

POPULATION OF SIKKIM : A GEOGRAPHICAL ANALYSIS

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*Certified that this thesis entitled **Population of Sikkim : A Geographical Analysis** embodies the result of a bonafide research work carried out by Smti Sujata Basnet, Lecturer in Geography, Sikkim Government College, Gangtok under my direct supervision and guidance. It is submitted in partial fulfilment of the requirements for the Degree of Doctor of Philosophy of the University of Gauhati. Neither the thesis as a whole, nor any part of it has been submitted so far elsewhere for any research degree or diploma. She has fulfilled all the requirements laid down in the regulations of the University for the Degree of Doctor of Philosophy.*

Date: 25/2/2000

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PART - I

PROBLEM AND BACKGROUND OF THE STUDY AREA

CHAPTER - I

INTRODUCTION

STATEMENT OF THE PROBLEM

Geographic study of population is assuming increasing importance every year. It is because population is increasing every year and all the issues, may be social, economic, political and environmental are inextricably related to man or human resources. In fact, the quality of human resources is the sole determinant of a region's level of development and creation of better human for the future. To understand the human resources of a place it is necessary to examine thoroughly the character of the people and their socio-economic condition, without which proper development of a region for the welfare of its people cannot be conceived of. A geographic study of population is even more significant in an isolated backward frontier region like Sikkim where the process of socio-economic development may be said to have just started. Also the ground reality is that in a vast country like India with diverse populace, recognition of the regional problems related to population character and its socio-economic condition is possible only through a micro-level analysis. It is in this background a geographic study of population of Sikkim is undertaken in the present work.

It will be in order to state here that the population character of a region may be known through an analysis of the demographic variables as population growth, age, sex, marital status, economic variables as working force, participation rate, occupational categories, and the social traits as literacy and educational level, ethnic and religious composition, language and dialects, etc. The nature of population structure plays a crucial role in the development of a region and its geographic personality. Birth, death and migration are the important components of demographic structure which are responsible for the population dynamics and spatial variation of population in a region. Besides, these components also bring remarkable change in the age-sex composition, dependency ratio, marital composition and sex disparity in literacy of the region. The age-sex composition

determines the size of the working force pattern, proportion of the dependent population, etc.

To have a better insight regarding the various social and economic attributes of an area, a study of the economic composition of population is also highly necessary. The character of occupational characteristics of an area depends on its physical resource base, background of the different ethnic groups, political situation in the past and the present and a number of its historical and socio-economic factors. The type of economy present in the different parts, scope for employment in different sectors and the pace of socio-economic transformation could be understood from the occupational structure of an area. The social attributes provide the total picture of the social pattern and the degree of socio-economic change. Among the social attributes literacy and educational level reveal the proportion of skilled, literate and educated persons, both male and female, in a society. In brief, an analysis of these attributes provides a clear understanding of the various socio-economic problems present in a region without which proper development planning cannot be made. Thus, a geographic study of population in respect of the above has immense importance, particularly in a backward region like Sikkim where special emphasis has to be given for upliftment of the prevailing socio-economic condition of the people.

Thus, above are the major points in view behind selection of the present research problem; Population of Sikkim : A Geographical Analysis. A synoptic view of the study region to follow justifies this contention.

The study region, i.e., Sikkim, is a rectangular shaped mountainous area with no flat land. It has a complex physiographic condition with a young folded mountains characterised by varied altitudinal zones. The State is dissected by innumerable number of perennial and non-perennial streams. Within an area of 7096 km² it exhibits varied terrains and a wide range of climatic conditions, soils and vegetations. Out of the total area only 25 per cent (approximately) is found habitable.

The total population of the State is 4,06,457. The present population structure of the State, on the whole, is the result of the process of intermixing of a number of tribal and non-tribal groups. Till the beginning of 19th century the predominant inhabitants of the State were the tribals. Towards the end of the same century the demographic profile changed and at present the State is predominantly inhabited by the non-tribal people. Among the major ethnic groups, Lepchas are considered as the autochthons of the State. According to many scholars Limboo and Mangars (Nepali) are also considered as the original inhabitants, contemporary to the Lepchas of the State. The next important tribe is the Bhutia. Among the non-tribals, the Nepalese (Gorkhali, Kirati, Newar) constitute the majority. Generally speaking, Lepchas are concentrated in the central, the Bhutias in the northern highland areas and the Nepalese, in the southern part of the State. At present, more than 60 per cent of the total population of the State are Nepalese, next to them come the Bhutias and the Lepchas. Besides, there are other groups of people coming from the neighbouring countries and different states of India. Thus, the State exhibits a distinct physiographic, demographic and cultural characteristics of its own and it provides a potential field for population geographic study.

OBJECTIVES AND HYPOTHESES

Based on the statement of the problem given above, the objectives of the study are:

- i] to examine the present pattern of distribution of population and social communities in different parts of the State and to find out the factors behind them;
- ii] to assess the man-land relationship by analysing the arithmetic, physiological and agricultural density of population and the available land resources of the different parts of the State;
- iii] to study the spatio-temporal pattern of population growth in the State and to evaluate the causes of rapid population growth in it and their effects;

- iv] to investigate the pattern of rural-urban migration within the State and mass in-migration from different parts of the country and outside, and to find out the causes of in-migration and its effect on the demographic and socio-economic structure of the area;
- v] to portray the spatio-temporal pattern of population characteristics, such as sex-ratio, age-structure, marital-status, fertility and mortality rates, etc., and to examine the causes of their variations in different parts;
- vi] to examine the basic socio-cultural characteristics of the State, such as spatio-temporal pattern of literacy and educational level, religion, language and dialects;
- vii] to evaluate the pattern of work participation rate and occupational structure in the State and to find out the nature of occupational shifting from one sector to another;
- viii] finally, to divide the State into different ethnic zones and population zones on the basis of distribution of different ethnic groups, demographic and socio-cultural attributes so that the socio-economic characteristics of the zones can be thoroughly understood.

In the light of the above objectives, the following hypotheses are proposed to be tested during the course of the work.

- i. Isolation due to harsh ecological setting, prevalence of monarchy system over a long period of time and peopling of the region through in-migration during both pre and post merger periods in the country have given the region a population character which is quite distinctive from other parts of the country.
- ii. The present distribution pattern of population of the State is the result of both permissive and restrictive factors of physical environment, on the one hand, and socio-cultural, historical and political, on the other.

- iii. The growth of population in certain parts, especially in the southern districts is not keeping pace with their physical resource base with resultant effects of population pressure on limited agricultural land.
- iv. The pattern of migration into the region bears a complex character owing partly to political reasons and partly to the availability of unexploited resources and increasing economic opportunities since its merger with the country.
- v. The development level of the various ethnic groups varies in different parts of the regions depending on their degree of exposure to the outside world and intermixing with each other and also with the rest of the population of the State.
- vi. The prevailing land tenure system and certain policies of the Government are acting as important forces of economic differentiation among various ethnic groups in the region.
- vii. The socio-economic status of the tribals and also of their woman is somewhat better than that of the non-tribals in the region as opposed to generally prevalent in most parts of the country.

Significance of the Study

Sikkim is a socio-economically backward State. Till now, very little research work has been done to analyse the geographical characteristics of its population. Such an analysis is, in fact, a prerequisite for any development planning for human welfare of the region. A comprehensive treatment of demographic and socio-economic characteristics of the region therefore assumes great significance. The region with rugged terrain and a remarkable ethno-cultural diversity, and strategic location near the International Boarder has an unique geographical entity of its own. Hence, a proper examination of the population attributes of the region from a geographic perspective has additional significance.

It is already mentioned that research work on this line is very limited. Although, some works have been done by anthropologists and sociologists on certain socio-cultural aspects of the different groups, but such work hardly focus on the spatial dimension of the problems related to population. It is therefore, expected that the present study, which attempts to focus on the different attributes related to demographic and socio-economic characteristics of the people of the State will be helpful to the planners and policy makers towards formulating development plans for the welfare of its people. In brief, the study is considered to have both academic and practical significance.

Database and Methodology

The study area has a plural society which comprises both tribal and non-tribals belonging to different ethnic groups. But due to non-availability of necessary data at micro level, it has not been possible to cover all the aspects of population in the present study. Also because of harsh physical condition, political restrictions, inaccessibility, remote location, language problem and limited time, the field study has been confined only to a limited number of areas. In any case, every attempt has been made to present a meaningful analysis of the population attributes of the State in this work.

Data for the present study, both published and unpublished have been taken from the different Census of India volumes and other relevant sources. Non-availability of data on different demographic and socio-economic aspects prior to 1971 has been a major constraint for the present study. Lack of data on different groups and sub-groups has also been a handicap in the work. Due to the formation of sub-divisions after 1981, data on various population characteristics at this level have been calculated on the basis of census data of 1981.

The entire work has been conducted into four stages. The initial stage comprises mostly the library work. At this stage, different books, journals, periodicals, administrative reports, etc., have been consulted in different libraries, research centres, archives (Government) to collect relevant literature related to the present research work. Besides, most of the data on various demographic and

socio-economic aspects have been collected from census reports and other reports and documents published by different government departments. As most of the data at district level are available only from 1971 onward and at sub-divisional level for 1991, the study has been carried out mostly on the basis of data of these census decades.

In the second stage, village survey through questionnaire schedules is done to examine the validity of the findings obtain from the secondary data. Four villages located in different altitudes and inhabited by different groups and sub-groups, viz., Lepcha, Bhutia, Nepali, Limboo (Nepali) have been selected for collecting primary data on various demographic and socio-economic aspects. Proper care has been taken in selecting the villages for study, opinions from reliable and knowledgeable persons have been taken so that the villages selected reflect a representative character of the different groups of the areas. The size of the selected village varies from small to large ones. Out of the surveyed villages two are located in the restricted areas. They are Lachen (Bhutia) at a height of 2697 metres and Gnon Samdong (Lepcha) at 1200 metres (approximately) near the boarder area. Despite, harsh physical condition, problem and communication facility, restriction in free movement and language problem these villages are chosen for survey because of their typical socio-economic characteristics. To obtain primary information verbal interviews with the members of the Panchayat and government officials were taken during the survey. Besides, observations were made on different aspects of the villages in relation to their respective ecological settings.

In the third stage, data obtained from primary and secondary sources are processed and analysed with the help of suitable, meaningful and simple quantitative techniques such as simple ratio, lorenz curve, location quotient, Sopher's disparity index and Z-score. The results obtained from different statistical analyses are cartographically represented with the help of suitable maps and diagrams for giving a clear exposition of the spatial patterns.

In the final stage, the writing of the thesis is done incorporating analysis of data on various population characteristics of the State. Towards the end of the work, a synthesis of the different variables is done to divide the State into separate ethnic and population zones. Photographs are also appended to illustrate the different aspects of the surveyed villages.

Organisation of the Study

The contents of the work is broadly divided into three parts : (I) Introduction, (II) Analysis of the Problem, and (III) Synthesis and Conclusion. The part I comprises three chapters. In the first chapter the nature of the problem, objectives and hypotheses, significance and methodology of the study have been stated. In the second chapter an attempt is made to critically review some of the works done by the Indian as well as foreign demographers and population geographers to have a theoretical background of the study. In the third chapter, historical, geographical and economic backgrounds, and peopling of the study area have been incorporated.

Part two comprises three chapters covering the analysis of the demographic and socio-economic characteristics of the State's population from both spatial and temporal perspective. In chapter IV of this part an analysis of the pattern of population distribution, density, growth and migration is done. The next chapter, i.e., chapter V, deals with the structural components of population, viz., sex ratio, age structure, dependency ratio, marital composition, etc. In chapter VI, economic characteristics such as work participation rate and occupational pattern in spatial context is discussed. Besides, social characteristics, especially, literacy, religion and language are also discussed in this chapter. The last chapter of this part (Chapter VII) contains a brief picture of both population and economic characteristics of the selected surveyed village (revenue blocks) of the State.

The last part consists of two chapters. In chapter VIII a synthesis of the work is done by outlining the ethnic and the population zones of the State. And finally, summary and conclusion including the major findings of the work have been presented in the last chapter.

CHAPTER - II

REVIEW OF THE RELEVANT LITERATURE

Population geography as a field of systematic study is not very old. As a matter of fact, the importance of the field came to lime-light only when Trewartha (1953) made a strong plea for the subject in 1953 in his presidential address entitled 'A case for Population Geography', before the Association of American Geographers. Following this Clarke (1965), Zelinsky (1966), Garnier (1966), Demko (1970) and a few others contributed substantially to the growth of this sub-field. It is worth mentioning here that the indispensable facts and techniques for the study of population have become available only very recently, although the basic concerns of the field are as old as human society itself. Until the later half of the present century, population characteristics were dealt with only by demographers and they received inadequate treatment in geographic research. In any case, the development in the field has been stupendous during the last few decades. Therefore, a review of the contemporary development in the field is essential for doing any geographic research on population as it provides the basis against which the nature and scope of the work have to be outlined. It is in this background, the present chapter is devoted to review some of the relevant literature and allied research works done in the field during the period of its history of development.

To begin with, it hardly needs any emphasis that Trewartha's work was a landmark in the development of the field as a distinct branch of Geography. In nineteen sixty, his significant contribution towards population geography is 'A Geography of Population : World Pattern'. In this work he made comprehensive study of worldwide patterns of demographic, economic and socio-cultural characteristics of human population.

John I. Clarke, a British geographer (1965) is credited for his work in the development of population geography. He emphasizes on the spatial aspects of population and distinguishes population geography from demography. According

to him population geography is concerned with demonstrating how spatial variations in the distribution, migration and growth of population are related to spatial variation in the nature of place. To him, the human characteristics that form the content of population geography seem to fall into three groups; (i) absolute numbers, (ii) physical, social and economic characteristics, and (iii) population dynamics.

In 1966, Wilbur Zelinsky's work on 'A Prologue to Population Geography' provides the students of population geography an introductory text on this newly emerging sub-field. In his book the author not only explains the meaning, nature and scope, issues and limits but also stresses that 'the main objectives of population geography is to understand various population characteristics of places, their causes, consequences and interaction with various non-demographic phenomena, thereby producing distinct geographical personality for each inhabited part of the world. He also classified these characteristics into three categories : (i) the essentially biological; (ii) the economic, social and cultural; (iii) the elements of dynamic change. At last, he emphasises on the study of the balance of population and resources and a cultural approach towards the formation of a population region.

Madam Garnier (1966), a French geographer, in her book, 'Geography of Population' considered the description of demographic facts in their present environmental context. She also studied their causes and regional characteristics and possible consequences. Here, she deals with various aspects of world population taking relevant case studies from different parts of the world. Besides dealing with the demographic and economic aspects, such as working population, occupational categories of the different parts of the world, she deals with the racial complexity, population distribution and the various factors affecting them.

Later in 1971, Clarke in view of the rapid population growth and related problems faced by the developing countries, analysed the patterns of population change, their causes, consequences and variations particularly in the developing countries of Latin America.

There is a difference between the conceptual basis of population geography held by the western geographers and the Soviet geographers. The basic tenets of Marxist theory lie counter to the view that man could be moulded, consciously or unconsciously by his physical environment'. According to them, the distribution of population of a place is determined by the productive aspects of population. They place the population geography within the framework of economic geography. According to Melezin (1963) a Soviet geographer, 'Population geography is the study of distribution and productive relationships existing within various population groups, the settlement network and its fitness, usefulness and effectiveness for productive goals of a society'.

Alina Potrykowska, a Polish Geographer, in her work *Population Demographic Change and Environment in Developing countries*, mentions that 'the growth of population in developing countries remains staggeringly high and in some places has reached crisis proportions'. She says, due to high growth rate of population developing countries face increasingly serious environmental problems that threaten efforts to improve the standard of living, worsen health conditions, reduce income from agriculture and other sources.

Daniel Noin (1997) in his work *Population Growth in the Third World : Evolution and Disparities* studied whether the population growth is going on with the same rate today, its evolution and the disparities of demographic growth in the various parts of the developing world. He says that to reduce the population growth, economic development and family planning are must, and also equal emphasis should be given in the development of education and the improvement in the status of women. In a similar type of work C.R. Malakar (1997) studied growth in developing countries from 1950 to 2025. He gave special attention to the two 'population giants' of less developed region, viz., China and India. To have a better understanding of the growth pattern he examined the age composition in broad age groups and demographic parameters also.

The techniques and methods used to analyse the different aspects of population geography have undergone significant changes very recently.

Geographers now stress more on theory and model building and application of sophisticated quantitative techniques to explain the problems of population geography. In this context the contributions of Woods are worth mentioning (1979, 1982). His work has added a new dimension to the study of population in geography.

The study of population at present has a very wide scope. It is apparent that different geographers besides explaining the interrelations between the various demographic and non-demographic attributes of population in spatio-temporal context, are trying to inter-link the practical population problems with resource potentiality, environmental condition, population planning, policy making, etc.

Regarding the population characteristics Newman and Matzke (1984) state that 'the three so called demographic variables of fertility, mortality and migration constitute a core along with ofcourse, their outcome mainly population change. Perhaps an ever more central concern is population distribution Also the age sex and marital characteristics of population are usually given high priority, primarily because of their impact on the three demographic variables'.

In India the importance of study of population geography has been realised very lately. However, within a short span of time the subject has gained importance perhaps because of its increasing population problems that are exerting pressure on economic, social and political life of the country. Although the beginning was made by Geddes (1941) and Davis (1951) but the initial framework of India's population geography was provided by the doctoral work of Gosal in the mid fifties (1956). Under his supervision and by using the same methodology several scholars brought out their doctoral dissertation and research papers in the field.

Punjab University was the first in India to introduce teaching and research in population geography at the post graduate level (early 1960). Later, the subject got wider recognition and importance in different Universities. Besides doctoral works, several research papers written on various aspects of population of the

country were published in different geographical journals. Among them, the works of Bhat (1961) and Chatterjee (1962) on population distribution and density are worth mentioning. They studied regional variation of population at different levels in the country and analysed the causes of such variations. In 1970 Prakash analysed the pattern of population distribution and density of Uttar Pradesh by using district and tahsil level data. In another work, Mehta (1973) did spatial analysis of distribution of population in Rajasthan. He discovered that the intensity of cropping, rather than the percentage of cultivated area, was instrumental in spatial variations in population distribution in the State.

Siddiqui (1978) examined the agricultural density of Uttar Pradesh during 1961-71. He found that here, the pattern of agricultural density mainly determined by physiography and socio-economic conditions, whereas, changes in density were inversely correlated with density at the base year. Chandna (1979) found that the years 1921 and 1951 act as divides in the recent demographic history of Haryana. It was revealed that growth rate of population should inverse correlation with density of population. In another work, Chandna (1980) made a detailed analysis of distributional pattern of scheduled caste population in India. He used the districtwise data from 1971 census.

Besides, the works of Verma (1956), Sinha (1958), Krishan (1969), Nand (1966) and Ghosh (1970), Gill (1980) on the distribution and density of population of Punjab, Orissa, Bihar, East Rajasthan, Uttar Pradesh, and Hissar district (Haryana) respectively are worth mentioning.

Among the various topics, population growth and migration received the greatest attention especially in a country like India, where it has an alarming growth rate of population. Dayal (1959), while analysing the temporal variations of population growth in India during 1891 to 1951 stressed upon the consequent problem of rapid increase in population, decrease in per capita land and rural-urban migration. Gosal (1974) studied the population growth in India during 1961-71, highlighting the gravity of the situation caused by staggering increase in India's population. He urged that high priority should be given to the country's

defence, because the massive increase in India's population was neutralizing much of the gains of economic development. In 1975, Krishan also worked on the same theme by using district level data. He analysed the spatio-temporal variations of population growth in the country during the last two decades in the context of birth rate, death rate and migration. He finds that the inter-regional disparities in growth of population in India have been narrowing down since Independence. Chandna (1974) has analysed the growth of rural population in Rohtak and Gurgaon districts by using village level data intended to examine the impact of proximity to Delhi in this respect. It is found that, villages located on the roads radiating from Delhi have the highest growth rate.

In another work Gosal (1982) briefly studied the recent population growth in India. It was revealed that the areas of rapid population growth were associated with; (i) development of industries, mining and commercial activities; (ii) extension of irrigation facilities to semi-arid and arid lands; (iii) reclamation of wastelands; and (iv) extension of farming into the marginal hill lands. On the contrary, relatively low growth of population was registered in areas with relatively high pressure of population. He further recommends that population control and economic development have to be accelerated simultaneously. Sawant and Khan (1982) studied the factors responsible for the natural growth rate of population in Western Maharashtra. They found that population growth in the area is correlated with the proportion of females in workforce as well as male literacy rate. In another work Gill (1982) studied the population growth in Hissar district during 1951-71. Sharma and Kar (1997) have made a study of the Pattern of population growth in North-East India. The aim of their work is to analyse the population growth and the factors behind it and trace out the socio-economic consequences. They find that high natural increase and heavy influx of immigrants and in-migrants from outside are the main causes of exploding population growth. They beside giving emphasis on the control of rapid population growth, stressed particularly on the socio-economic and human resource development of the region through proper planning.

Among the studies on Migration, the work of Gosal and Krishan (1974) is worth mentioning. They used district level data on place of birth to evaluate in detail the patterns of internal migration in India. They find that a large majority of India's population spend their life in or near their place of birth. However, mobility of India's population has been increasing particularly since 1947. Maximum in-migration takes place to urban industrial concentrations, areas of plantation, newly reclaimed agricultural land, mining tracts and multipurpose project areas. Out-migration takes place from the densely populated area marked by small agricultural landholdings and overdependence on agriculture. Swarnjit Mehta (1973) analyses the pattern of migration in the Bist Doab during 1951-61. While studying the process of emigration from the regions he finds that there is a regular excess of out-migration over in-migration and the main causes is the severe pressure of population on the available resources.

Among the few works done on age sex composition, works of Gosal (1961) and Sen (1963) on sex composition of India's population are worth noting. According to Gosal, it is the differential in sex at birth followed by differential in the rate of mortality in the two sexes at different ages that together explain the existing overall sex-ratio in the country. Krishan and Chandna (1973) examined the sex composition of Haryana's population and observe the excessive deficiency of females in the State's population which is attributable to an unusual low sex ratio at birth and higher rate of mortality among the females. Siddiqui (1982) examined the regional aspects of sex ratio in Uttar Pradesh. From the analysis it is obtained that socio-economic structure and urbanisation are the important variables responsible for characteristic pattern of sex ratio in the State.

Krishan and Shyam (1972) viewed the progress of female literacy in India in spatial perspective. They used district level data for mapping percentage of literate females in 1951, 1961 and 1971. The main cause of areal variations in female literacy were found to be related to male literacy, age at marriage, degree of urbanisation and influence of Christianity. In another work Krishan and Syam (1974) observed a high incidence of literacy in Indian cities where 44 per cent of the total population were illiterate in 1971. There is a wide disparity between male

and female literacy. The spatial variation in literacy in the cities is related to their functions, population composition and size.

In another work, Krishan and Shyam (1978) discuss in detail the rural-urban differential in literacy. Among the studies on regional aspects of literacy Gosal's work (1967) on 'Regional Aspect of Rural Literacy in India is highly significant. It is found that besides a number socio-economic reasons, the prevailing mass rural illiteracy is largely a legacy of the past. Dutta (1982) examined the Pattern of Literacy in the Southern districts of West Bengal by applying regression model. Urbanisation was found as a strong explanatory variable of literacy.

In one of the work on working force and its occupational structure Krishan and Chandna (1973) found that despite of a net gain in migration, Haryana had the lowest proportion of workers in the country mainly due to a very high proportion of children in 0-14 years age group and extremely low participation of females in work. In 1981, Krishan analysed in detail the spatial variations in the proportion of non-agricultural workers in rural India. Raju (1982) found that female work participation rate decreases from South to North India because of different cultural contexts.

The studies on working force and occupational pattern of India's population are limited. Vishwanath (1975) made a study of occupational structure of women in India. She opines that, women are employed more in primary sector in the rural areas and in tertiary sector in the urban areas. However, female workers are low in the secondary sector in both the areas. A.B. Mukherji (1971, 1974) in his two identical works statistically analysed two different regional patterns of distribution of female agricultural labourers in Andhra Pradesh and Uttar Pradesh. He finds that high female participation is highly correlated with sex ratio, percentage of scheduled caste population, diversification of agriculture, size of landholdings, wage rates and percentage of female workers in the workforce.

The interest towards the study of population resource relationship is gradually increasing because of increasing pressure of population on the resource and environment through time and space. P. Sengupta's (1985) work on this line

is quite remarkable. He tried to divide India into a number of dynamic, prospective and problem regions on the basis of basic population characteristics and resource potentialities.

S.S. Chib (1991) in his work *Population Region of a Trans Himalayan Tribal Tract : A Case Study of Kinnaur District of Himachal Pradesh* tried to portray the Changing demographic landscape of Kinnaur through the medium of 'Population Regions' of the district. His work based on the analysis of census data and extension field work. He finds that first order population divisions of Kinnaur bear a large resemblance to physical divisions. However, with exogenetic influences, development of transport and communication and improved agricultural technology, the association between population and physical regions is gradually changing.

R.S. Tripathi (1991) in his work *Identification of Backward Areas in Human Resource Development in Uttar Pradesh (India)*, tried to identify the backward areas in human resource development and highlight the dimensions of their backwardness. The findings are, the districts of the western and hill regions of the State are in better condition in human resource development than other regions. The districts of the Eastern and Bundelkhand regions are much backward in comparison to other regions.

During the last two decades, a few books on India's population have been published which may further enrich the field. The important among them are the ones of Bhattacharyya (1978), Bhende and Kanitkar (1978), Chandna and Sidhu (1980), Chandna (1986) and B.N. Ghosh (1987).

The number of research works on scheduled castes and scheduled tribes population is very limited. The work of Gosal and Mukherji (1971) on scheduled castes population throws light on the spatial and relative concentrations of scheduled castes population in the country. Similar type of work is done by Mukherji (1971) on the patterns of distribution and density of scheduled castes population at regional level for Andhra Pradesh.

Roy Burman (1971) has done a remarkable work regarding the distribution of tribes in India. He divided the tribal groups of the country into six categories on the basis of territorial-cum-ethno-cultural relations, where he grouped the tribes of North-East India into a distinct category. Patnaik (1970), Prasad (1971), Mazumdar (1976), Sinha and Mishra (1976) and Banerjee (1976) worked on the spatial pattern of distribution, growth, sex-ratio, age structure, literacy, occupational structure of Madhya Pradesh, Bihar, Eastern Gujrat, Orissa and Singhbhum respectively.

Regarding the population study of North-East India, very limited work has been done till now. Because of its ethnic, social and cultural diversity, micro-level study of the population of this region is very essential. As mentioned earlier, Roy Burman (1970) studied the demographic and socio-economic aspects of the hill tribes of North-East India. Sharma's contribution towards the upliftment of women research in geography in Assam is remarkable. According to him literacy and educational level are the vital dimensions of social development of women. Considering this he did three valuable works at different level to study the distribution pattern of literacy and education of women in North-East India (1985, 1992 and 1993) . In another work, Sharma and Kar (1994) studied about the spatial pattern of women literacy in Assam and analyse the causes behind the existing patterns. They find that women educational development in Assam is not only low and uneven but also complex in character. Low literacy is the result of interplay of a host of physical, economic and cultural attributes of varied dimensions. The thesis of Bora (1990) on population of Siang Region: A Geographical Analysis, enlightens about the pattern of distribution, density, growth, migration, age and sex composition, marital status, work participation rate and occupation of Siang region and their spatio-temporal variation and causes. Das (1976) studied the character of demographic and socio-economic aspects of tribal population of Kamrup district, Assam. Singh (1986) made a detailed analysis of pattern of basic population characteristics like growth, distribution and density, migration, occupational structure literacy, religion, linguistic and social compositions of population of plains and hills of Manipur. He finds imbalance in the demographic and socio-economic aspects in the study region. He also highlights

on the increasing pressure of population on the resource base caused by mass immigration. Lokeswar Nath and M.M. Das (1995) finds out the distributional pattern of the different social groups or communities and their agricultural land occupancies in different physico-social regions. M. Taher (1997) has analysed the ethnic situation in North-East India on the basis of primary and secondary information and finds out the causes thereof and interpret them for a general understanding. ✓

Regarding the Population of Sikkim, very limited work has appeared so far. No detail research work on the population geography in general or on ethnic groups in particular has been done so far. For research purpose geographical literature on population of Sikkim is very limited. However, the authentic references about the land and the people of the region from the early days could be found from sources like the reports, travel accounts, etc., written by the British officials who visited or spent some time on official work or research purposes in Sikkim. Among them the reports of Campbell (1842-1874), White (1909) Waddel (1979 reprint), Hooker (1980 reprint), Risley (1894) and Macaulay (1884) are worth mentioning. These studies give a general idea of the land and people of the region. Most of the recent publications give a general idea of the physical, social and political aspects of the region. In the Government Publications, such as 'A Portrait of Population, Sikkim, 1981', certain aspects of population in Sikkim have been dealt with. Similar type of work has been done by Ram and Tamang (1998) of the census department. M.M. Jana (1996) made a study on the population planning in Sikkim. He tried to analyse the growth of population in Sikkim, and examined the population planning, policy measures and programmes designed to achieve economic and social development in the State.

In another work B. Thakur and P.S. Bhusan (1992) studied about the Land-Man Relationship and Distribution of Agricultural Land in East Sikkim. The work is done at revenue block level. He examined the spatial characteristics of per capita land available and factors influencing variation in land-man ratio. He found that revenue blocks around Gangtok have deficit in per capita agricultural land and the

upper valley of Dik chu, Rangpo chu, Rongli chu and Rora chu have surplus. Altitude and ethnic structure seem to be closely associated with land-man ratio.

A. Datta in his work *Land and Ethnicity* (1992) tried to highlight the nature of inter-relationship between ethnicity and land in Sikkim. It reveals that Nepalese possess largest number of holdings, on the other hand, the Bhutias and the Lepchas have high amount of per-capita landholdings. Bhasin (1989) made an effort to examine the complex pattern of two diverse tribal culture of the Lepchas and the Bhutias of North Sikkim. In another work Acharya (1997) studied the population growth among the different ethnic groups particularly Lepchas and Nepalese of Darjeeling and Sikkim during the last 150 years. He tried to examine the changing ethnic profile of the region and the impact of the influx on the marginalization process of the indigenous population. He finds that in both the areas major demographic explosion started since 1835. This change has basically been detrimental to the survival of the Lepchas. Changing ethnic profile has been an important factor to the marginalization of the Lepchas in the region.

Thus, the foregoing review of available literature apparently reflects that works on diverse population of North-East, particularly on Sikkim is very limited. Whatever works have so far been done comprises the works primarily from anthropological, historical, sociological perspectives. The entire North-Eastern region including Sikkim have diverse tribal and non-tribal groups with their distinct population characteristics, provide a wide and virgin field for geographic study. Thus, the present work makes an effort to study some of the major population aspects of Sikkim within the broad framework of Population Geography.

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CHAPTER III

BACKGROUND OF THE STUDY AREA

With an area of 7,096 sq. km., which is about 0.22 per cent of the total area of the country, Sikkim is one of the hilly states of North-East India. It is located in the Eastern Himalayas between the $27^{\circ}5'$ N and $28^{\circ}7'$ N latitudes and $88^{\circ}0'$ E and $88^{\circ}55'$ E longitudes. From north to south its area extends for 112 kms. and from east to west 64 kms. The State holds a strategic position because of its international boundaries with Tibet (China occupied) in the north and east, with Nepal in the west and Bhutan in the southeast. In the south, it has a boundary with the Darjeeling district of the state of West Bengal.

According to the 1991 census, Sikkim had a total population of 4,06,457 constituting 0.05 per cent of the total population of India, ranking 28th among the states of India. The State is connected with other parts of the country by the National High Way 31(A) that runs along the eastern bank of the river Tista, through Siliguri, a commercial city in the Darjeeling district. Gangtok, the state's capital, is connected by roads with different nearby places like Kalimpong, Darjeeling as well as its districts and sub-divisional headquarters. The State is thus, totally dependent on the road communication as there is no rail or air links. New Jalpaiguri and Bagdogra of West Bengal are the State's nearest rail and airheads respectively. The passes through which the State was linked with the neighboring country of Tibet in earlier times had been closed since long. Sikkim is thus an isolated landlocked State.

Four districts and eight sub-divisions constitute the study area. The sub-divisions are further divided into 411 revenue blocks and 42 forest blocks. As urbanization is a comparatively recent phenomenon in Sikkim, it has only eight towns of which only the capital town of Gangtok is a class III town and the rest are in class VI category. The distribution of population and the areas of the districts, the sub-divisions and the urban centres are shown in Table 3.1 (Fig. 3.1).

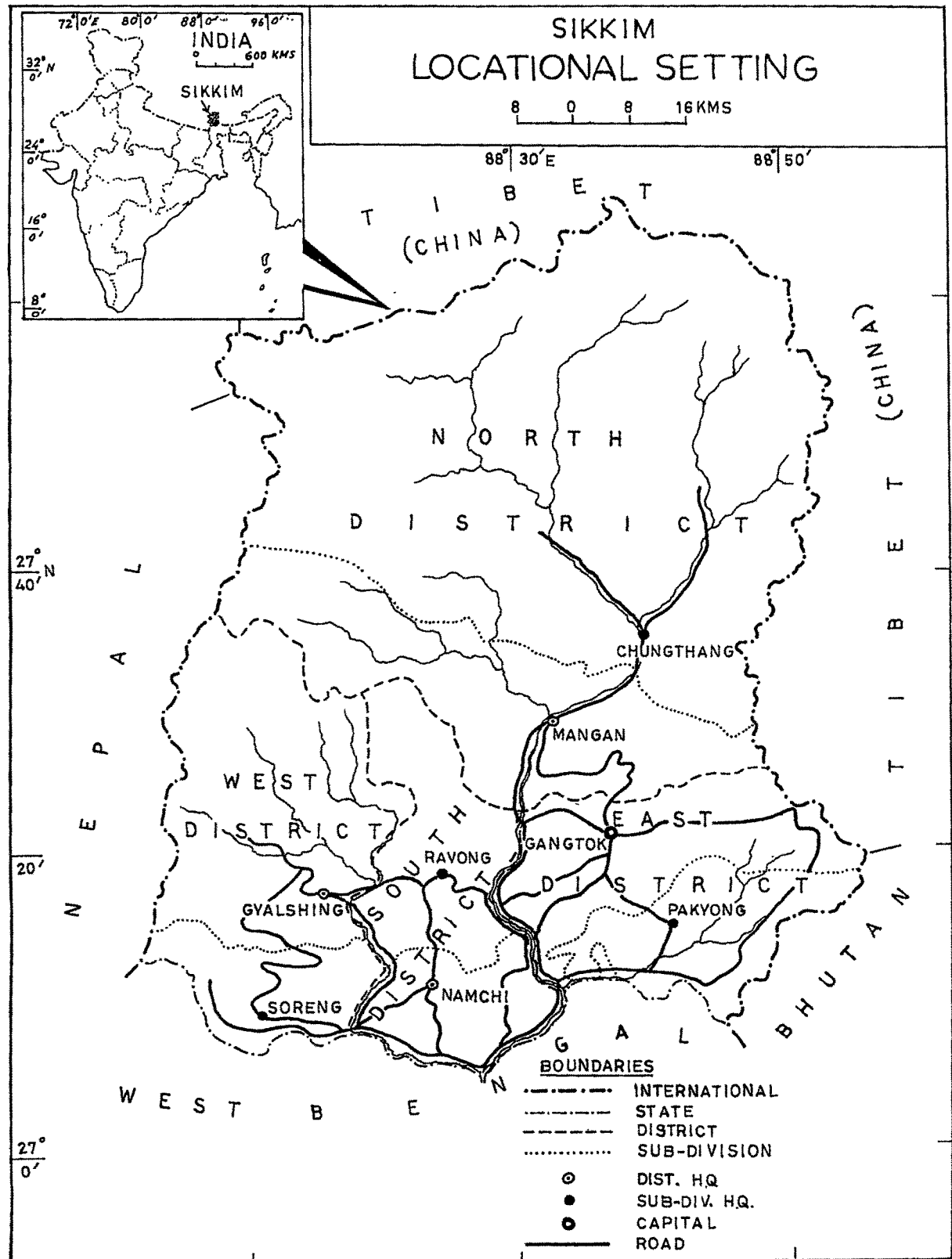


FIG. 3'1

For a comprehensive understanding of the geographic personality of the State, it is essential to discuss its (a) historical background, (b) geo-physical setting, (c) economic setting and (d) the peopling of the State.

