bhotiyas from their trade point of view.

The region was under British rule during 1815 to 1947. Britisher's appointed trade agents in Tibet and worked for a better organisation of trade⁶. In the post independence period the work of constructing new link routes in the Bhotiya region gave a new boost to the trade.

The Bhotiyas of different groups followed different routes and passes for entering Tibet and used different trade marts or 'mandis' for export and import of items. The Bhotiya traders of Darma valley usually traded through Meodhura pass (5609m) while the Byans' and Chaundasi followed the Lipu Lekh (5087m) and Lumpia Lekh (5591) passes.

5. Raipa, R.S. (1974): Shauka, Seemavarti Janvati (Hindi), Dharchala Press, Dharchala, p-41.

6. Pant, J.C. (1977): Bhotiya Samaj Ka Arthik Adhyayan (Hindi), Modern Publishers, Mainitas, p-41.

Two trade trips were made from India to Tibet in one year. The first trip started in the beginning of July while the second and more difficult one was undertaken in the months of September. Since food growing comprised an important part of the items of export from India to Tibet, these generally were taken to Tibet after the end of the harvest season. Goats, sheep, Yaks, hill ponies and Tibetan horses were the important pack animals used for this purpose. These animals were mostly supplied by the villages lying in 'Dangpar Patti'.

There were several important marts in Tibet. Out of these, Taklakot (3970m) was the nearest from Bhotiya valleys and safest from the trade point of view. Gyaniima (5000m) mart was reputed for the exchange of costlier items like Tibetan horses, mules, yaks, borax, wool, woolen textiles and tea etc. Gartok mart was famous for big commercial fair in which gold, silver and precious stones were transacted.⁷

The Nature, Composition and Volume of Trade

In earlier times, Bhotiyas brought mainly salt and borax from Tibet. Subsequently, the Bhotiyas established

7. Sherring C.A. (1906): Western Tibet and British Border Lands, Cosmos Publication, London p-152.

good markets for the Indian rice, barley, wheat, clothe etc. in Tibet.

Table No.4.1 : Goods Imported and Exported to Tibet

Items exported to Tibet	Item Imported from Tibet
Sugarcandy, Cur, Confectionery, almonds, cloves, chillies, indigo, salt, coarse clothe pearls, corals, buttons, Chinaware, grains, hardware, tobacco, betelnut, satingeans, velvet, spices, precious stares and jewellery.	Borax, rocksalt, gold dust, yak tails, ponies, sheep and goats, mules' wool, pusham, musk, shawls, blankets, yak and other silk material and saffron.

Table 4.1 shows that the items exported to Tibet mainly included agricultural products, spice & and industrial goods. Bhotiyas used to obtain these items of export from the different marketing centres of India. They were having trade relations with the traders of Bombay, Delhi, Kanpur and Calcutta. Besides these, they had marketing relations with the Baniyas (traders) of 'terai' region especially of Ramnagar and Haldwani. The imports from Tibet commondeal, a wide demand in India. These included mainly animal and mineral products. Borax was most important which was imported in purified form by Bhotiyas. About, 10,896 mounds of borax was exported to Europe from Calcutta port alone in 1838. As to how advantageous the trade was for the Bhotiya community, may be understood from the fact that borax

brought at a price of Rs. 1 per moud in Tibet, was sold at Rs. 16 to 20 per moud at Bageshwar in Almora district.

TABLE NO. 4.2

* TRADE WITH TIBET THROUGH THE PASSES OF KUMAON & GARHWAL

YEAR	1882-83	1884-85	1889-90	1894-95	1899-1900	1904-05	1909-10	1914-15	1919-20	1920-21
Mds	58,872	70,945	67,186	52,712	74,536	75,892	73,233	75,381	71,574	72,453
Import										
Rs.	42,125	5,58,993	6,89,072	6,36,066	7,00,234	6,50,402	7,97,375	9,52,736	13,50,270	15,69,359
Mds	68,337	71,339	54,774	47,148	2,218	60,569	53,818	50,632	46,632	52,532
Export										
Rs.	2,26,668	2,66,290	2,76,863	2,47,032	3,45,295	3,13,534	3,69,662	5,21,877	6,40,630	7,42,687

* TRADE WITH TIBET THROUGH THE PASSES OF DHARMA AND BYANS

YEAR	1878-79	1879-80	1880-81	1881-82	1882-83	1883-84	1884-85	1885-86
Mds	15,068	19,466	21,224	20,010	14,649	28,719	26,827	21,044
Import								
Rs.	84,494	1,09,827	1,24,799	1,14,486	90,691	2,19,623	1,91,136	2,46,896
Mds	18,224	16,778	16,087	20,273	24,984	31,536	30,782	24,337
Export								
Rs.	46,428	56,009	51,091	86,308	86,456	1,10,313	1,13,372	89,983

* Annual Trade Report of North-West border, Tibet and Nepal, Deptt. of Commerce, NW Province, Allahabad
Source: National Archives - New Delhi.

Tibet was carried out on a barter basis i.e. the goods were imported equal to the cost of exported goods. The volume of trade can easily be assessed from table 4.2. It shows a clear profit in the year 1882-83. Import of goods worth Rs. 4,20,125 was done at the cost of Rs. 2,26,668 only, Which gives a net profit of 85.34 percent. This trend also continued with a very high profit of 111.30 percent in the year 1920-21. In the span of 40 years there is a continuous increase in the trade except in 1889-90 to 1894-95 and 1899-1900 to 1904-1905. The decline between 1889 to 1895 was mainly due to increase in excise duty levied on salt in the plains. Decrease in amount of borax from Tibet is also responsible for it. Decline between 1900 to 1905 was due to several factors. A severe show storm in September 1900 on Chorhoti mountains resulted in the disruption of trade. The storm costed lives of eight men and hundreds of sheep and goat. Again the failure to crop in hills and outbreak of disease among the animals in 1902 adversely affected trade. A great deal of show had accumulated on the passes in 1903. There was serious unrest in Tibet in 1905.⁸

8. Annula Trade Report of North West border, Tibet and Nepal. Department of commerce, North West Province Allahabad. Source: National Archive, New Delhi.

All above mentioned data give a clear picture of trade through the passes of Darma and Byans valley. Bhotiyas of these valleys had virtually monopoly on this trade. Due to the rich trade, the Bhotiyas were referred to as high land traders. This trade was confined to a few rich families of important villages like Garbayang, Gunji, Kuti. While rest of the Bhotiya population was dependent on agriculture. This trade supported a large part of the population and economic activities like pastoralism and cottage industry. The Sino-Indian border has closed after Sino-Indian border conflict of 1962. Thus, the people engaged in trade either migrated out from the region or got involved in agriculture.

Work Force and Occupational Structure

The workforce and occupation structure are very important aspects to know the economic structure of a region. While the workforce gives an idea of how much population is involved in active productive activities, the occupation structure shows distribution of the working population under different economic activities. So it is quite essential to study both for Bhotiya valleys.

Work Force include those, whose main activity is participation in any economically productive work by his/her

physical or mental activities. The men and women, engaged primarily in household duties, students and very young and old people are excluded from this list. Working population in the village itself gives the indication of the village economy specially when it is predominantly an agrarian society.

WORK FORCE PARTICIPATION (In Percent)
Table No. 4.3

		Darma	Byans	Chaundas	All three Valleys
	Total	63.31	67.66	65.72	65.73
1961	Male	61.45	68.35	64.77	65.09
	Female	66.90	66.87	66.80	66.43
	Total	39.04	53.67	58.38	51.12
1971	Male	58.51	60.86	56.36	58.25
	Female	16.74	45.65	60.50	43.32
	Total	56.24	48.83	38.40	43.43
1991	Male	59.41	64.94	45.15	50.79
	Female	53.30	31.67	30.72	35.16

Source :- Census of India District census handbook Pithora-garh (1961,71 and 91)

Note :- Data for 1981 is not published.

Table 4.3 depicts a continuous decline in the percentage of workers among male and female as well as in the total population. The decline in work force is mainly due to the outmigration. The decline in female work force, from 66.43 percent in 1961 to 35.16 percent in 1991, shows that migration is not confined to males but females are also migrating from the valleys. It may be mentioned that the decline in the participation rates is also due to the change in the definition of worker during this period. But, in spite of that earlier discussion shows that the region is suffering from acute outmigration. It was due to Bhotiya's contact with the outerworld, since the time of trade, which brought awareness among females. Is female literacy very high? Also the social structure gives enough opportunity to girls for studies as well as jobs.