Table 3.1: Sikkim: Primary Abstract, 1991.

| Districts/ Sub-Divisions | Area (sq. km.) | Total Population | Density (per sq. km.) | Number of Revenue Blocks | Urban Population |
|-----------------------------|-------------------|---------------------|-----------------------------|-----------------------------------|--|
| North Dist. | 4,226 | 31,240 | 7 | 45 | 803 (Mangan) |
| Chungthang Sub-Div. | 3,286 | 7,033 | 2 | 5 | - |
| Mangan Sub-Div. | 940 | 24,207 | 26 | 40 | 803 |
| East Dist. | 954 | 1,78,452 | 187 | 120 | 31,872 |
| Gangtok Sub-Div. | 598 | 1,37,070 | 229 | 81 | 25,024 (Gangtok) 3,868 (Singtam) 2,980 (Rangpo) |
| Pakyong Sub-Div. | 356 | 41,382 | 116 | 39 | - |
| South Dist. | 750 | 98,604 | 131 | 135 | 2,569 |
| Namchi Sub-Div. | 323 | 63,527 | 197 | 91 | 630 (Namchi) 1,939 (Jorethang) |
| Ravong Sub-Div. | 427 | 35,077 | 82 | 44 | - |
| West Dist. | 1166 | 98,161 | 84 | 111 | 1,762 |
| Gyalshing Sub-Div. | 868 | 50,383 | 58 | 64 | 717 (Gyalshing) |
| Soreng Sub-Div. | 298 | 47,808 | 160 | 47 | 1,045 (Naya Bazar) |
| Sikkim | 7,096 | 4,06,457 | 57 | 411 | 37,006 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B., Districts Census Handbook.

HISTORICAL BACKGROUND

The systematic history of Sikkim can be said to have begun with the consecration of its first Chogyal (King) in 1642 AD. The early history of the State is unknown to us, although we get some idea about the remote past through legends

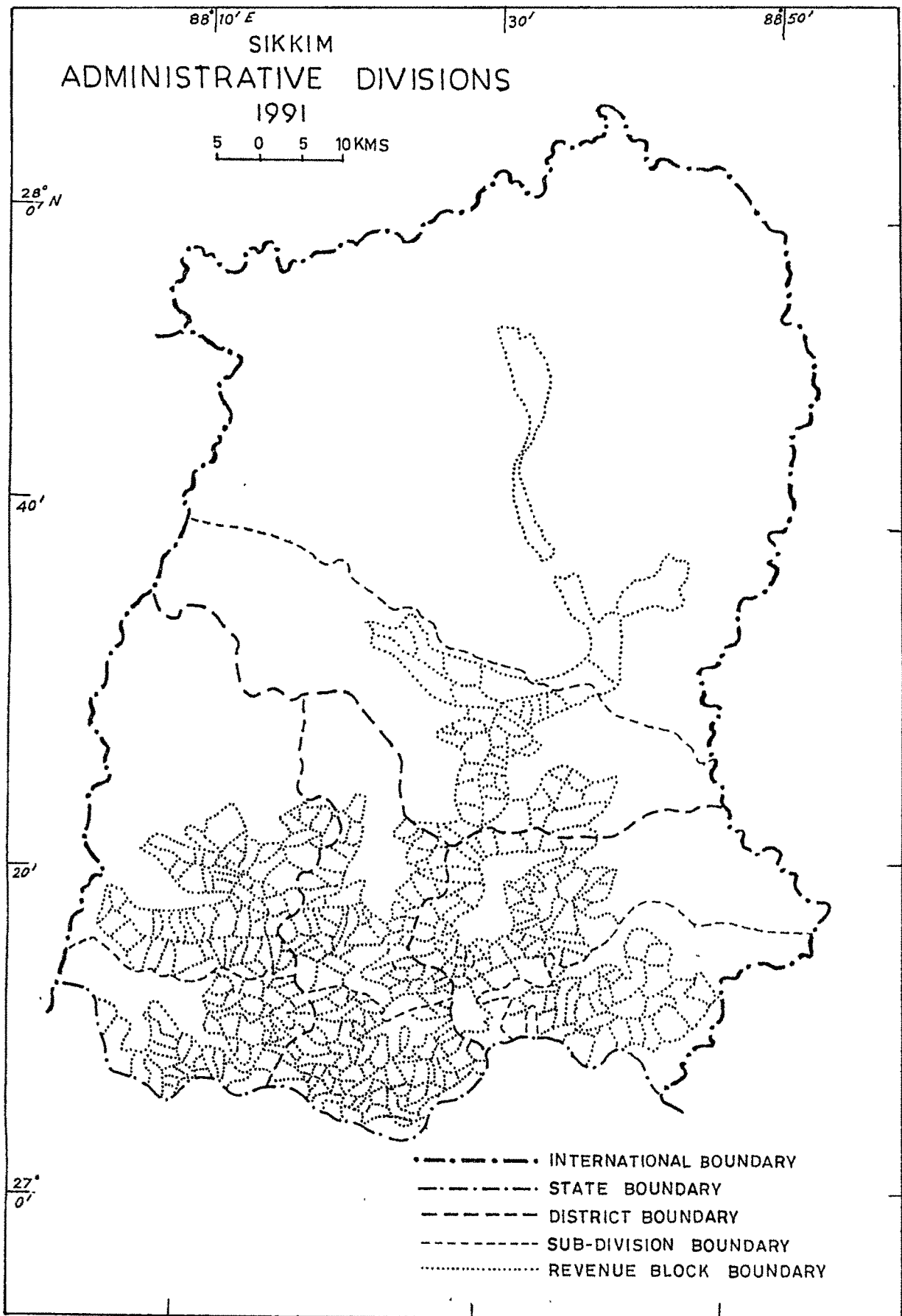


FIG.3'2

and mythical folklores of the Lepchas and the Limboos. They have not been however, authenticated by any of the historians so far. The early literatures available to us are mainly in the form of travel accounts and official report. The gazetteer of Sikkim, which was compiled by H. H. Risley in 1899 throws light on the different ethnic groups of the area.

In ancient times, Sikkim was known as 'Mayel-Lyang', meaning a hidden paradise to the Lepchas. Later on, the Tibetans called the region 'Denzong' meaning the valley of rice. The present name of Sikkim is of Limboo or Tsong origin (Nepali), which means 'A new house'. According to Dr. Waddel, the name 'Sikkim' is of Sanskrit origin meaning 'Crested'. Dr.H.H. Risley, in his Gazetteer of Sikkim State' has mentioned that the 'Sikhim' has been derived from the Limboo word 'Su' and 'Khim' meaning a new house or place. With the passage of time the word was corrupted into 'Sukhim', which was later anglicized to 'Sikkim' (Risley, 1894). The name thus seems to have originated more to mean a new place or house than any other else.

Before the advent of the Bhutias from Tibet, Sikkim is said to have been inhabited by different Kirati tribes. Among them Lepchas are considered to be the original inhabitants though, Limboos are also considered as very old community of the region. It is so because the border of Limbuana, the then land of the Limboos, had extension upto the left bank of the river Tista before the boundaries between both the countries were drawn. Dr. Hooker, in his book 'Himalayan Journal' mentioned that 'Mangars' were the aborigines of Sikkim. However, during the arrival of the Bhutias from Tibet, the region is understood to have mostly the Lepchas, although the Limboos and the Mangars are also reported to have been found in small numbers in different pockets of the region.

There is no authentic record regarding the origin of the Lepchas. From the way of their living it is believed that they have migrated from areas located along the foothills of Arunachal Pradesh. But the Lepchas believe that they are the descendants of a couple created by their God beneath the slopes of the sacred mountain, Kongchenjunga. According to David Macdonald, Lepchas were in

Sikkim prior to the 12th century AD (Macdonald, D. 1930). From the available early records and folklores it is understood that during the arrival of Bhutias from Tibet, the Lepchas of Sikkim did not have a systematic centralized political administration. They were distributed in groups in different areas and ruled by a chief selected by the people on the basis of proven merits, like skill in archery and other physical prowess. Hence, it is observed that they did not practise the system of hereditary rule.

As already mentioned, the real history of Sikkim begins with the emergence of the Chogyal kingdom under the Namgyal dynasty. After a religious strife in Tibet, a group of rival order fled southward into Sikkim. At first, the Tibetan immigration was very less. Later, with the increase in the number of migrants, need for organization was felt. As a result, in the early 17th century, after the international conflicts and Chinese war, three Red Hat sect Lamas fled to Sikkim and established a Tibetan kingdom. They were Lama Latshun Chembo, Lama Katog and Lama Nga-Dag, who together consecrated the first Chogyal of Sikkim in 1642 at Yuksom in the western part of Sikkim. The Namgyal dynasty ruled for more than three centuries. After the establishment of Sikkimese kingdom, "the Lepchas became an inferior subject race under the domination of the Sikkimese Tibetans or Bhutias to which race the Maharajas and the big land owners belonged" (Gora, Geoffery, 1984).

Phuntsog Namgyal was the first king to set up a centralized administration in Sikkim. He ruled over a vast territory that extended from Limbuana (the present day eastern Nepal) in the west to Chumbi valley and Thang-La near Paro in Bhutan in the east. The southern boundary extended upto Titaliya in the Bengal-Bihar border including the entire Darjeeling district. Phuntsog Namgyal divided the country into twelve Dzongs (Districts), each under a Lepcha Dzongpon (Governor). To assist him in the administration, he had a council of twelve ministers mostly from Bhutia noble families. In course of time, these councilors became the powerful Kazis or the feudal lords of Sikkim. During his reign, the king had to fight intermittently to take control over the smaller tribal groups. The Limboos and the Mangars paid a nominal tribute to the Chogyal every year and

recognized him as their king, but otherwise were free to rule themselves as they liked. During this time, the Lepchas are said to have converted into Buddhism. The Limboos, however, continued with their own religion.

During the rule of second Chogyal, Tensung Namgyal (1670), the capital of Sikkim was shifted from Yukson to Rabdantse (more towards east). When the third Chogyal, Chakdor Namgyal succeeded his father, his half sister Pedi Wangmo, claimed the throne by virtue of her seniority in age. She conspired with Bhutan, her maternal land, against the king. As a consequence, in the years 1700-1706, the Bhutanese force invaded Sikkim and captured the capital. They occupied the country for eight years. During this period, influx of the Bhutanese population took place. Later, with the aid of the Tibetan Government, the Bhutanese were expelled and eventually Chakdor Namgyal was reinstalled on the throne. From that time up to 1888, the Tibetan power exercised great influence at the court of Sikkim. During the reign of the fourth Chogyal Gyurmed Namgyal, Lama Jigme Pao from Tibet became the regent.

When the fifth Chogyal, Namgyal Phuntsog (II) ascended the throne (1717), the Kazis and the nobles of the court opposed to it, as he was considered as an illegitimate son of Gyurmed Namgyal. But the young king got support from the Lepchas and the Limboos. During that time, although the Limboos had a good position in the Sikkimese court, but due to Bhutanese occupation and with the increasing influence of the Tibetans in all the matters, they slowly drifted away. At last, towards the end of the 18th century Limbuana got merged into Nepal.

When the difference between the Bhutias and the Lepchas became wider, that time the Tibetan Government sent one Rapden Sharpa to settle the dispute and to restore normalcy in Sikkim. For that he allowed to give the greater share of power to the Lepchas by recognizing them as Tumiyang or superintendent of cultivation. During his time, the Bhutanese invasion of Sikkim was repelled. After the negotiation at Rhenok, in eastern Sikkim, the Bhutanese withdrew to the present boundary. But a portion of land mostly inhabited by the Mangars was permanently lost to Sikkim.

During the period of sixth Chogyal, Tenzing Namgyal (1780), despite the treaty of 1775, the Gorkhas entered Sikkim unobserved through Chiabhanjan pass (1788) and made a lightning raid on Rabdentse, the capital. The Chogyal and his family fled away and sought asylum in Tibet. During that period, they occupied Sikkim's territories west of the river Tista including Ilam in Taplijung and the southern part of Sikkim. Until 1815, all the inhabitants of the south of Tista tract including Pemiongchi paid tribute to Nepal.

The seventh Chogyal of Sikkim was Tsugphud Namgyal (1793), who ruled for 70 years, the longest period in the history of Chogyal Dynasty. During his reign, British power increased in this Himalayan kingdom. The attention of the British was attracted towards Sikkim due to its strategic importance. They wanted to develop a trade route with China via Sikkim and Tibet. Hence, the British were ready to offer help to the Chogyal of Sikkim to prevent the problems created by the Nepalese and the Bhutanese.

In 1814-1815, the British Government got involved in a war with Nepal, where Sikkim also supported them. The war came to an end with the signing of the treaty of Segauly on December 2, 1815 between the East India Company and Nepal. By this treaty Nepal returned the low land tract of Morang (Terai) in south eastern part and secondly, agreed not to disturb or infringe the Raja of Sikkim (as named by the British). Again, they signed another treaty at Titaliya in 1817, by which some of the territories earlier lost by Sikkim to Nepal were returned to the Raja. "The treaty of Titaliya, thus marked the beginning of the British interest in Sikkim as a trade route to Tibet and as a factor in India's security" (Grover, B.S.K., 1974). The British reserved the right of arbitration in any dispute arising between Sikkim and Nepal to themselves.

Although Sikkim had security against external disturbances, it had no relief from its growing internal feuds. The Lepchas were showing displeasure over the Bhutias' dominance and when the Bhutias murdered the Lepcha Prime Minister Chanzod Bolak, a large number of his Lepcha followers fled over to Ilam territory in eastern Nepal. The Lepchas, with the support of the Gorkhas made several

raids into Sikkim and caused border disputes in 1828. During that time J.W. Grant, the Commercial Resident at Malda was deputed to Sikkim to look into this matter. As a result of British intervention, the Lepcha intruders were pushed back. During the inspection visit to Sikkim Grant and Captain Lloyd, who commanded the British Frontier Force at Titalia, came across a village called Dorje Liang (modern Darjeeling), located in the western part of Sikkim near Nepal border. The cool climate and the natural beauty of this area impressed them very much. They decided to make it a health resort for the British soldiers and an outpost for the frontier region. When the British discussed about it with the Raja of Sikkim, at first, he and the members of Sikkim Darbar were reluctant. But later, considering the constant need for British help and protections, they ultimately accepted the offer. In February 1, 1835, Darjeeling was given to British and in exchange Sikkim received an annual subsidy of Rs.3,000 as compensation in 1841, which was increased to Rs.6,000 in 1846.

In Darjeeling, the progress of developmental work provided numerous facilities for free trade both in mercantile commodities and in labour. With the start of tea plantation, large number of labourers immigrated from Nepal. The new opportunities also attracted the Lepchas and the Drukpas from Sikkim and Bhutan respectively. Such a development not only threatened the privileges (e.g. Trade monopoly) traditionally enjoyed by certain Bhutias but also disturbed the age-old population balance and inter-tribal relations in Sikkim. In 1847 Sikkim Raja appointed an anti-British Tibetan called Tokhang Namguay as his Dewan. He not only opposed to the new settlement and the trade monopoly of Darjeeling but also started to obstruct in the movement and other activities of the British officers. He arrested Campbell and Hooker, a botanist, while travelling in the restricted parts of Sikkim.

The British government took a serious offense of this act of Chogyal and to punish him they annexed Morang (Terai), which has been previously gifted to him and the hill tracts around Darjeeling, i.e., almost the entire income (Rs.4,600) of the king permanently. Apart from this, Darjeeling compensation was suspended. The king could not face the problem and left the entire state affair to the

management of Dewan Namguay. Because of continuous problems created by the Dewan from the Sikkim side, British Government captured the capital at Tumlong (which was shifted from Rabdentse due to Gorkha's attack) in 1861. Dewan Namguay fled to Tibet. A new treaty consisting of 23 articles was signed between Ashley Eden, a British officer and Prince Sidkeong Namgyal on 28th of March, 1861 at Tumlong. This treaty was of great importance in the British-Sikkim relation because, (i) it brought Sikkim under the British control, (ii) all the demands of British Indian Government like road construction upto the Tibetan border, establishment of trade relation with Tibet, etc., were realized, (iii) the Raja was asked to stay in Sikkim for nine months in a year, (iv) Dewan Namguay was banished from Sikkim and (v) the Raja regained all the territory occupied by the company. This treaty also checked Tibetan influence in Sikkim for some time.

After this Sidkeong Namgyal became the virtual king of Sikkim in 1861. He maintained a cordial relationship with the British. His half-brother Thutob Namgyal succeeded him in 1874. During his period (1878) a road was constructed to Jelep-La on the Tibetan border via Sikkim. During his time the British encouraged the Nepalese to settle in Sikkim so that proper exploitation of the potential resources could be made possible. These settlers were engaged in reclamation of the forestland for cultivation, exploitation of copper mines and other developmental works like the construction of roads and bridges, etc. Viewing this to be a threat to Sikkim, the Raja Thutob Namgyal made a request to the British Government to restrict the settlements to southern part of Sikkim. This arrangement, however, did not workout as a number of influential Bhutia landlords were opposed to it. As a result, a communal problem between the Bhutias and the Nepalese broke out in 1880. Dewan Namguay (the ex-Dewan), who was quite influential in Tibet had conspired to turn the Tibetan Government also anti-British. This led to a fall in trade in Sikkim-Tibet border. To discuss the matter, when a mission to Tibet under Colman Macaulay was progressing towards the border, the Tibetan force stopped them and advanced about 20 miles towards Sikkim and occupied a place called Lingtu. The British expeditionary force later restored this.

In June 1889, J. Claude White was appointed as the first British political officer in Sikkim. He was responsible for the modern framework of administration in Sikkim. After the Anglo-Chinese convention in 1890, China acknowledged Sikkim as a British protectorate. The Govt. of British India became solely responsible for the internal and external affairs of Sikkim and recognized the watershed of the river Tista as the boundary between Sikkim and Tibet.

In 1906, Sikkim State affairs were transferred from the provincial government of Bengal to the Government of India. During this period (in the reign of Thutob Namgyal), roads and bridges were constructed over Tista, Rangit and their tributaries and communication was improved. The first census of Sikkim was taken in 1891, according to which the population of Sikkim was 30,000 composed of different ethnic communities. In 1906, the first modern type of school was set up at Gangtok.

In 1914, Sidkeong Namgyal became the tenth ruler of Sikkim. During his short period of reign, he introduced a number of reformative changes in the administration. He opposed to the privileges of the feudal aristocracy and the religious hierarchies of the State. In 1916, an independent judiciary was set up, judicial functions of the Kazis and landlords were brought under the supervision of the superior courts. In 1924, forced labour was prohibited, lease system was abolished and peasants were given the right to pay taxes directly to the State. He also opposed to the polyandry system of marriage.

After the withdrawal of British from India in 1947, Sikkim signed a standstill agreement, which continued the old relation between Sikkim and the Government of India. In 1950, another treaty signed with India was aimed at re-establishing Sikkim a protectorate of the Government of India, with the autonomy in the internal affairs. This treaty brought its external affairs, i.e., defence and communications under the control of the Indian government. The treaty also conferred entitlement to Sikkim to receive from India an annual grant of Rs. 3 lakhs.

After 1947, the political and demographic scene of Sikkim gradually changed. The State witnessed the growth of a movement for democratization. This

movement was initially inspired by the Indian struggle for freedom. In 1949, there was a major demonstration against the Maharaja for the formation of a popular ministry (elected council). On the 4th of May, the same year, the first ministry was formed. It however, did not last long and was soon dismissed, and a senior Indian official was appointed to act as Dewan in the State.

In 1962, when trouble started in the Sikkim-Tibet border due to Chinese aggression, an emergency was declared and all the powers were vested in the Maharaja. The Chogyal of Sikkim and the Dewan looked after the administration. Maharaja Tashi Namgyal died on December 2, 1963 and his second son Palden Thondup became the Chogyal. During his time, democratic movement of the people had slowly but steadily gained momentum. New political parties were formed and demand for democracy became stronger. On 9th of May 1973 a tripartite agreement between the Chogyal, major political parties and the Govt. of India was signed. The agreement envisaged the establishment of a fully responsible government with a more democratic constitution. To realize that goal an election was held in April 1974. On the 4th of July of the same year, Chogyal Palden Thondup Namgyal signed the Constitution Bill. According to the provision of the act, Kazi Lhendup Dorji Khangsharpa was sworn on the 23rd of July, as the Chief Minister of Sikkim. Thus, the country passed from autocracy to democracy. At last on the 16th of May 1975, the President of India gave assent to the 36th Amendment Bill to the Indian Constitution, that formally Sikkim merged into the Indian Union as its 22nd state.

GEO-PHYSICAL SETTING

Geographical environment and human milieu both are interrelated and responsible for the emergence of a distinct demographic and socio-economic pattern. To understand this relationship and the processes involved with interaction, it is necessary to examine the geo-physical set-up of the region in right perspective because it has both restrictive and permissive relation to human activities. It is in this context that the essential elements of the physical

environment, viz., physiography, geological structure, drainage, climate, soil and vegetation of the study area is taken up for discussion in the following section.

Geological Structure

"Geological structure and processes of erosion influence the surface appearance of landforms, which are intricately related to man's use of the land" (Singh, R.L., 1971). Geologically Sikkim covers a segment of the eastern Himalayas, which falls within the geological history of the youngest mountain building epoch of the Himalayan orogeny. Sikkim Himalaya rises abruptly from the plains of Bengal and suddenly attains its great elevation above the snow line within a short distance from the foot of the mountain.

The Geological Survey of India set up a full-fledged circle at Gangtok in August 1981. Although, geological investigation has been started since early sixties of the present century in this zone, but Sikkim is still not studied and explored fully. As a result, not much of detailed information about the geology of the region is available compared to many parts of the country.

Being a part of the Eastern Himalayas, Sikkim Himalaya was formed out of the Tethys geo-syncline during the Tertiary period. It contains both young and old rocks. The sediment, which has been accumulated in different periods, got metamorphosed into rocks and has been subjected to intense folding, faulting and thrusting movements. Over these rocks subsequent denudation repeated over millions of years and gave rise to the present day topography of the region.

The physical shape of Sikkim is partly due to geological structure. The northern, eastern and western portion of the State is constituted of hard (massive gneissose) rock capable of resisting denudation to a considerable extent. On the other hand, the central and the southern portion is chiefly formed of comparatively softer, thinner and slaty half schistose rocks which are more easily denuded. Therefore, this area is less elevated and more populated.

The Northern part of Sikkim consists of the gneissic groups of rock. It is uninterruptedly stretched over a distance of around 75 miles. The Southern part is covered by the central crystalline rocks consisting mostly of granite laminated rocks (gneiss), which forms the mighty Kanchanjunga and its surrounding peaks. Around Chungthang and Lachen in North Sikkim are found the Chungthang group of rocks bearing schists and marble. Further south occurs the Daling group of rocks containing phyllites, slates, and quartzite with occasional granite gneiss. This group of rocks occurs from Dikchu through Gangtok to Rangpo. The Sikkim Daling occurs somewhat in the form of a dome shaped anticline. Here, the softer rocks are confined mainly to the lower granitic masses forming ridges and hilltops. In the west Sikkim, a group of rocks containing limestone, slate and dolomite occur in the Rangit river valley and around Naya Bazar and Namchi towns. To the further west the high hills are formed of granite. In the southwestern part of the State occurs coal bearing 'Gondwana' sedimentary rocks.

Sikkim Himalaya is geologically active and because of its location in the Alpine Himalayan seismic belt, earthquakes accompanied by landslides are common. The State has already experienced tremors on several occasions, sometimes severe enough to cause large scale destruction as in 1897 and 1934 and moderately severe like in the year 1987-88. With the large scale deforestation and resultant denudations, and other harms done to the land surface, the chances of future disasters of larger magnitude have in fact increased.

Economic Geology

Sikkim is very rich in mineral wealth, but the structure and topography of the State are not conducive to the commercial exploitation of the mineral; as the thrusts are very complex that it is difficult to locate the rich pockets of minerals. Since 1960, Sikkim Mining Corporation, a joint undertaking of Govt. of India and Sikkim has done pioneering work in the field of mineral exploitation. This survey, conducted by the Geological Survey of India, reveals that there are appreciable amount of copper, zinc, lead, dolomite, limestone, marble, coal, etc., throughout the State (Sikkim Herald, 1970). The Atomic Mineral Division of the Govt. of India

has recently traced the presence of Uranium at Pabring, Maniram and Gurpish Gumpa areas of the State.

Table 3.2: Location of Mineral Resources of Sikkim

| Mineral | Location |
|------------------------|--|
| Copper | Rangpo, Dikchu, Pachey-Khani, Rorathang, Jogdumb near Chakhung, Soreng, Namchi, etc. |
| Coal | Rangit river valley, Namchi area, Patkhola, Roathak Khola and Rinchinpong. |
| Dolomite | Rangit river valley at Reshi (West district) and Bhanjan (South Sikkim). |
| Graphite | Dareli-Chitrey (West district), Bhot near Chungthang (North district). |
| Lead & Zinc | Rangpo, Dikchu, Jugdam in East Sikkim. |
| Lime stone | Rishi and Rangit river section, Rinchenpong and Changu. |
| Marble | West Changu lake and near Chungthang |
| Iron | Bhotang |
| Garnet | Near Pachey-khani |

Source: A report published by G.S.I. of Sikkim.

Among all the above-mentioned mineral ores copper mines are the oldest. They are wide spread in Sikkim and constitute the main source of its prospective mineral wealth. Copper has been mined in Sikkim since 1875. About 0.15 million tones of the ore has been mined up to the year 1978-79 out of the reserves of 0.66 million tones (Census, 1981). Bhotang, the most promising mine has a resource of about 41,000 tones.

Physiography

The topography of Sikkim is similar to that of any other young mountain terrain featured with high mountain peaks, gorges, sharp crest ridges, narrow valleys, hanging valleys, etc. The physical configuration of Sikkim is partly due to the southerly direction of the main drainage and partly due to the geological structure. As stated earlier, the three sides of the region, i.e. northern, eastern and western portions are constituted of hard massive gneiss rocks capable of resisting

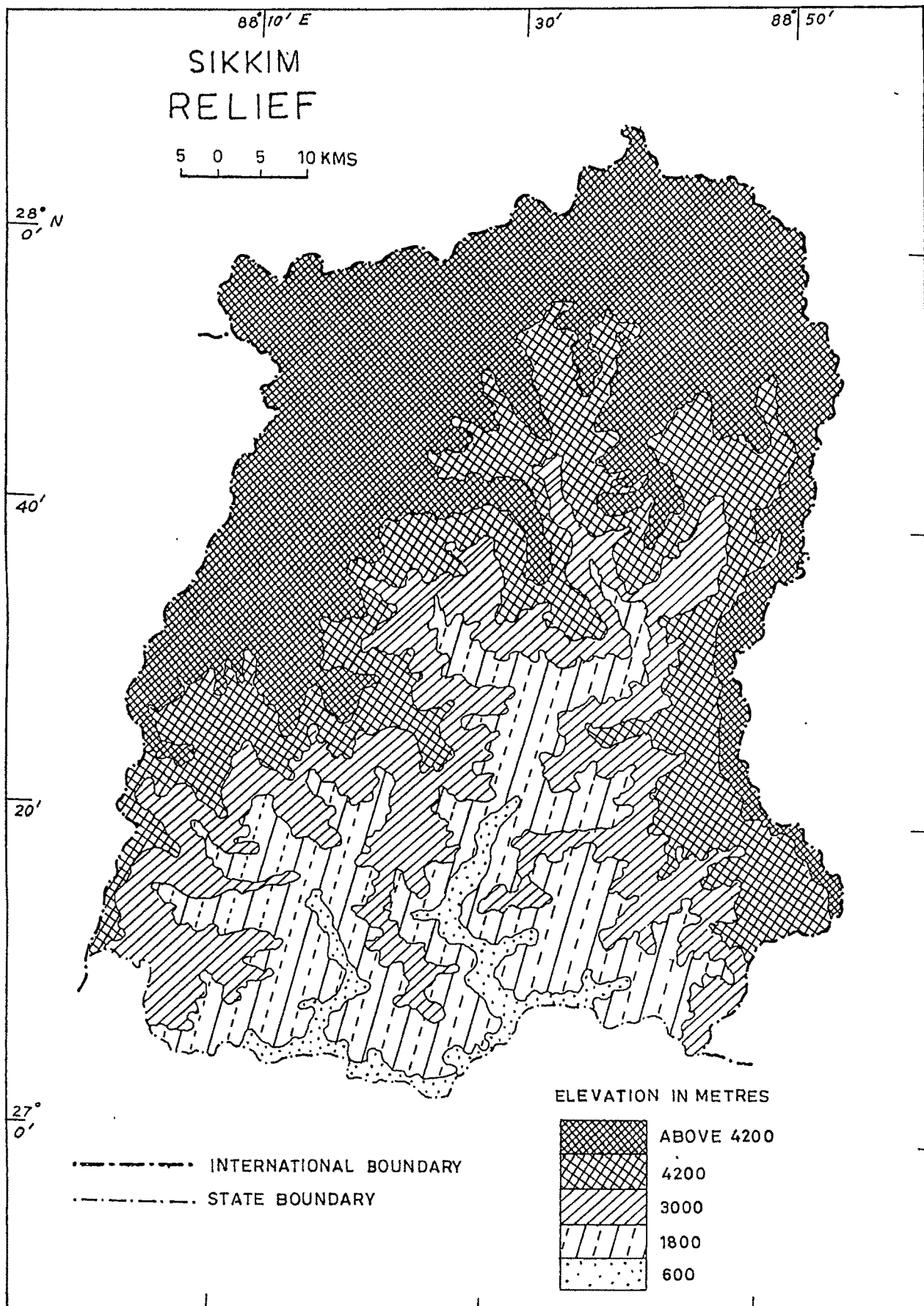


FIG. 3'3

denudation to a considerable extent, on the other hand, the southern and the central part is formed of comparatively softer, thinner and slaty half-schistose rocks, less resistant to denudation. Being a part of the inner mountain ranges of the Himalayas, the region has no open valley and no plains but varied elevations ranging from 300 to 5000 metres above the mean sea level. It may be viewed as a stupendous stairway leading from the northern border of the Tibetan plateau down to the plains of West Bengal. As mentioned earlier, the central and the southern area are less elevated and therefore, densely populated in Sikkim.

Two transverse ranges running north to south enclose the State. They are Singalila ranges in the west and Chola ranges (Donkhya range) in the east. Another north-south ridge runs through the central portion of Sikkim separating Rangit from the Tista valley. Tendong (8,670 ft.) and Moinam (10,637 ft.) are two of its best-known peaks. The north-south direction of the principal ridges is most probably due to the original slope of the Himalayas. The central basin is only 64 kms. wide and cut-off from Tibet by the broad convex arc of the Great Himalayan peaks. It is built-up of crystalline rocks, in which river Tista rises. To the south it is blocked by the resistant rocks of Darjeeling ridges through which the river Tista has curved a deep narrow gorge running west of Kalimpong. This extensive bowl-like mountain girdled basin, formed by erosive work of the Tista system is inverted, occupying the axis of the enormous over-folded anticline and the Kanchanjunga represents the core. The dissected Sikkim Himalaya is located immediately opposite to the alluvial gap between the hills of North-Eastern peninsular India and between the Shillong plateau of Meghalaya, and has been facilitated by excessive rainfall from the uninterrupted sweep of the moisture laden south-west monsoon.

Sikkim Himalaya is decorated with some of the most important peaks of the world. Kanchanjunga (8,585 metres) is the highest peak of the State and the third highest in the world, which lies on the Singlila range (the border of Nepal and Sikkim). The indigenous Lepchas regard it as the guardian deity. From north to south this range is decorated with several peaks. To the south and southeast of Kanchanjunga peak lie Kumbha Karna (7,711 metres), Gocha (6,115 metres), Pandim (6,706 metres), Narsing (5,825 metres), Kabru (6,545 metres), Pyramid

(7,365 metres), Lhonak (6,100 metres) and Jonsang (7,442 metres) peaks. On the other hand, Simvo (2,828 metres), Tent peak (7,315 metres), Nepal peak (7,163 metres), Fluted peak lie to the north, and Siniolchu (4,858 metres) to the east of Kanchanjunga. The highest part of Sikkim is in the Northwest. The arc of the great Himalayas in the north runs eastward from Kanchanjunga to Kanchengyao. The important peaks of north Sikkim are Chhungakhang (5,824 metres), Chhungakhang (6,212 metres), Kangchengyo (6,838 metres), etc.

The mountain ranges of Sikkim contain many important passes also. These passes played very important role in determining the political and socio-economic set-up of Sikkim. As mentioned earlier, these passes are the gateways through which people from Tibet came over to Sikkim and consolidated their political power, brought their culture and traditions that has amalgamated in the present day's Sikkimese culture. The Northern border from Singalila to Donkhya contains many important passes like Chorten Nyima-la, Naku-La, Kongra-La, Chhulung-La, Bamchho-La and Sere-La. The passes in the greater Himalayas are so high that they were seldom used as communication routes. Kongra-La at a height of 16,000 ft. used to be the annual migration route for the hardy pasturer (grazing) community of Lhopas who wandered in the region indifferent of the boundaries that divided the Nations (Kotturan, George, 1983). The passes of the eastern ranges are more accessible than others. The Kungyami-la, Yak-La (14,400 ft.), Cho-La (14,550 ft.), Thangkar-La (16,000 ft.), Sibu-La, Gora-La, Nathu-La (15,512 ft.), Jelep-La (13,254 ft.) and Batang-La link Sikkim with Chumbi valley of Tibet. Immediately after the occupation of Tibet by China, the frontier of Sikkim, which had been frontier of peace and cultural intercourse also, got converted into an area of tension and conflict (Singh, O.P., 1985). As a result Nathu-La and Jelep-La have gained great strategic importance to both India and China. In the west, between Sikkim and Nepal, the most important pass is Chaibhanjan at a height of 10,320 ft. The other passes in the west are Kang-la (16,740 ft.) and Kangra-La (14,770 ft.) north of Chaibhanjan. In the southeast, the boundary between Sikkim and Bhutan is marked by Pango-La range. The important pass of this area is Doka-La. This part is the trijunction of Sikkim, Bhutan and Tibet.

The snow line of Sikkim is about 4,900 metres. The glaciers come down to 700-1,000 metres below the snow line. The lowest level, at which the old moraines are found, is the valley of Lachung (2,676 metres). A number of glaciers descend from the eastern slopes of Kanchanjunga. Among them Zemu is the biggest, which is draining the Kanchanjunga group of peaks. The thickness of ice of this glacier is nearly 200 metres, extending for 26 km., from which river Tista rises. Other glaciers are Talung, Lhonak, Changsang, Jonsang, Tista and Changme, which cover a considerable portion this State. Sikkim is full of lakes and hot springs and many of them are important to the indigenous people from the religious point of view. There are more than hundred small and big lakes in the region, among them Chho-Lhamo, Gurudongma, Green Lake, Tsomgo (Changu), Me-Mein Tsong, Khechoperi, Bidang Cho, etc., are important. There are about sixteen hot springs in the State, among them Yumthang on the east bank of the Lachung river, Phurcha-chu on the east of Rangit river, Ralong-Cha-Chu on the west bank of the Rangit river, Momay hot spring at a height of 16,000 ft. above the sea level and less than a kilometre below the glacier of Kanchanjunga, Shinmo-Cha-Chu in Talung are important.

Drainage System

Numerous seasonal and perennial rivers and their tributaries dissect Sikkim, forming a unique and intricate river system. Because of the folded structure of the mountain, all the river system of the region has developed dendritic pattern. In accordance with the trend of the transverse ranges and the spurs, the course of the main rivers of the region are generally aligned in the north-south direction.

The horseshoe like formation of the mountain ranges in the north constitutes the watershed of the rivers of the region. The most important river of the State is Tista, which divides the region into two unequal halves. The central basin of which is underlain by the comparatively softer rocks. This is the catchment area of the headwaters of Tista and its affluents. This river system

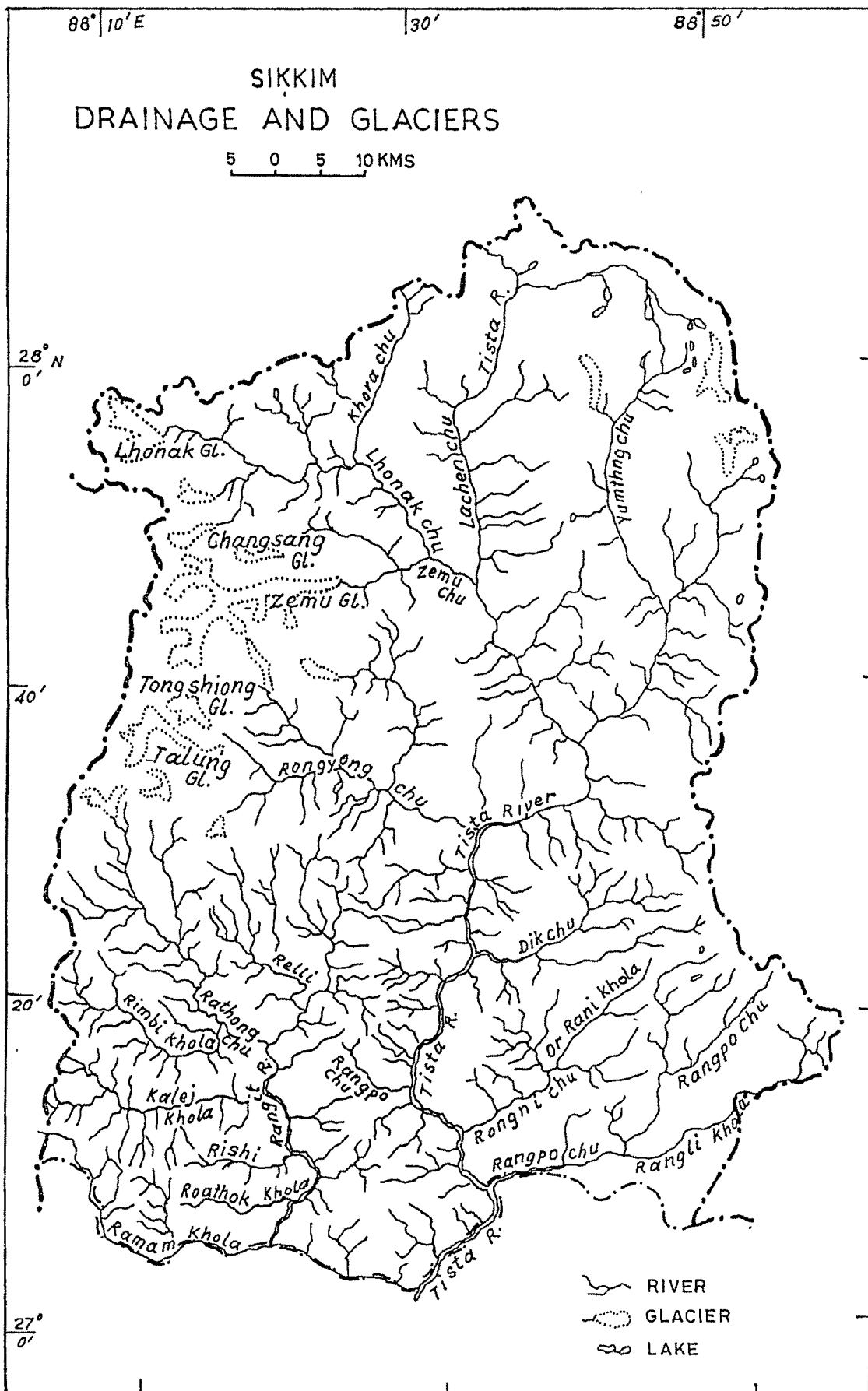


FIG.3'4

forms narrow gorges and large basins in the structurally weak and less resistant crustal parts of the central anticline axis of the region.

The river Tista, the artery of Sikkim, rising from the snout of the Zemu glacier, is fed by numerous tributaries. Within a few kilometres from the source it drops to 1,000 metres near Singhik and Mangan. Here, the tributaries of Tista converge into it forming a centripetal pattern. After travelling for 152 kms. through the North district and the boundary of East and South districts, it leaves the State at Rangpo and takes a sharp bend towards west. Before joining with the river Brahmaputra, it curved a deep gorge through the resistant rocks of Darjeeling ridge of Darjeeling district and drains through the Bengal plains. The Tista basin has a southward slope, being broad at the top, where they leave the watershed and gradually contracting towards the south. At several places, Tista and its tributaries formed deep transverse gorges and canyons. According to S.C. Mukhopadhyay (1998), "the upper Tista basin is found to have extended through narrow gorges (I-shaped and steep V-shaped) at several sites being marked by the evidences of uplifts of the underlying rocks". There is a striking contrast between the deep gorge bottom of the Tista and the enclosing mountain including the Kanchanjunga group of peaks. These evidences prove that the rivers in the Tista basin are antecedent.

The main trunk tributary which forms a unique drainage system with the countless streams flowing down the slope of the Himalayas is the Rangit. It is the most important tributary of Tista. It originates in the Talung glaciers in West Sikkim. River Rangit travels for about 60 kms. down stream and joins with the Tista below Melli Bazar. It forms the natural boundary between Sikkim and Darjeeling (West Bengal). It also divides the South district from the West district. It is fed by the Kanchanjunga group of glaciers and a number of tributaries flowing from the eastern slope of the Singalila range and also from the western slope of the water divides of Tista and Rangit. Important tributaries are Relli, Rathong, Rimbi, Kalej, Rishi and Roathak.

In the North district, Tista is fed by the tributaries called Lachung-chu, Lachen-chu, the Zemu-chu, Lhonak-chu, Pauharni-chu, Talung-chu, etc., which originate from different glaciers and lakes of the region. In the East District the important tributaries are Rongni-chu, Takchem-chu, Rangli Khola and Rangpo-chu, which originate from the western slope of Chola range. Dik-chu, another tributary, originating from the eastern range, is the boundary between the North and the East districts.

River terraces are very well developed in the lower portion of the river of Sikkim. Some of the valleys are furnished with intrusive examples of 'Hanging valleys'. In the higher courses many rivers exhibit river capture or piracy also.

The settlement of the region is mostly concentrated within the river valleys. The total density of the rivers of Sikkim is 0.38 kms. per sq. km., which produces better possibilities for accessibility (Singh, O.P., 1985). The river Tista provides a base for the National highway in the State.

Climate

Sikkim being in the direct path of the monsoon wind is the wettest part of the North-Eastern region. Within an area of 7096 km² it has extremely varied climate, ranging from the sub-tropical to Alpine type. These climatic variations are influenced by the locational and physiographic factors. The mountain tract of the region enjoys a mountain type of climate, while the foothills and the valleys experience a tropical climate. The two important basic characteristics are noticed in the climate of Sikkim, viz., (i) altitudinal zoning of climate and (ii) a seasonal rhythm of weather. To have a better understanding of the altitudinal zoning of climate, the climate of the region is divided into the following climatic zones.

The entire series of climate can be observed within this tiny State. Low temperatures, high rainfall on windward slopes and heavy precipitation in the form of snow in the higher altitude are the main features of the climate of Sikkim. The annual rainfall ranges between 1,250 mm in the dry upper valleys of Lachen and Lachung to 3,500 mm in other (wettest) parts of Sikkim (Table 3.4). Temperature

varies with altitude and slope aspects. Relative Humidity remains above 70 per cent throughout the year at most places.

Table 3.3: Climatic Zones of Sikkim

| Area | Altitude (in metres) | Climate Zones |
|-----------------|----------------------|---------------|
| Lower hills | 300 - 500 | Tropical |
| | 500 - 1500 | Sub-tropical |
| Mid hills | 1500 - 2000 | Temperate |
| High hills | 2000 - 2700 | Temperate |
| High hills | 2700 - 4000 | Sub-Alpine |
| | 4000 - 5000 | Alpine |
| Very high hills | Above 5000 | Alpine |

Source : Census of India, 1981, Sikkim, 'Regional Divisions of India - A Cartographic Analysis'. S-1, Vol. XIX.

In Sikkim, the climate in a year has distinct seasonal variation in regards to temperature, rainfall, humidity and other atmospheric phenomena. Such a seasonal rhythm gradually tends to lose its character towards higher altitude (north, west and east).

The prevalent seasons in the region are:

(a) Pre-Monsoon Season (March to May) or The Spring Weather Season:

This season is marked by thunder storms and occasional hailstorms. Temperature increases rapidly till the middle of May. Before the monsoon breaks, conventional rain takes place.

(b) Monsoon Season (May to September):

This season lasts for five months. It is the longest season of Sikkim. The heat of the pre-monsoon period is almost neutralized by the long spell of rain in this season. Sometimes, when the sky is clear it becomes hot. In the foothill zone,

the maximum temperature rises to 35°C. The maximum temperature so far recorded is 45°C at Naya Bazar. At Lachen (2697 metres) the maximum temperature is only 17.8°C and Gangtok (1818 metres) records 22.9°C.

Sikkim is a humid place, because of its proximity to the Bay of Bengal and direct exposure to the effect of the moisture laden south-west monsoon, which enters through the Tista valley and extends right up to the lower reaches of the snow-capped mountains. The annual rainfall of the State varies from 1,500 mm to 4,000 mm with intensity of rain from drizzling shower in the lower altitude to torrential rains in the higher altitude. Summer monsoon account for more than 80 per cent of the rainfall of the year. The distribution of rainfall is uneven throughout the State. It is heavier in the central part and decreases substantially towards north. Thangu (3,901 metres) in the north gets only 68.43 mm of average annual rainfall. The northeastern side, which is far from the reach of the monsoon wind, receives less rainfall. The moderating effect of climate is felt with the increasing height. The amount of annual rainfall recorded at different stations ranges between 1,652 mm and 3,494 mm. South district receives comparatively lesser rainfall.

(c) Post Monsoon or Retreating Monsoon (October to November):

Towards the end of September the southwest wind becomes feeble and starts retreating. During this season rain gradually decreases, temperature also decreases and the sky becomes clear. With the withdrawal of Monsoon this season experiences a pleasant weather. End of October is marked by a sharp fall of temperature and occasional shower for a short duration.

(d) Winter Season (December to February):

The beginning of the season is marked by a steep fall in temperature. January is the coldest month of the season. Snowfall is experienced in most of the regions above 1,500 metres. Winters are cold and damp with occasional showers, but in higher altitudes, low temperature and low humidity impart a dry atmospheric condition. The range of average minimum temperature is in between -3.9°C to

6.9°C in the north and 5.9°C to 16.9°C towards the south. Temperature gradually increases towards March, although occasional shower brings it down.

The influence of climate upon population distribution is immensely important, not only directly upon the human organism but also indirectly through its effects upon soils, vegetation and agriculture (Clark, J.I., 1968). Thus, the study of climate as one of the most influencing factors in human ecology of a region is very much relevant.

Table 3.4: Temperature and Rainfall at Different Stations

Gangtok (1,818 metres)

| Month | Max. Temp. (°C) | Min. Temp. (°C) | Rainfall (mm.) |
|----------------|-----------------|-----------------|----------------|
| January | 13.9 | 4.2 | 39.6 |
| February | 14.6 | 5.5 | 57.7 |
| March | 18.8 | 8.5 | 130.4 |
| April | 21.7 | 12.0 | 255.3 |
| May | 22.3 | 13.9 | 500.7 |
| June | 22.8 | 16.1 | 629.0 |
| July | 22.8 | 17.1 | 652.5 |
| August | 22.9 | 16.7 | 594.4 |
| September | 22.7 | 15.7 | 411.9 |
| October | 21.9 | 12.3 | 155.2 |
| November | 18.5 | 8.6 | 45.9 |
| December | 15.7 | 5.8 | 20.9 |
| Annual Average | 19.9 | 11.4 | 291.13 |

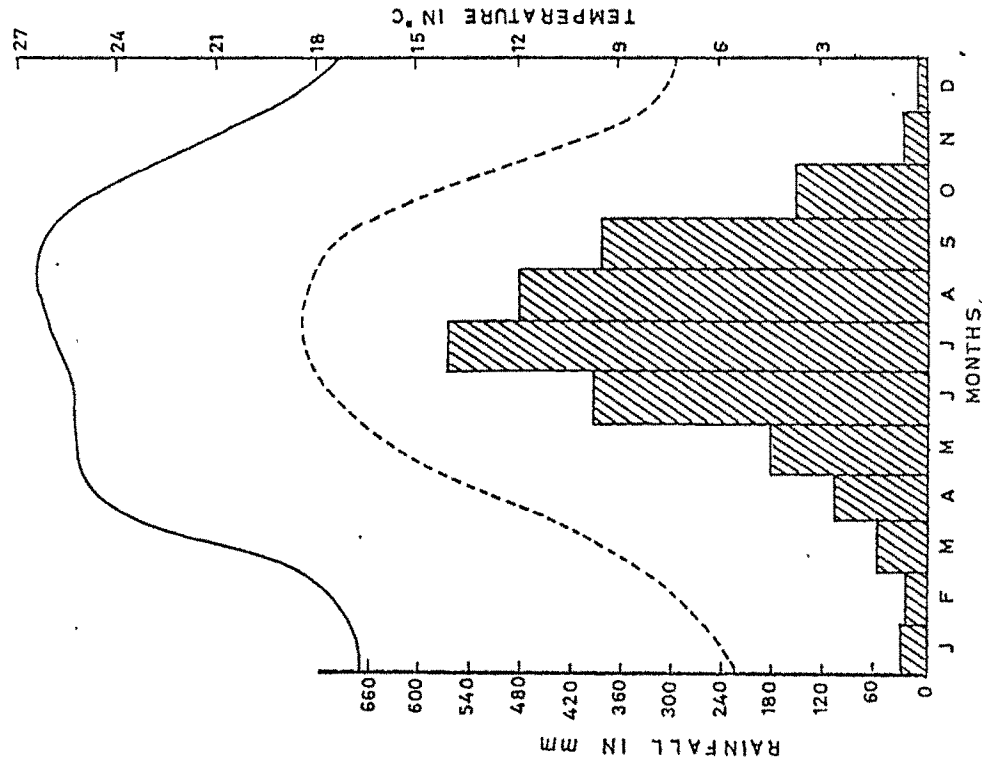
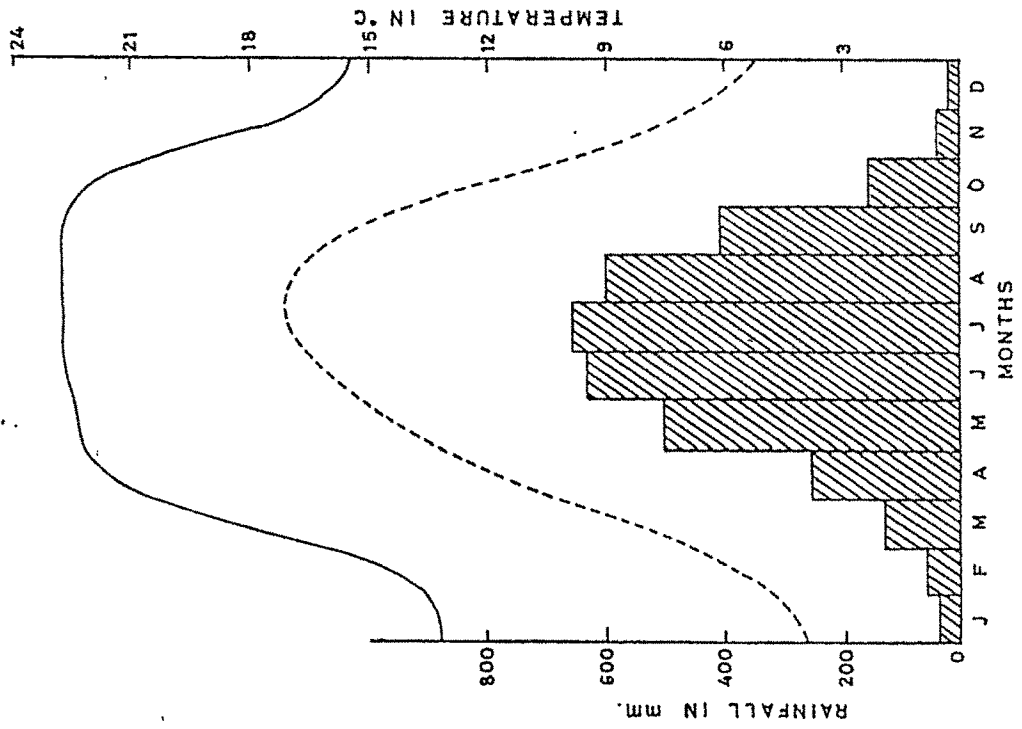
Lachen (2,697 metres)

| Month | Max. Temp. (°C) | Min. Temp. (°C) | Rainfall (mm.) |
|----------------|-----------------|-----------------|----------------|
| January | 6.9 | -3.9 | 52.7 |
| February | 7.8 | -4.2 | 54.3 |
| March | 10.3 | -1.5 | 143.2 |
| April | 14.3 | 2.0 | 98.2 |
| May | 16.1 | 4.8 | 161.2 |
| June | 17.0 | 7.8 | 241.7 |
| July | 17.8 | 8.4 | 245.4 |
| August | 17.2 | 8.7 | 270.2 |
| September | 17.0 | 6.8 | 229.2 |
| October | 14.4 | 3.6 | 112.1 |
| November | 10.5 | -1.4 | 24.5 |
| December | 7.9 | -3.6 | 19.2 |
| Annual Average | 13.1 | 2.3 | 137.66 |

SIKKIM
TEMPERATURE AND RAINFALL

GANGTOK

GYALSHING

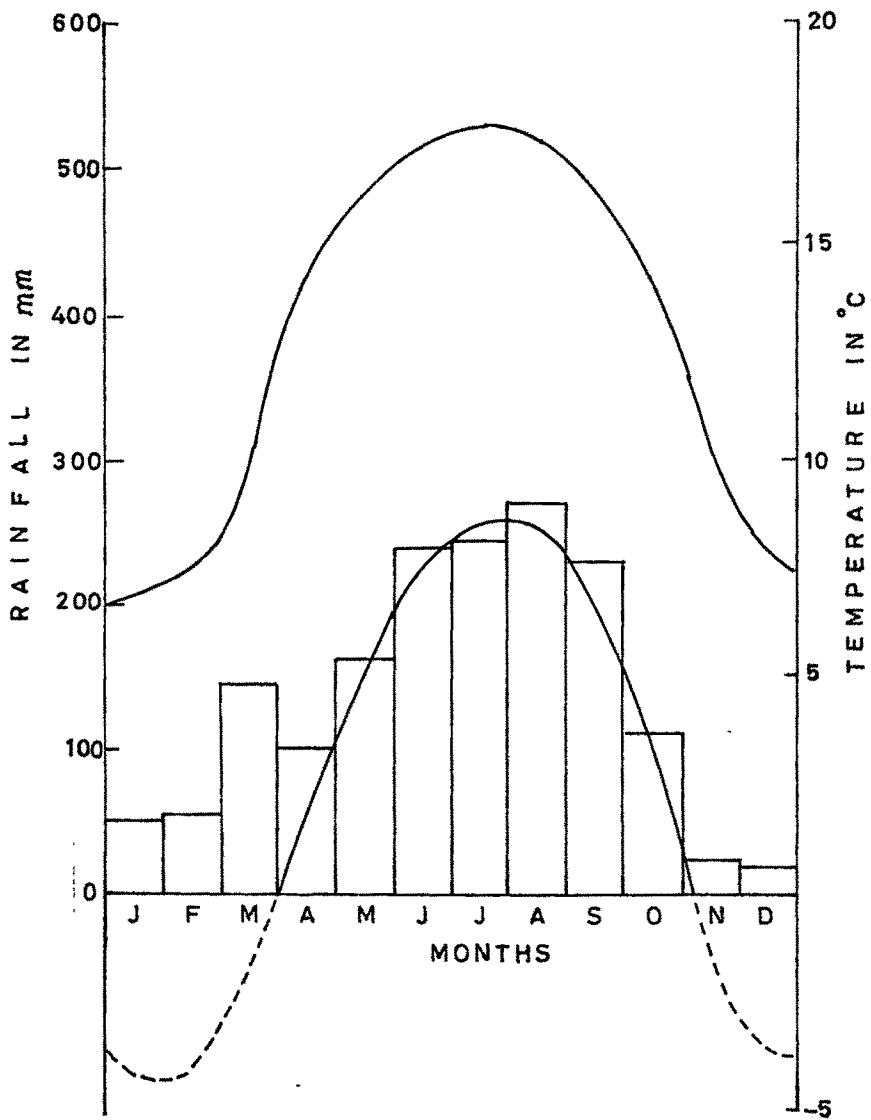


— MAXIMUM
- - - MINIMUM

FIG. 3'5

SIKKIM TEMPERATURE AND RAINFALL

LACHEN



Gyalshing (1,528 metres)

| Month | Max. Temp. (°C) | Min. Temp. (°C) | Rainfall (mm.) |
|----------------|-----------------|-----------------|----------------|
| January | 16.9 | 5.9 | 27.4 |
| February | 17.3 | 7.1 | 24.4 |
| March | 21.8 | 9.9 | 56.0 |
| April | 24.9 | 13.5 | 105.0 |
| May | 25.1 | 15.6 | 181.2 |
| June | 25.4 | 17.7 | 392.3 |
| July | 25.9 | 18.4 | 563.6 |
| August | 26.1 | 18.3 | 480.2 |
| September | 26.1 | 17.3 | 380.6 |
| October | 24.5 | 14.1 | 148.3 |
| November | 21.2 | 10.0 | 23.0 |
| December | 18.1 | 7.5 | 10.0 |
| Annual Average | 22.8 | 12.9 | 199.25 |

Source: Sikkim, A Statistical Profile (1979-80 & 1991-92), Bureau of Economics & Statistics, Planning and Development Department, Govt. of Sikkim.

Soil

Sikkim being a part of the Himalayas has a varied type of soil. Due to absence of regular and systematic survey, very little is therefore, known about the soils of the region. Here, soils of this State in general, are derived from sedimentary and metamorphic rocks; as a result, they are loose in structure, thin and light in texture.

Soil is the product of interaction among the five forming factors, viz., parent material, climate, vegetation, topography and time. As Sikkim experiences a wide variation of physiographic and vegetation condition, the composition of soil differs from place to place.

The texture, thickness and fertility of the soil are influenced by the gradient of soil, climate and vegetal cover. On the whole, the texture of the soil of the region is loamy sand to silty clay loam with varying amount of coarse fractions. On an average the soil depth at hill slopes varies from 60 to 90 cms.

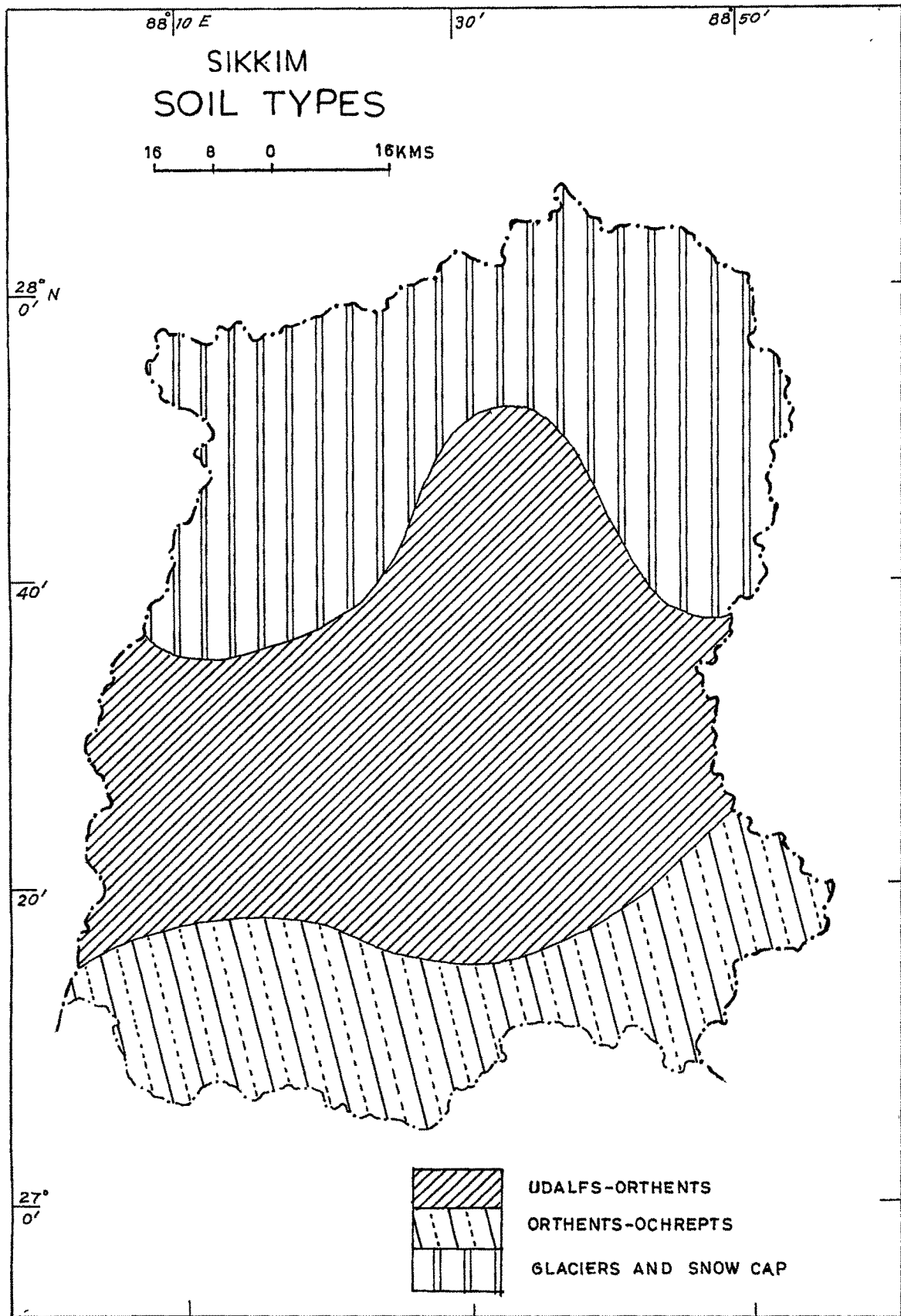


FIG.36

Sikkim being a hilly area has acidic type of soil reaction with high organic matter content (mostly 2 to 5 per cent). The available phosphorous shows about 30 per cent low, 35 per cent medium and 20 per cent high. The soils are found developed in situ in most of the hills and valley side-slopes.

The colour of the soil varies from grey, brown to black red, yellow, mixed red and black. Red and yellow sub-soils are very common in the State. At lower altitude grey, mixed red and black soils are common while at higher altitude brown. The soil of the State can broadly be divided into two categories, viz., (a) clayey loam and sandy loam soils (alluvial soils) and (b) hill soils (residual soils).

The major part of the State lies on Darjeeling gneiss and schists, from which derive a stiff reddish loam soil. In the foothill region, soils are alluvial in nature, being either loams or sandy loams mixed with gravels, pebbles and coarse sand brought down by rain and river water from higher altitudes. The river valleys and the river terraces are covered by alluvial soil, while the steep slopes have immature or thin rocky soils because of active erosions. The pines and other conifers have developed acidic and podzolic soils. The higher areas, which are under the influence of snow or moving ice, are covered by fluvio-glacial soils, while in the glaciated area boulders, clay and out wash soils are found. Near the snow line soil is immature.

As stated earlier, Sikkim is influenced by monsoon rain. The heavy rainfall washes away the nutritive minerals of the soil; as a result, they are infertile and get exhausted very soon. Preventive measures have been taken by constructing terraces in the agricultural lands.

Vegetation

Of the total area of the State, 2,650 sq. kms., which is about 36 per cent, is under forest cover. Owing to the variations in the altitude from 300 to 5,000 metres, the climate ranging from sub-tropical to alpine type, is highly varied here. The State receives heavy Monsoon as well as localized rains and therefore, richly endowed with a wide spectrum of vegetation cover. There are about four thousand

recorded species of plants in the State of which about four hundred fifty are orchids alone. Sikkim is also famous for various medicinal herbs and plants. On the whole, the region is veritable botanists' paradise.

The altitudinal aspects, diverse climate and varied soils play a dominant role in the growth of varied species of vegetation in the State. On the basis of the above factors, the vegetal cover of the State can be broadly divided into the following types.

Tropical Zone (upto 5,000 ft.)

This forest zone is mostly confined to the river valley slopes and terraces of the river Tista and Rangit. Along with the altitudinal change the floral cover including forest types also change within the same zone. The tropical zone consists of three different types of forests, they are, Sal forest, dry mixed and wet mixed forests. They are confined to the river valleys, starting from Melli to Dikchu. In this zone Sal is accompanied by Lampatay (*Duabanga Sonneratoide*). Dry mixed forests mainly occur along the ridges and drier slopes. Common species are Chilaune, Dabdabe and Comari (*Gmedine Arborea*). Sal occurs as isolated species. Wet mixed type of forest occurs on the north and north-eastern parts of the State. The valley in the north is covered by sub-tropical vegetation. The common species are *Eugenia Operculata*. Undergrowth consists of evergreen herbs and shrubs.

Latitudinal aspects are equally important as altitudinal aspects, in determining the vegetation of a region. With the progress along the north-south axis, a drastic change in the floral picture including the forest type is noticed. For instance, from Melli to Dikchu along the valley of the river Tista (below 3,000 ft.), the Sal and the Lampatay are found, but towards the north along the same river valley, the *Schima Wallichii* replaces it. This is again replaced by *Castanopsis* and *Engel Hardia* at Mangan (26°N) below 3,000 ft. The major species of this zone are Sal, Teak, Panisaj (*Termanilia myriocapra*), Tooni (*Cedrela Toona*), Lampatay, etc. The zone is also covered with varieties of bamboo, fern, tree ferns, plantains,

SIKKIM FOREST TYPES

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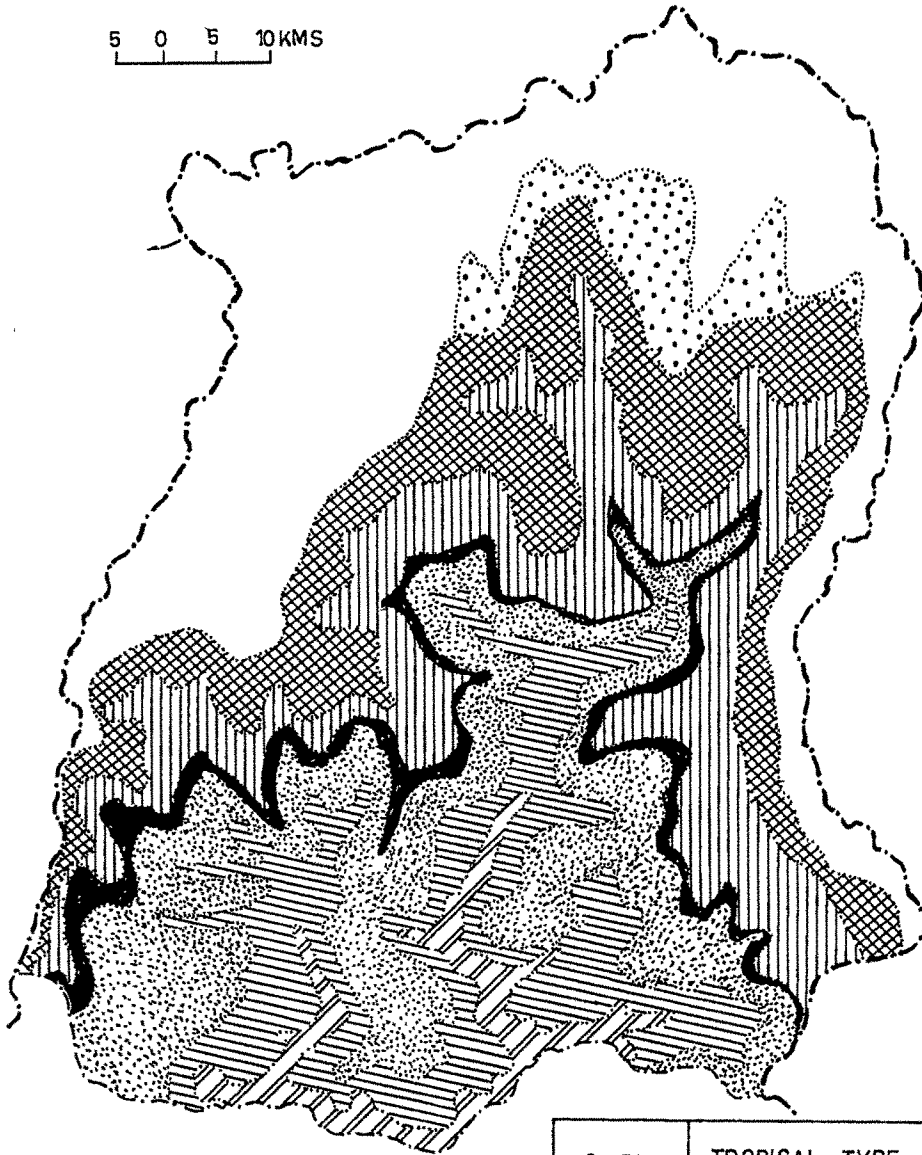
28°
0'

40'

20'

27°
0'

----- INTERNATIONAL BOUNDARY
 - - - - - STATE BOUNDARY



| | | |
|----------------|-------------------|--|
| LOWER HILL | TROPICAL TYPE | |
| | SUB-TROPICAL TYPE | |
| MID HILL | TEMPERATE | |
| HIGH HILL | TEMPERATE | |
| | SUB-ALPINE | |
| | ALPINE | |
| VERY HIGH HILL | ALPINE PASTURE | |

FIG.3'7

and orchids. The southern most belt of the region where rainfall is heavier has different varieties of bamboo also.

Temperate Zone (5,000 to 13,000 ft.)