Valleywise figures (Table 3) also supports the same trend of decline in the Byans and Chaunds. Darma shows substantial decrease in 1971 female workforce came down from 66.90 percent to 16.74 percent. This may be partially explained by the new marital relations established, after the closure of trade from Tibet. Prior to it, marriage was very much confined within the valley mainly among Byansi and Chaundasi and served as an important trade ties. Darmis, who were poorest and most backward among all three valleys,

had a few marriage relations with them. But after the trade ceased, these ties lost their importance and due to highest sex-ratio, number of young girls were available in Darma at a lower bride price (There is a tradition of paying price of bride to her father). It gave a boost to establishing marital ties especially among Darmis' and Chaundasis'.

It led to decline of female work force in Darma while helped in maintaining the high workforce in Chaundasi. It again increased to 53.30 percent in 1991. The decline of female workforce in Byane and Chaundas, is also related to the outmigration of women for study, jobs as well as house wives. The increase in male workforce between 1971-91, in Byans and Derma, is due to the immigration of males working in different government institutions.

Philam village of Darma valley shows the highest workforce of 82.4 percent at the village level. It is mainly due to the very high female work force (93.33 percent) in the village. Khimling, Dantu of Darma valley and Sangri Dhakdhona of Chaundas valley, also show high workforce. All these are small villages. Good agricultural base puts a check on outmigration. Rung had a low workforce amounting for 21 percent of total population. Sirdang and Punla Bhatka are other villages with low workforce.

This is because of the smaller cultivated area with a larger population, which acts as a push factor for the young males. The other important factor is that all three had a very low female population under working group.

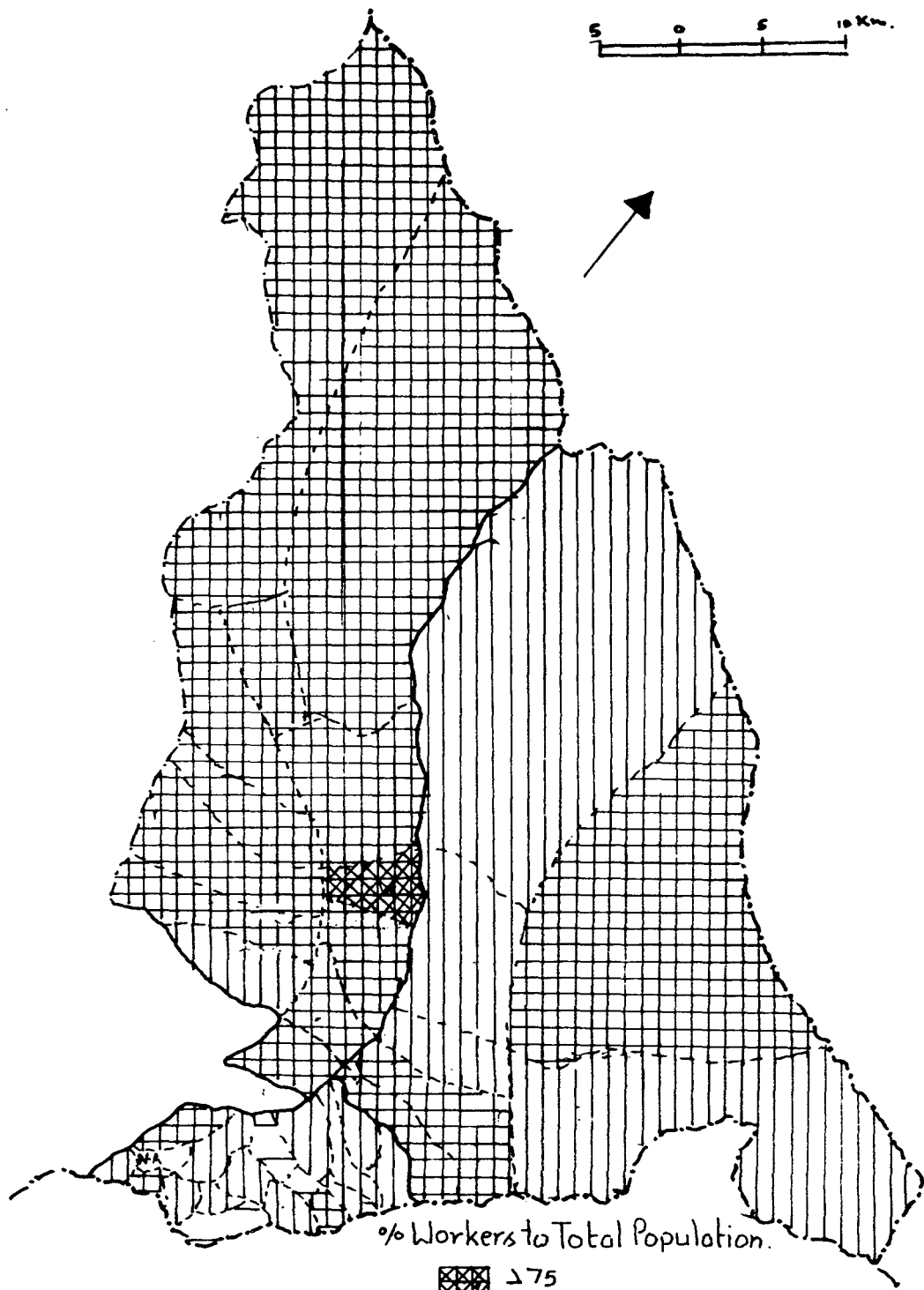
Table No.4.4

WORKING POPULATION - 1991





Total						
Percent Workers in Total	Darma		Byans		Chaundas	
	No.	Name of the Village	No.	Name of the Village	No.	Name of the Village
<-25	0	--	0	--	3	Rung,Sirdang, Punala Bhatka
25-50	1	Nagling	4	Kuti Rongtong Gunji, Napachyon	11	Bung Bung, Galagar, Jipti,Sirkha,Himkhola,
50-75	11	Sipu Marcha, Khimling Geo, Dantas, Dugtu, Baun, Baling, Chal, Sela,	3	Navi, Garbyang, Bundi	3	Takula, Dhar Pangu Sangari Dhakdhona
>-75	1	Philam	0	--	0	--

BHOTIYA VALLEYS

TOTAL WORKERS
1991



% Workers to Total Population.

-  > 75
-  50 - 75
-  25 - 50
-  < 25
- N.A. not available

Male

Workforce in Percent	Darma		Byans		Chaundas	
	No.	Name of the Village	No.	Name of the Village	No.	Name of the Village
<-40	0	--	0	--	5	BungBung,Rung,Pangla, Sosa, Jee
40-55	4	Marcha,Tidang,Goe, Baling	2	Rungkong,Mapachyon	8	Galagar,Jigti,Takula, Sirkha,Himkhola, Sirdon,Tantugaon-Ronto Chhilmachibison
55-70	6	Sipu,Dugtu,Baun,	4	Kuti,Navi,Garbyang,	4	Sangari dhakdhona, Jyunti Pangu,Dharpangu Punla Bhatka.
>-70	3	Khimling Dantu Philam	1	Gunji	0	--

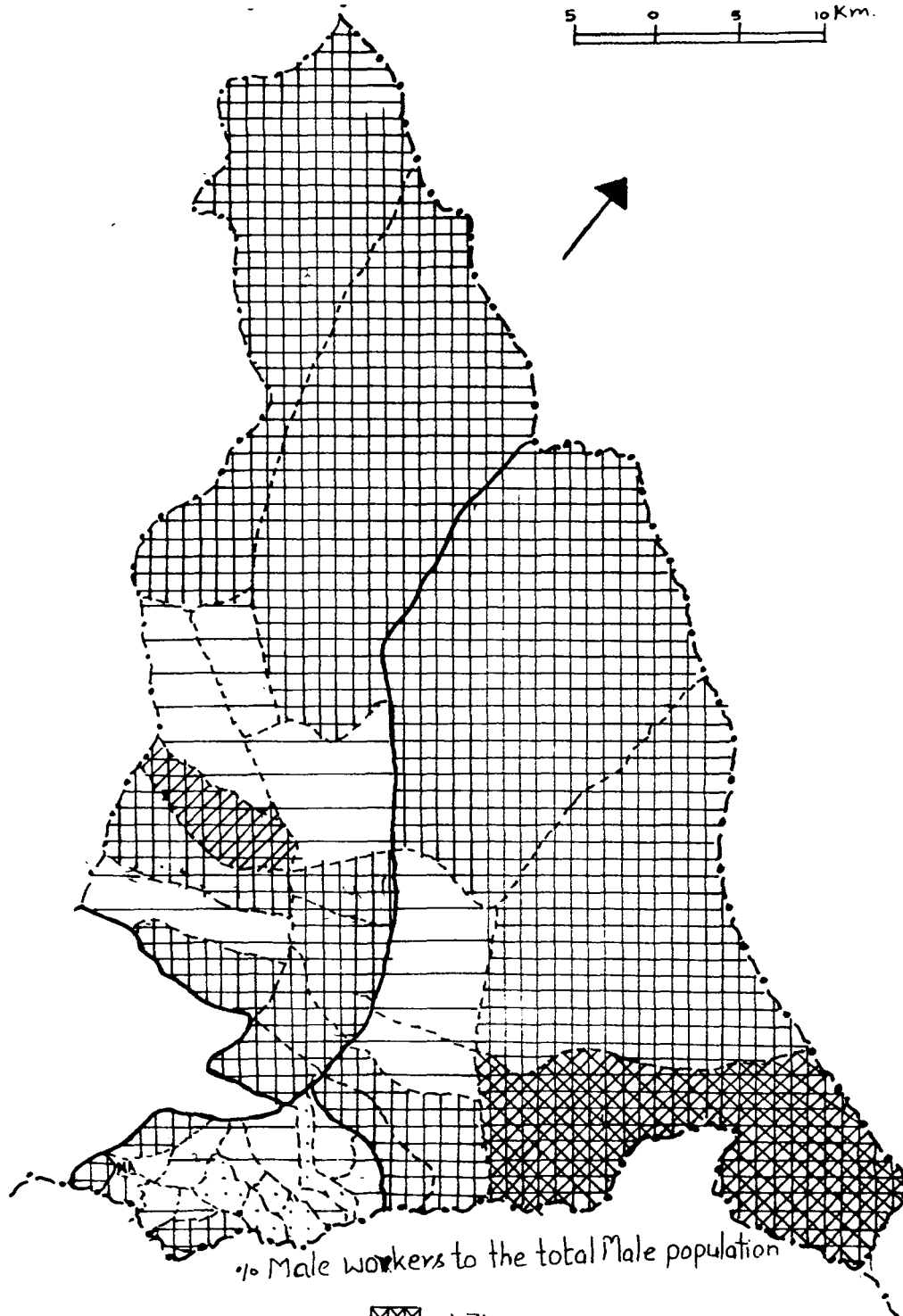
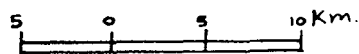
Female