The Temperate Zone covers a wide variety of hill topography. The characteristic features of this zone are the uniform floral appearance throughout the region. In the Temperate Zone, vegetation varies with the degree of humidity. The outermost ranges and the river valleys are covered with temperate forests. The chief trees are cherry, laurel, oak, chestnut, giant flowering magnolia, rhododendron, pine, maple, firs and birch. On the drier sides, bamboos and tall grasses form the undergrowth. The temperate forest is also found mixed with broad-leaved trees. With the increase of elevation, the growth of trees becomes stunted. Pure conifers occur only at higher elevation.

Sub -Alpine and Alpine zones

Sub-Alpine zone starts from below 13,000 ft. This type of forest occurs in the moist tracts of the higher Himalayas in the State. The Sub- Alpine forest is dominated by fir, birch, rhododendron and to a lesser extent by spruce, maple, and larch. These trees form a valuable group of timbers for the construction, woodwork as well as paper pulp making. The growth of the trees is better in the moist shady depressions. Dense undergrowth with thorny species also occurs. Patches of Alpine meadows are found intermixed with sub-alpine forest. This zone is known for the abundance and diversity of plants, which bear therapeutic properties.

Alpine zone starts from 13,000 ft. The upper region of Singalila and the Chola ranges, the slopes of Kanchanjunga and the upper parts of Lachen and Lachung valleys are covered by Alpine forest. The chief trees of this zone consist of firs, juniper, cypresses and giant cedars. The undergrowth consists of thorny scrubs, grasses and mosses. With the increase of altitudes appear multicoloured rhododendrons. The meadows of Alpine flowers, giving the appearance of natural carpet continues upto 16,000 ft. above the sea level. The gentler slopes of these

mountains are covered often with flowers like Primulas. Alpine pasture consists of dwarf junipers and rhododendrons, extensive meadows, etc.

ECONOMIC SETTING

The development of a region depends on the economic base of that area. The process of economic development of the State commenced in the true sense, after its merger with the Indian Union in 1995. Within a span of two decades, although the State has made remarkable progress in the economic development, but compared to its population growth, the achievements are not very significant. Like any other hill states of North-East India, Sikkim has been sustaining an economic environment, which is still in primitive stage. The physical resource base on which the development of the region depends is limited. Among the potential resources, the water and the forests are the most important. Some minerals are also available in the State, but their economic uses are not viable. Difficult terrain, adverse climatic conditions, lack of adequate transport and communication facilities and other infrastructures have been obvious hindrances in the agricultural and industrial development of the region. In this chapter, a brief assessment of the activities connected with the physical resources, viz., agriculture, mineral, forest, water resources, etc., will be discussed from which the level of the economic base of the State can be understood.

Agricultural Economy

The economy of Sikkim is agrarian in nature. In spite of large aerial extent, it could bring only about 13.45 per cent of the total geographical area under cultivation. As stated earlier, mountainous topography and varied climate are responsible for the acute shortage of cultivable land in the State. The landuse pattern of the State is strongly governed by its physical features, mainly the terrain. The direct effect of terrain operates particularly through elevation, rugged relief and slope. It is found that most of the agricultural lands of the State are situated within 300 to 3,000 metres, with most of the cultivable lands below 1,800 meters. Here, cultivation is done mostly on the terraced slopes of the hills. Shifting

cultivation (slash and burn) is rarely practised in the State now, except in some pockets of the upper Dzongu area in the North districts.

Sikkim has an area of 1,74,419 hectares land for utilization which accounts for 24.58 per cent of its total geographical area (1991). The total arable land is estimated to be 95,136 hectares, which is about 50.03 per cent of the total, reported area. From the following table, we can have a better idea about the landuse pattern of the State.

Table 3.5: Landuse Pattern of Sikkim, 1995-96

| Particulars | Area (in Hectare) |
|---|--------------------------|
| Forest | 5,07,080 (20.74%) |
| Area under non-agricultural use | 26,076 (1.53%) |
| Barren and uncultivable land | 98,867 (5.81%) |
| Permanent pastures and over grazing lands | 43,710 (2.56%) |
| Land under miscellaneous trees and groves | 54,360 (3.19%) |
| Culturable wasteland | 23,866 (1.41%) |

Source: Land Utilization Statistics of Sikkim, 1995-96, Department of Agriculture, Govt. of Sikkim.

In an agricultural economy, the forms of land tenure of the past and the present have an important role to play as the tenure by which it occupies arable land has a vital bearing on agricultural practices. The land tenure system can have far-reaching effects on the landuse pattern and productivity. In Sikkim, the land tenure system is Feudalistic as there are many intermediaries between the State and the actual cultivators. When Sikkim was a kingdom, land belonged to the Chogyal (King) and the land rights primarily vested in the hands of the Kazis (landlords) of a particular area. The Kazis administered the land for the King and the Mandals were the middlemen between the Kazis and the tenants. After the arrival of the Nepalese, the land was given on lease to them. A fixed amount of khazana or land tax was levied on each lessee. But the lands owned by the

Lepchas of Dzongu area, in North Sikkim, were administered directly by the King's private office. On the other hand, the people of the Lachen and Lachung valleys in the North enjoyed a kind of cantonal autonomy. Before the land reform was affected in Sikkim, the traditional landlord families owned considerable amount of lands. Later, the introduction of land reforms led to re-distribution of the lands to the tenants and appreciable reduction of lands owned by the Kazis.

The land tenure system of Sikkim mostly follows individual land ownership. However, in some places the communitarian ownership replaces this system, where the land is scarce. For instance, the Bhutias of Lachen and Lachung valleys (revenue blocks) follow this system of land ownership. Here, individual ownership is restricted to only small patches of land. In these areas, land is classified on the basis of the status of ownership. They are –community land, including forest and pastures under strong community regulation of land use. The distribution of fallow land as pasture is decided by the Phipun (elected village headman) in the meeting of the Dzumsha (Assembly/Council). This system of land distribution is known as 'sago'. In Lachen, public land besides roads is allotted to the landless people at nominal rates. On the other hand, in Lachung, the land is redistributed and re-allotted after three years to avoid unequal distribution of good and bad lands. Due to short period of land ownership, cultivators tend to put less attention towards the improvements of the land leading to low productivity. As in other parts of Sikkim, in Lachen and Lachung areas too, private lands are held by the individuals as private properties, with the right of inheritance and transfer among themselves. The sizes of the individual lands are very small and mostly used for kitchen gardening and construction purposes.

The average size of landholdings in Sikkim is only 2.11 hectare. The marginal and small farmers form the bulk of the total holdings. They together constitute 70.74 per cent of the holdings, but possess only 27.39 per cent of the total land area. On the other hand, medium holdings (9.68 per cent) constitute the highest per centage of the operated area, with 28.11 per cent of the total land area.

Table 3.6: Number of Holdings and Areas Operated in Different Size-Class, 1991-92

| Category of Holdings | Size-Class (hectares) | Number of Holdings (per cent) | Operated area (%) |
|-----------------------------|------------------------------|--------------------------------------|--------------------------|
| Marginal holding | below 1.0 | 49.56 | 10.30 |
| Small holdings | 1.0-2.0 | 21.18 | 17.09 |
| Semi-Medium holdings | 2.0-4.0 | 17.20 | 24.30 |
| Medium holdings | 4.0-10.0 | 9.60 | 28.11 |
| Large holdings | 10 and above | 2.38 | 20.20 |

Source: State Report on Agriculture Census, 1990-91, Bureau of Economics and Statistics, Govt. of Sikkim.

The nature of terrain and the diversity of climate influence the farming in Sikkim. The whole of the State can be divided into three zones -- the crop growing zone, the forest zone and the alpine pasture zone. Due to varied elevations, varieties of crops are grown in the State. Here, agriculture has been relatively more diversified and include commercial plantations like cardamom and tea, animal husbandry and agro-forestry. Usually, four major bio-geographical provinces of human landuse can be identified. They are: -

- (i) The sub-alpine and alpine zones (above 2,700 metres)
- (ii) The upper slopes of the hills (2,000-2,700 metres)
- (iii) The lower slopes of the temperate zone (1,500- 2,000 metres)
- (iv) The valley floors and the peripheral valleys (below 1,500 metres)

The sub-alpine and the alpine zones of the North district are used for pasturage, growing vegetables like seed potato, radish and turnip. In the upper slopes of the hills, barley, buck wheat and millet are grown. In the lower slopes of the Temperate Zone, wheat, maize and vegetables are cultivated. Cardamom is

grown on the shady slope of this zone. The valley floors and the peripheral valleys below 1,500 metres are used for paddy cultivation. The principal crops of the State are maize and paddy, which are cultivated extensively in the East, West and South districts, while cardamom is cultivated in large scale in the North and the West districts.

The crops and the method of cultivating them have undergone some changes in the last hundred years. The indigenous people in some parts of the State mostly practiced the slash and burn method with a rotation of seven years. Later, i.e., in the beginning of the century, wet rice cultivation with the terraced method and the cardamom cultivation were introduced by the Nepalese, as stated before.

Although primitive in form, agriculture is the mainstay of the people of Sikkim. It engages 70 per cent (approximately) of the total working force of the State. The area under cultivation is only 9.46 per cent (1990-91) of the total area of the Sikkim. Like other North-Eastern states, low per capita land and low productivity are the characteristic features of the agricultural economy of the State. Here, agriculture is affected by the unequal distribution of land ownership. Besides that, fragmentation of landholdings, limited infrastructural facilities, inaccessibility to the most of the agricultural zones, lack of irrigation and marketing facilities, soil erosion, etc., are the main constraints that led to low productivity. Hence, the State is always deficient in food grains and is dependent on supplies from outside. The insufficiency in the local production of food grains is a serious constraint on the socio-economic prospects of the State. Pulses, ginger, potato and other vegetables are grown not only for consumption but also for sale to procure other necessary goods like oil, salt, clothes, kerosene, tea, etc. Millet is mostly used for making a local brewery called 'chang'. Cardamom is the principal cash crop of the State. Although it gives a good earning to the cultivators, but a large proportion of it is spent for repayment of loans with high interest rate, taken during the rainy season (Case study).

Sikkim has immense potential for the development of horticulture. It supplements the agricultural economy to a large extent. Important fruit crops of the State include orange, guava, avocado, papaya, etc. Among them orange is most widely grown. The Singtam-Rangpo area is the important orange belt of the State. Apple cultivation is confined to only Lachung valley, where it was first introduced by the Finnis missionaries long back. Large cardamom is the traditional commercial crop with a promising future as a foreign exchange earner for the country. Ginger is the next important commercial crop. Vegetables form a part of the mixed agricultural farming set-up. Tea is another important plantation crop introduced recently in Sikkim. It is cultivated in about 170 hectares of land in Termitarku in South district.

Forest Economy

Forest can be considered as the most extensive primary natural resource of Sikkim. About 37.5 per cent of the total geographical area of the State are under forest, of which over 85 per cent is protected forest. The forest however, contributes very little to the revenue of the State as the total expenditure for the conservation and the development of forest is higher than the total revenue received from it. The forest products that contribute to the State revenue are timber, bamboo, charcoal, firewood, sand stone, cocoons (from oak forest), cardamom and mineral products like medicinal herbs, incense (pine leaf dhoop), etc.

Sikkim forests are rich in wild life. Among the mammals, Snow Leopard, Red Panda, Musk Deer, etc., are rare species found in the State. It is also famous for its exotic varieties of birds like Pheasants, Partridge, Horned Lark, Snow Pigeons and different migratory birds.

The State is well known for its floral wealth too. Among the flowers, orchids, rhododendrons are important. With the development of floriculture, orchid is becoming an important commercial flower for the markets inside as well as outside the country. The region is also rich in a variety of medicinal herbs and plants, which have heavy demand for pharmaceutical use. They supplement the mixed

economy of the highlanders of Lachen and Lachung valleys as well as in other parts of the State. The people, mostly for construction purpose, use forest products. While the Bhutias prefer to live in the cold and dry climate of the higher altitudes and use timber for the construction of house, the Lepchas and the Nepalese of the sub-tropical and the tropical areas use bamboo along with wood for construction.

The Lepchas are known for their wide knowledge of forest products. As gatherers, they use to thrive on forest products like tubers, edible fruits, roots, foliage and herbs, collected from the forests. They are said to possess good knowledge about different plants and herbs that have curative values.

A wide varieties of forest resources provide a fairly good scope for the development of forest based industries. At present, there are only a few industries, such as, saw mills, agarbatti making, sericulture, etc., in the State.

Animal Husbandry

In Sikkim animal husbandry played a crucial role in the rural economy. Domestication of animal has always been a part and parcel of pastoral as well as agricultural class of the area. Due to rugged terrain, low land holdings, soil erosions, etc., farmers have to depend upon livestock to supplement their income. Among the domestic animals, cattle, goats, sheep, yaks, pigs, horses, mules, ponies and poultry are important. The cattle population of Sikkim is estimated to be about 3.5 lakhs, out of which the milching animals account for nearly 50 per cent of the total (Das Gupta, Manas, 1992). A large proportion of cattle population of the area is found within 2,700 metres. The cattle between 2,500 metres to 6,000 metres are mostly used for beef production. But according to a survey conducted by the NDDB (National Dairy Development Board), the per centage of household owning milching cattle varies from 60 per cent (East District) to 70 per cent (North District). The average number of milching animal was 1.1 milching animal per household.

The cattle population of Sikkim has not improved due to limited domestic market for liquid milk and the problem of transportation of milk over the hill terrain and long distances. These disadvantages offers a good potential for the establishment of milk processing and manufacturing of milk based products for the local and outside markets.

Yak is a native of Tibet and mostly found above 2,500 metres. They predominate the dry high zones of North, East and West districts of Sikkim. Because of its sure-footed nature, it is used for transporting load in the difficult tracks of the high mountains. Traditionally, ownership of yak was considered as one of the most important status symbol.

In the north the farming economy is based on yak breeding. There are two types of yaks usually reared by the highlanders, they are `Bho' yak and `Aho' yak. They are grazing animals. Before the closure of the border people used to migrate to Tibet to graze their animals. According to survey conducted by the Statistical Department of Sikkim, the production of butter is the main source of income from the yaks. Milk is mostly used at home, however, curd and churpi (dried cheese) are sold. Yak meat gets a good price in the market. Hair is used for making blankets and carpets.

Sheep also plays an important role in the rural economy. They are mostly reared by the Gurungs of western part of Sikkim and the Bhutias of Lachen and Lachung of the north. Tibetan breed of sheep produces fine wool. Pashmina goats (Changra) are found in the Lhonak and the Chho-Lhamu areas of the northern part of the State. Goats are reared by most of the household for meat purpose. Sheep wool is used for making blankets and carpets in the north and felt cloths like `Lukuni' and `Rari' in the west.

Pig keeping is popular amongst the Sikkimese farmers. More than 80 per cent of the population eat pork. It is also used as bride price by several tribes of the region. Ponies are used in North, South and West districts. Poultry are kept in the villages under primitive conditions. Angora rabbit rearing has recently been developed in Rabom in Lachen sub-division. It is gradually picking up momentum

for the purpose of wool, meat and skin. Similarly, fish farming is also a recent introduction by the State Government Fishery department, which is gaining popularity among the farmers of the West district (Case study).

Livestock rearing has a better scope in Sikkim, provided a proper policy is adopted. Recently, a project is being set up in collaboration with the Swiss Development Corporation to develop a livestock and dairy sector and set up milk and dairy processing units in different parts of the State.

Mineral and Industrial Economy

Sikkim possess different mineral resources which include copper, iron pyrites, lime, garnet, coal, graphite, tungsten, rock salt, phosphate, etc., out of which copper has been extensively mined since 19th century. Copper mining is a traditional vocation in Sikkim. As stated earlier, Sikkim Mining Corporation, which was established 1960 in collaboration with Govt. of India has been extracting copper and zinc from mines around Rangpo in East district of Sikkim. From the point of commercial and industrial exploitation, Sikkim has a comfortably rich mineral resources (Chib, S.S., 1977). Transportation problems, however, are the major obstructions that make the extraction uneconomical. Thus, mining activities, at present are very limited. The State Government department of Mines and Geology and the Geological Survey of India are engaged in exploration of minerals, although a breakthrough is yet to be made.

Industrial Economy

Industries in Sikkim are still in infancy stage, though they have potential resources to flourish. At present, there are 929 industrial units, which have been registered, in the small-scale sector. Among them most of the industries have been closed down due to different reasons and some of them are declared as sick industry. Presently, very few of them are in operation. Many units are established in Sikkim because of legal/taxation advantages, which were quickly abandoned when these advantages ceased to exist (Tenzing, P.G., 1998). Sikkim has diverse agro-climatic conditions, which provide ground for the growth of large varieties of

spices, medicinal plants, fruits and vegetables, as stated earlier. These products could form base for the development of different types of agro-based industries in the State. Besides, there are large scope for the development of tourism, floriculture and units for the generation of Hydro-electricity. Rugged terrain, lack of proper market and transport facilities, capital, etc., are some of the causes of slow development of industries in the State.

Keeping in view the advantage and the disadvantages of industrialisation, the State government has formulated different policies for the development of industries in Sikkim. Since the inception of planning in 1951, more emphasis is given on the exploitation of indigenous agriculture, animal husbandry, forest resources, development of tourism, waterpower resources, etc.

Water Resources

Sikkim is endowed with huge amount of water resources in the form of river, ice-capped mountains, lakes and precipitation. Among all the available potential natural resources of the State, water resource is the most important. Being a hilly terrain, it is dissected by numerous turbulent streams and perennial rivers, which are fed by glaciers and rain. The surface water of the river Tista catchment area provides a vast scope for the development of both minor irrigation schemes and establishment of hydel power stations. The State government has been taking initiative to bring more land under irrigation. About 20,434 hectares of the gross cropped area has been brought under irrigation in the year 1991.

Sikkim provides all the suitable conditions necessary for the development of hydel power. It is estimated to have potentiality to generate 3,000 MW firm power and 8000 MW seasonal power. Till 1996-97, Sikkim has been able to tap only 33.10 MW. By harnessing its potential water power resources, the State could easily export power to its neighbouring states and countries to generate more revenue.

Table 3.7: Hydro-power Stations, Streams and Capacity of Various Stations in Tista river, 1991

| Power Stations | Streams | Installed Capacity (kW) | Status |
|-----------------------|----------------------------------|--------------------------------|--------------------|
| North District | | | |
| Lachen Micro-HEP | Lachen Chu | 2 x 50 | In operation |
| Lachung Micro-HEP | Lachung Chu | 2 x 100 | -do- |
| Mayong Chu HEP | Mayong Chu | 2 x 2,000 | -do- |
| Rabom Chu HEP | Rabom Chu | 2 x 1,500 | Under construction |
| East District | | | |
| Lower Lagyup HEP | Roro Chu, Yalichu and Takchonchu | 2 x 6,000 | In operation |
| Upper Rongni Chu HEP | Rongni Chu | 4 x 2,000 | -do- |
| Jali power house | -do- | 2 x 416 | -do- |
| Rongni Chu stage 2 | -do- | 5 x 500 | -do- |
| Pureykhola Micro-HEP | Pureykhola | 2 x 100 | Under construction |

Before the merger of the State with India, requirement of power was very small. Along with the development, demand for power gradually increased, which led to the development of number of micro-hydel power stations in the different parts of the State. Sikkim's first hydroelectric power project was completed in 1964 at Sangkhola. It generates 2,100 kW power and provides power to Gangtok, Singtam and Rangpo areas. The status of hydropower projects existing under construction falling within the tributaries of Tista basin is presented in table 3.7.

Rangit river and its tributaries are also equally important for potential power resources as shown in the table below.

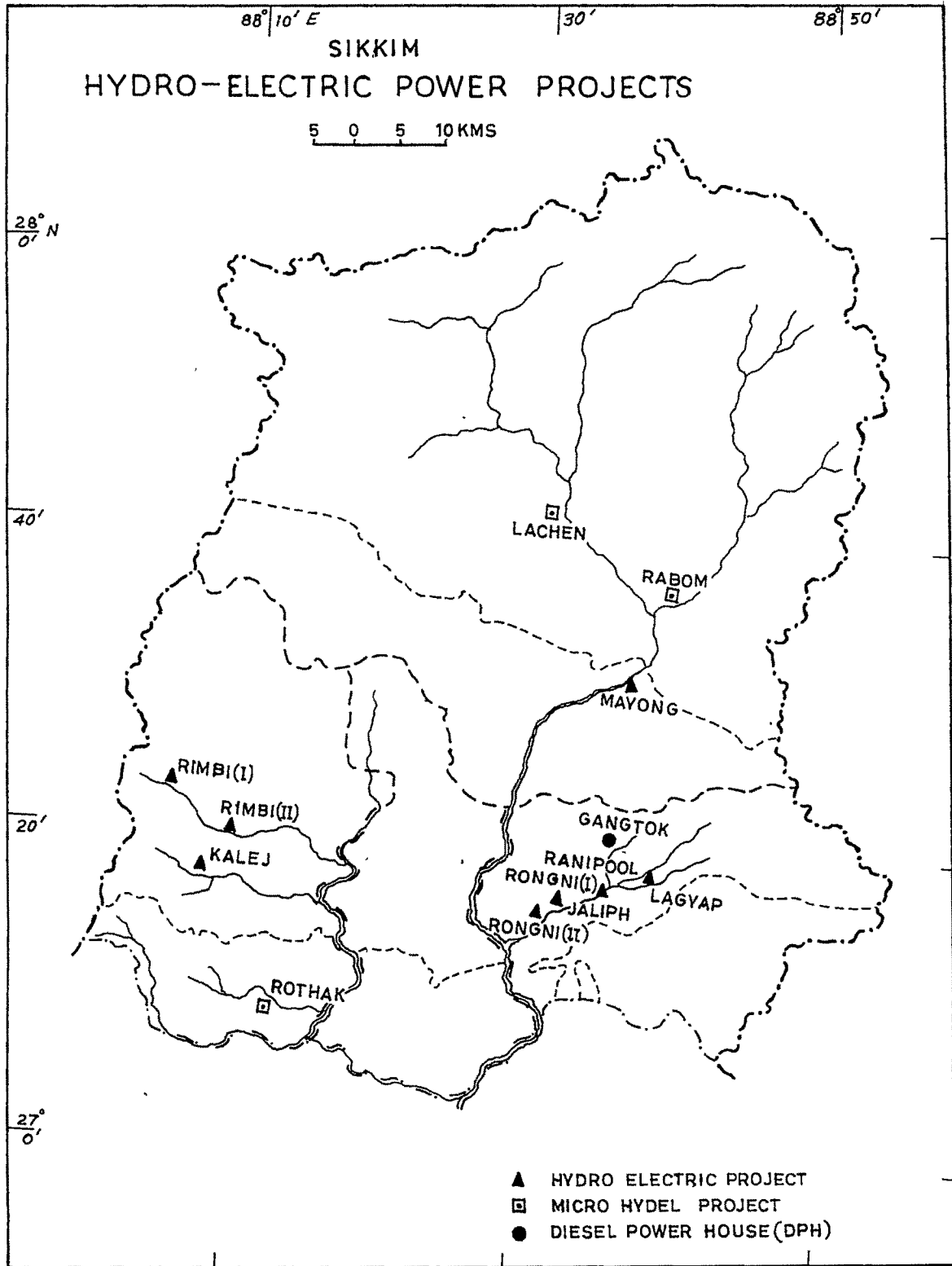


FIG. 38

Table3.8: Hydro-Power Stations, Streams and Capacity of Various Stations in Rangit River , 1991

| Power Station | Streams | Installed Capacity (KW) | Status |
|-----------------------|-------------------------|-------------------------|--------------------|
| <u>West District</u> | | | |
| Rimbi Micro-HEP I | Rimbi-Chu | 2 x 200 | In operation |
| Rimbi stage II | -do- | 2 x 500 | -do- |
| Kalez Khola HEP | Kalez Khola | 2 x 1,000 | -do- |
| Rothak Micro-HEP | Rohtak Khola | 2 x 100 | -do- |
| Rathong-Chu HEP | Rathong-Chu | 2 x 10,000 | In complete |
| <u>South District</u> | | | |
| Rangit stage III | Rangit (central sector) | 3 x 20,000 | Under construction |

Source for table 3.7 and 3.8 : Pradhan, D.D. (1998), 'Development of Hydroelectric Projects in Sikkim', in Rai, S.C., Sundriyal, R.C. and Sharma, E. (eds) *Sikkim: Perspective for Planning and Development*, 1998, (eds), Pub. Sikkim Science Society, Gangtok, pp. 455-456.

The entire basins of Tista, Rangit and their tributaries can be designed for proper use, conservation and development of natural resources. This in turn would provide for the general welfare, in terms of physical, social and economic development of the State.

Transport and Communication

The importance of transport and communication in the socio-economic life of the region needs no explanation. Prevalence of adequate transport facility assures a better socio-economic condition of the people of a region. Harsh physical condition, sparse population, presence of very few or no industries, etc., prevent the development of transport and communication in a region. In this regard, although Sikkim has relatively better network of transport and

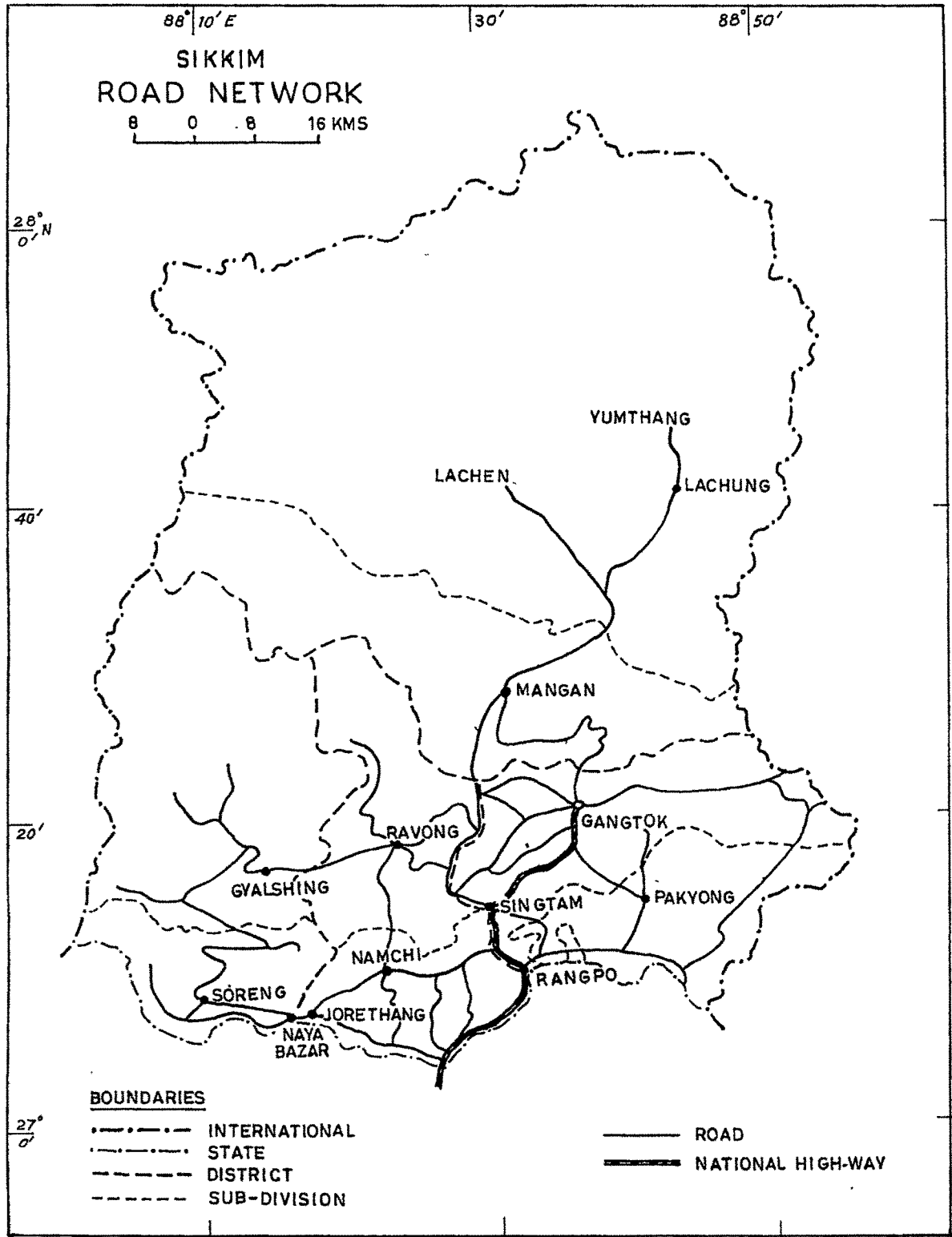


FIG. 3'9'

communication then some of the hill States of the North-East India, but it is inadequate.

The strategic location of the State demands maximum attention in the development and maintenance of the transport and communication. Here, roads are very frequently damaged by landslides, causing great difficulty in the free movement of men, goods and services. In such time, people (both civilian and army) living in the remote areas and near the boarder in the high altitudinal zones have to depend on air droppings.

In Sikkim, roads are the only means of transportation. The State has a total road length of 2,203 kms. of various status. Out of that it has only 40 kms. of National Highway, 937 kms. of State Highways, 446 kms. of major district roads and 829 kms. other districts roads (1991-92). The main artery of communication is the National Highway from Siliguri to Gangtok via Singtam and Rangpo towns. Different State Highways and districts roads join with the National highway at different points (Fig. 3.8). The present position of transport system in the State can be understood from the density of roads at State and District levels. Sikkim had a road density of 3.10 kms. per 10 sq. kms. Among the districts, East District has the highest road density in the State, while North District has the lowest (Table 3.9). It is observed that for the people of the higher altitudinal zones and remote areas, footpaths with iron suspension bridges are the only means of communication.

Table 3.9: Road Density of Sikkim (per 10 km²), 1991-92.

| District | Area (km ²) | Roads of Different Status (km) | Density (kms/10 ² km) |
|----------|-------------------------|--------------------------------|----------------------------------|
| North | 4226 | 481 | 1.13 |
| East | 954 | 978 | 10.25 |
| South | 750 | 360 | 4.80 |
| West | 1166 | 384 | 3.20 |

Source: Calculated from 'Sikkim : A Statistical Profile, 1979-80 and 1991-92, p.59, Bureau of Economics and Statistics, Planning and Development Department, Govt. of Sikkim

There is no rail connection in the State. The nearest rail head is the New-Jalpaiguri, which is located about 120 kms. from Gangtok. The State has no regular air services. There was Helicopter services between Gangtok and Bagdogra, which has stopped now. At present, only the army has helicopter services. The nearest airport is Bagdogra situated near Siliguri, 120 kms. from Gangtok. The river transportation is beyond imagination as they are turbulent and not suitable for navigation. Thus, the State has to entirely depends on the road services.

Peopling of the Area

Before undertaking the study of the population geography of Sikkim, it would be necessary to refer briefly to the history of peopling of the region. It has already been mentioned that the land and the people of this area were almost in dark for centuries. After the advent of the Bhutias from Tibet, political and socio-economic scenario of the area had changed, but the overall change took place rapidly only after the arrival of the British. During that period, the British policy brought a drastic change in the population pattern of the area. When the Bhutias came, the Kirati tribes, as stated earlier inhabited Sikkim. Dr. A.C.Singh (1983) says, "Sikkim is known as the home of the Kirati tribesmen from the pre-historic times. Limboo, Lepcha, Rai, Mangar, Gurung and other marginal communities are traditionally included among the Kiratis". They inhabit eastern Nepal, Sikkim (south-west, Darjeeling district (West Bengal) and in some parts of western Bhutan. Among the Kiratis, the Lepchas are considered to be the original inhabitant of Sikkim. But other Kiratis, namely Limboos, Mangars and Rais are also considered as the aborigines of the region. At present, Sikkim has a plural society with different communities, chiefly belonging to three ethnic stocks. They are the Lepchas, the Bhutias and the Nepalese (Gorkhalis, Kiratis and Newars) and the plains men from the other parts of the country came later on.

Although the Lepchas are considered as the autochthones of the area, but there is no authentic record to prove it. They were believed to have migrated from the east, along the foothills via Assam, although they do not have the tradition of

migration, as mentioned earlier. The Tibetans (Bhutias) call them as 'Monpas', meaning the Kirati tribes of the lowlands. According to some scholars, they are descendants from the Monpas of Arunachal Pradesh. It may be due to the fact that both the groups have a number of similarities in their way of living. But according to the Lepcha myth, they are descendants from the couple created by God beneath the slopes of the mountain Kanchanjunga, as stated before. At first, Lepchas were scattered throughout Sikkim but later, they were pushed by the Bhutias and the Nepalese from the North and the South respectively, to more remote corners. As a result, at present they are found to be concentrated at Dzongu (Lepcha reserves) in the left bank of the river Tista (central part of Sikkim), in Mangan sub-division.

Limboos are also considered as one of the ancient tribes and contemporary to the Lepchas. According to Dr. J.D.Hooker (1854), "Next to the Lepchas the most numerous tribe in Sikkim is that of the Limboos". The word Limboo is derived from the word 'Li', meaning 'Bow' and 'Abu', meaning 'Shooter'. The Tibetans call them Tsongs. Because they believe that the original home of the Limboo is Tsangpo valley in Tibet from where they have migrated to Limbuana, west of Sikkim through the northwestern hill tract. Lepchas call them 'Lum', but the Limboos call themselves as 'Yakthumba', meaning yak herders. They are also called as 'Subba', the honorific title given to them. Before the boundary between Sikkim and Nepal was decided, Limbuana was extended upto the left bank of the river Tista. "There had been free intercourse between the Limboos of Limbuana and Tsongs, and the Lepchas of Sikkim, before the advent of the Tibetans on the political stage of Sikkim" (Hooker, J.D. 1854).

According to 1891 census there were 5,762 Lepchas and 3,356 Limboos in Sikkim, which have increased to 29,854 and 26,985 persons respectively in 1991 (Language based population). At present Limboos are concentrated in the West district, but also found scattered in rest of the districts within an average altitude of 4,000 ft. to 6,000 ft.

Mangars are considered as one of the ancient tribes of Sikkim. Dr. J.D. Hooker viewed them as one of the indigenous people of the region. He mentioned in his book, "The Mangars, a tribe now confined to Nepal, west of Arun, are aborigines of Sikkim, whence, they were driven by the Lepchas westward into the country of Limboos, and by these, latter further west still". According to Dr. K. Pradhan (1982), Mangars used to inhabit in a place called Mangar Jong (Mangar fort) in Darjeeling district. Sarat Ch. Das in his visit to the west of Kanchenjunga (Kanpachen valley) saw the old fort and remnant of the house of the Mangars. According to 1891 census there were 901 Mangars in Sikkim, which increased to 4,194 persons in 1921. They are concentrated in the southern parts of the State. In course of time, other Kiratis like Rais, Gurungs, Sunwars, Tamangs, etc., have migrated to Sikkim and settled in different parts of the area.

The Bhutias are the descendants of the Tibetans and the Bhutanese immigrants. The Tibetan immigrants played an important role in establishing the kingdom and introducing cultural and political changes in Sikkim. The Tibetans call themselves as 'Bod-pas' (people from 'Bhot', Tibet). They are commonly called as 'Bhote', although they belong to different place of Tibet. Among them the Khampas are from a place called 'Kham' in south of Tibet and Chumbi-pas are from Chumbi valley (East Tibet). The Drukpas are from Drukyul, Bhutan, the Dhophthapas are from 'Dhophthas' (south Tibet), Do-mu-pas are the inhabitants of Do-mu, etc. These groups entered Sikkim through different passes of the northern arc and the eastern ranges. The Bhutias of Sikkim are divided into two broad groups, viz., (i) those who came and settled before 1959 and (ii) those who came after 1959 (considered as refugees). While the former group is mostly concentrated in the cool highlands, the latter are traders and businessman, concentrated in and around the market centres. The Bhutias from Bhutan have entered Sikkim in different phases of time and settled in North and East districts and in small number in rest of the districts. In the North district, the inhabitants of Lachen and Lachung valleys are believed to have migrated from northern and western Bhutan. According to Risley, they are immigrants from 'Hah' and 'Paro' valleys in Bhutan (1894). The original home of Sherpas are Solu-khambu, from

where they have migrated to east Nepal and at last to Sikkim. They are distributed in the highlands of West and South districts.

Nepalese immigration to Sikkim started after 1773 when Prthivi Narayan Shah, a chieftain of western Nepal invaded Sikkim and occupied the territories west of Tista river. But the actual mass migration took place when Sikkim came under the British control. For the developmental works like construction of roads, mining, etc., as stated earlier the British encouraged the Nepalese to come and settle in Darjeeling district (British occupied) and in some parts of Sikkim. This has completely altered the ethnic composition of the area. In 1880-1881, with the demand of the Bhutias and the Lepchas, the Nepalese were prohibited by the government to settle in the present North district of Sikkim.

According to 1891 census, there were 15,458 Nepalese, which increased to 84,693 in 1931 and to 2,56,418 (Language based) persons in 1991. This trend of increase of population reflects the encouragement given to the Nepali settlers in the first phase of the British protectorate. Among the Nepalese the Brahmans are concentrated in the East district within an altitude of 800 m to 1,200 m, while the Chettris (Kshatriyas) are scattered mostly in the West, South and East districts within an altitude of 3,000 ft. to 6,000 ft. The Newars (Pradhan) on the other hand, are concentrated in the East and some parts of South districts. In 1835, under the British patronage, the Newars entered Sikkim for trading and colonizing. They are usually concentrated in the market area and around the mines. Most of the scheduled caste communities are concentrated in the South and the East districts. As stated earlier, rests of the communities are found scattered in the West, South and part of East districts. In 1991, Nepalese (Gorkhali, Kirati and Newari) constitute 70 per cent of the total population of the State. With the emergence of British and consolidation of their control in Sikkim, the business communities and service holders from India started to come. Among them Marwaris and Biharis are the earliest settlers. Although there is no evidence when they first immigrated to Sikkim, the older people say that the first Marwari family might have entered the State about 150 year's back. J.C. White, the first political officer of Sikkim, mentioned in his book 'Sikkim and Bhutan' that the Marwaris have settled here

since the Young Husband's expedition of 1888. During the British Raj the Marwaris have expanded trade as far as to Tibet. They are followed by the Biharis. Both the communities have settled in the market centres of the State. They also have opened shops in the remote areas from where they could trade on agricultural products like cardamom, ginger, orange, potato, pulses, etc.

In course of time, with the progress of the developmental work, people from different parts of India migrated to Sikkim. Particularly, after the merger of the State avenue for job attracted more migrants to the area, which further changed the demographic and the socio-economic scenario of the region.

In a broad sense, the present Sikkim is a meeting ground of three races, viz., Tibetans, Lepchas and Nepalese and their civilisations. The plainmen also contributed to their civilisation. Hence, here, Sino-Tibetan culture is blended with the Aryan culture. The Tibetans brought with them Lamaist Buddhism, mixed economy with trading and pastoralism. They also brought Sino-Tibetan language, art and culture. On the other hand, the Nepalese brought Hinduism, Indo-Aryan language and art & culture. They also introduced terrace system of cultivation and cash crops like cardamom, etc., as stated earlier. People from rest of India also brought their indigenous culture and technology to this area.

From the above facts it is clear that the social structure of the present Sikkim has emerged out of the process of intermingling of different tribal and non-tribal groups despite having their socio-cultural distinctiveness. It exhibits a synthesis of indigenous tribals and both other tribal and non-tribal immigrants. This heterogeneous social structure which forms the entire populace of the State can broadly be divided in five broad groups. They are: -

- (i) The indigenous inhabitants of the valley slopes of the central and western parts.
- (ii) The Tibeto-Mongoloids (Kiratis) of the west and the south.
- (iii) Immigrants colonised in the cool highlands of the North and other districts.
- (iv) Immigrants colonised in the southern fertile valley slopes.
- (v) People from other parts of India.

In Sikkim, intermixing of different races with different cultural background was possible due to its geographical location on the principal migration routes among the neighbouring countries. There are four possible land routes to Sikkim. They are: -

- (i) The northern hill tracts through the watersheds between Sikkim and Tibet (Chinese occupied).
- (ii) The eastern passes along the Donkhya and Pangola ranges.
- (iii) The western hill tract through the Singalila range.
- (iv) The southern tracts through the river valleys.

Long before the establishment of the Namgyal dynasty, the traders, animal herders and lamas from Tibet came to Sikkim in search of new areas for colonization. The former came in search of pasture land while the later for converting the Animist tribes to Lamaist Buddhism. The traders and the peasants, who came in search of rice lands, followed them. The principal passes of the northern range through which immigration took place are Kongra-la, Bamchho-la and Sese-la via Lachen and Lachung valleys. Till the closure of the borders, eastern hill tracts were more accessible and shorter in distance than the northern tracts. As a result, the people of both Sikkim and Tibet more frequently used these passes. Jelep-la, Nathu-la, yak-la and Thanka-la are the other principal passes which connect Chumbi valley of Tibet with Sikkim. The old trade route from Gangtok to Phari in Tibet was via Nathu-la. After 1888, British also established trade routes with Tibet through these passes. Till the closure of the border, the northern and the eastern passes were freely used by the animal herders, traders, immigrants, etc. The Chumbi valley may be said to be the principal route used for spreading Buddhism in Tibet. The northern and the eastern passes played an important role in changing the political, demographic and socio-economic scenario of Sikkim.

In a mountainous terrain, rivers are also important source of accessibility. In Sikkim, the river valleys of south acted as one of the major routes for the

Nepalese, the British and the Indians to enter the State. These routes were used by the people to go to the border and beyond. The waves of migration from the mainland of India continued till now through the southern river valleys. After the closure of the border, these river valleys became the only routes, which connect this landlocked State with the rest of India.

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PART - II

POPULATION ANALYSIS

CHAPTER - IV

POPULATION DISTRIBUTION, DENSITY AND GROWTH OF POPULATION

The distribution and density of population are interrelated aspects and are vital areas of population geographic studies. In fact, they are considered as the starting point in many population geographical studies. The study of distribution and density of population of Sikkim is particularly significant because of its mountainous and strategic location, and multiple ethnic characteristics. The study of these elements is a basic requirement towards formulating strategies for socio-economic planning of the State at the micro regional level. In this chapter, an attempt is made to study the character of population distribution, density, growth and migration in the State and analyse the factors behind their various spatial patterns.

DISTRIBUTION OF POPULATION

Pattern of Population Distribution

Sikkim is a sparsely populated mountainous region. As already mentioned, the State has 4,06,457 persons and an area of 7,096 km². As a matter of fact, the population distribution in the region is not only sparse but also highly uneven from the low altitude zone to the very high altitude zone. The Lorenz curve appended here (Fig. 4.2) clearly reflects the situation.

The population distribution of Sikkim exhibits a glaring relationship of population concentration and altitudinal factor. That the altitude alone impairs an ultimate physical limitation upon human habitation in the region is evident in very clear terms. The concentration of population in the State, therefore, may be clearly demarcated based on the various altitudinal zones like above 1,800 metres, 600-1,800 metres and below 600 metres.

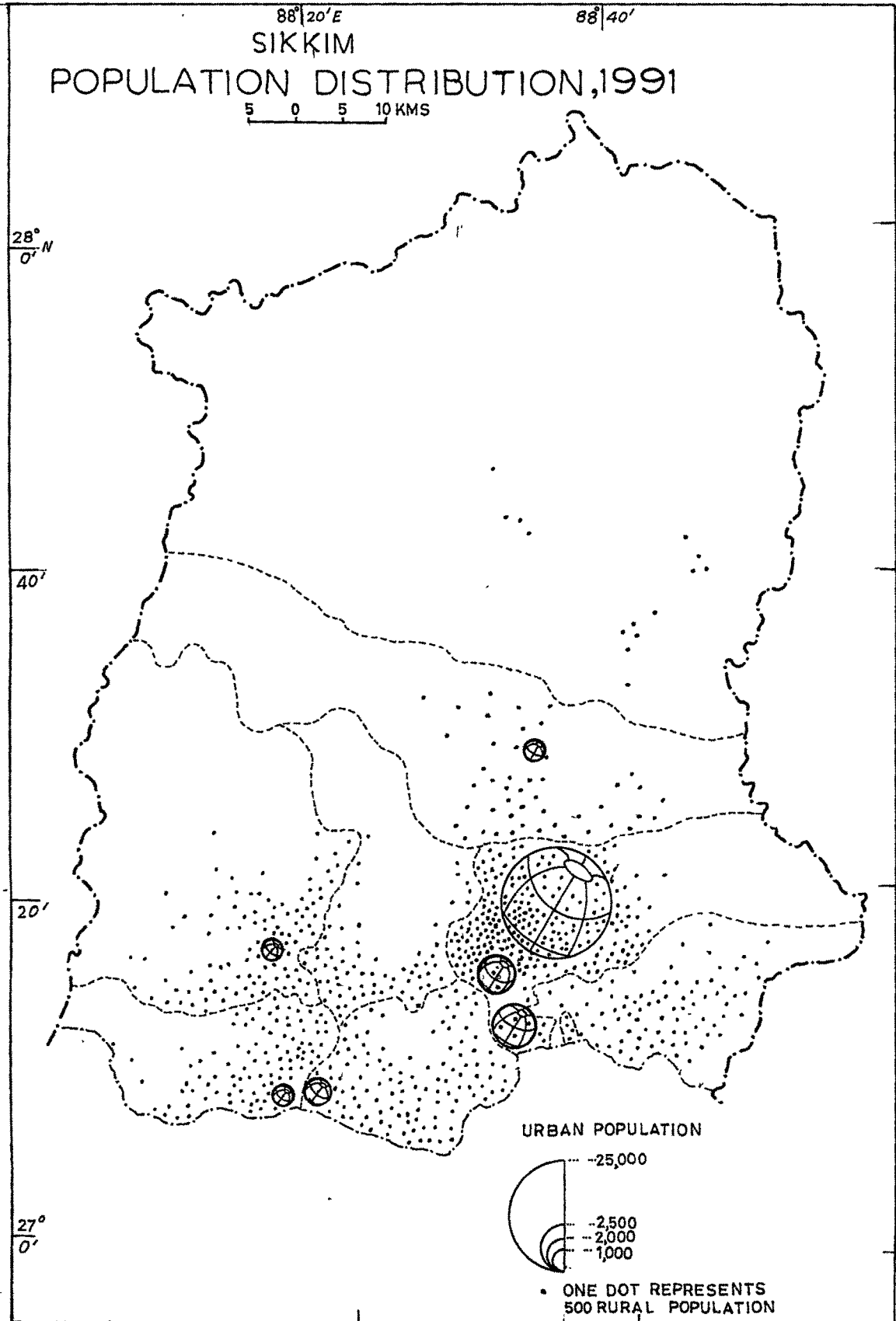


FIG. 4.1

Table 4.1: Relation between Altitude and Distribution of Population in Sikkim.

| Altitudinal Zone (in metres) | Percentage of area to total area | Percentage of Population to total population |
|---------------------------------|-------------------------------------|---|
| Below - 600 | 8.85 | 20.55 |
| 600 m - 1,800 | 31.30 | 74.40 |
| Above - 1,800 | 59.85 | 5.05 |

In the zone above 1,800 mtrs., it may be noted that human habitation is noticeable only up to 3,000 mtrs. The zone between 1,800 - 3,000 mtrs. covers 14 per cent of the total area of the revenue blocks of the State. Beyond the altitude of 3,000 mtrs. only temporary settlements like those of cattle herders, defence forces and labourers engaged in road maintenance work may only be seen. Here, human survival, location and sustenance can be managed only rarely and that too with considerable difficulty. It is because such areas are characterized by highly rugged, dissected mountainous terrain, extreme climate, inferior soil and scarcity of agricultural land. Secondly, due to political factor, there is restriction in free movement in these areas as they are close to the international border area. In fact, the actual habitable area is found only up to 2,100 mtrs. It has been noticed that habitation in this zone is mostly concentrated in the valley slope of the river Tista and its tributaries. Beyond 2,100 mtrs. population distribution is extremely thin. The population in this high altitude zone may be found only in a few semi-permanent villages like Kupup (3,962 mtrs.), Gnathang (4,000 mtrs.) in the east and Lachen (2,682 mtrs.), Thangu (3,812 mtrs.), Muguthang and Lachung (2,633 mtrs.) in the north. The population here is supported by the army with their supplies of essential commodities like fuel, oil, etc.

In the zone below 600 m also population concentration is relatively thin. This zone covers 10 per cent of the total area of the revenue blocks. Unfavourable ecological conditions because of hot, humid and sultry climate, excessive rainfall, dense forest and occurrence of dreaded diseases like Malaria, Influenza, etc., affect the population concentration in this zone. Most of the areas of this zone are occupied by the poor section of the society. The settlements in this zone are

SIKKIM
LORENZ CURVE OF POPULATION DISTRIBUTION
1991

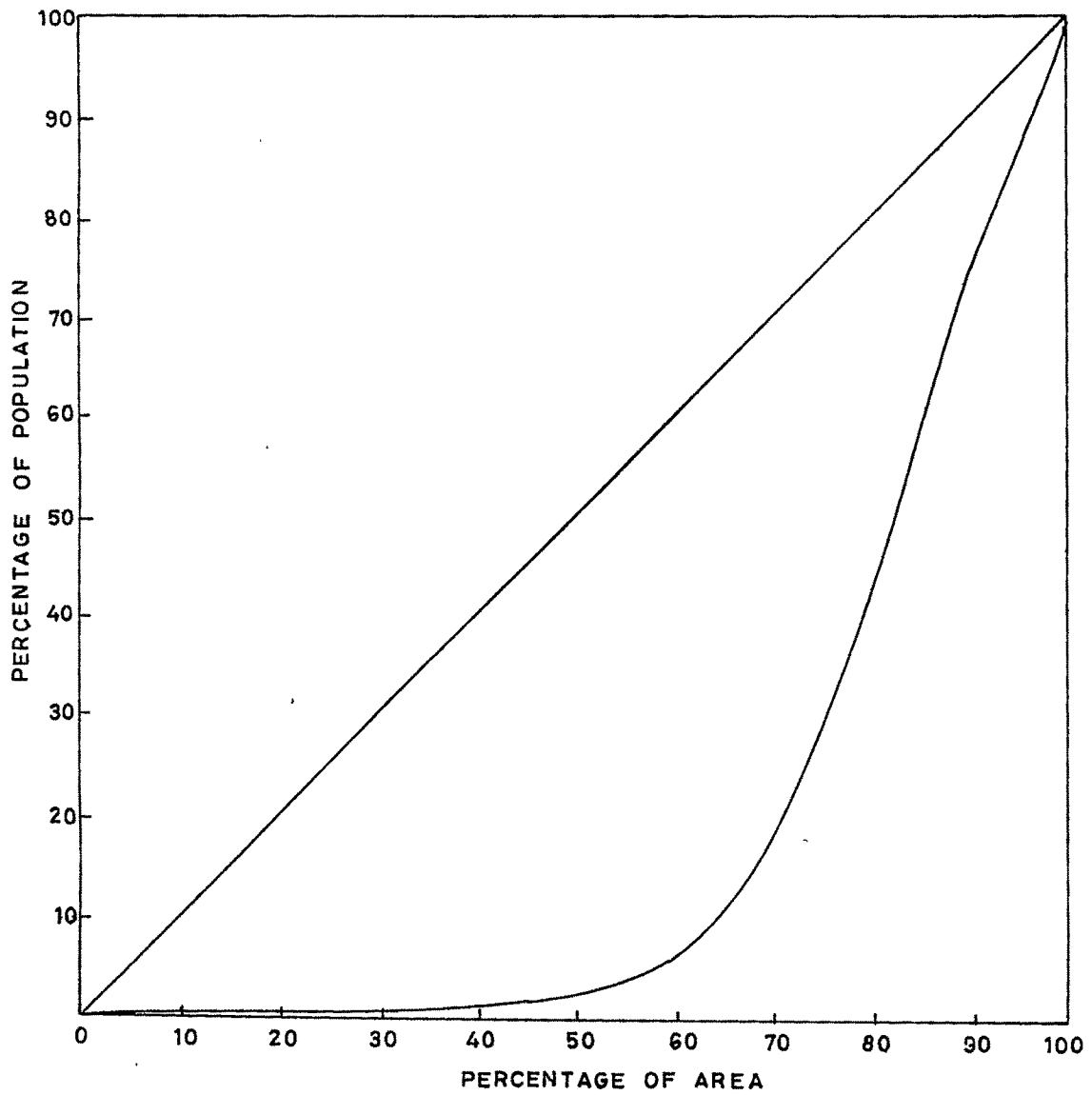


FIG.4'2

located by the side of the rivers and the areas which are slightly above the river sides. Whatever flat land is available in this zone mostly belong to economically affluent communities living in the high altitudes and some non-tribal land owners / cultivators. In the flat lands generally paddy cultivation is done. However, a few places like Rangpo, Singtam, Jorethang, Reshi, etc., have higher concentration of population. It is because these places are the collection centres of agricultural products like cardamom and ginger. In the places like Rongli (A new sub division, i.e., Rongli sub-division has been created recently, *The Times of India*, June 3, 1999), Rhenok in the northeastern part also, the population concentration is somewhat high due to their location on the British India-Tibet trade route. On the whole, population concentration in this zone is about five times higher than that of the zone above 1,800 mtrs. It is mainly due to the availability of flat lands at certain riverine pockets for wet paddy cultivation. Besides, the National and State highways running through this belt provide better transport and communication facilities. Other factors like availability of public health facilities, electricity, schools, etc., also contributed to some extent in the concentration of population. In recent times establishment of some industrial units in the valleys, particularly Rangpo, Singtam and Jorethang belts also has added some population to this zone.

The next altitudinal zone between 600m to 1,800 mtrs. is the most suitable zone for human habitation because of its favourable climate, gentle and moderate slopes for location of settlement and conducive conditions for agricultural practices. This zone covers 76 per cent of the total area of the revenue blocks of the State. In this belt population is concentrated mostly on the moderate slopes and river valleys. The highest proportion of the cultivable areas of Sikkim lie within this belt. Here, most of the forests have been cleared and lands have been terraced for cultivation. Although this belt covers only 31.3 per cent of the total area of the State, it supports 74.40 per cent of the total population. More than 70 per cent of the villages and many commercial centres (bazars) like Gangtok, Namchi, Mangan, Gyalshing, etc., are situated in this belt. The villages with largest number of population are also located in this belt. This belt was also chosen by the early migrants who practised settled agriculture. From the above discussion it is

clear that the distribution of population in Sikkim is very much influenced by the physiological conditions.

In addition to the physical factors, a number of historical and socio-economic factors have also influenced the present distribution pattern of population in Sikkim. Among the historical factors immigration of people from different neighbouring countries at different phases of time to the State is quite significant because it has influenced the present distribution of different ethnic groups in the region.

Besides, the distribution of population is also influenced by the prevailing socio-economic set-up of the area. Among the socio-cultural factors presence of both individual and communitarian land ownership system, social structure of the tribal and the non-tribal are worth noting. Areas where people practise communitarian landownership system have mono-clan type of village while the followers of individual ownership of land have mixed type of population. Religion, although in a negligible rate, influence the distribution pattern of population. For instance, the follower of Buddhism of a particular sect have a tendency to settle around or near their monastery, e.g., settlement around the Rumtek monastery mostly belongs to Bhutia (Tibetan) tribe. The distribution pattern of population is also influenced by the availability of social facilities. Places near the National Highway have a linear type of settlements.

If we consider the economic system of the State, it is found that areas with wet paddy cultivation and dry farming by terraced method support the largest proportion of population of the area which tends to scattering of villages over a large area irrespective of their population size. On the other hand, animal herders have large size villages with population concentrated at certain pockets (valleys). The factors like industrialization and urbanization have influenced the distribution pattern marginally only in some pockets.

Distribution of Ethnic Groups

The population of Sikkim is composed of mainly three ethnic stocks, viz., the Lepchas, the Bhutias and the Nepalese (both Aryan and non-Aryans). The Anthropological Survey of India has identified 21 communities in Sikkim (Table 4.2).

Table 4.2 Ethnic Groups and their Sub-Groups of Sikkim

| | |
|---------------|---|
| 1. Lepcha | |
| 2. Bhutias | : a] Bhutia, b] Sherpa, c] Drukpa, d] Tibetan |
| 3. Nepali | : a] Limboo, b] Rai, c] Yakha, d] Tamang, e] Gurung, f] Mangar, g] Sunuwar, h] Kagatey, (Yolmo), i] Brahman, j] Chettri, k] Newar, l] Kami (Lohar), m] Damai, n] Sarki, o] Mazhi, p] Bhujel, g] Thakuri |
| 4. Plains men | : a] Marwari, b] Bihari, c] Bengali, etc. |

The histogenesis of the peopling of the region reveals that the different ethnic groups entered Sikkim in several batches at different periods of time. These groups prefer different altitudinal zones for their settlement. Each group selected those areas where they could continue their traditional subsistence farming and pastoralism. Thus, the Bhutias have preferred the cold and dry climate and as a result, they are mostly concentrated in the higher altitudinal zones of the State and hence, they are highly concentrated in the northern part. Among the Nepalese, Kiratis have mostly occupied the southern and western part of the region. It is due to the fact that, the original home of the Kiratis, the eastern Nepal on the west of the Sikkim had its boundary extended up to the river Tista of present Sikkim as stated earlier. The rest of them who came from different parts of Nepal have preferred the warm gentle slopes and the fertile river valleys of the southern slopes of the east, south and west districts where they could continue their wet farming. The Lepchas, regarded as autochthons of Sikkim, were scattered throughout the region in earlier times. But with increasing influx of the Bhutias and the Nepalese, they have been pushed into remote corners and at present they are

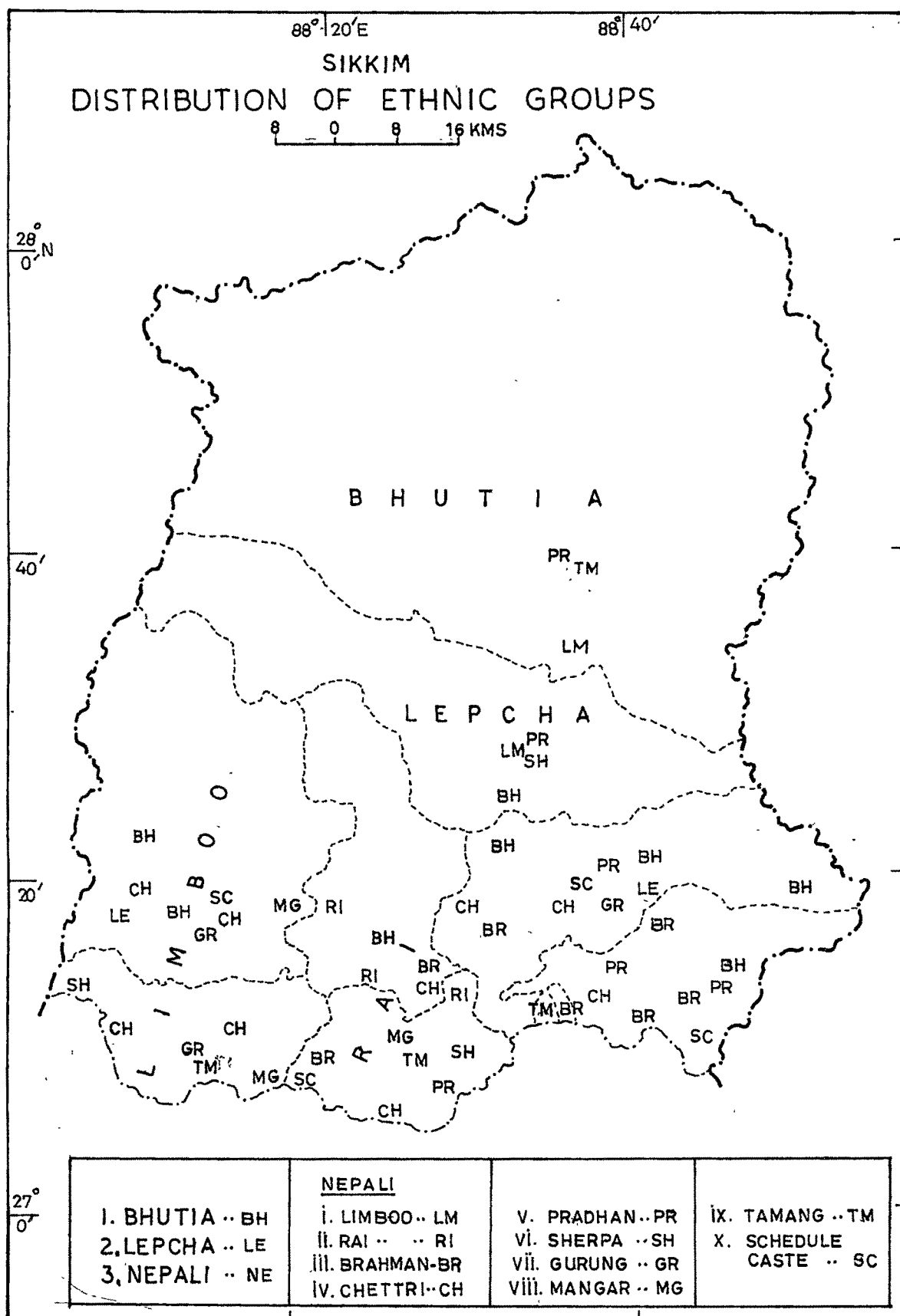


FIG. 4'3

concentrated mostly in the river valleys and forest clad lower mountains of central-western Sikkim. The plainsmen who have settled in Sikkim from earlier times for the purpose of business are concentrated in the urban centres, while the ones who have come in pursuit of jobs are found all over the State, though in small number.

Table 4.3 Sikkim : Population by Different Ethnic Communities, 1891.

| Race / Caste | Total Population |
|--------------|------------------|
| Lepcha | 5,762 |
| Bhutia | 4,894 |
| Limboo | 3,356 |
| Gurung | 2,921 |
| Murmi | 2,867 |
| Rai / Jimdar | 2,020 |
| Khamu | 1,963 |
| Kami | 1,670 |
| Brahman | 1,414 |
| Mangar | 901 |
| Chettri | 829 |
| Newar | 727 |
| Darji | 287 |

Source: Risley, H.H. 1896, : *Gazetteer of Sikkim*, p. 27.

At present data on different ethnic groups are not available. Records show that Lepchas constituted the largest group (5,762 persons) followed by Bhutias (4,894 persons) and Limboos (3,356 persons) in 1891 (Table 4.4). The last ethnic groupwise census of the State was done in 1931 and according to this the Nepalese constituted 77 per cent, Lepchas 11.9 per cent and Bhutias 10.9 per

cent of the State's total population. However, other group data of 1991 census based on Linguistic composition show that the Percentage of Nepalese have gone down to 63.09. The Percentage of Bhutias (8.02) and Lepchas (7.34) have also decreased but their order have become reversed. The Percentage of other groups is very small.

The distribution of the ethnic groups exhibits certain marked features. It is noticed that except the Lepchas and Bhutias in the North district, other communities including the tribals of Sikkim do not have a fixed territorial boundary of the land they have occupied. Each one is mixed with other ethnic groups. The tribes of the North district have their own territorial boundaries. This has great bearing on their socio-cultural behaviour, particularly their nature of self contentment within meager resources available around them. Among the tribes of the North district, the Lepchas of Dzongu (Lepcha reserve in Mangon sub-division) and, Lachenpas and Lachungpas of Lachen and Lachung valleys respectively in Chungthang sub-division reflect the most significant ethnic groupwise concentration of population. According to 1981 census there were 4,331 Lepchas in Dzongu scattered over an area of 15,845.95 hectares (158 km²), in twelve revenue blocks. Out of the total population of Dzongu (7,745 persons), 3,414 were seasonal labourer mostly from Nepal (Bhasin, V. 1989). In Lachung, there are 2,086 persons (503 households, 1991) scattered over an area of 2,805.82 hectare (28 km²) while in Lachen 1,640 persons (488 households) scattered over an area of 3635.75 hectares (36.36 km²) (1991 census). Among them some of the households belong to the Tibetan refugee settlers who had come after the closure of the Sikkim Tibet border (Case Study) following the 1962 Chinese aggression. Other revenue blocks of Chungthang and Mangan sub-division (North district) are occupied mostly by the Bhutias, Tibetans, Drukpas, Sherpas, Kagates, Limboos and the Lepchas (Fig. 4.3).

Towards the southern part of the State, as stated earlier, the higher altitudinal areas of East, South and West districts are occupied by the Bhutias, Sherpas, Gurungs, Tamangs, Tibetans, etc. Largest concentration of Bhutias are found in the north and eastern high lands of Gangtok, Pakyong (East district),

north of Ravong (South district) and north west of Gyalshing (West district) sub-divisions. On the other hand, Sherpas are concentrated in the western part of West district, Tamangs in the south-eastern corner of South district and southern part of Soreng sub-division and the Gurungs in the north-eastern corner of Soreng sub-division. In the southern belt concentration of Lepchas are noticed in and around Tashiding revenue block (Gyalshing Sub-division) and northern part of Soreng (Soreng sub-division). In the southern slope of the South district there are some villages with predominantly Lepcha population, e.g., Kanamtek revenue block with more than 70 per cent of Lepcha people (Case Study). West district is inhabited predominantly by the Limboos while the South district by the Rais. Their villages are situated in the sparsely forested slopes usually at an average altitude of 3,000 to 6,000 feet. Among the Nepalese, the farming communities of Brahman and Chettris are concentrated in the southern part of East, West and South districts between 800-1,200 m. A large proportion of Chettris are found in south, west and central part of Gangtok sub-division, and south and eastern part of Namchi Sub division. They are also concentrated in the northern and the western parts of Gyalshing (Gyalshing Sub division) and the North-East of Soreng Sub-division. Large number of Brahmans are found in south and east of both Gangtok and Pakyong Sub-divisions. The Pradhans, originally an ethnic business, and crafts men community are mostly concentrated in the North-Eastern parts of East district and the southern part of South district. Other Nepali communities are distributed in all the three districts although in scattered groups. Among the three ethnic groups, Nepalese constituting 70 per cent of the total population of the State (1991) are distributed over less than 40 per cent of the total area of the State. The rest of the 60 per cent areas belong to the Lepchas, Bhutias and other tribes. In the North district more than 54 per cent of the revenue blocks have the Lepchas while about 46 per cent have the concentration of the Bhutias.

Distribution and Concentration Pattern of Tribal and Non-tribal Population

In Sikkim the distribution and concentration of tribal and non-tribal population reflect a distinct pattern. It is noticed that the tribals are mostly concentrated in the higher altitudinal zone and the non-tribals in the middle and

low altitudinal zones or in the market areas. According to 1991 census data (at sub-division level) it is found that more than 50 per cent of the total population in Chungthang and Mangan sub-divisions in the north are tribals whereas in other sub-divisions viz. in the South, East and West districts the Percentage of tribal population is 19.61 per cent only (1991 census). In Ravong (South district), Gangtok (East district) and Gyalshing (West district) it is 25.51 per cent, 22.06 per cent and 21.83 per cent, respectively. In Pakyong (East district), Soreng (West district) and Namchi (South district) the Percentage range between 9.16 to 17.36. From the above discussion it is found that North district has the highest concentration of tribal population. In rest of the sub-divisions they are mostly concentrated around the monasteries and market areas, preferably in the higher altitudinal zone, as stated earlier.

At district level, North district has the lowest proportion of non-tribal population (4.41 per cent of the total population of the State), while East district contains the highest with 44.62 per cent of the total non-tribal population. South and West districts have almost same percentage, 25.96 and 24.99 respectively. The data show that the proportion of non-tribal is substantially high in the southern part of the State (95.57 per cent). At Sub-division level, Pakyong, the easternmost Sub-division in the southern part has the highest concentration of non-tribals. It is mainly because the old trade route between India and Tibet was through this Sub-division, as a result, in-migration of large number of non-tribals from Nepal and different parts of India took place since 18th century to this area. Besides, the presence of mines (copper) also attracted a large number of miners, traders, and coin markers from Nepal. Next comes Namchi (South district) and Soreng (West district) Sub-divisions with 87.84 per cent and 82.63 per cent respectively. Namchi with substantial amount of cultivable land attracted the non-tribal farmers. Likewise, Soreng being close to West Bengal and Nepal border received a large number of farmers. As mentioned earlier, it was also the original home of the Limboos of eastern Nepal. Besides that, urban areas of both the Sub-divisions also contributed to the high concentration of non-tribal population to these Sub-divisions. The Percentage of non-tribals in Gyalshing (West district), Ravong (South district) and Gangtok (East district) ranges between 78.16 and 74.48. First

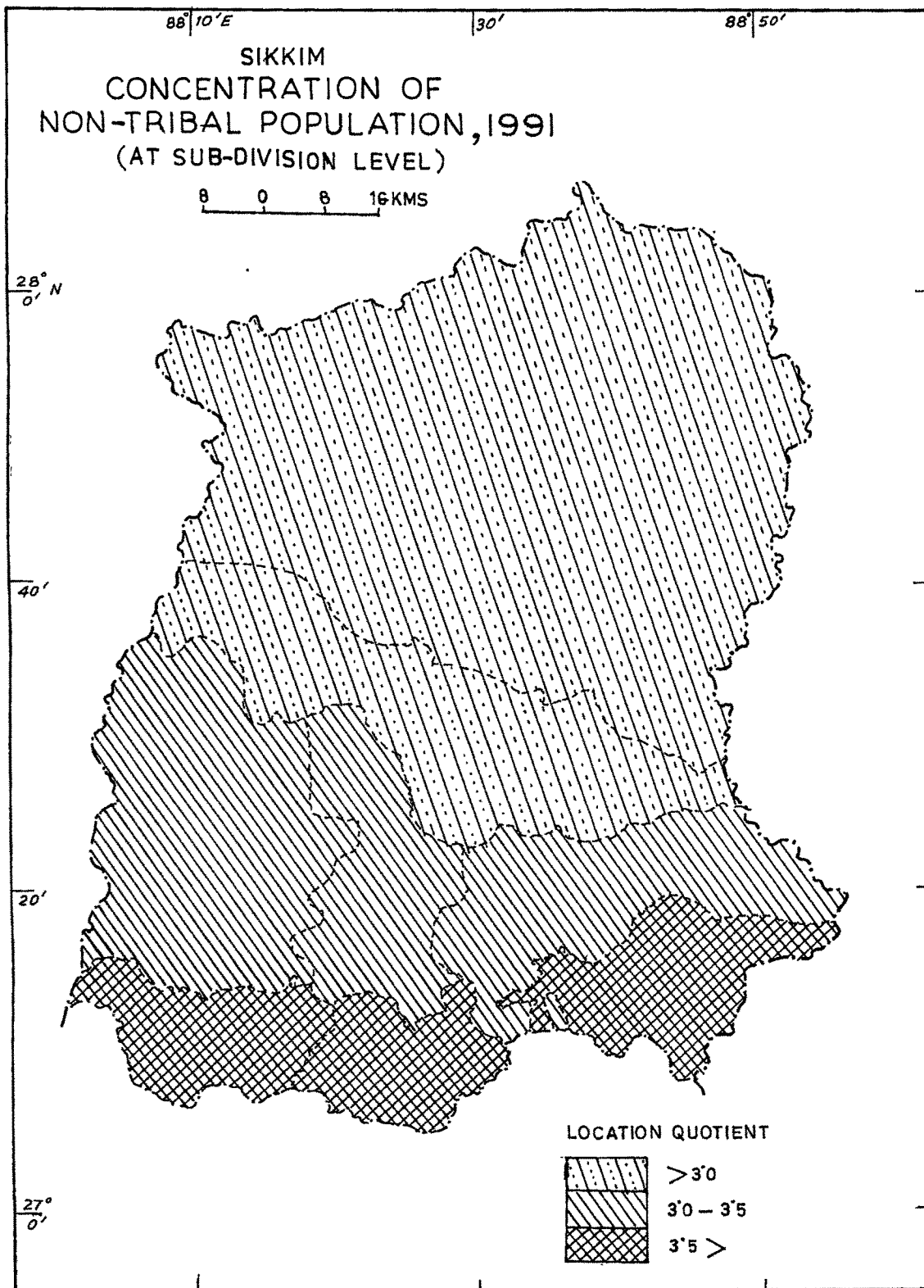


FIG. 4.4

two places are located towards the higher altitudinal area of the West and South districts. Because of remote location, rugged topography, climate and inaccessibility these areas are less attracted by the non-tribal people from the very beginning.