Workforce in Percent	Darma		Byans		Chaundas	
	No.	Name of the Village	No.	Name of the Village	No.	Name of the Village
<-20	1	Nagling	2	Gunji Napachyon	7	Galagar,Sirkha,Rung, Himkhola,Sirdang, Chhalmachilason Punla Bhatka
20-40	0	--	4	Kuti Rungkong, Garbyang,Bundi	2	Jibti,Jyunti Pangu
40-60	5	March,Tidang,Chal, Sela,Dugtu	1	Navi	6	BungBung,Takula,Pangla Sosa Jee,Dhanpangu
60-80	6	Sipu,Khimling,Goe, Dantu,Baun,Baling	0	--	2	Sangaridhakdhona, Tantagaon Route

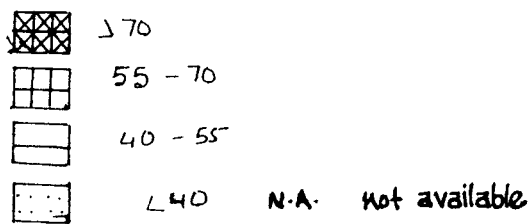
BHOTIYA VALLEYS

MALE WORKERS

1991



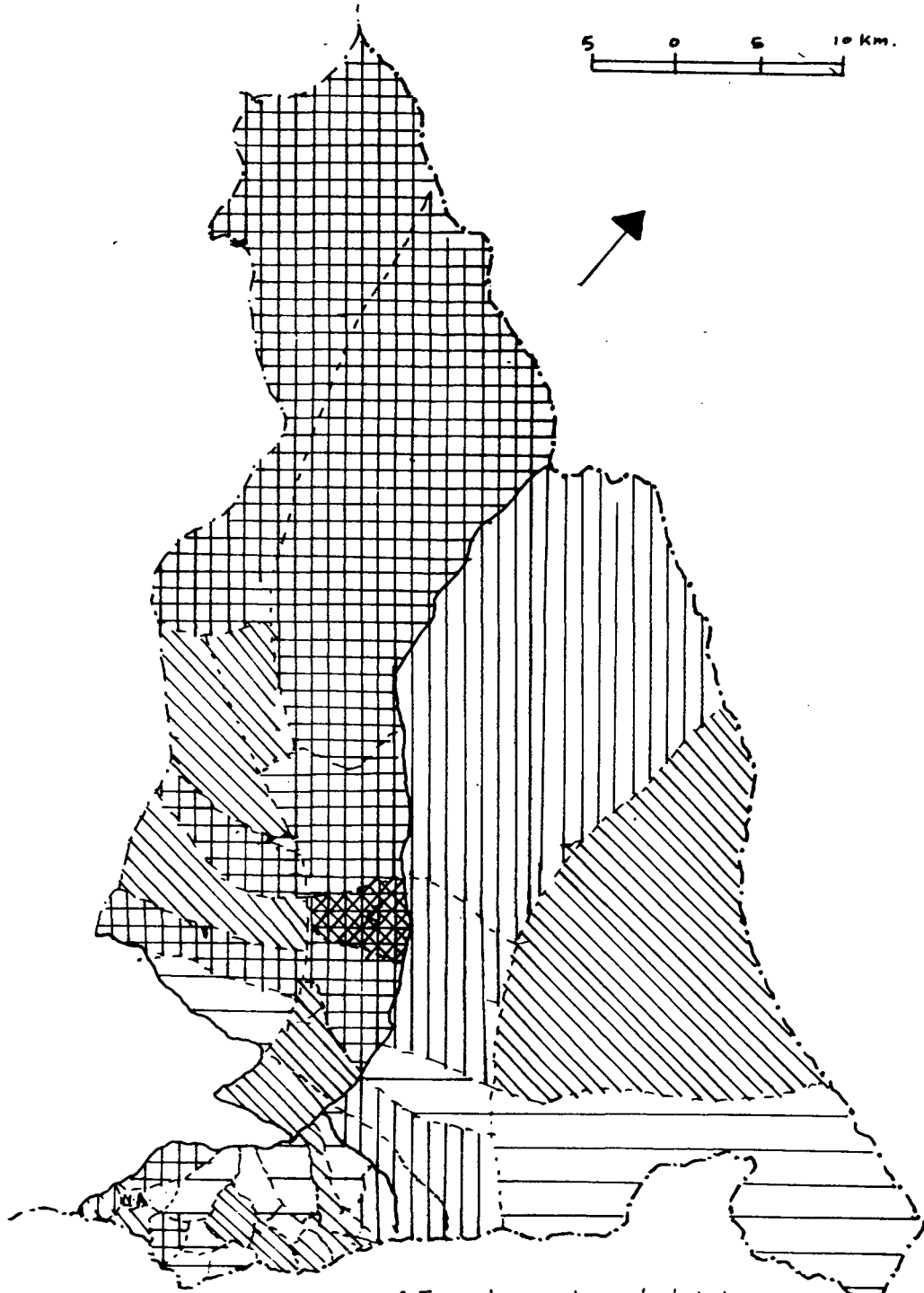
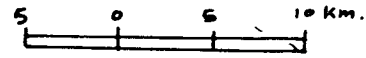
% Male workers to the total Male population



BHOTIYA VALLEYS

FEMALE WORKERS

1991



%age of Female workers to total Female population.

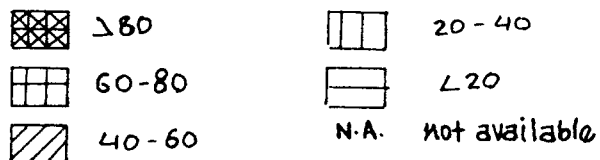


Table No. 4.4 shows that almost all villages fall under the range of 25-75 percent workforce category in the region. Male workforce, in most of the villages, lie in the range of 40-70 percent while female workforce is distributed over larger range. Migration among male and natural growth among female is one of the most important factor. the picture will become clearer after looking at the occupational structure.

Occupational Structure

The occupational structure gives a detailed description of participation of workforce under different occupation. This is essential to know the prevailing economic pursuits in the given area.