Table: 4.4 Concentration of Tribal and Non-Tribal Population in Sikkim, 1991

| Sub-Division | Percentage of Population to total population | | Location Quotient | |
|--------------|--|------------|-------------------|------------|
| | Tribal | Non-Tribal | Tribal | Non-Tribal |
| Chungthang | 57.94 | 42.06 | 2.59 | 1.90 |
| Mangan | 54.63 | 45.36 | 2.45 | 2.04 |
| Gangtok | 22.06 | 77.93 | 1.00 | 3.50 |
| Pakyong | 9.16 | 90.83 | 0.40 | 4.09 |
| Namchi | 12.15 | 87.84 | 0.54 | 3.95 |
| Ravong | 25.51 | 74.48 | 1.13 | 3.36 |
| Gyalshing | 21.83 | 78.16 | 1.00 | 3.54 |
| Soreng | 17.36 | 82.63 | 0.77 | 3.72 |

Source : Calculated from Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

Gangtok Sub-division with the State capital and three urban centres and number of small market towns attracted a large number of non-tribal people from different parts of India and other neighbouring countries, particularly after the merger of the State with India. Mangan (45.36 per cent) and Chungthang (42.06 per cent) in the North district have the lowest proportion of non-tribal population. From the beginning these two Sub-divisions were restricted to the non-tribal population for permanent settlement. Here non-tribals are floating population and mostly migrate to these areas for job in army and government offices, business purposes, for road maintenance and construction work. Large number of non-tribal agricultural

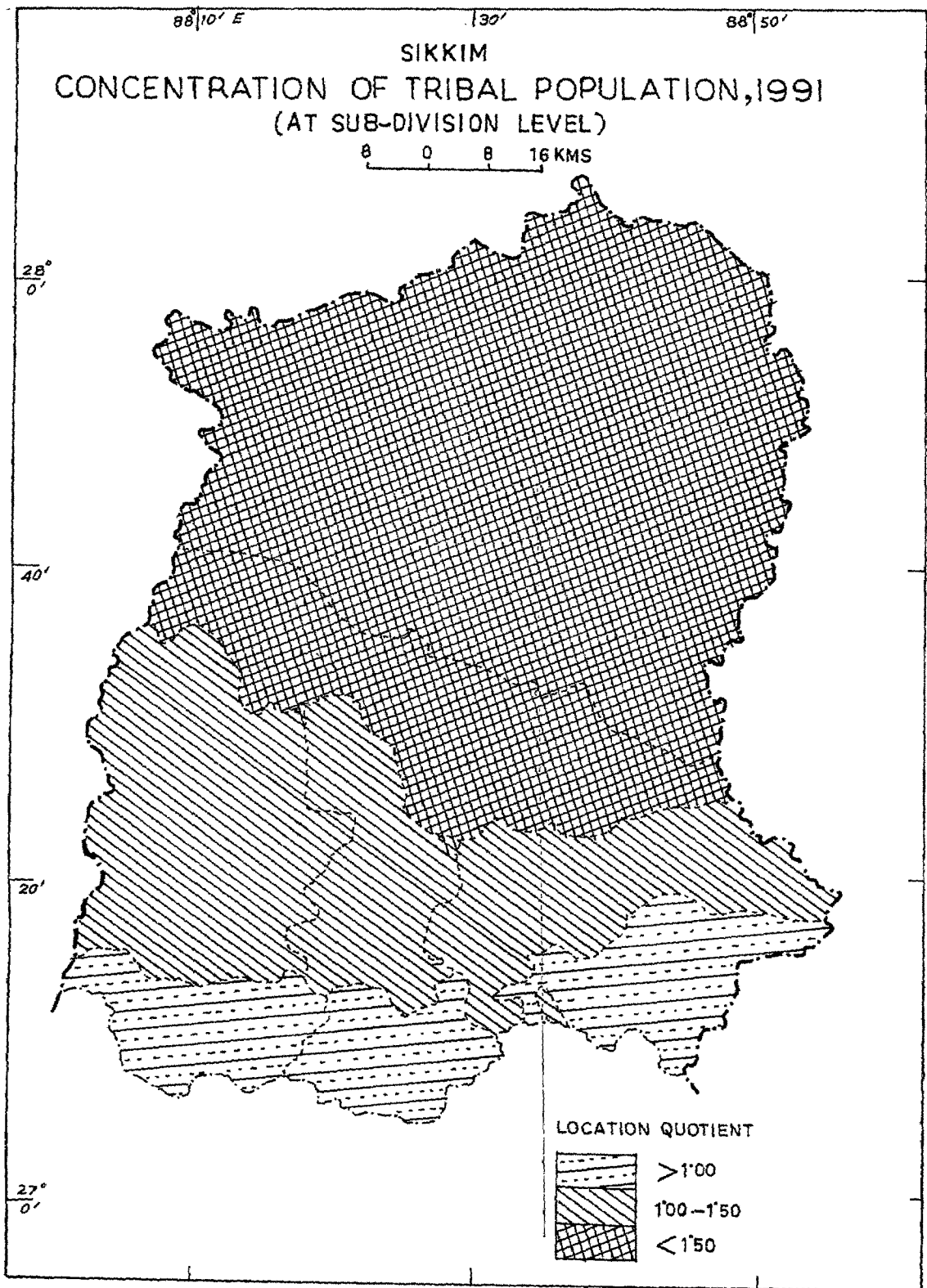


FIG. 4.5

labourer are found mostly in Mangan Sub-division (North district) who contributed to a large extent in the concentration of non-tribals in this Sub-division. It is clear from the discussion that high concentration of non-tribal population at certain places is influenced by not only socio-economic factors but also by historical factor. (Table 4.1).

The relative degree of concentration of tribal and non-tribal population at sub-division level may be clearly seen from the location quotient* values given in the table 4.4. This Table shows that the L.Q. value is the highest for non-tribals in Pakyong Sub-division (L.Q. is <4) which has in fact the highest Percentage of the non-tribal population. Again, the northernmost sub-division Chungthang has the lowest L.Q. for non-tribal population (L.Q. is >2) which has again the lowest Percentage of non-tribal population.

Distribution of Rural and Urban Population

With 90.9 per cent rural population, Sikkim is virtually a rural State. Urbanization here can be said to be a recent phenomenon. Till 1951 there were no notified towns in the State. There were only trading centres scattered in different parts of the State. Gangtok gained the status of a town only in 1951. Other urban centres came into existence only after 1971.

In 1991 the State had only 9.1 per cent urban population. This proportion was much lower than those of the North-Eastern states (between 46.10 per cent and 11.10 per cent) and the country's average of 25.71 per cent. Out of the State's total urban population East district with 86 per cent has the largest proportion of urban population. The rest of the districts, North, South and West have 2.17 per cent, 6.94 per cent and 4.76 per cent respectively. Among the sub-districts Gangtok with three towns has the largest Percentage of urban population (23.25 per cent)

* Location Quotient = $\frac{p_{ij} / p_i}{p_j / p}$, Where, p_{ij} = No. of tribal population in jth unit.

p_i = Total No. of Population in jth unit.
 p_j = Total tribal population of the region
 p = Total population of the region

Table 4.5: Percentage of Urban Population to Total Population in North-Eastern States and India, 1991

| State | Urban Population |
|-------------------|------------------|
| Arunachal Pradesh | 12.80 |
| Assam | 11.10 |
| Manipur | 27.52 |
| Meghalaya | 18.60 |
| Mizoram | 46.10 |
| Nagaland | 17.21 |
| Sikkim | 9.10 |
| Tripura | 15.30 |
| All India | 25.71 |

Source: Census of India, 1991, Sikkim, S-22, P-I, *District Census Handbook*.

As per 1991 Census, the State has 8 towns, among them Gangtok belongs to class III and the rest to class VI. Gangtok had a population of 25,000 which constitutes 67.62 per cent of the total urban population of the State. The rest of the towns are very small in size (Table 4.7), the population of which ranges from 630 persons to 3,868 persons. In-migration is one of the important factors for the net increase of population in the urban areas of Sikkim. The intensity of in-migration increased particularly after Sikkim became a part of India, and the pulling forces were the administrative, commercial, educational and in some cases accessibility.

Rural population of Sikkim is distributed over 411 Revenue Blocks (villages) of different sizes and 42 forest blocks with temporary settlement. The distribution of rural population by size class of revenue blocks has important bearing on the degree of concentration of population in the region.

Table 4.6: Percentage of Urban Population to Total Population, 1991

| District | Urban Population | Percentage of Urban Population to Total Population |
|---------------------|------------------|--|
| North | 803 | 2.17 |
| East | 31.872 | 86.17 |
| South | 2569 | 6.94 |
| West | 1762 | 4.76 |
| Sub-Division | | |
| Chungthang | - | - |
| Mangan | 803 | 3.32 |
| Gangtok | 31872 | 23.25 |
| Pakyong | - | - |
| Namchi | 2569 | 4.04 |
| Ravong | - | - |
| Gyalshing | 717 | 1.42 |
| Soreng | 1045 | 2.19 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

From the table 4.8, it may be seen that 53 per cent of the total revenue blocks, has medium size village of 500-999 persons, followed by 27 per cent in the size of 200-499 persons. The Percentage of very small size villages with population less than 200 persons is 11. In the State more than 65 per cent of very small size village is forest blocks where settlement is mostly temporary. There are a very few large size villages having population above 2,000 persons (7.16 per cent). They are Upper Tadong (7,941 persons), Central Pendam (5,809 persons) and West Pendam (5,011 persons), constituting 0.67 per cent of the total blocks. These blocks are located in the Gangtok, sub-division of East district.

Table 4.7: Percentage of Population in Different Urban Centres of Sikkim, 1991.

| Towns | Total Population | Percentage of Urban Population to Total Population |
|---------------|-------------------------|---|
| Gangtok | 25,024 | 67.62 |
| Singtam | 3,868 | 10.45 |
| Rangpo | 2,980 | 8.05 |
| Jorethang | 1,939 | 5.24 |
| Naya Bazar | 1,048 | 2.82 |
| Mangan | 803 | 2.17 |
| Gyalshing | 717 | 1.94 |
| Namchi | 630 | 1.70 |
| Sikkim | 37,006 | |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

However, significant variation in the Percentage of revenue blocks by size class of population is noticed at district level. West district has the largest Percentage of revenue blocks (60) with a class size of 500 - 999 persons, followed by South and East districts with 56 and 50 per cent respectively. On the other hand, North district has the maximum number of very small size villages constituting 22.6 per cent of the total revenue blocks. Lachen (Chungthang sub-division) is the largest size village in the State, with a population of 1640 persons, an exception in the North district. East district has the largest Percentage (16.15) of large size village having more than 2,000 persons.

Table 4.8: Percentage of Revenue Blocks by Size-Class of Population in Sikkim, 1991

| State/District | Less than 200 | 200-499 | 500-999 | 2,000-4,999 | Above 5,000 |
|----------------|-----------------|------------------|------------------|------------------|-----------------|
| Sikkim | 11.63 (1.24) | 27.74 (12.55) | 53.47 (62.02) | 6.49 (20.0) | 0.67 (4.25) |
| North District | 22.64 (3.36) | 33.96 (36.85) | 39.62 (44.89) | 3.78 (14.88) | - |
| East District | 10.77 (0.66) | 23.08 (7.78) | 50.00 (45.67) | 13.84 (33.06) | 2.31 (12.79) |
| South District | 10.42 (1.75) | 31.25 (16.96) | 56.25 (71.24) | 2.08 (10.03) | - |
| West District | 9.17 (1.16) | 25.83 (13.70) | 60.00 (70.74) | 5.00 (14.38) | - |

(The figures within parentheses indicate Percentage of Population)

Source: Census of India, 1991, Sikkim, S-22, P-XII, A and B, *District Census Handbook*.

It is worth mentioning that 62 per cent of the total population of the State reside in medium size village (500 - 999 persons) followed by 24 per cent of population in large size village (more than 2,000 persons). Only 1.24 per cent live in very small size villages (Less than 200 persons).

At district level it is found that more than 70 per cent of the total population of South and West districts live in medium size villages. East district has the highest proportion of (45.85 per cent) population residing in the large size village (more than 2,000 persons) Table 4.8. It is interesting to note that 96.62 per cent of the total population of the North district live in small villages. Here villages with compact population are scattered over the area.

From the above discussion it is clear that medium size villages are common in those areas where slope is gentle, physical harshness is comparatively less and agriculture is the predominant occupation. On the other hand, small size villages

are located in areas where steep slope, harsh physical condition, small size agricultural landholdings and mixed economy prevail. On the contrary, large size villages are related to urbanization, large concentration of non-tribal Nepalese whose fertility rate is high and to some extent industrialization.

The dispersion of settlement is closely related to spacing of the villages. The size and spacing of villages play a crucial role in the development of a village. In the study area degree of dispersion increases with the increase of altitude and physical harshness. When the density of villages (revenue block) per km² is considered at sub-division level it is found that, it varies from a value of 0.04 villages per km² for Chungthang sub-division (North district) to 0.40 per km² for Namchi sub-division. There is a great variation in the (size) area of the villages. It ranges from as high as 36.35 km² for Lachen revenue block (Chungthang sub-division) to a low value of 0.45 km² in Mangbrue revenue block (Namchi Sub-Division). The variation in the size, spacing and density of villages (revenue blocks) is primarily caused by the topographic condition, inaccessibility, territorial land occupance by different ethnic groups (both tribal and non-tribal), etc. The inter-village (revenue blocks) distance* varies from 2 km in Namchi to 27 km in Chungthang Sub-Division, which is also caused by the topography.

It is worth mentioning that size and spacing of villages are closely associated with the development of the rural areas. Higher degree of dispersal of small villages act as an obstruction in the various services like school, health services, drinking water, transport and communication to the people of the area. Chungthang sub-division is such an example where large inter-village distance act as an obstruction in the expansion of different socio-economic facilities. Although Mangan sub-division is located in the same belt (North district) but has a better position than Chungthang (Table 4.9). The Sub--divisions located in the southern slope of the State are in a more advantageous position due to less inter-village distance.

* The inter village distance has been calculated from the formula, $S = 1.0746 \times \frac{\sum A}{N}$ where, S is spacing, A is the area of the areal unit for which spacing is calculated, N is the number of villages in the area and 1.0746 is constant

Table 4.9: Sub-Divisionwise Inter-Village Distance of Sikkim, 1991.

| Sub-Division | Inter village distance in km. |
|---------------------|--------------------------------------|
| Chungthang | 27.55 |
| Mangan | 5.21 |
| Gangtok | 2.92 |
| Pakyong | 3.25 |
| Namchi | 2.02 |
| Ravong | 3.35 |
| Gyalshing | 3.96 |
| Soreng | 2.71 |

Source: Calculated by the author.

Summary Statement

The analysis of the population distribution makes us clear that Sikkim is not only sparsely populated but also highly unevenly distributed. Physical, socio-cultural and political factors are found to have played a crucial role in determining the present distribution pattern. The altitudewise distribution of population shows that the existing distribution pattern is somewhat different from the expected relationship of population concentration and altitude.

Among the altitudinal zones, (i) the mid-altitudinal zone (600-1,800 m) covers 31.30 per cent of the total area has the highest concentration of population (74.40 per cent) in the State. More than 70 per cent of the villages, almost all the towns and small market centres are located in this belt. High degree of concentration of population in this zone is associated with favourable climate, moderate slope for location of settlement, availability of land for paddy cultivation, dry farming, horticulture and also for animal husbandary. On the contrary, (ii) the lower altitudinal zone (below 600 metres) constitute 8.85 per cent of the total area, is sparsely populated and supports only 20.55 per cent of the total population. It is

mainly due to hot, humid and sultry climate, excessive rainfall, dense forest and presence of dreaded diseases like Malaria, Influenza, etc. In spite of the disadvantages, a few commercial towns have grown there on the banks of the major rivers and their tributaries, where there are transport facilities. (iii) The higher altitudinal zone, above 1,800 metres, with 59.85 per cent of the total area of the State shares only 5.05 per cent of the total populations. Sparse population in this belt is associated with the extremely rugged and dissected terrain, harsh climate, limited agricultural land, inaccessibility, frequent landslide, etc. Here, habitation is mostly concentrated within 2,100 metres; beyond which settlement is semi-permanent to temporary. Chumbi valley, Thanggu, Muguthang, Gnathang are some of the good examples of this type of settlements. Besides physical factors, closeness to the international boundaries and remarkably clan territorial occupance pattern of certain tribal groups, viz., Lepchas and Bhutias (Lachenpas and Lachungpas) in the northern highlands (Chungthang Sub-division), their traditional occupation and landholding system have greatly influenced the present spatial pattern and the variation in the degree of their dispersal in this altitude zone (Above 2,100 metres). Religion also influences the distribution pattern. For example, Buddhist people of a particular sect tend to settle near their monastery.

When the distribution of population is looked at in terms of ethnic groups, it is seen that the distribution of the different ethnic groups in the state is closely related with socio-economic pattern of each group, and also historical and political factors. For instance, the Nepali farmers are mostly concentrated in the gentle slopes of the southern districts (East, South and West districts), the animal rearers like the people of Lachen and Lachung (Bhutias), the Sherpas, the Gurungs, etc., occupy the highland areas and, the Lepcha farmers and food gatherers reside within the middle slope of the river valleys. Further, the Bhutias from Tibet are more concentrated near the Tibetan borders and the Nepalese (Rai and Limboos) from eastern Nepal near the Western borders and in the southern slope of the State. Besides, the former monarchy system is also responsible for the present ethnicwise distribution pattern of population in the State.

Regarding the distribution of tribals and non-tribals it is found that, tribals are mostly concentrated in the remote areas of the high altitudinal zone. Data show that more than 55 per cent of the total population of the North district and 22 to 29 per cent of the Gangtok, Ravong and Gyalshing sub-divisions are tribal people. On the other hand, non-tribals are mostly concentrated in the urban areas, near the mines, in the industrial belts and in those areas where agricultural land is available. East district with all these advantages has the largest proportion (44.62) of non-tribals in the State.

At present, there are 8 towns in the State out of which Gangtok has the highest percentage (67.62) of population. Rest of the towns have a population ranging between 1.70 and 10.45 per cent. East district on the other hand, 86.17 per cent of the total urban population which is the highest among all. At sub-division level Gangtok with three urban centres has the highest urban population (86.13 per cent). It is worth mentioning that, since 85 per cent of the total urban centres of the State is located in the Southern slope, hence it is obvious that largest portion of the skilled and educated non-tribal people are concentrated in this part.

As per 1991 Census, 90.9 per cent of the total population of the State are rural, out of which 62 per cent of them live in the medium size villages (239 revenue blocks, i.e. 53.47 per cent) with a population size ranging between 500 and 999 persons. The Percentage of very small size villages with population less than 200 persons is only 11. Here, more than 65 per cent of very small size villages are forest blocks where settlement is mostly temporary. There are very few large size villages having population above 2,000 persons (7.16 per cent). They are upper Tadong (794), Central Pendam (5,809) and West Pendam (5,011) of Gangtok sub-division which constitute 0.67 per cent of the total revenue blocks.

However, significant variation in the Percentage of revenue blocks by size, class of population is noticed at district level. West district has the largest Percentage of revenue blocks (60) with a class size of 500 - 999 persons, North district has the maximum number of very small size villages constituting 22.6 per

cent of the total revenue blocks. It also has the largest size village in the State, viz., Lachen at Chungthang sub-division. With an area of 36.36 km², it accommodates only 1,640 persons. The name of the smallest villages is Mangbrue revenue blocks of Namchi sub-division with an area of 0.45 km², it has a population of 186 persons. From the analysis it is found that more than 70 per cent of the total population of South and West districts live in the medium size village. In the East district, highest proportion of population (45.85 per cent) is residing in the large size village with more than 2000 persons. On the other hand, 96.62 per cent of the total population of the North district lives in the small size villages. From the above discussion it is clear that spatial variation of the size of the villages and population are mainly affected by the physiography of the area, economic factors like type of occupation, urbanization, industrialization, concentration of non-tribal population and territorial land occupation by different ethnic groups.

The density of villages (revenue blocks) per km² varies from a value of 0.04 villages per km² for Chungthang Sub-Division to 0.40 per km² for Namchi Sub-Division. The inter-village distance varies from 2 kms in Namchi to 27 kms. in Chungthang Sub-Division. It is worth mentioning that size and spacing of the villages are closely associated with the development of rural areas. From this point of view it is found that Sub-Divisions located in the southern slope of the State are in a more advantageous position than those in the northern highlands.

From the above discussion, the assumption mentioned in Chapter 1 that the distribution pattern of population is the result of cause and effect relationship between the physical factors, on the one hand, and socio-cultural factors on the other hand is quite valid.

DENSITY OF POPULATION

An analysis of the distributional aspects of population remains incomplete without a discussion on the pattern of population density. It is because, density of population is an useful tool in the analysis of the diversity of Man's distribution is

space. (Clarke, 1965). In fact, the distribution of population is more locational, while density of population is more proportional (Chandna, 1986). As a result, a simultaneous discussion of the two is highly essential. Further, Demko (1970) recognizes that land and people constitute that two significant elements of an area and, therefore, the ratio between the two is of fundamental interest to all scholars concerned with population analysis. Glenn Trewartha had suggested three of density calculations, they are, arithmetic, nutritional (physiological) and agricultural densities. In this chapter an attempt is made to analyse the different types of population density to get a clear picture of the population concentration and the intensity of the population pressure on the available land resources in the State.

Pattern of Population Density

The population of the State is mainly confined to 411 habitable revenue blocks and in rest of the 42 forest blocks settlement is semi-permanent. The arithmetic density of population of Sikkim is only 57 persons km² as against India's 257 persons per km² (1991). At district level, North district with 60 per cent area of the State has a density of only 7 persons per square kilometre. On the other hand, East, South and West districts with 13, 11 and 16 per cent area of the State respectively have density of 187, 131 and 84 persons per km² respectively. Most of the area of North Sikkim are barren and remain covered by snow throughout the year. West district because of its steep slope and rugged topography has comparatively low density of population. Marked variation of density of population is also observed at the subdivision level, with 2.14 persons per km² in Chungthang sub-division to 229 persons per km² in Gangtok sub-division. This diversity is caused by the physical factors like terrain, climate, availability of suitable land for agriculture, transport and communication facilities, better market etc. High density of population in Gangtok sub-division is mainly caused by its favourable location and by the various socio-economical facilities provided by the capital of the State situated at Gangtok town (as stated earlier). This sub-division with 8.43 per cent of the total area accommodates 33.72 per cent of the total population of the State. It is to be noted that 78 per cent of the total population of this sub-division is non-tribal, which constitutes 33.86 per cent of the total non-tribal population of the

State. After Gangtok sub-division a relatively high concentration of population above 100 persons km² is observed in Namchi (196 person per km²), Soreng (160 persons per km²), and Pakyong (116 persons per km²). These sub-divisions have a density of population higher than the State's average. The most important cause of attraction of population to these sub-divisions is availability of arable land and suitable climate for growing crops. Namchi, Soreng and Pakyong sub-divisions together support 37.6 per cent of the total population of Sikkim. 90 per cent of the population of each of these sub-divisions are non-tribals, mostly belong to Nepali community. Sub-divisions having a population below 100 persons per km² are Ravong, Gyalshing and Mangan with 82, 58 and 25 persons per km² respectively (Table 4.10). Ravong and Gyalshing located in the north of West and South districts respectively. Only 40 per cent of Ravong and 28 per cent of Gyalshing sub-division are habitable. They have a medium to low density of population. 25 per cent of population of Ravong and 21.8 per cent of population of Gyalshing are tribal, belongs to Nepali and Bhutia and in a small number Lepcha and Sherpa tribes. Both these sub-divisions are located on the foothills of the Kanchenjunga groups of peaks. Hence, sparsity of population is found increasing with the increase of altitude towards the north and the west of the sub-divisions (Table 4.10).

Table 4.10: Density of Population at District and Sub-division Levels, 1991

| District | Density / km ² persons | Sub-Division | Density persons / km ² |
|-------------------|--------------------------------------|----------------------|--------------------------------------|
| 1. North District | 7 | Chungthang Mangan | 2.14 25.75 |
| 2. East District | 187 | Gangtok Pakyong | 229.21 116.24 |
| 3. South District | 131 | Namchi Ravong | 196.68 82.15 |
| 4. West District | 84 | Gyalshing Soreng | 58.01 160.43 |
| 5. Sikkim | 57 | | |

Source: Census of India, 1991, Sikkim, S-19, P-XII, A & B *District Census Handbook*.

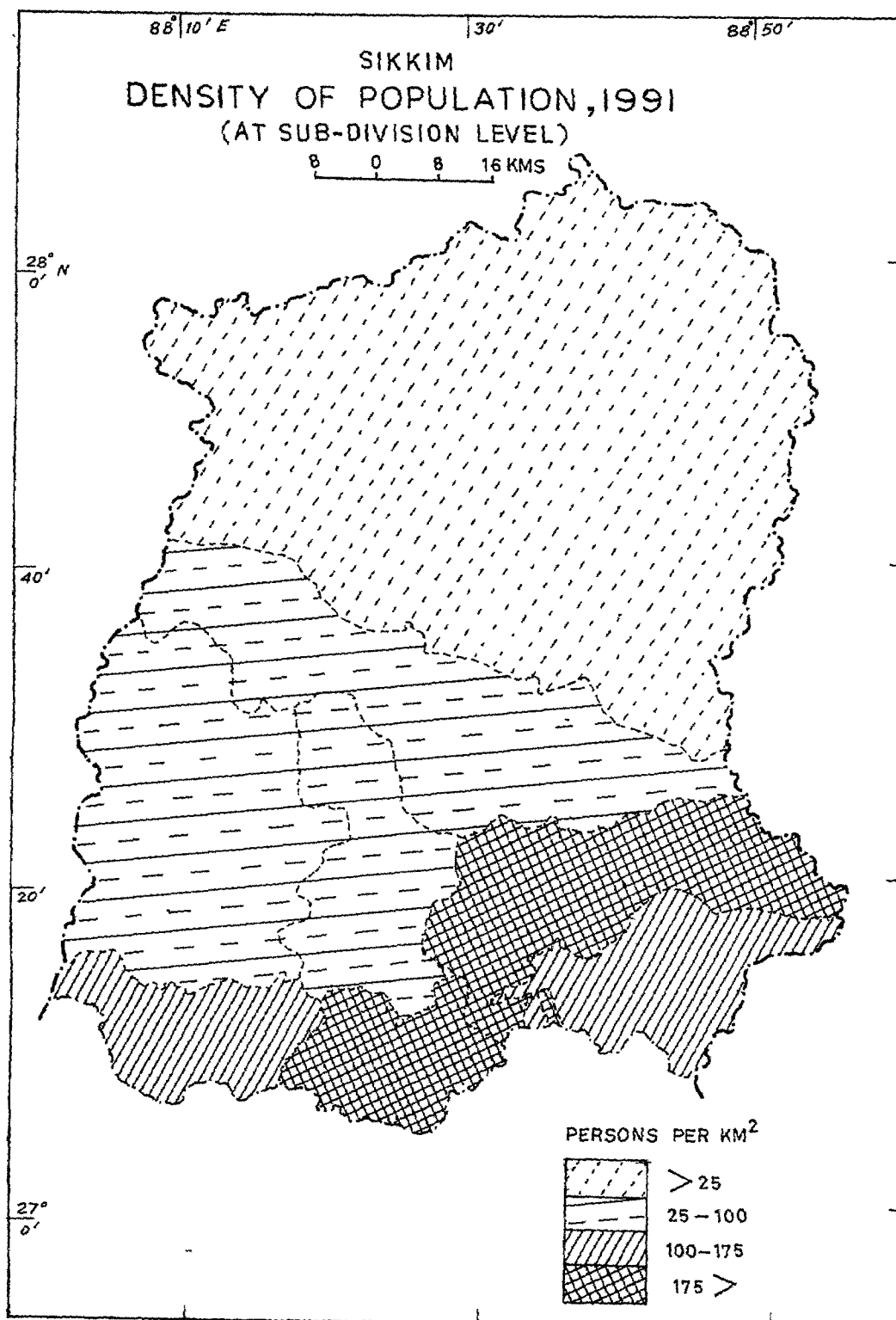


FIG.4'6

In the higher altitude zone, the tribal population with pastoral background are found. In the North district, between the two sub-divisions, Mangan has a comparatively higher density of population than Chungthang, 54.64 per cent of the total population of Mangan is tribal. As stated earlier, majority of the tribal population of this subdivision belongs to Lepcha tribe. A large proportion of area (50.84%) of this sub-division forms the Dzongu reserve for Lepchas. Because of its isolated location, steep slope, rugged topography and lack of better transport facilities, Dzongu is very sparsely populated. Rest of the revenue blocks of this sub-division belongs to both Lepcha and Bhutia tribes as stated earlier).

The lowest density of population of the State is observed in Chungthang sub-division, with 2.14 persons per km². Population of this area is mainly Bhutias, concentrated in different pockets (Valleys). These groups are separated from each other by physical barriers. The environmental factors which impose limit of the arable land and growth of crops, and traditional economy are some of the important factors of low density of population of this area. Besides, because of its strategic location there is restriction on the free movement of people and vehicles from outside which creates obstruction in the socio-economic development of the Chungthang sub-division. It may be mentioned that only tribal people (Bhutia and Lepcha) can purchase land in the North district.

Table 4.11: Sikkim : Percentage of Revenue Blocks in Different Ranges of Density of Population, 1991

| Density of Population (per km ²) | Total No. of Revenue Block | Percentage of Revenue Blocks to Total |
|--|----------------------------|---------------------------------------|
| Below - 50 | 18 | 4.53 |
| 51 - 100 | 45 | 11.34 |
| 100 - 200 | 118 | 29.72 |
| 201 - 300 | 97 | 24.43 |
| 301 - 400 | 60 | 15.11 |
| 401 & above | 59 | 14.86 |

Source: Calculated from census data.

At revenue block level it is found that a large Percentage of revenue block has medium density of population. 118. R.B. have population density below 100-200 persons per km². On the other hand, only 4.53 per cent (18 Revenue Blocks) of the revenue blocks have low density of population (less than 50 persons/km²). revenue Blocks with 401 persons per km² is 59 accounts 14.86 per cent of the total revenue blocks (table 4.11). It is interesting to note that overwhelmingly high density of population ranging between 1,000-14,000 persons per km² is found in the revenue blocks located around or close to the urban centres. According to 1991 census, in Gangtok sub-division (East district) high density of population is seen in Arithang (13,413). Upper Tadong (7,748), Upper Tathangchen (5,177), Upper Burtok (3,413) Upper Sichey gaon (2,940) and Chandmari (1,229) revenue blocks which were previously (1981) within the boundary of Gangtok town. The density of population is comparatively low in Chungthang sub-division (29 to 91 persons per km²) due to remote location, hostile physical condition and socio-economic condition. The revenue blocks which are located in the southern slope of the (East, south and west districts) state and where the main occupation is farming have a density ranging between 40 to 900 persons per km². Quite a large proportion of the area of the State, being hostile to man remains sparsely settled or unoccupied.

Man-Land Ratio

For an in-depth study of the population density of a region a study of man-land ratio is very necessary. A region with high man-land ratio causes abnormal pressure on the land, and if the land is not sufficiently productive the consequence will be over population.

The density of population indicates the man-land ratio. The simple man-land ratio of Sikkim is 57 persons per km², but it cannot be treated as a measure of population pressure on the land because it does not provide a clear picture of the intensity of population pressure on the land of a region, where physical and human conditions are too diverse. Physiological and Agricultural density provide better ratios for understanding the relationship between man and land, which on

the other hand, give a better idea about the intensity of pressure of population on land in the region.

Table 4.12: Physiological and Agricultural Density of Population of Sikkim, 1991

| Districts | Sub-divisions | Physiological density/km ² | Agricultural density/km ² |
|-----------|---------------|---------------------------------------|--------------------------------------|
| NORTH | | 150 | 41 |
| | Chungthang | 137 | 20 |
| | Mangan | 154 | 48 |
| EAST | | 501 | 89 |
| | Gangtok | 647 | 97 |
| | Pakyong | 287 | 91 |
| SOUTH | | 255 | 83 |
| | Namchi | 291 | 92 |
| | Ravong | 208 | 71 |
| WEST | | 356 | 136 |
| | Gyalshing | 343 | 122 |
| | Soreng | 371 | 151 |
| SIKKIM | | 332 | 91 |

Source: Calculated from

- i] Census of India, 1991, Sikkim, Series-72, P-XII, A & B, DCH.
- ii] *Sikkim, A Statistical Profile (1979-80, 1991-92)* Bureau of Economics and Statistics and Planning and Development Department, Govt. of Sikkim.
- iii] *Agriculture Census, Landuse Pattern, 1991*, Bureau of Economics and Statistics and Planning and Development Department, Govt. of Sikkim.