Table No. 5
Occupational structure 1991

Valleys	I			II			III			IV			Va			VIb		
	Total	Male	Female	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
DARMA	61.75	57.32	45.7	6.51	3.5	5.33	11.08	18.3	0.28	0.00	0.00	0.00	9.80	2.0	49.2	0.61	1.0	0
BYANS	73.07	64.35	86.7	3.97	5.06	2.0	1.26	1.64	0.0	0.00	0.00	0.00	7.54	9.6	7.67	0.00	0.00	0
CHAUNDA	54.59	59.35	66.95	4.29	3.16	6.13	6.13	8.65	0.23	0.00	0.00	0.00	2.43	5.1	2.88	0.26	0.6	0
ALL THREE VALLEYS	63.18	30.34	66.45	4.18	3.90	4.48	6.74	9.53	0.17	0.00	0.00	0.00	5.69	5.57	19.91	0.32	0.53	0

VI			VII			VII			IX		
T	M	F	T	M	F	T	M	F	T	M	F
3.01	4.7	0.00	6.81	6.2	5.12	0.04	0.24	0.00	3.40	5.8	1.21
4.77	7.9	0.00	2.40	2.7	0.37	0.10	0.14	0.00	6.88	8.4	3.1
5.56	8.5	0.00	2.87	3.1	0.39	1.06	1.45	0.00	22.91	11.8	11.9
4.38	7.03	0.00	4.03	4.00	1.96	0.51	0.61	0.00	7.08	8.67	5.40

Note :

The nine industrial categories of worker (1-9) are as follows: (1) Cultivator (2) Agricultural labour (3) Livestock forestry Plantation etc. (4) Mining and quarrying (5) A) Household Industry b) Other than household industry. (6) Construction and maintenance (7) Trade and commerce (8) Transport and communication services (9) Public utility services.

Table 5.5 shows that the major part of the population is engaged in cultivation. Though in this hostile climate only a few crops can be cultivated, yet agriculture is the basic occupation of the people of Bhotiya valleys the pro-

portion of Females is higher in agricultural activities. In case of Darma it is reverse, because a large number of females are engaged in household industry.

After agriculture, household industry is the second most important occupation for Darmis' and Byansis', Household industry is quite old in these valleys. The skill of making different types of woolen clothes is passed from generation to generation. It continues to be an important activity among Bhotiya females even to-day. That is why the female workers under this category are more than males. In case of Byans and Chaundas, the higher percentage of male in household category is due to the Shilpkar presence of people belonging to caste, who are engaged in different household industries of making baskets, and terms of black smiltry etc.

The second largest worker groups engaged after agriculture is of those engaged in other services in Chaundas valley. This is because of a number of departments and projects are functioning in this valley. Educated Darmais' are engaged in these jobs. Also significant proportion work force is engaged in forestry, livestock and plantation in Darma and Chaundas valleys. The forestry and plantation are quite important activities there. The Chundas valley has a

rich foreste - area under village and forest department. Forest department of Uttar Pradesh is also doing large scale plantations in this area provide employment. Livestock rearing is more important in Darma valley as Byans valley does not have a large forest cover.

There is a small population of agricultural labour in all three valleys. These poor people are working in the fields of those families whose working population had migrated and only aged or children are left behind. No mining or quarrying activity is taking place in the region. The reason is neither a proper survey for mineral resources has been done so far nor the transportation network is developed.

Only 8.41 percent of total workers are engaged in construction works, and trade and commerce. Construction work and transport communication is not significant in Darma and Byans. Some construction work is taking place in Chaundas valley because labour is available at cheap rate in the valley and from neighbouring Nepal. Trade, which flourished before 1962, has lost its importance. The low economic standard and poor resource base is not that strong enough which can support a big trade within the valley. Trade is confined to small shops only which infuse 0.5 percent

workforce. No moterable road leads to valley. The only means of transport is domestic animals like mule, Jubu etc. Such type of means of transportation cannot be employed by big population of these backward areas. After the valleywise distribution of workforce under different occupations, it is necessary to analyse the distribution of workforce under different occupations.

Table No. 4.6

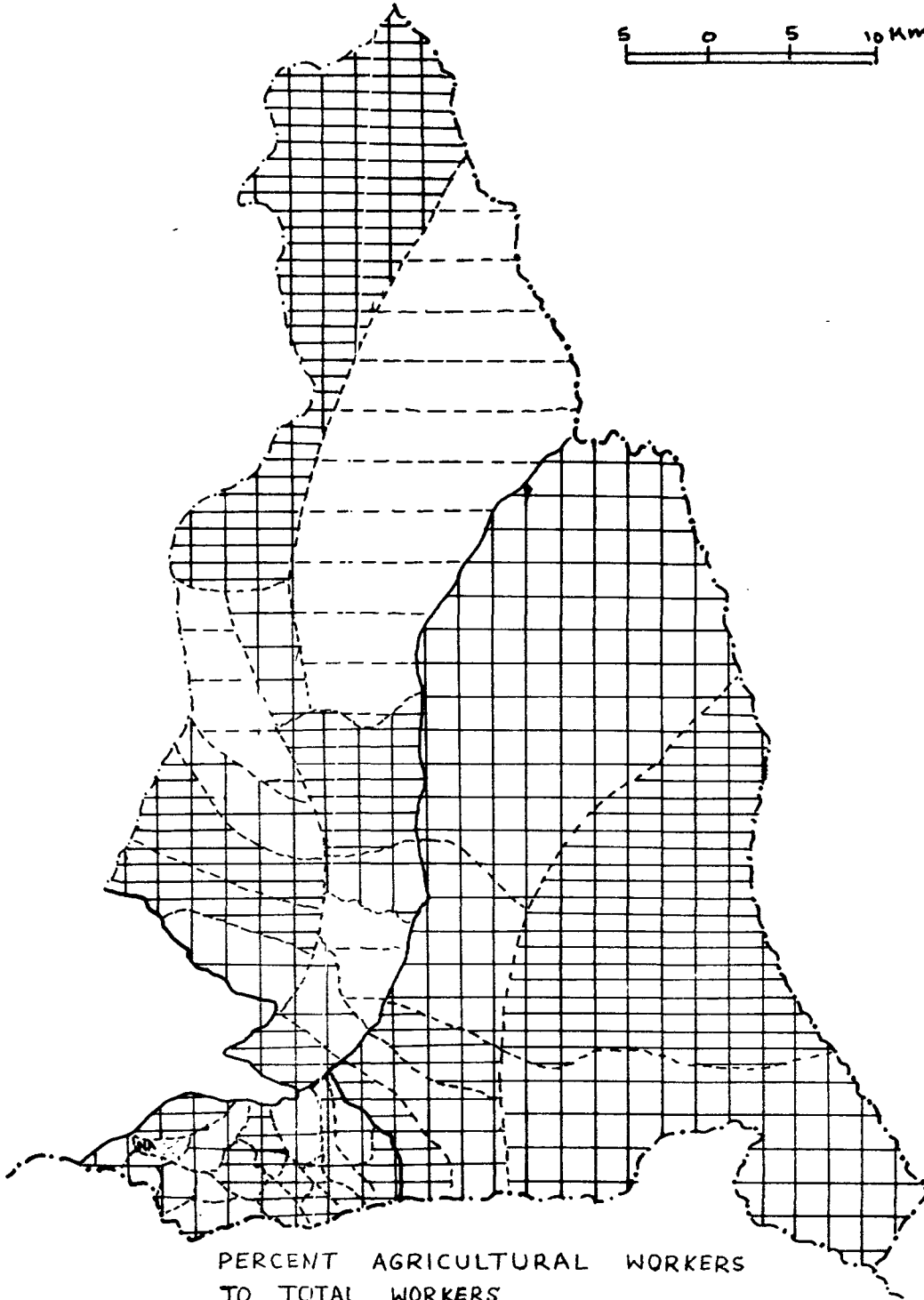
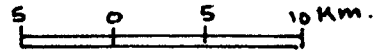
Population engaged in Cultivation - 1991

Workforce in Percent	Darma		Byans		Chaundas	
	No.	Name of the Village	No.	Name of the Village	No.	Name of the Village
<-25	3	Khimling, Baun Tiding.	0	--	0	--
25-50	4	Dantu, Philam Chal, Nagling	0	--	5	Himkhola, Jyunti Pangu Dharpangu, Punla Bhaka, Silkha,
50-75	1	Marcha	4	Kuti, Rogkong, Garbyang, Gunji	3	Bung Bung Galagar, Tantagaon Ponto
>-75	5	Sipu, Goe, Boling, Sela	3	Napalchyon, Navi Bundi		Chhalmanchhilaron, Jibti, Takula, Sangar- idhakdhona, Rurg, Pangla, Sirdany, Sosa, Je

BHOTIYA VALLEYS

AGRICULTURAL WORKERS

1991



PERCENT AGRICULTURAL WORKERS
TO TOTAL WORKERS



> 75



25 - 50



50 - 75



< 25

N.A.

not available

Male

Workforce in Percent	Darma		Byans		Chaundas	
	No.	Name of the Village	No.	Name of the Village	No.	Name of the Village
<-25	2	Kihiling, Tidang	0	--	0	--
25-50	3	Baun, chat, Nagling	2	Gunji, Garbyang	6	Bung Burg, Sirkha, Himkhola, Jyunti Pangu Dhar Pangu, Punla Bhatka.
50-75	3	Morcha, Dangtu Philan.	3	Kuti, Rangkong, Bundi	4	Galagar, Pangla, Sosa, Tantagaonronto
>-75	5	Sipu, Goe, Dantu Baling Sela,	2	Navi, Naplchyon	7	Jibti, Takula, Jee, Rung. Sirdang, Sagridh-akdona, Chhalmachhilason.