* The physiological density of population of Sikkim is 332 persons per km², which is higher than Mizoram (135) and Nagaland (288). But it varies from area to area depending upon various physical, socio-economic and cultural factors. At

$$\text{* Physiological Density} = \frac{\text{Total Population}}{\text{Total Cultivated area}}$$

$$\text{Agricultural Density} = \frac{\text{Total Agri. Population}}{\text{Total Cultivated area}}$$

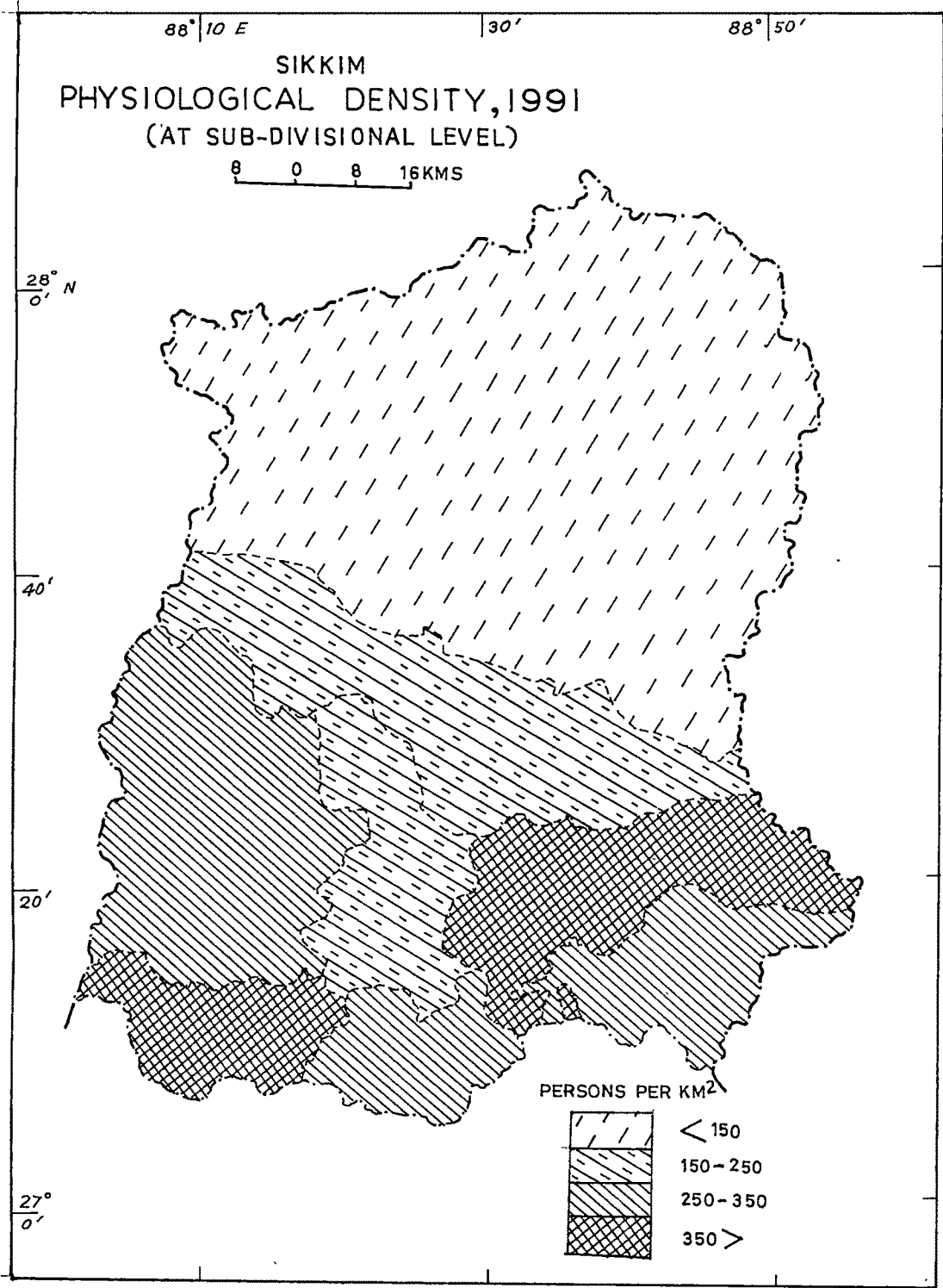


FIG. 47

district level the maximum physiological density is found in East district with 501.61 persons per km², it is followed by West and South districts with 356 and 255 persons per km² respectively. North district with 150 persons per km² has the lowest physiological density in the State. A marked variation between the physiological and the arithmetic density clearly indicates a high incidence of population pressure on land in the State, particularly in Chungthang, Mangan, Gyalshing and Ravong sub-divisions (Table 4.12). It is more so in Gangtok sub-division which has exceedingly high physiological density accounting 647 persons/km² which is almost double the State's physiological density (Fig. 4.6).

Table 4.13: Density of Population in the States and Union Territories of North-East India

| States/Union Territories | Arithmetic Density per km ² | Physiological Density per km ² | Agricultural Density per km ² |
|--------------------------|--|---|--|
| | 1991 | 1991 | 1991 |
| All India | 256 | - | - |
| Assam | 284 | 774 | 157 |
| Manipur | 81 | 550 | 136 |
| Meghalaya | 78 | 407 | 115 |
| Mizoram | 32 | 135 | 37 |
| Nagaland | 73 | 288 | 85 |
| Tripura | 261 | 1009 | 179 |
| Arunachal Pradesh | 10 | 348 | 104 |

Source: Census of India, 1991, pt. II, B(i), *Primary Census Abstract*, Registrar General Delhi

Gyalshing and Soreng (West District) with physiological density of 343 and 371 persons respectively also exceed State's average of 332 persons. In rest of the subdivisions physiological density varies from 137 to 291 persons per km². Chungthang has the lowest physiological density.

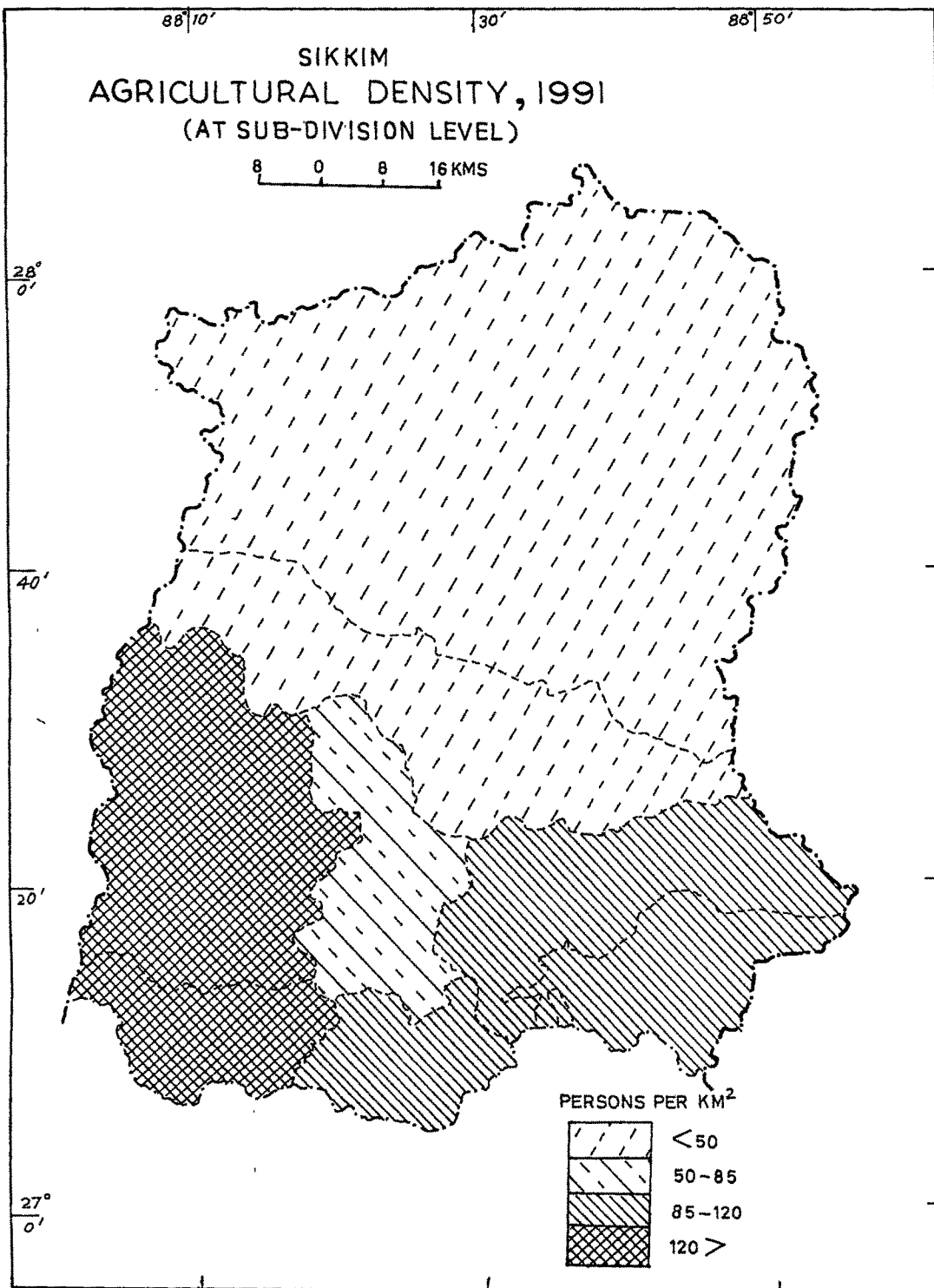


FIG. 4.8

The average agricultural density of the State is 91.62 persons/km² which is much higher than the arithmetic density. (Fig. 4.7). It is found to be higher than Mizoram (37) and Nagaland (85). This reflects that a small fraction of land is cultivated in the region. The causes of the availability of extremely limited cultivable land are steep slope, difficult terrain, land slides, deforestation which make cultivation very often a difficult proposition.

At sub-division level agricultural density varies from 20.48 persons / km² to 151.59 persons/km². Lowest agricultural density of population is noticed in Chungthang (20.48 persons/km²) and Mangan (48.53 persons per km²) of North district. These sub-divisions are located in the higher altitude, hence have limited agricultural land. But by virtue of the occupation of the people as a highlander, pressure of population on the available cultivable land is less. On the other hand, Gangtok, Pakyong, Namchi, and Ravong have a agricultural density of population ranging from 71-97 persons / km². These sub-divisions are located in the southern slope of the region which have gentler slope than the North. The favourable location of these sub-divisions have attracted more agrarian population. Highest density of population on agricultural land is found in Soreng (151.59 persons/km²) and Gyalshing (122.59 persons per km²) sub-divisions of west district. Here, physical environment impose limit on arable land and thus causes variation in the pattern of agricultural density in the region. It is interesting to note that sub-divisions which are located in the southern slope, where valleys are comparatively open and slope of the land is gentle has relatively higher arithmetic density and low agricultural density. It is due to availability of agricultural land. On the other hand, sub-divisions located in the areas of higher altitude have very low arithmetic density but high agricultural density. This is mainly because of extremely limited agricultural land. From the above analysis it is clear that there exists a position correlation between agricultural density and altitudinal aspect of relief in the State.

Summary Statement

The average density of population in the State is 57 persons per km² as against 257 persons per km² for the country. At the sub-division level Chungthang (2), Mangan (25) in North district, Gyalshing (58) in West district and Ravong (82)

South district have very low density of population. These sub-divisions are located in the northern and western highlands of Sikkim Himalaya. Rugged terrain, diverse climate, inaccessibility, lack of suitable land for agriculture, remote location are some of the causes of low density of population. Highest density of population is found in Gangtok sub-division (229) in East district, while medium density of population is observed in Pakyong (116). Namchi (196) and Soreng (160) sub-divisions located in the gentle slopes of the east, south and west districts respectively.

At revenue block level maximum number of blocks (118 revenue block) have a density ranging between 101-200 persons. There are some exceptional cases where density ranges between 1,229 - 13, 414 persons. These revenue blocks are Arithang (13, 413), Upper Tadong (7,748), Upper Tathangchen (5177), Upper Burtok (3413), Upper Sichey gaon (2940) and Chandmari (1229) which were in fact, included within the boundary of Gangtok town in 1981. These blocks were then considered as the urban areas. But in 1991 due to reduction in the boundary of Gangtok town, these revenue blocks fall under rural areas.

From the above arithmetic density we get a general idea of density of population of the State. The actual picture of the man-land ratio becomes clear when it is considered in terms of physiological and agricultural density. The physiological density (332) of population of Sikkim ranks third lowest (Mizoram: 135 persons per km²; Nagaland : 288 persons per km²) among the North-Eastern States (1991). There is a marked variation between the physiological and arithmetic density in Sikkim. Maximum variation is noticed in Gangtok sub-division of East district (647) and Chungthang sub-division of North district (137). In case of the former population pressure on available land is maximum and the latter is minimum. On the other hand, agricultural density of population of the State is 91 which is the third lowest among the North-Eastern States. Here, agricultural density is determined by the type of occupation practiced by the people. For instance, in Chungthung sub-division (20.40 persons per km²) there is a scarcity of agricultural land, but because of the occupation of the people as highlanders, pressure on the available agricultural land is less. On the contrary, sub-divisions

located in the southern slope of the State have high agricultural density, due to pressure of large number of farmers and less agricultural land.

It is clear from the above that both physiological and agricultural density of population of the State are higher than the arithmetic density. This situation indicates the pressure of population on the limited arable land. Increase in agricultural land by deforestation will lead wide spread soil erosion and climatic change. This will ultimately lead to a serious environmental problem which will jeopardize the natural habitat as a whole.

GROWTH OF POPULATION

The growth of population is a fundamental demographic process with which all other population attributes are associated. The population characteristics, viz., age, sex, working force, occupational pattern, etc., get changed with the change in the size of population. It is also a vital index of a region's economic development, social awakening, historical and cultural background and political ideology (Chandna, 1986). Further an increase in population means an extra pressure on the land and available resources. Hence, an understanding of the growth of population is highly imperative towards population analysis of any area. It is in such a backdrop the present chapter deals with the population growth of Sikkim from both temporal and spatial perspectives.

The first census of Sikkim was conducted in 1891 by the then political officer of the State. The population of the State was estimated to be 30,458 persons (Risley, 1994) in this year. Since 1901 the census was conducted under the supervision of West Bengal Census authorities. From 1981, the decennial census has been conducted independently by a full fledged census Directorate of Sikkim which was established in 1976.

Trend of Population Growth 1901-1991

In 1901 the total population of Sikkim was 59,014 persons which increased to 87,920 persons in 1911. In 1921 population of the State dropped to 81,721 and

it was in accordance with the trend throughout the Country. After this period the population of Sikkim showed an increasing trend. In 1931 the State had a population of 1,09,808 persons which increased to 2,09,843 persons in 1971. After this period the rate of growth of population was quite noticeable. The number increased from 3,16,385 persons in 1981 to 4,06,457 in 1991.

Table 4.14: Sikkim: Growth of Population and Decadal Variation, 1901-1991

| Year | Population (in number) | Decadal Variation |
|------|------------------------|-------------------|
| 1901 | 59,014 | - |
| 1911 | 87,920 | 48.98 |
| 1921 | 81,721 | -7.05 |
| 1931 | 1,09,808 | 34.37 |
| 1941 | 1,21,520 | 10.67 |
| 1951 | 1,37,725 | 13.34 |
| 1961 | 1,62,189 | 17.76 |
| 1971 | 2,009,843 | 29.38 |
| 1981 | 3,16,384 | 50.77 |
| 1991 | 4,06,457 | 28.47 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

In terms of decadal variation, the State recorded a high growth rate of population (48.98 per cent) in the beginning of this century (1901-1911). In the next decade, like other parts of the country, Sikkim also had a negative growth of -7.05 per cent (1911 to 1921) mainly due to Influenza epidemics. Because of improvement in the public health and medical facilities, transport facilities, etc., death rate declined which resulted into high growth rate of 34.37 per cent 1921-31. During the next decades (1941-61) growth rate was low but had an increasing trend (10-17 per cent). After 1921 the variation in population, no doubt, exhibited

an increasing trend at every census but the pace of variation had always been lower than 34.37 per cent which was marked in 1921-31. In a period of 190 years (1901-1991) of population history of Sikkim maximum decadal variation was noticed during 1981 (50.77) which was double the growth rate of the country (25 per cent) as a whole. However, the growth rate had again declined to 28.47 per cent in 1981-91, but was still higher than the country's average (23.50 per cent). During 1971-1981 maximum growth of population took place after 1975, when Sikkim became the 22nd State of India. It is also observed that this period witnessed an annual growth rate of population (4.19 per cent) which was almost double the country's annual growth rate (2.26 per cent) (Table 4.15). On the whole, the State witnessed a very high growth rate registering a growth index* of 234.47 per cent during the last 50 years (1941 to 1991) which was higher than the country's growth index of 165.58. (Table 4.16).

Table 4.15: Percentage Variation and Annual Growth Rate, 1990-1991

| Year | SIKKIM | | INDIA | |
|---------|---------------------------------|-----------------------------|---------------------------------|-----------------------------|
| | Decadal Variation (in per cent) | Annual Growth (in per cent) | Decadal Variation (in Per cent) | Annual Growth (in Per cent) |
| 1961-71 | 29.38 | 2.61 | 24.80 | 2.24 |
| 1971-91 | 50.77 | 4.19 | 25.00 | 2.26 |
| 1981-91 | 28.46 | 2.53 | 23.23 | 2.11 |

$$(i) \text{ Decadal Growth } r = - \frac{P_1 - P_0}{P_0} \times 100$$

$$(ii) \text{ Annual Growth Rate } r = (t \sqrt{\frac{P_1}{P_0}} - 1) \times 100,$$

Where, P_0 is population at the beginning year,

P_1 is the population at the end year,

t is the time

$$* (i) \text{ Growth Index} = \frac{X}{\text{Population of the base year}} \times 100$$

Where, X = Variation of Population between 1941 and 1991

Table 4.16: Trend of Population Growth in Sikkim, 1941-91

| Year | Population | Variation | Growth index | All India (1941-91) |
|------|------------|-----------|--------------|---------------------|
| 1941 | 1,21,520 | | | |
| 1951 | 1,37,725 | 16,205 | | |
| 1961 | 1,62,189 | 24,464 | | |
| 1971 | 2,09,843 | 47,659 | | |
| 1981 | 3,16,384 | 1,06,542 | | |
| 1991 | 4,06,457 | 90,072 | 234.47 | 165.58 |

Source: i] Census of India, 1991, S-22, Sikkim, P-XII, A & B, *District Census Handbook*.

ii] Census of India, 1981, Sikkim, S-19, P-XIII, A & B *District Census Book*.

Table 4.17: Decadal Growth Rate of North-Eastern States 1971- 81 and 1981- 91

| States | 1971-81 | 1981-91 |
|-------------------|---------|---------|
| Arunachal Pradesh | 35.15 | 36.83 |
| Assam | 36.05 | 23.58 |
| Manipur | 32.46 | 29.29 |
| Meghalaya | 32.04 | 32.86 |
| Mizoram | 48.55 | 39.70 |
| Nagaland | 50.05 | 56.08 |
| Tripura | 31.92 | 34.30 |

Source: (i) Census of India, 1981, Pt, II (B) (i), *Primary Census Abstract*, Registrar General, Delhi.

(ii) Census of India, 1991, Sikkim, P-1.

The population growth in Sikkim is the result of cumulative effects of both the components of population change, viz., natural increase and in-migration of population from the neighbouring countries and different parts of the country. It is observed that due to improvement in medical and public health facilities, education, drinking water, etc., death rate is decreasing in the State which is leading to the increase of its natural growth. The growth rate was almost constant up to 1989 (20.45 to 23.7 per cent) but after this period a decline in the natural growth rate has been observed. General illiteracy, higher proportion of persons in the reproductive age groups, early marriage among certain communities, high dependency ratio and poor economic condition are the main causes of high natural growth in the early decades. The birth and death rates of the State show that the natural increase here was 22.1 per cent in 1981 which dropped to 15 per cent in 1991 (Appendix II) as against 21.4 per cent and 19.7 per cent for the country. The low natural growth rate of population in 1991 is attributable to both low birth rate and death rate among the three ethnic groups of Sikkim. The Bhutias and the Lepchas have comparatively low fertility rate mainly because of high bride price, late marriage, practice of polyandry, adoption of the monastic life by the male children and to some extent by the female children particularly from the Bhutia community, etc. On the other hand, the Nepalese who have a high fertility rate due to various factors like lower age at marriage, low bride price, agricultural occupation, etc., contribute more to the high growth rate of population in the State. However, from the declining trend of the natural growth in the State from 22.1 per cent in 1981 to 15.0 per cent in 1991, it is clear that people are becoming conscious of high birth rate and preferring small families. It is being so because of people's shifting of occupation from primary to tertiary, increasing literacy, exposure to outside world, development of transport and communication facilities, etc.

The next important component which led to the high growth rate of population in the State is the in-migration. As stated earlier, migration of population to Sikkim has been taking place since long. Different ethnic groups from the neighbouring countries migrated to the region in different phases of time and contributed to the decadal increase of growth rate of population. But the high

growth rate in the last two decades is mainly due to the in-migration of people from different parts of India, especially after the merger of the State with the Nation. This has been mainly because of availability of avenues for jobs and opening of business in a newly created State and also lack of skilled people in it. However, there has been a decreasing growth rate (28.47 per cent) in the last decade (1981-91) which indicates a declining trend of in-migration after 1981 due to slow economic development in the State.

Growth of Tribal Population and Non-Tribal Population

There is a difference between the decennial growth rate of tribal and non-tribal population of Sikkim (Table 4.18). During 1971-81 the tribal population recorded a decadal growth of 46.19 per cent as compared to a high growth rate of 52.22 per cent for non-tribals. Again, during the last decade (1981-91) the tribal population recorded a growth rate of 23.47 per cent as against the rate of 30.00 per cent for non-tribals. In respect of tribal population growth rate among the North-Eastern States, Sikkim ranked second (46.19 per cent) next to Mizoram (47.43 per cent) during 1971-81 (Appendix III). But during the last decade (1981-91) growth rate of tribal population dropped to the lowest. It is due to a decline in the immigration of tribal population from the neighbouring areas and out-migration to different parts of India for better prospective. During the last decade (1981-91) growth of tribal population was noticed only in certain parts of the State. At district level, West district has the highest growth of tribal population. Maximum growth is noticed in different revenue blocks of South district and East district. Salghari revenue block in Namchi sub-division of South district has the highest growth of tribal population (564.84). This revenue block is followed by Barfung block of Ravong Sub-division in South district, Penlong of Gangtok sub-division in East district and Gagyong revenue block of Ravong Sub-division with a growth rates of 355.94, 132.35 and 105.75 per cent respectively. The majority of the population of these sub-divisions are Bhutias. Among the other revenue blocks Tadong, Shyangyong, Rumtek, Temphyal Mendu (Gangtok Sub-division), Rhenok (Pakyong Sub-division) of East district, Thangsing, Singhithang (Namchi Sub-division), Lingding (Ravong Sub-division) of South district, Begha, Hee-Patal

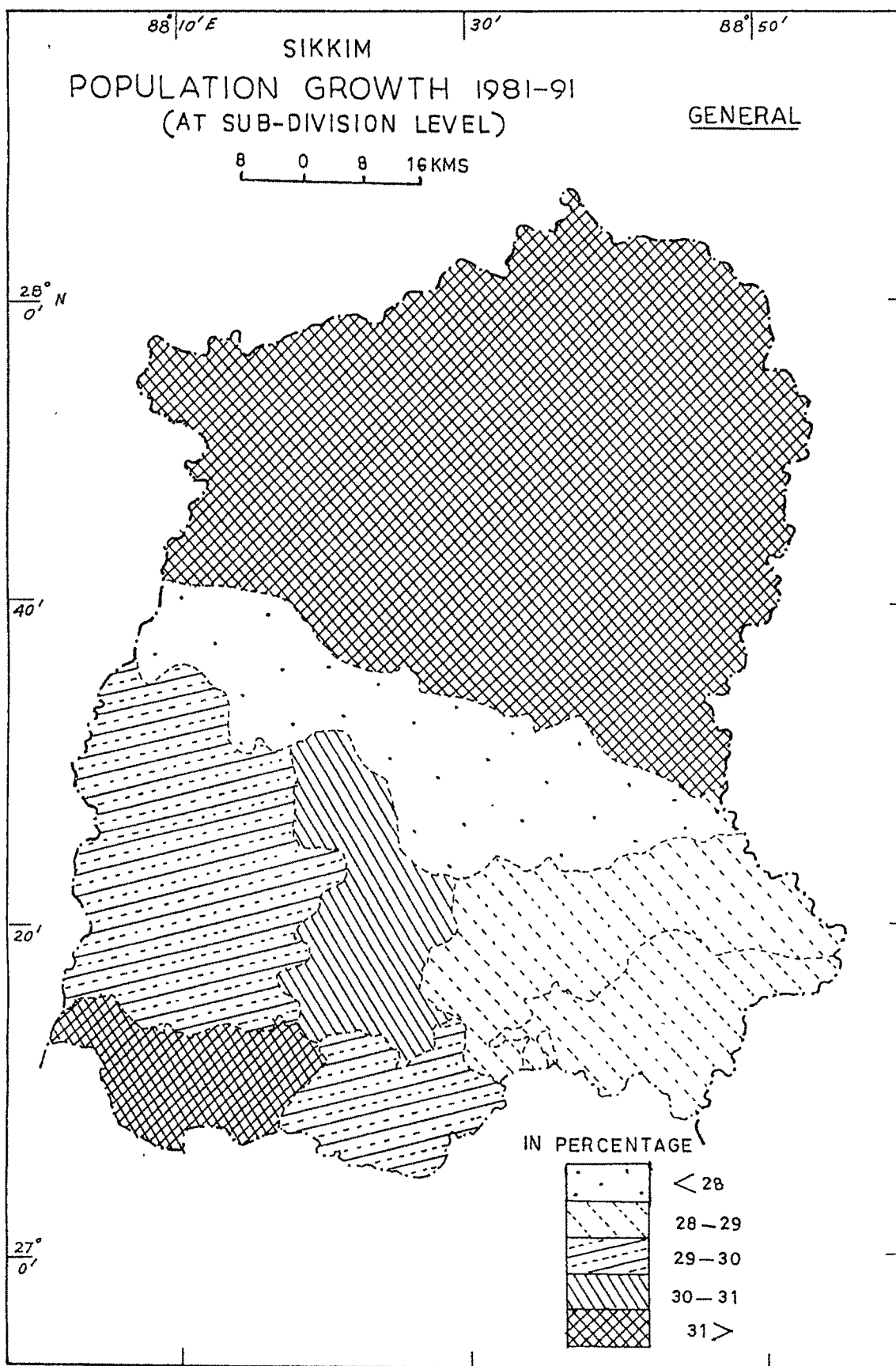


FIG. 4'9

(Gyalshing Sub-division), and Bara Samdong, Sribadam Chumbong, Upper Fumbong, Ribdi (Soreng Sub-division) of West district have a growth of tribal population ranging between 45 and 90 per cent.

Table 4.18: Decadal Growth Rate of Population of Sikkim, 1971-91

| Districts/Sub-divisions | Total Population | | Tribal Population | | Non-tribal Population | |
|-------------------------|------------------|---------|-------------------|---------|-----------------------|---------|
| | 1971-81 | 1981-91 | 1971-81 | 1981-91 | 1971-81 | 1981-91 |
| NORTH | 103.93 | 18.09 | - | 17.68 | - | 18.60 |
| Chungthang | - | 47.75 | DNA | 18.32 | - | 124.8 |
| Mangan | - | 15.74 | - | 17.48 | - | 5.21 |
| EAST | 62.07 | 28.60 | - | 23.22 | - | 30.12 |
| Gangtok | - | 28.50 | - | 25.74 | - | 171.28 |
| Pakyong | - | 28.95 | - | 13.89 | - | 32.77 |
| SOUTH | 42.85 | 29.78 | - | 25.25 | - | 30.75 |
| Namchi | - | 29.30 | - | 23.46 | - | 30.14 |
| Ravong | - | 30.70 | - | 26.84 | - | 32.05 |
| WEST | 29.59 | 30.55 | - | 28.04 | - | 31.18 |
| Gyalshing | - | 29.30 | - | 26.52 | - | 30.75 |
| Soreng | - | 31.35 | - | 30.12 | - | 31.61 |
| SIKKIM | 50.17 | 28.47 | 46.19* | 23.47 | 52.22* | 30.00 |

* Projected population, DNA: Data Not Available.

Source: 1. Census of India, 1991, Sikkim, S-22, P-XII, A & B.

2. Census of India, 1981, Sikkim, S-19, P-XIII, A & B.

3. Census of India, 1971, Sikkim, A & B.

The revenue blocks of Soreng sub-division are mostly inhabited by the Sherpa tribe. In the North district high growth rate of tribal population is found in Ringhim

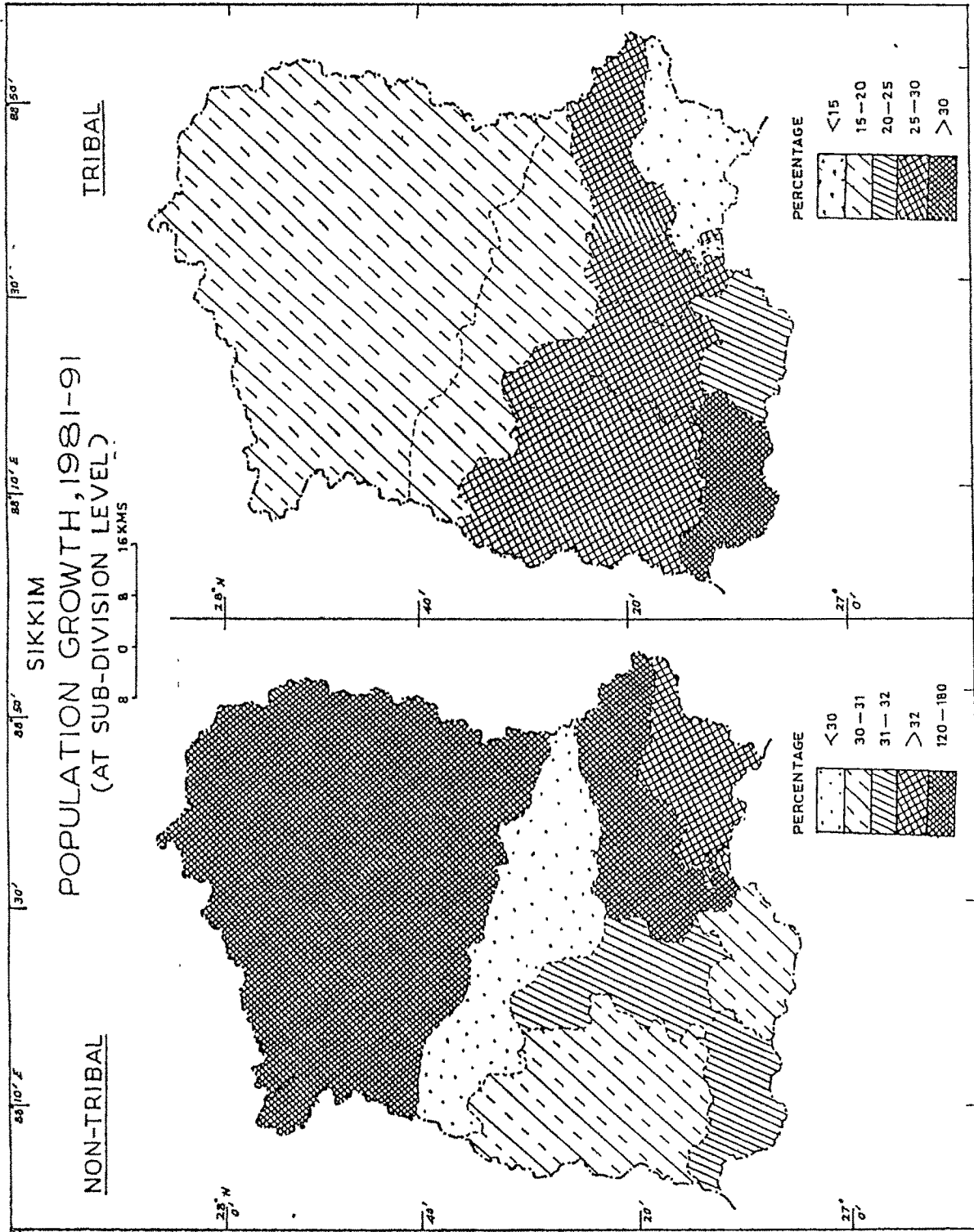


FIG.4.10

(77), Lingdong (63) and Sangtak (42) revenue blocks of Mangan sub-divisions. These blocks are mostly inhabited by Lepcha and Bhutia tribes. They are located near the Mangan Town. It is worth mentioning that maximum growth of tribal population is noticed in those revenue blocks which are located near the urban areas, market towns and monasteries.

The causes of population growth of the tribes, viz., Lepcha and Bhutia and both non-tribals and tribals of the Nepali Community may be put as follows:

Table 4.19: Ethnic Groupwise Growth of Population in Sikkim, 1891-1991, and 1981-1991

| Ethnic Groups | 1891 | 1981 | 1991 | 1891-1991 | 1981-1991 |
|---------------|--------|----------|----------|-----------|-----------|
| Lepcha | 5,762 | 24,953 | 30,266 | 458 | 21.29 |
| Bhutia | 4,894 | 48,664 | 59,449 | 1099 | 22.16 |
| Nepali | 15,599 | 2,27,797 | 2,96,713 | 1543 | 30.00 |

Source: i) Census of India, 1981, Sikkim, S-19, P-IX, *Special Table for S.C. and S.T.*

ii) Census of India, 1991, Sikkim. (Unpublished data, collected from Census Department).

3) Risley, H.H. 1894, *The Gazetteer of Sikkim*, Pub. Bengal Secretariat Press, Reprinted by Kuwality Store Gangtok, Sikkim.

During the last hundred years (1891-1991) Lepcha has the lowest growth rate of population (458 per cent). (Table 4.19). The growth of Lepcha population is due to natural increase and immigration from Darjeeling and Kalimpong areas. The growth of Bhutia population is 1099 per cent, which is mainly caused by immigration from Tibet before the closure of the border following Sino-Indian war in 1962 and from Bhutan, and different parts of North and North-East India. As stated earlier, natural growth among the tribes is low due to different social, demographic and political factors. Among the demographic and social conditions as mentioned

earlier, low fertility rate, late marriage, adoption of the monastic life by the male Child, polyandry system of marriage are important ones. The non-tribal and tribal Nepalese have the maximum growth rate with 1543 per cent. This is mainly due to mass in-migration of Nepali people from Nepal for different development work in Sikkim. Later, Nepalese from different parts of the Darjeeling districts and other parts of India have migrated to this region in search of job marriage. According to the information found from the Department of Census, the total number of Lepchas in 1991 was 32,182 persons as against 24,953 in 1981. Bhutia population for the corresponding years are 58,708 and 48,664 persons respectively. Nepali population in this study is estimated on the basis of linguistic data and other information. Their number is found to be 2,96,713 persons for 1991 as against 2,27,797 persons for 1981 approximately. Among the three groups Nepalese have the highest growth rate of population (30) followed by Lepchas (28) and Bhutias (20) in the last decade (1981-91), as stated earlier. (Table 4.19).

It is clear from the above discussion that the growth of both tribal and non-tribal population in the State has been the result of interplay of various political and socio-economic factors during different phases of times.

Rural and Urban growth of Population

When the first census was taken under the west Bengal Census Operation, the entire population of Sikkim was considered as rural. When the first town (Gangtok) was established in 1951, the State had only 1.99 per cent urban population. Urbanisation is, as a matter of fact, a recent phenomenon in Sikkim.

By 1991, 16.15 per cent of the State's population was classified as urban population which was less than that of many states of the North-Eastern region. (Table 3.3.10). Due to rapid increase of urban population, there is however, a striking difference in the growth rate of rural and urban population in Sikkim. During 1971 - 1981, when the growth rate of rural population was 39.50 per cent, its urban population showed a tremendous increase of 159.73 per cent (Table 4.20). During 1901-1991 the rural population had grown a little more than five times whereas urban population increased more than 12 times during 1951 - 1991,

i.e., only in 40 years. This sudden growth of population in the urban areas is attributed to the accelerated rate of in-migration of mostly non-tribal population into the urban centres specially during 1971-81. On the other hand, low growth rate in the rural population was due to mainly to out-migration of population to the urban areas mainly for job and education. In 1981-91, when the growth of rural population remained same (39.26 per cent), the urban population showed a negative rate of growth, i.e., -27.6 per cent (Table 4.20). The main cause of negative growth of urban population is primarily due to the exclusion of considerable portion of area that were previously treated as urban. Among the North-Eastern States, Sikkim (159.73 per cent) ranks third after Mizoram (222.61 per cent) and Manipur (165.36 per cent) in the growth of urban population in 1971-81 which is far above the country's urban growth rate (46.14 per cent) (Appendix V).