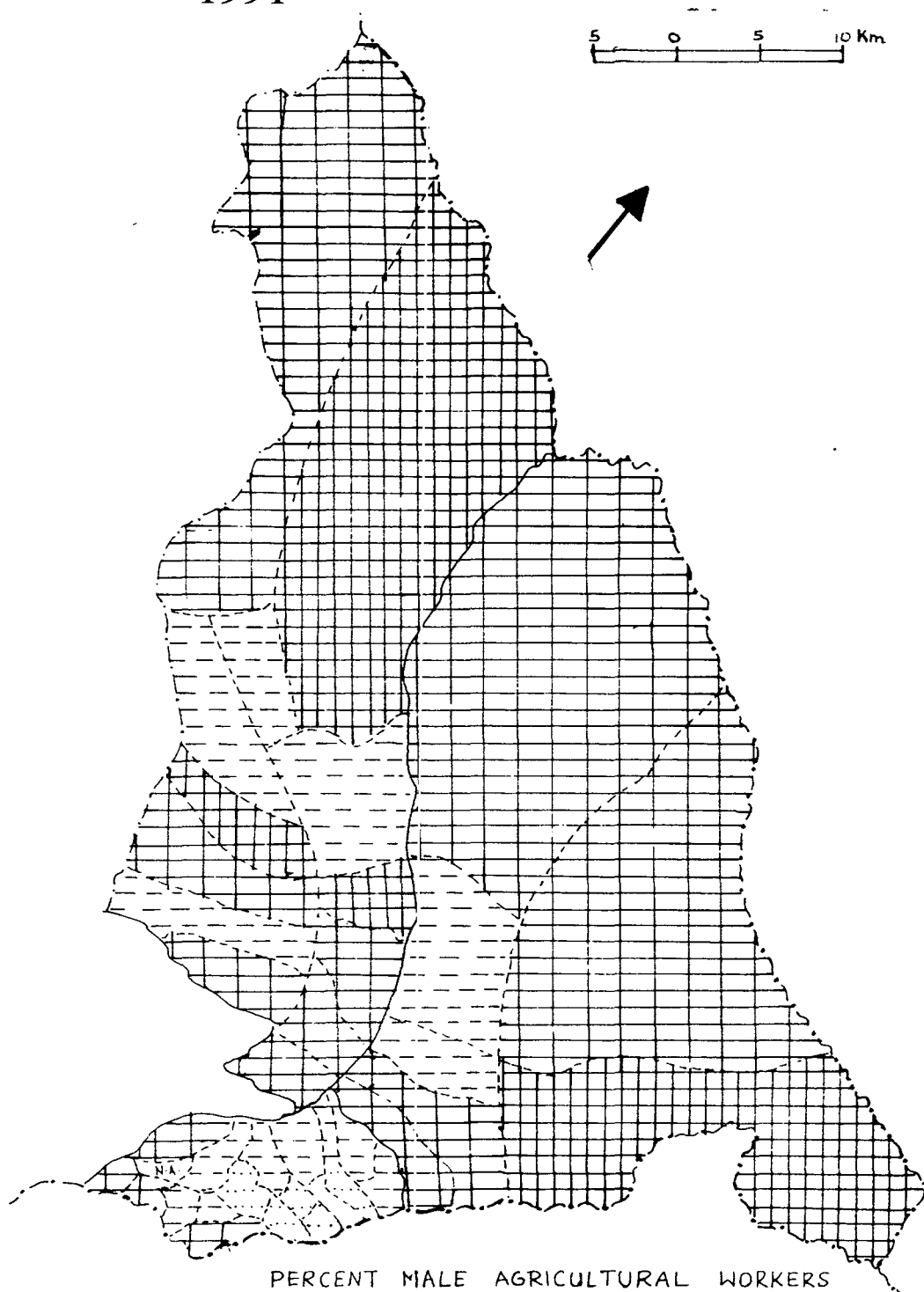
Female

Workforce in Percent	Darma		Byans		Chaundas	
	No.	Name of the Village	No.	Name of the Village	No.	Name of the Village
<-25	6	Khimling, Tidang, Denter, Philam, Baunchal	0	--	2	Galagar, Punla Bhatka
25-50	1	Nagling	0	--	1	Sirkha
50-75	1	Marcha	0	--	5	Himkhola, Jyunti Punju Runj Sirdang, Chhalmachhilaron.
>-75	5	Sipu, Goe, Dugtin, Baling, Sela	7	Kuti, Navi, Bandi Napalchyon, Gunji Rongkong, Garbyang	9	Bung Bung, Jibti, Takula, Sangaridhakdhona, Sosa, Tantagaon Ponto Punla Bntka.

BHOTIYA VALLEYS

MALE AGRICULTURAL WORKERS

1991



PERCENT MALE AGRICULTURAL WORKERS
TO TOTAL MALE WORKERS



>70



40-55



55-70



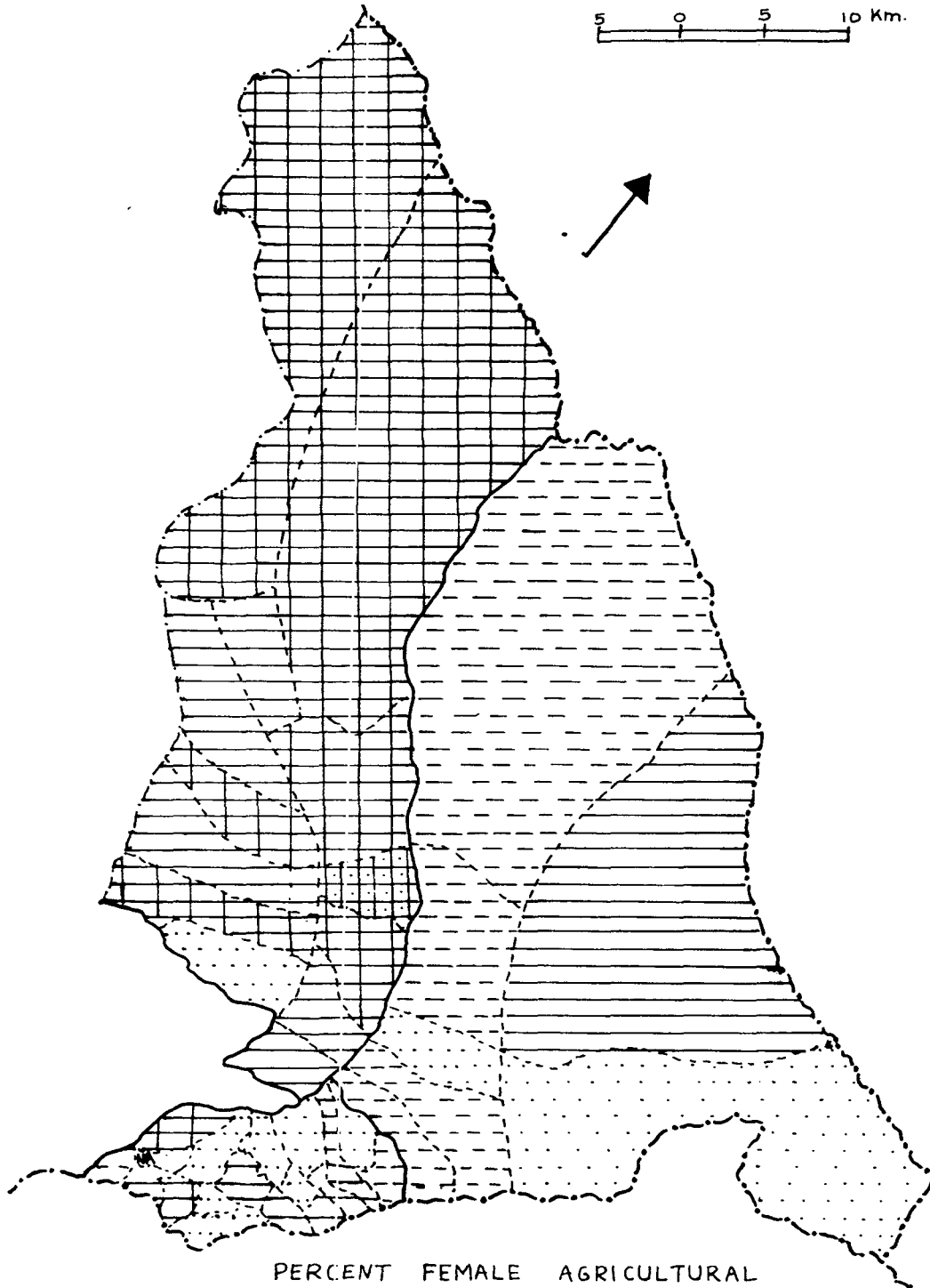
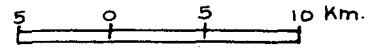
<40

N.A. Not available

BHOTIYA VALLEYS

FEMALE AGRICULTURAL WORKERS

1991



PERCENT FEMALE AGRICULTURAL WORKERS TO TOTAL FEMALE WORKERS



>80



40-60



<20



60-80



20-40

NA. not available

Village level data shows that majority of the workers are engaged in agriculture. Table 4.6 shows Sipu village in Darma valley had the highest proportion of workers i.e. 96.5 percent engaged in agriculture cultivation in Pangla, Takula and Jee. Other villages have above 90 percent workers engaged in agriculture included. Availability of good cultivable land is the basic factor behind it. Besides other occupation such as household industry etc are not developed in this valley.

The village Khimling and Tidang have the lowest proportion of workers engaged in agriculture, Khimling, situated near the famous trade Centre of Darma, known as 'Bedang Mandi', had all families engaged in trade. Even today 66.6 percent of male and female workers are involved in trade with hill people and 33.3 percent female workers are in cottage industry, which indirectly support trade.

Area under cultivation is very small in Tidang and Baun villages. Due to this, 50 percent male workers are mainly working as agricultural labourers in nearby villages, while 37.8 percent are engaged in livelivestock and forestry. Nearly 10.2 percent workers are also engaged in construction and other services. Three villages namely Sipu, Dugtu and Takula, have more than 90 percent male workers engaged in

agriculture. While female workers accounting for over 90 percents were engaged in agriculture in 12 villages. In general the female participation in agriculture is much higher than that of males.

The proportion of female workers in agriculture is less than 25 percent in a few village. It is mainly due to the fact that they are involved in household industry as their main occupation, which is also more profitable. Over 90 percent female workers are engaged in this occupation in Tidang and Baun villages.

Male workers have a clear domination in other services in the villages of Byans and Chaundas. Due to the presence of Government Inter college at Pangu in Chaundas, valley female got a fair opportunity to get higher education. That is why both male and female had a better participation in other services in villages like Pangu, Dhar Pangu, Rung.

It can be inferred that agriculture is the primary occupation of males as well as of females in the Bhotiya valleys. Where cultivation is not enough to support the family, male working population has started working as agricultural labourer, forestry plantation and construction workers in villages while female workers are engaged in

household industries. This is clearly seen in Darma and Byans valleys. Education has helped in shifting the working population towards other services. It can be clearly noted in Chaundas valley.

After having seen the overall occupational structure, it is important to study individual sectors of the economy.

Agriculture

Agriculture is one of the basic activities of any society. The Bhotiyas, too, are dependent on agriculture as their means of livelihood besides their being trader and pastoralists. Terraced agriculture is mostly practised in Chaundas valley while in case of Byans and Darma, cultivation is done on river terraces. These river terraces are of fluvio-glacial origin. A significant part of the Bhotiya region is situated above 4500mts above sea level, hence there is acute scarcity of cultivable land. At such height, it is not an easy task to cut hard rocks and the climate is extremely cold. Thus, it is difficult to reclaim land for agriculture. It is very essential to know the available land use. It gives the picture about how much of the land is under different uses.

Table No.7**Land Use**

Year	Valley	Area (Acres)	Forest		Cultivable		Cultivable Waste		Not Available for Cultivation	
			Acres	%age	Acres	%age	Acres	%age	Acres	%age
1971	Darma	7402	76	0.01	1915	25.87	4853	65.56	682	9.21
	Byans	4689	0	0.00	1143	24.27	3025	64.51	599	12.77
	Chaundas	5673	2	0.02	2342	25.09	3052	45.73	1182	17.71
	All three Valleys	18764	78	0.41	5400	28.77	10930	58.24	2463	13.12
1981	Darma	5411	729	13.47	1771	32.73	2305	42.59	606	11.19
	Byans	4618	289	6.26	995	21.55	2531	54.80	789	14.58
	Chaundas	6750	62	9.36	2307	34.18	2506	37.12	1073	15.90
	All three Valleys	16780	1651	9.83	5074	30.24	7342	43.75	2468	14.71

Source: Census of India

Land Use

The largest area of the Bhotiya valleys is under the cultivable waste category. The forest cover is very limited. The rugged terrain of the valley is responsible for large cultivable waste, the low rainfall and temperature are responsible for scant forest cover. Most of the villages are situated on river terraces which provide cultivable land and thus raise the proportion of cultivable land. The table

no. 4.7 for 1971 and 1981 shows similar features, however, the proportion of land under different uses shows greater fluctuations in 1981. There is some change in the area for these two years. Therefore, it is not possible to compare it directly but it is clear that a part of area under waste land has been used for plantation and forest. This is the outcome of management of forest by village panchayats and large scale plantation by state government. Adjustment of land between village Panchayat and forest department had also increased the area under forest. There is very small change in area not available for cultivation. It is because built up area has increased during 1971-81.

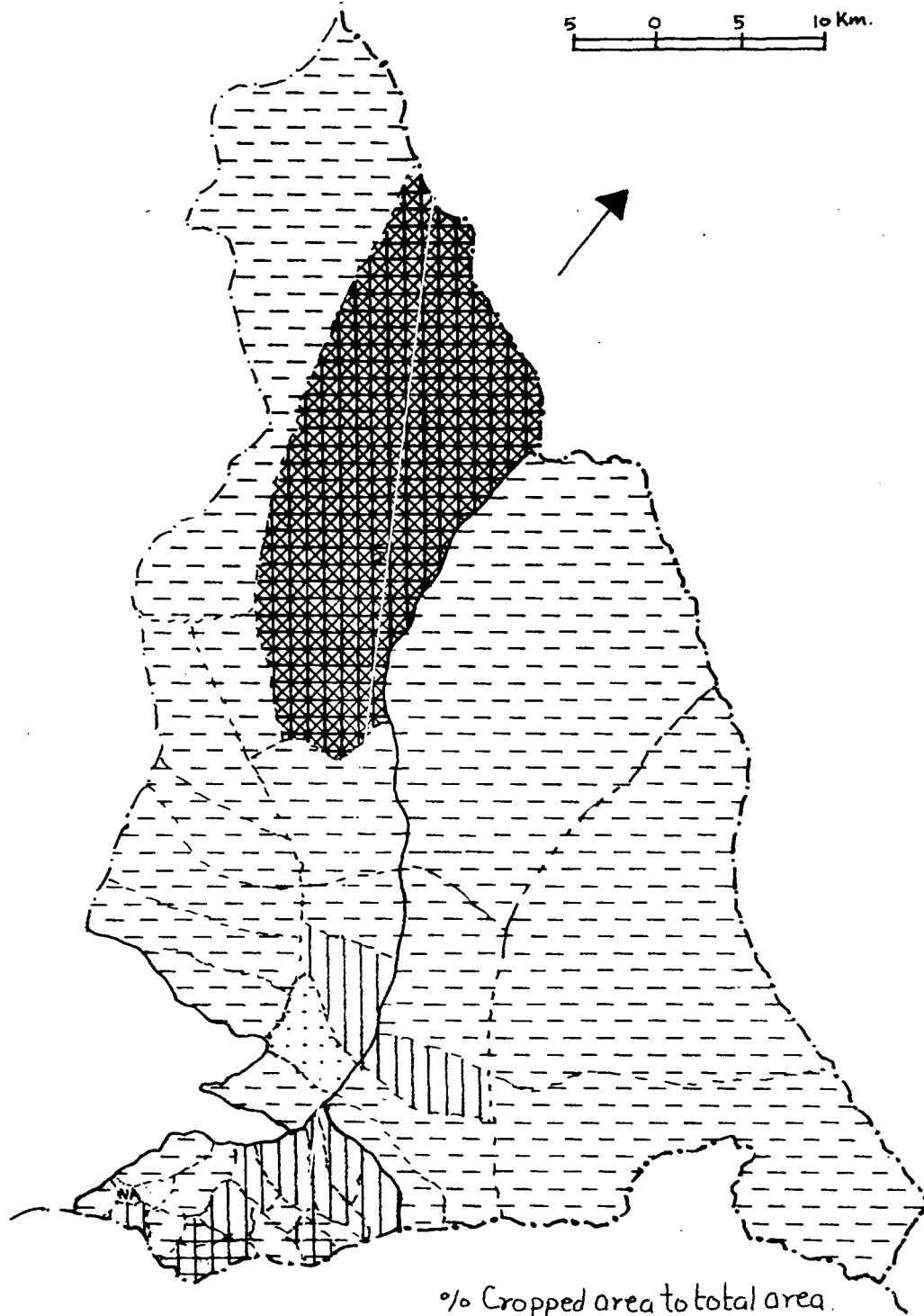
Table No.4.8
Area Under Cultivation - 1991

Area in Acre	Darma		Byans		Chaundas	
	No.	Name of the Village	No.	Name of the Village	No.	Name of the Village
<-15	1	Chal	0	--	0	--
15-30	10	Sela,Nagling,Baling Filam,Dantu,Goe,Sipu Tidang,Marcha	6	Kuti,Navi,Garbyang Rongkong,Gunji,Bundi	7	Takula,Rung,Jee, Juyanti Pangu, Hyonkhola,Tantagaon Ronto,Sageri Dhakdhona
30-45	1	Baun	1	Napalchyon	7	Bung-Bung,Galagar, Jibti,Sirkha,Sosa, Sirdang,Dhar Pangu
45-60	0	--	0	--	3	Pangla, Punla Bhatka Chhalmachalason
>-60	1	Khimling	0	--	0	--


BHOTIYA VALLEYS


AREA UNDER CULTIVATION 1981


5 0 5 10 Km.




% Cropped area to total area.

 > 60

 45-60

 30-45

 15-30

 < 15

N.A. Not available

Valley level land use pattern is not sufficient to explain the real situation, so, village level changes under different categories have been studied. Except a few, most of the villages do not show any perceptible change in land use. According to table No. 4.8 Villages like Tidang, Galagar and Pangla show a sharp decline in the area under cultivable waste and it seems to have been used for increasing the area under cultivation and forest. This is to meet the demands of the growing population in these villages. Villages like Goe, Bundi, Jee and Pang show decline not only in wasteland but also in the cultivable land and subsequently increase in the area under forest. This is related to the migrations of the people from these villages. Different pattern of change in the land use are found in the villages of Garbyiang, Baling and Hyun Kholo. The cultivable area in these villages is almost same but waste land is shifting towards forest land. It is because of plantation of trees and forest management adopted by the villagers. Khimling and Jyunti Pangu villages show such typical patterns of change. Large part of cultivable waste has been reclaimed for cultivation in Khimling villages. Although, population is mainly dependent on trade and house hold industry, yet, agriculture as a secondary occupation is growing up in these villages. There is sharp decline in cultivable land and

large increase in the cultivable waste. This is the result of small working population due to high migration in Jyanti Pangu.

In short, it can be said that, though few villages have a special pattern of change in landuse, yet, most of the villages recorded a net increase in the cultivated area and area under forest and decrease in the cultivable waste.

Table No.4.9
Land Holdings

Land Holding (in Acre)	Village Dugtu (Darma Valley)	Village-Napalchyon (Byans Valley)	Village Sirkha (Chaundas)
0	3	3	1
<-0.5	18	8	5
0.5-1.0	12	12	25
1.0-1.5	3	3	6
1.5-2.0	1	-	4
2.0-2.5	0	-	1
>-2.5	1	-	1
Total	38	26	43

Source : Based on Field Survey, Sept. 1994..CW12

The area under cultivation is determined the physiographic conditions and the type of soil (Table 8) village

Khimling has largest area amounting to 66.5 acre under cultivation while Chal has the lowest area i.e. 12.8 acres. Most of the villages have cultivated areas varying between 15 to 60 acres. This is because most of the villages of Darma and Byans valley are situated on the valley floor or river terraces. The villages of Chaundas are situated on the hill slopes. In both cases, the cultivable land is limited and it is difficult to bring other land under cultivation. Table No. 4.9 shows that land holdings for sample villages vary between 0.5 acre to 1.0 acre for majority of the households. The next important aspect is cropping pattern, which gives idea about the crops being grown by the inhabitants of the region.

Cropping Pattern:

The cropping pattern which depicts the proportion of land under different crops has been calculated from the primary data. Table 4.10 shows a kind of wheat, the locally known as Napal, to be dominant crop in Napal Chyon village of Byans valleys. It gives a very high yield in this valley. Barley comes second followed by Phapar (buck wheat) and potato. These crops are used for food and for preparing alcoholic drinks.

Table 4.10
Cropping Pattern

(Area in Acres)

Village Napalchyon (Byans Valley)

Total Cultivated	Area under wheat (Napal)	Area under Barley	Area under Buckwhen (phapar)	Area under Potato
21.55 (100%)	10.77 (50%)	6.46 (30%)	3.25 (15%)	1.08 (5.0%)

Village Dugtu (Darma Valley)

Total Cultivated	Palti (Millet)	Buckwheat (Phapar)	Potato	Vegetables
41.5 (100%)	29.46 (71%)	10.37 (25%)	1.24 (3.0%)	0.41 (100%)

Village Sirkha (Chaundas Valley)

Total Cultivated	Wheat	Barley	Potato	Rajma	Lentil (Masoor)	Vegetable
53.8 (100%)	27.98 (52.0%)	12.37 (23.0%)	6.46 (12.0%)	3.23 (6.0%)	10.76 (5.0%)	1.7 (2.0%)

Cropping pattern is different in Dngtu village of Darma valley. Here a millet 'Palti' occupies the largest area followed by the buckwheat, which is locally known as 'Phapar'. The high yield and difficulty in growing other crops in harsh conditions, gives palti the leading position in the cropping pattern. Two varieties of buckwheat namely, *Fagopyrum exulentum* and *Fagopyrum tatarieun* are grown here. It is a multipurpose crop. It is used in a number of culinary

preparations and for making alcoholic drinks. It is also a cash crop of high demand. This can be easily sold at the rate of Rs. 15 per kg at Dharchula or Rs. 12 per kg at the village itself. Areawise potato comes after phapar and gives a good yield. Vegetables are also grown in the fields close to the house.

A large number of crops are grown in Sirkha village of Chaudhas valley. Wheat occupies the largest area followed by barley. The wheat is used for food while barley is meant for brewing alcoholic drinks. Due to better climatic conditions Rajma and lentils are also grown on a significant area in this village. Vegetables occupy 2 percent of the total cultivated area.

The area under crop is not enough to explain the cultivators choice of growing different crops. The yield of the crop is very important in this regard. Several climatic and physiographic factors like physiography, soil, rainfall, temperature windspeed, sunshine etc. have a strong influence on the yield of the crops. These factors varies from valley to valley. The yield of different crop is given in the table 4.11.

YIELD OF DIFFERENT CROPS IN THE BHOTIYA VALLEYS
Table No. 4.11

DUGTU (DARMA VALLEY)		NAPLCHYON (BYANS VALLEY)		SIRKHA (CHAUNDAS V.)	
Crop	Yield Qt./Acre	Crop	Yield Qt./Acre	Crop	Yield Qt./Acre
PALTI (MILLET)	4.00	Wheat (Napal)	6.2	Wheat	6.0
Phapar (Buck wheat)	6.02	Barly	6.80	Barly	6.95
Potato	130	Phapar (Buck wheat)	5.89	Potato	120
		Potato	110	Rajama	4
				Masoor	3.80

Napal wheat in Napal Chyon has a high yield of 6.26 quintal/acre. The yield of Phapar and potato is high in Darma valley. The yield of lentils and Rajma is high in Sirkha village. This high yield is due to relatively longer growing season and availability of more sunlight in this region. The agriculture practised in the Bhotiya valley is fraught with lot of constraints. These are not merely physical but also legal and social.

Problems Underlying Bhotiya Agriculture

Whatsoever meagre cultivable land is there in the Bhotiya region, that is not wholly under their possession. Prior to 1962, the Bhotiyas were chiefly a trading class and trade with Tibet was their whole time job. During that

period usually non-Bhotiya tenants looked after their agriculture and land which ultimately into their hand under 'lands for the tenants' Act of 1952 and 1967. Land settlement records of district Pithoragarh show no other region is having as large number of tenants as the Bhotiya region.

Now land above 3030m above sea level only remains the exclusive property of the Bhotiyas. But this high mountainous land is very less fertile and after hard labour only one crop can be harvested, with an exception of the Chaundas valley where the villages are situated below 2727m.

The time of sowing and harvesting also differs in the high mountainous lands. Melting of snow and break of snowfall are important in this regard. Besides the problem of difficult agricultural land, non-fertility of land, soil erosion and sinking of land and avalanches are other problems facing agriculture. Village 'Garbyang' and 'Bundi' of Byans valley are example of sinking lands and of soil erosion. Avalanche and accumulation of debris in the fields in a big hazard in cultivation in 'Kuti' village.

Live Stock

Table No.4.12

Live Stock - 1994

Name of the village	Cow			Bullocks	Jubu	Mules	Sheep/
	Milch	Dry	Calves				
Napalchyon	13	7	18	15	17	7	90
Dugtu	38	22	45	28	36	33	550
Sirkha	53	37	83	81	--	23	90

Source : Field Survey

Live Stock is an inseparable part of agriculture. Table-4.12 shows that the largest number of cows and bullocks are in Sirkha village of Chaundas valley. The Napal Chyan of Byans valley has the lowest number of cattle. In fact, Chundas has rich green cover and strong agro-base which can support a large number of cattle. The forest cover is scanty in Bayans and agrobases, is not much strong in Darma and Byans. Forest cover in Darma and Byans is mostly coniferous trees or berch and rododen-dron which is not suitable for livestock. Jubu, a crossbreed of yak and cow, is found in Byans and Darma. The population of sheep and goats high in absolute numbers. They are not equally distributed in the village & but confined to few families only.

Household Industry

Table No.13

Household Industry

Name of the Village	No. of household	Household in Woolen Industry		No. of Item produced (Dan, Chutka) 1993	Sale in Rs. 1993
		No.of	Percentage		
Napalchyon	26	15	57.69	26	34,000
Dugtu	38	25	65.78	66	61,600
Sirkha	43	19	44.18	40	51,000

Source : Data based on field survey (Sept. 1994)

The wearing is the traditional occupation of the Bhotiyas in these valleys. Table 4.13 shows-that the high proportion of households in Dugtu village of Darma valley are engaged in preparing woolen goods like Dan, Chutka etc. It is lowest in Napal Chyan village because of the high female outmigration from the Byans valley. In females are mostly involved in agriculture in Sirkha village and not in wearing/spinning etc.

From above discussions it can be inferred that the economy of the Bhotiya valleys is based on subsistence agriculture. The land holdings are small and there are hardship in practising agriculture. Even then most of the

workforce is engaged in agriculture. Mainly coarse grains and grown in these valleys. Higher proportion of female workers are involved in agriculture. Interestingly, females dominate in the household industry. Carpet wearing, and spinning of wool form the core activities. On the other hand male dominates in construction and other services besides working as agricultural labourers, in comparison to females. Though the livestock are limited but is enough to support their subsistence economy.

Conclusion

Chapter 5

Human-Interaction with the nature is not the same every where. It is the diversity in nature and varied need of the man that provides the basis for spatial interaction. The nature of spatial interactions demand upon several physical factors as well as socio-cultural aspects of the inhabitants.

Bhotiya is a generic term used for designating several socially unrelated groups of people, in Indo-Tibetan border land, in the Greater Himalayan and Trans Himalayan region.

The physiography of Bhotiya valleys include snowclad peaks rugged mountains U-shape valley and high passes, and steep hill slopes in the Zankar range while deep gorges, moderate hill slopes with V-shapes valleys in the Greater Himdeyan range.

The drainage of the Bhotiya valleys is greatly influenced by physiography and the climate. The perennial rivers originate from the snow clad zone of Zanskar Himdeyas. Dendritic drainage pattern is communally found.

The variation in temperature and precipitation are largely explained by the topographical differences within the valleys. Altitude plays major role in the fluctuations

in temperature and relative location in the spatial distribution of precipitation. The Greater Himalayan range of Bhotiya valleys experiences low temperature and high monsoon while in Trans Himalayan area very cold climate with sparse precipitation.

Natural vegetation in the Bhotiya valleys represent the combined effect of climate, terrain and soil of the area. A wide range of variations in natural vegetation are observed, which varies from chirpine and oak in the lower parts to birch rhododendron trees and alpine meadow i.e. buggal in the high reaches of the valleys.

The population distribution in Bhotiya valleys is highly uneven and the villages are generally small in size. The population of villages in the valleys, varies from 20 persons in Khimling village to the highest 728 persons in pangla village. Most of the villages have population ranging between 25 persons to 300 persons. Larger concentration of population is seen in Chaundas valley. The lower part of Darma and Byans valleys have moderate population concentration, whereas the upper parts have very sparse population.

Though the population change was not homogeneous during 1961-91; population, in general, declined over the period. during 1961-71 and 1981-91. It declined by 7.27 percent and

15.68 percent during 1961-71 and 1981-91 respectably. It shows a marginal increase of 1.18 percent during 1971-81. The population change is not in all the three valleys. Byans and Darma have experienced continuous decline during 1961-91, whereas Chaundas had an increase in population during 1961-81 but decline during 1981-91. A striking feature was observed in the change of Chaundas population. It experienced an increase of 32.78 percent during 1971-81. Subsequently it experienced negative growth of 30.20 percent.

The outmigration was observed in all the three valleys. It was especially clear in three sample villages. The rate of out migration is highest in Byans valley. Outmigration is male dominated in all the three valleys. The highest male migration was observed in Chundas valley, also which had the lowest total out migration during this period. The female outmigration is moderately in all the three valleys; The outmigration is related to the closure of trade.

The sex-ratio in all the three valleys increased during 1961-91. Darma valley experienced sharp decline in sex-ratio during 1961-71. This may be attributed to bride price which has very low in Darma after the collapse of trade in

post 1962 period. The change in sex-ratio was found to be more in Chaundas followed by Byans and Darma.

The overall literacy scenario in all the valleys is not very encouraging. All the valleys have experienced increase in literacy. Male literacy is highest in comparison to female literacy in all the valleys. The male literacy was highest in Byans valley in 1991. The Increase in male literacy is not significant except in Byans valley. The change in female literacy is significantly more in all the valleys. It may be due to government efforts at the village level.

The location of settlement in Bhotiya valleys is pro- vavly guided by factor lipe terran climate, availability of land for agriculture and source of inter. Trade routes also influenced the settlement Chaundas has largest number of settlements. While lowest number of settlements was in Byans valley. Generally the settlements are found in the southern slopes of Great Himalayan range in case of Chaundas valley, In other valleys these ae situated an river ter- races. The linear settlement pattern is observed with nuclearted settlements.

The house type in Bhotiya valleys is influenced by environmental factors and availability of building materi-

als. Generally, rectangular double storeyed houses with gabled roofs are built. The ground floor of the house is used for cattle, storing grasses and fuel wood and the upper floor is used for living purposes. The specialities of these houses are that they have small doors and windows with thick walls to prevent cold winds.

Natural environment markedly affects dwellings, dress and food habits of the Bhotiyas. Bhotiya valley are inhabited by multi-ethnic societies. Bhotiyas are of Indo-Tibetan affinity, the others have Indo-Aryan descent. Bhotiya people have typical Mongoloid features.

Stratified society is found in the Bhotiya valleys. The population is basically composed of four groups namely Bhotiyas, Purohits, Shilpkars and mirasis. The sub groups are profession based. Religiously Bhotiya valley people are Hindus but influence of Animism and Lamaistic Buddhism is also seen. Dhaja, Darcha, Chortens form part of the cultural landscape of Bhotiya villages.

The dialects and languages spoken belongs to the Tibetan-Burma linguistic firmly. No systematic script has been developed. The non Bhotiya people speak Kumaoni dialect. Basically woolen clothes are worn to counter cold. Their

food included coarse cereals, dried meat of sheep and goats. Jan and Chakti which are locally brewed liquor, are consumed in large quantities. These are consumed at the time of events like birth, marriages and deaths.

Agriculture forms the basis of the Economy of Bhotiya valleys. Trade with Tibet was the major feature of economy before 1962 and other economic activities were largely dependent on it. This trade with large turnovers was confined to only rich families of the villages and major section of the working population was engaged in agriculture.

The work force participation shows a continuous decline during 1961-91. This is due to the fact that the region is suffering from acute outmigration. Female work force participation has declined sharply from 66.43 percent to 35.16 percent during 1961-91. This shows that the migration is not confined to males but females are also migrating from the valleys.

The primary occupation of people of Bhotiya valleys is agriculture. Apart from being cultivators they are engaged as agricultural labourers, in forestry, and construction. Female workers are mainly engaged in household industry in Darma and Byans valleys. Significant increase in education in Chaundas valley has caused the working population to shift towards service sector.

The cultivable waste is quite wide spread. It has decreased from 58.24 percent in 1971 to 43.75 percent in 1981. Area under cultivation has increased slightly where as forest area shows a significant increase from 0.41 percent to 9.83 percent during 1961-81. Land holdings vary between 0.3 acres to 1.5 acres in size.

Napal, wheat is found to be the main crop of Byans valley along with barley, Phapar and potatoes. Millets (Palti) is the main (Buck wheat) crop of Darma along with phapar and potatoes. Wheat occupies the largest area in Sirkha village followed by barley and potatoes. Here lentil and rajma are also grown.

Most of the female workers are engaged in agricultural activities in Byans and Chaundas valleys. But they are engaged in household industry in Darma valley. The household industry occupies the second most important place after agriculture. Weaving woolen cloth and dan (carpets) is the main traditional household industry in these valleys.

Sirkha village in Chaundas and Dugtu of Darma valley has large number of livestockes due to better agriculture and forest cover. Napal Chyong village of the Byans valley has only a few animals.

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