Table 4.20: Decadal Growth of Rural and Urban Population, 1971-1991

| District | Rural Population | | Urban Population | |
|----------|------------------|-----------|------------------|-----------|
| | 1971-1981 | 1981-1991 | 1971-1981 | 1981-1991 |
| North | +102.44 | +18.55 | +135.65 | +2.94 |
| East | +39.24 | +53.45 | +154.08 | -26.30 |
| South | +35.89 | +36.00 | +339.03 | -52.10 |
| West | +29.10 | +31.26 | +54.84 | +3.83 |
| Sikkim | +39.50 | +39.30 | +159.73 | -27.60 |

Source: Census of India, 1991, S-22, P-XII, A & B, Sikkim, *District Census Handbook*.

When viewed from spatio-temporal perspective, North district had the highest growth rate of 102.44 per cent of rural population, on the other hand, South district had highest growth rate of urban population in 1971-81. But in 1981-1991 East district recorded the highest growth rate of rural population (53.45 per cent) and West district recorded the highest growth rate of (+3.83 per cent) urban

population. During the same period East and South districts had a negative growth of urban population. Among the urban centres Gangtok is the oldest town with a population of 25,024 person in 1991. The highest growth rate of population of this town is observed during the decades of 1951 to 1961 (149.56 per cent) and 1971-81 (176.12 per cent). Due to the merger of the State with India all the towns had a high growth rate of population due to mass in-migration (1971-81). Among all the towns Jorethang ranks the highest in growth rate (414.56 per cent) followed by Namchi (213.9 per cent). Gangtok (176.1), Mangan (135.6) and Singtam (109.91) in 1971-81. Rest of the towns had a growth rate ranging between 37.36 and 67.41 per cent. During the last decade 1981 to 1991 Gangtok, Singtam, Namchi, Jorethang and Gyalshing had a negative growth rate of population ranging between (-) 4.32 to (-) 96.24 per cent. The causes are mentioned earlier. During this period only, Rangpo (21.53 per cent), Nayabazar (9.76 per cent) and Mangan (2.94 per cent) had positive growth of population. (Table 4.21). In the next decade, i.e., 1981-91, a general decline in the growth of urban population is mainly because of the decreasing rate of the job opportunities due to slow developmental activities. Comparatively high growth rate in the rural areas is caused by extension of various development schemes in the rural areas, such as development of road, schools, public health, agriculture, etc.

Table 4.21: Growth of Population in Different Towns of Sikkim, 1951 - 1991

| Town | 1951 | 1961 | 1971 | 1981 | 1991 | 1951-1961 | 1961-1971 | 1971-1981 | 1981-1991 |
|-----------------------|-------|-------|--------|--------|--------|-----------|-----------|-----------|-----------|
| Gangtok Class III | 2,744 | 6,848 | 13,308 | 36,747 | 25,024 | 149.56 | 94.33 | 176.12 | -31.9 |
| Mangan Class VI | - | - | 331 | 780 | 803 | - | - | 135.6 | 2.94 |
| Rangpo Class VI | - | - | 1,785 | 2,452 | 2,980 | - | - | 37.36 | 21.53 |
| Singtam Class VI | - | - | 1,926 | 4,043 | 3,868 | - | - | 109.91 | -4.32 |
| Namchi Class VI | - | - | 460 | 1,444 | 630 | - | - | 213.91 | -56.37 |
| Jorethang Class VI | - | - | 762 | 3,921 | 1,939 | - | - | 414.56 | -50.54 |
| Gyalshing Class VI | - | - | 445 | 745 | 717 | - | - | 67.41 | -96.24 |
| Nayabazar Class VI | - | - | 651 | 952 | 1,045 | - | - | 46.23 | 9.76 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

Spatial Overview of Population Growth

An analysis of the growth pattern at sub-divisional level indicates that there is an uniformity in the growth rate of rural population in the sub-divisions located in the southern slope (East, West and South districts) of the State. On the other hand, the sub-divisions located in the northern highlands (North district) have a varied growth rate. Except Gangtok sub-division. (East district), the rest of the sub-divisions, viz., Pakyong, Namchi, Ravong, Gyalshing and Soreng have a growth rate ranging between 28 to 39 per cent (Table 4.22). The main reason behind it is that the occupational pattern of the people is almost same, i.e. farming. Secondly, they are predominant of Nepali population whose fertility rate is comparatively higher than other groups. Among these sub-divisions Namchi (39 per cent) has the highest growth rate of rural population due to expansion of Namchi and Jorethang town to the adjacent rural areas (revenue block) and the presence of Temi Tea Estate in the rural areas. Among all the sub-divisions Gangtok (65.9 per cent) has the highest growth rate of rural population. The high growth rate is attributable to a number of factors, such as (i) expansion of the Gangtok town to the adjacent rural areas, (ii) establishment of offices and institutes in the outskirts of rural areas due to scarcity of space in the town, (iii) presence of important monasteries in certain pockets, (iv) development of small scale industries in the Rangpo and Singtam belt, (v) development of transport and communication facilities, (vi) as stated earlier, conversion of urban areas into rural, etc. In the northern highland (North district) Chungthang sub-division (47.75) has the highest growth rate. The main reason behind this are the creation of the sub-division headquarters at Chungthang which has generated employment opportunities. Secondly, expansion of construction work (BRO and Army), resulted in-migration of people of the area. Besides, it is observed that Chungthang being the last market centre of the North district, a number of population of business community from different parts of the country and the State are migrated to this area for trade and commercial activities, and opening of the Yumthang valley (Lachung revenue block) for the tourists lead to development of hotels and market in the Lachung areas have also contributed to the high growth rate of rural population. On the contrary, Mangan Sub-division with equal amount of facilities

like the former one, and in addition, with an urban centre, has surprisingly lowest growth rate of population (15.74) in the State. One of the cause behind it is the out-migration of Nepali labourer from Dzongu (Ref. Case Study) and other revenue blocks. It is found that 16.81 per cent of the total area of Mangan Sub-division is covered by Dzongu, the Lepcha reserve. Due to remote location, this area is backward and neglected. As a result, here out-migration for better prospective is a common feature. On the whole, growth rate of rural population in the North district is the lowest (17.68) in the State. Number of cases are responsible for it. They are, (i) low fertility rate caused by existing socio-economic system, (ii) secondly, Dzongu, Lachen and Lachung, which cover a large part of this district are restricted areas for the outsiders, (iii) the seasonal labourer and other people are not allowed to enter and work here without a work permit and a pass, as mentioned earlier.

Table 4.22: Sikkim : Decennial Growth of Population of the Sub-divisions (in per cent), 1981-91

| Sub-division | Population | | Growth of Population |
|--------------|------------|----------|----------------------|
| | 1981 | 1991 | 1981-1991 |
| Chungthang | 4,760 | 7,033 | 47.75 |
| Mangan | 20,915 | 24,207 | 15.74 |
| Gangtok | 1,06,670 | 1,37,070 | 28.50 |
| Pakyong | 32,092 | 41,382 | 28.95 |
| Namchi | 49,135 | 63,527 | 29.29 |
| Ravong | 26,841 | 35,077 | 30.38 |
| Gyalshing | 38,795 | 50,353 | 29.19 |
| Soreng | 36,397 | 47,808 | 31.35 |
| Sikkim | 3,16,385 | 4,06,457 | 28.47 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

The growth rate of scheduled caste population in Sikkim is 31.74 per cent which is higher than the growth rate of S.T. population (23.47 per cent). At district level, west district has the highest growth 39.42 per cent which is the result of both natural increase and in-migration. On the other hand, East district with highest Percentage of S.C. population (6.99 per cent has the lowest growth rate (28.15 per cent). A large proportion of S.C. population in the east district is concentrated in the market areas such people usually prefer small families. It is interesting to note that North district with the lowest Percentage (3.56 per cent) of S.C. population in the State has the highest growth rate (38.88 per cent) next to that of the west district. It is mainly due to the extension of government departments in the North district. (Appendix V).

POPULATION PROJECTION

After analysing the trend of growth of population of Sikkim from 1901 to 1991, it is essential to project its population size for the next decade (2001). Population projection helps in making economic planning for the development and welfare of human resources. It has special meaning and importance to a backward State like Sikkim where potential resources are yet to be harnessed and implementation of planning programmes for the overall development of the place and people are yet to make progress in real terms. With the help of a simple formula ⁺ the future rate of population for the State is calculated.

The result (Fig. 4.11) shows that if the present trend of growth continues, the population of the State will increase to 5 lakhs in 2001 and 7 lakhs in 2011. Such a rapid growth would create an alarming situation for a small State like Sikkim in the near future.

⁺ Formula, $P_t = P_0 \left(1 + \left(\frac{r}{100}\right)^t\right)$, Where, P_t is projected population

P_0 is present population

r is the annual rate of growth

t is the number of years.

SIKKIM POPULATION PROJECTION

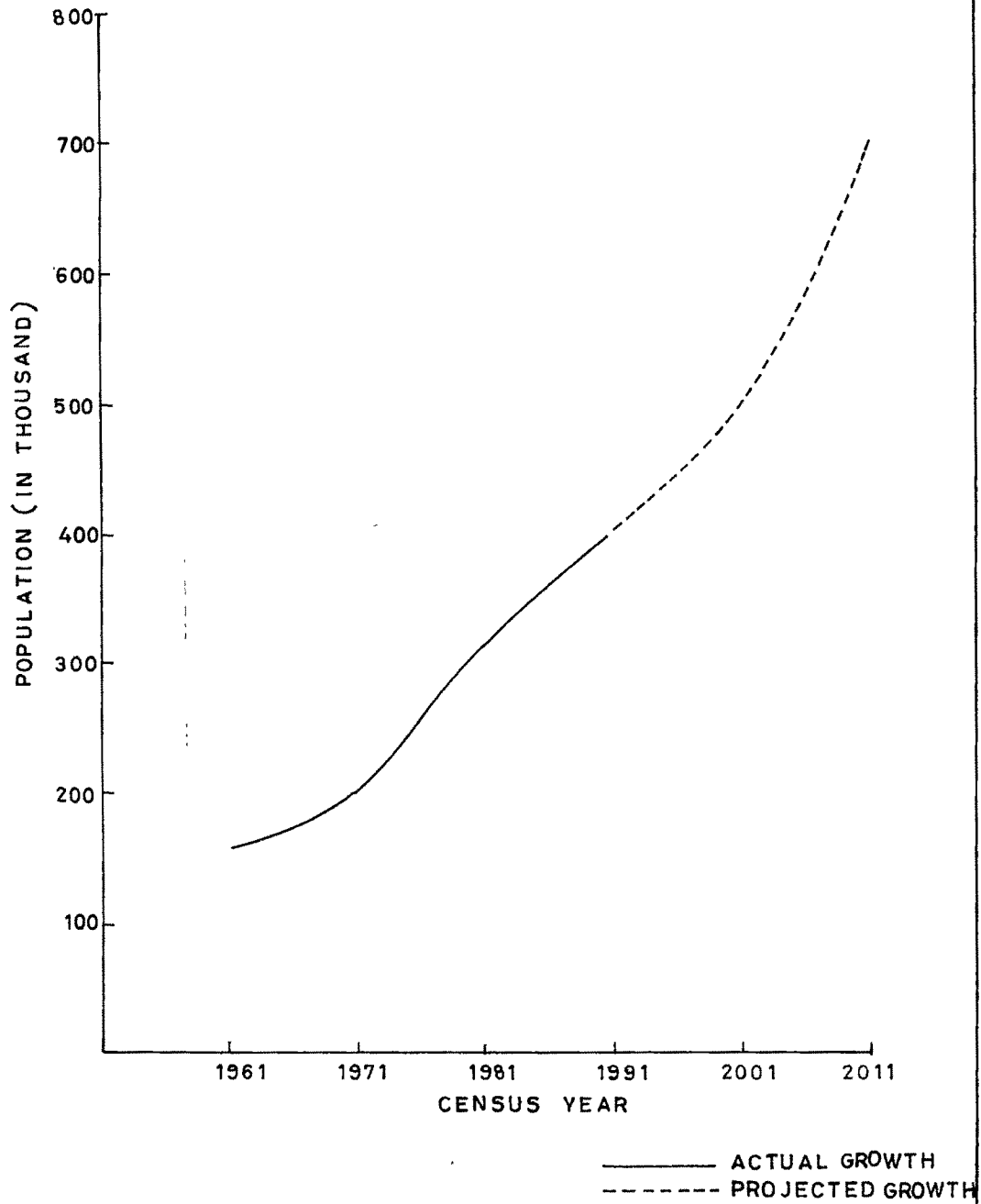


FIG 4'11

Summary Statement

The population of Sikkim during the last three decades is almost same like those of the other states of North-East India. The State experienced a very high growth rate (50.77 per cent) during 1971 to 1981. This increase is mainly due to mass in-migration of people from different parts of India as a consequence of merger of the State with the Nation in 1975. The contribution of natural growth to this high growth rate of population is negligible. During the last decade (1981-91) decrease in the growth rate (28.47%) indicates a decline in in-migration due to slow progress in the development activity in the State. Since 1901 the growth rate of the State was fluctuating, but after 1941 it had a increasing trend although at a sluggish rate. During the last 50 years (1941 to 1991) the State registered a growth index of 234.47 per cent, which is higher than the country's growth index (165.58 per cent).

From the recorded history of the region it is observed that immigration and in-migration from the neighbouring countries and the different States of the Nation have been a common feature since long and these factors were solely responsible for the demographic change in the region in different phases of time. Natural increase is a continuous process in the growth of population of the State. The rate of natural growth has increased with the increase of Nepali population, who are considered to be the most fertile group, because of their high fertility rate in the region. Till 1989 natural growth of population of the region was almost constant and at par with the country's natural growth rate (20-23 per cent). After this period it has declined to 15 per cent in 1991. This decrease indicates that people are becoming more conscious about better living standard. It is mainly due to shifting of occupation from primary to tertiary, increasing exposure to outside world, development of transport and communication, increasing education facilities, etc.

The growth rate of tribal population during 1971-81 was 46.19 per cent which is lower than the non-tribal population (52.22 per cent). In 1981-91 the corresponding figures declined to 23.47 per cent and 30 per cent respectively. Among the North-Eastern States, Sikkim has the lowest growth of tribal population. It is due to decrease in the rate of in-migration from the surrounding

areas and also due to decline in natural growth rate. At district level, East district has the maximum growth of tribal population. Salghari revenue block near Jorethang town in Namchi sub-division (South district) with 564.85 has the highest growth rate of tribal population in the State followed by Barfung revenue block of Ravong sub-division (South district) with 355.94 per cent. The majority of the tribal population of these revenue block are Bhutias. High growth rate of tribal population is noticed in the revenue blocks located near the urban areas, market or monastries. It is interesting to note that growth rate is low in the revenue blocks of North district with predominantly tribal population. The growth rate of both tribal and non-tribal population of Sikkim have been influenced by historical, socio-economic and political conditions.

Urbanization is a recent phenomenon in the State. There are eight town in the region. In 1971-81, high growth rate in urban population (159 per cent) is attributable to the accelerated rate of in-migration to the urban centres. But negative growth rate (-27 per cent) during the last decade (1981-91) is due to readjustment and reduction of the boundaries of the five urban centres, viz., Gangtok, Singtam, Namchi, Jorethang and Gyalshing.

Comparatively high growth rate of rural population has been due to the extension of various socio-economic facilities to the rural areas. East district has the highest growth of rural population (53 per cent) and North district has the lowest (18 per cent) during 1981-91. Some significant variation in rural population growth is observed at sub-division level. Except Gangtok, other sub-divisions located in the southern slope of the region (East, South and West districts) have a uniform growth rate ranging between 28 and 29 per cent. These sub-divisions have some common characteristics, they are:

- Predominantly inhabited by Nepali people whose fertility rate is higher than other ethnic groups.
- More than 90 per cent of population of these sub-divisions are farmers. They prefer large families to have more helping hands.

- More than 95 per cent population are rural.

Very high growth rate of rural population in Gangtok sub-division is attributable to urbanization, industrialization (small scale), expansion of town areas, presence of important monasteries and development of transport and communication facilities. On the other hand, the northern highlands (North district) have low growth of rural population. Between the two sub-divisions of this district, Chungthung (47.75 per cent) has the high growth rate, due to establishment of a new sub-division headquarters at Chungthang. Here, expansion of administrative work, development activities and market lead to in-migration of population to this area. Besides, opening of Yumthang valley for the tourists also opened a scope for the development of hotels and shops. This also attracted more migrants to this sub-division. On the contrary, lowest growth rate (Table 3.3.6) in the Mangan sub-division (15.74 per cent) is related to out-migration of agricultural labourer, slow growth of population, social backwardness and slow economic development of the area.

Among the three ethnic groups Nepalese have the highest growth rate of population (30 per cent) next to it come the Lepchas (28 per cent) and the Bhutias (20 per cent) during 1981 and 1991.

On the whole, besides natural growth, in-migration has played a crucial role in the present demographic pattern of the State.

MIGRATION

Migration is an important attribute of population. Like fertility and mortality it holds a place of prominence in population change in an area (Trewartha, 1969). The spatio-temporal pattern of growth of population of a place is highly affected by the intensity of migration of people. It not only affects the demographic but also economic and social characteristics of population of both the place of origin and place of destination. Garnier (1966) and Smith (1960) rightly remark that "area from which people out-migrate, the area to which they in-migrate, and the migrants themselves never remain the same". On the whole, migration brings both

qualitative and quantitative change of the population attributes, viz., distribution, density, growth, sex and age composition, etc. The pattern of migration in the present chapter deals with the pattern of migration, causes and consequences of migration in the study region.

Pattern of In-migration

In-migration is not a new phenomenon in Sikkim. It has already been stated that since the known history, people from different parts of the Himalayan belt, Tibet and plains of India have migrated to the State. Here, in-migration is associated with a number of historical and political factors. The beginning of in-migration to this region perhaps can be traced back to early 15th century when people from eastern Nepal and Southern Tibet have migrated to it. As stated earlier, after the arrival of British the rate of in-migration increased from Nepal mainly with the progress of the development works in Darjeeling and Sikkim. Later, during 1971-81, mass in-migration took place owing to the merger of the State with India. The pattern of migration in Sikkim is different from the other parts of the country. The rugged terrain, diverse climate, inaccessibility, isolated location, social structure, uncertain localised economy, innerline policy made by the government, etc. restrict the free movement of outsiders to the State, particularly in the areas located near the border and in the reserved area (Dzongu). In comparison to some of the States of North-Eastern region Sikkim is less affected by the serious problems of large scale influx of in-migrants.

On the basis of the data the in-migrants of the State can be categorized into the following groups, viz., (i) Government and non-government employees, (ii) those engaged in trade, business, transport, etc., (iii) those engaged in construction work and other workers like barbers, cobblers, washerman, sweeper, etc., (iv) the Nepali in-migrants mainly employed as agricultural labourer, share croppers, porters, etc., and (v) rag pickers. The first category constitutes the largest proportion of in-migrants coming from the North and South India. The second and third categories of migrants have come from North India. The fourth

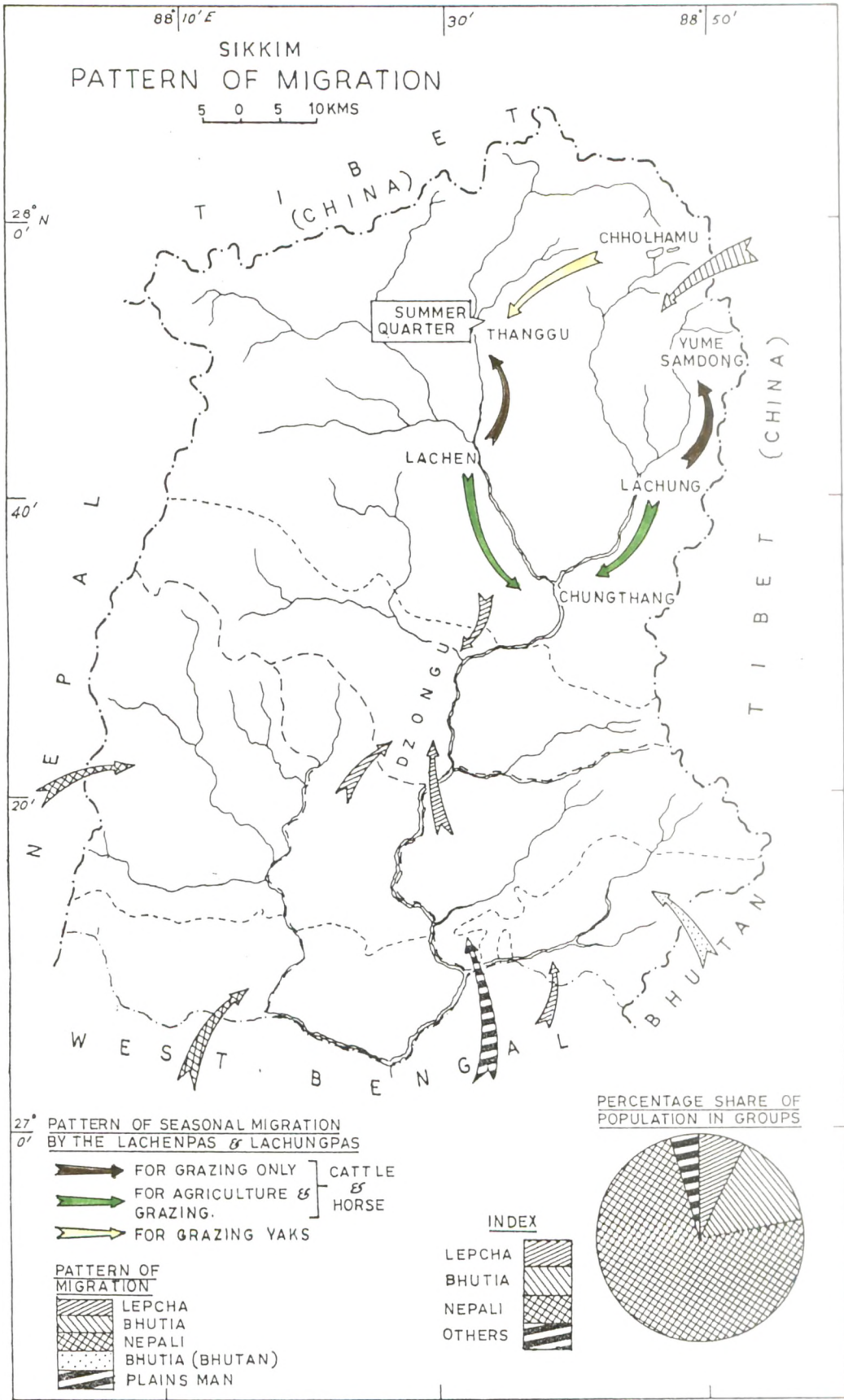


FIG. 4'12

category has migrated mostly from Nepal and the last one belongs to the refugees from Bangladesh and people from Bihar. (Fig.4.12)

In 1971 total number of in-migrants was recorded to be 20,975 persons (males: 12,908; females : 8,067), which constitute 10 per cent of the total population. This number has increased to 49,230 persons (males: 29,972; females: 19,258) in 1981 and to 36,406 persons (males : 1,20,709; females : 15,697) in 1991 constituting 15.56 per cent and 8.96 per cent respectively. (Table 4.23). On the whole, there has been an increase of 134.70 per cent in-migrants during 1971-91. As stated earlier, it is mainly due to rapid expansion of administrative, educational and developmental work and non-availability of educated and skilled persons, agricultural labourer, etc., locally. Among the in-migrants majority of them are non-tribals. This was inevitable and continued till recently, although in a declining order.

Table 4.23: In-migrants by Sex and Place of Last Residence, 1971-91

| Year | Persons | Male | Female |
|------|----------------|----------------|----------------|
| 1971 | 20975 (10%) | 12908 (11.46%) | 8067 (8.38%) |
| 1981 | 49230 (15.56%) | 29972 (17.38%) | 19258 (13.58%) |
| 1991 | 36407 (8.96%) | 20709 (9.57%) | 15697 (8.26%) |

(The figures within parentheses indicate Percentage of in-migrants)

Source: (i) Census of India, 1971, Sikkim, S-18, P-II, *Migration Table*.
(ii) census of India, 1981, Sikkim, S-19, *Migration Table*,
(iii) Census of India, 1991, Sikkim, *Migration Table* (unpublished)

While analysing the volume of migrants various States of the country it is found that Sikkim receives the largest proportion of migrants from its neighbouring state West Bengal (51.08). It is followed by Bihar (20.00) and Uttar Pradesh (7.34) in 1991 (Appendix VII). The three states together constitute 79 per cent of the total migrants coming from different states of India. In 1981, the corresponding figures

were 54.91, 24.55 and 6.96 per cent respectively, constituting 86 per cent of the total migrants. The total migrants coming from other parts of India is quite less. From the North-Eastern States it is 5.40 in 1991 as against 3.34 per cent in 1981. Migrants coming from rest of the states of the country are 15.56 in 1991 per cent as against 11.59 per cent in 1981. Among the in-migrants maximum are Nepalese and Bengalis from West Bengal and other North-Eastern States.

Because of closeness to Nepal, Bhutan and Bangladesh, Sikkim also receives migrants from these countries. Among them maximum migration took place from Nepal, constituting 86 per cent. It is mainly due to socio-cultural contact and scarcity of agricultural labourer and other manual labourer in the State. On the basis of observations and information it is found that large number of Nepali migrants are concentrated in the East district and in Mangan sub-division of North district. However, because of harsh physical condition, inaccessibility and restriction on outsiders, only a very negligible number of in-migrants go to Chungthang sub-division for construction work or as a porter. These migrants are also found scattered throughout the South and West districts. Large proportion of them come to Sikkim only during sowing and harvesting seasons.

The Chinese migrants constitute 9.08 per cent, and they are mostly concentrated in the East district. Of the total, 4.19 per cent are from Bhutan and mostly found in the East district and near the monasteries of Bhutanese origin. Migrants from Bangladesh (0.37 per cent) are confined near the town areas. The volume of in-migrants from other countries is only 1.04 per cent. (Appendix VI).

In-migration of people from different parts brought lot of changes in the demographic, economic and socio-cultural pattern of the State. Firstly, it is affecting the growth of population in the area. Secondly, male-dominated in-migration has brought a substantial lowering of overall sex ratio (878 females per 1000 male, in 1991) and increase of working age-group population. In-migration of population also affected the growth pattern of population at district level. Among the districts, East district receives largest proportion (56.30) of in-migrants out of the total. It is followed by South district with 20.38 per cent. North and West district

have the lowest proportion of in-migrants constituting 12.12 and 11.20 per cent respectively. High proportion of in-migrants in East district is attributable to accessibility and socio-economic facilities provided by the capital town at Gangtok and other urban centres. Development of industries also to some extent is responsible for it. South district, on the other, with its two urban centres, has attracted some migrants. Secondly, due to the development of number of educational institutes for higher education, existence of the tea estate, etc., also attract in-migrants to this district. On the contrary, North district and West district have less in-migrants due to number of causes. Among them inaccessibility, steep slope, slow economic development are some of the important causes. Restriction on the free movement of the outsiders is one of the main causes of low rate of migration to the North district.

If we consider the Percentage of in-migrants out of the total population of the district, it is found that North district has the highest proportion with 34.87, next to it is East district (30.87). West district has the lowest (Table 4.24) .

In North district, in-migration of Army and Defence workers, people engaged in construction and maintenance work, and agricultural work is a regular feature. But mass in-migration took place when the sub-division headquarters was established at Chungthang. As a result of lack of availability of educated and skilled people locally, large number of people have migrated to this area for doing job and business. As a consequence the growth pattern of population of the North district has changed. The declining growth rate of population in the State during the last decade (1981-91) indicates that the rate of in-migration has declined with the availability of manpower locally and due to slow economic development of the State the magnitude of in-migration from outside has decreased.

The degree of social change brought about by the in-migrants in Sikkim cannot be underestimated. The in-migrants from different parts of the Nation and outside have widened the horizon of social out-look and extend various development programme in Sikkim. Introduction of settled agriculture by terraced method, cultivation of commercial crops like cardamom, ginger, etc., beginning of

formal education are worth mentioning. Their contribution in the development of industries in the State is no less significant. Beside, Aryan culture brought a rapid change in the socio-psycho-economic level of the people of the region. Modernization has brought lots of changes in the social system. For example, people now prefer monogamy instead of polygamy and polyandry and so on. But these changes are less noticed in the remote corners of the State. Shifting of occupation from primary to tertiary sectors is another noticeable changes that may be seen in the region.

Table 4.24: In-migrants at District Level, 1981 (by place of last residence)

| District | Total In-migrants | | | |
|----------|-------------------|--------|--------|---|
| | Person | Male | Female | Percentage of In-migrants to total population |
| North | 9224 (12.12) | 5,671 | 3,553 | 34.87 |
| East | 42,840 (56.30) | 25,970 | 16,870 | 30.87 |
| South | 15,510 (20.30) | 8,498 | 7,012 | 20.41 |
| West | 8,524 (11.20) | 4,392 | 4,132 | 11.34 |

(The figure within the parentheses indicate Percentage of in-migrants out of the total in-migrants)

Source: Census of India, 1981, Sikkim, S-19, *Migration Table*

Local Migration

Due to unavailability of census data on local migration, it is difficult to give a clear picture on this aspect. Besides, very little work has so far been done on this

issue. Therefore, the problem has been dealt here with whatever information has been available on it.

According to 1981 census, the largest proportion of migrants were received by the East district with 39.10 per cent next to which comes South district with 31.75 per cent. North and West districts received 15.27 per cent and 13.88 per cent in-migrants respectively.

Table 4.25: Inter-District Migrants, 1981

| District | In-migrants | Percentage of in-migrants out of total population |
|----------|-------------|---|
| North | 2,607 | 15.27 |
| East | 6,674 | 39.10 |
| South | 5,419 | 31.75 |
| West | 2,369 | 13.88 |

Source: Census of India, 1981, Sikkim, S-19, *Migration Table*.

Socio-economic development, urbanization, job opportunity, availability of socio-economic facilities, etc., are some of the causes of present pattern of inter-district in-migration. Although inter-district migration affects the growth of population at district level, but it has no impact on the size of population of the State as a whole.

Seasonal migration is a common phenomenon among the highlanders of Sikkim. Their main occupation is animal rearing which is supplemented by farming. Seasonal migration is mainly practised by the highlanders of Lachen and Lachung revenue blocks of Chungthang sub-divisions (North district) and Gnathang revenue blocks of Gangtok sub-division (East district). Similarly, some of the sheep rearers of Western range (West district) also migrate seasonally to graze their animals.

It is worth mentioning that the system of migration practised by the seasonal migrants of Lachen and Lachung sub-divisions is different from the other seasonal migrants. Here, seasonal migration is organised by both the family and the community structure.

In Lachen revenue block the total length of the migratory route is more than 25 kms. In summer they migrate from Lachen (headquarters) to Thanggu (around 4000 metres) along the Lachen chu (Table 4.26).

Table 4.26 Migration Schedule of the Lachen Revenue Block

| Place | Time |
|-------------------------|----------------------------------|
| Lachen | April - May, September - October |
| Thanggu | May - September |
| Rabom (Near Chungthang) | November - March |
| Chho - Lhamu | October - May |
| Thanggu | June - September |

Source: Field Study.

Table 4.27 Migration Schedule of the Lachung Revenue Block

| Place | Time |
|----------------|--------------------|
| Chungthang | October - February |
| Lima (Lachung) | March, April |
| Yangthang | May, June |
| Lima (Lachung) | September |

Source: Das Gupta, M. 1992, Sikkim, *Problems and Prospective of Development*, P. 81, Indus Publishing Company, New Delhi.

From there they spread to nearby places, viz., Chopta, Tsegu, Toga, etc. Here, they are mostly engaged in cultivation. From September to November they stay at Lachen. Again in winter, they migrate downward up to Rabom near Chungthang (1,631 metres) for grazing purpose (Table 4.26). On these two migratory tracts, people of Lachen have landholdings (both individual and community holdings) and settlements at different places where they halt to graze their animals. Another group of animal herders migrate in summer from Chho-Lhamu (Above 4880 metres) down to Thangu to graze the Yaks. These herders are Tibetan refugees who look after the Yaks belonging to the people of Lachen.

In Lachen, normally, the whole family migrates along with their cattle. Because of this system, education here poses a big problem. Before, the whole staff of the school use to migrate along with the villagers. But at present, there is a hostel in the government school where people leave their children during their migratory period. Besides, because of their migratory nature they have not been able to take the benefit of the social facilities such as education programmes, public health facilities, postal facilities, etc., provided by the government.

4.28: Stages of Migration of the People of Gnathang Revenue Block, Gangtok, Sub-Division

| Place | Months |
|------------------|--|
| Below Karponang | November, December, January, February. |
| Karponang | March, April, May, October. |
| Gnathang, Changu | June, July, August, September. |

Source: Das, Gupta, M. 1992; *Sikkim, Problems and Prospective of Development*, Indus Publishing Company, New Delhi, P. 81

Similarly, in Lachung block people migrate downward up to Chungthang mainly for agriculture. Again, they migrate upward along the river Yumthang Chu (river) to Yum Samdong (4880 metres) and finally to Chho-Lhamu to graze their

animals. In Lachung block, as only the male members of the family migrate to graze the animals, they do not face so much of problem and are not deprived of the social facilities like the people of Lachen.

4.29: Migratory Routes Adopted by some Sheep Farmers in Western Range, West District.

| Place | Month |
|---|-------------------|
| Reshi, Legship, Hindgon, Burdong (hot places) | January, February |
| Melli, Rimbi, Param, Chayri, Syang-khola | March |

Source: Source: Das, Gupta, M. 1992; *Sikkim, Problems and Prospective of Development*, Indus Publishing Company, New Delhi, P. 81

The seasonal migration of Sikkim is related to availability of resources. Although seasonal shifting of people has no impact on the growth pattern of population of the block or sub-division but this hampers in the socio-economic development of the place and people of those areas.

Summary Statement

In-migration is not a new phenomenon in Sikkim. The beginning of in-migration to this region perhaps can be traced back to early 15th Century. The intensity of in-migration increased mainly after the arrival of British. Later, during 1971-81, mass in-migration took place owing to the merger of the State with India. Unlike, the other North-Eastern States of India, Sikkim is less affected by serious problems of large scale influx.

Before the merger of the State with India, in-migration was recorded to be 20,975 persons (males : 12,908; females : 8067) which constituted 10 per cent of the total population. But after the merger it increased to 49,230 persons (males : 29,972; females : 19,258) in 1981 which constituted 15.56 per cent. Although in

1991 the rate in-migration declined to 36,406 persons (male : 20,709; female : 15,697), i.e., 8.96 per cent but on the whole, there was an increase of 134.70 per cent in-migrants during 1971-91.

Sikkim receives maximum in-migrants from its neighbouring State of West Bengal (51.08 per cent) followed by Bihar (20.60 per cent) and Uttar Pradesh (7.34 per cent). Among the in-migrants the maximum are the Nepalese and the Bengalis from West Bengal. From the neighbouring countries the State receives maximum in-migrants from Nepal, constituting 85.69 per cent. From the observation and available information it is found that the largest number of Nepali migrants is mostly concentrated in the East district and Mangan sub-division of North district. They are also found scattered in the southern slope of the state.

In-migration of people from outside the State is affecting the growth of population. Secondly, male selective in-migration has brought a substantial lowering of overall sex ratio (878 females per 1000 male in 1991) thirdly, it has increased the number of people in working age-group and fourthly, increased the sex disparity in literacy.

Among the districts, East district has received the largest proportion (56.30) of in-migrants and the West district the lowest (11.20). But if we consider the Percentage of in-migrants out of the districts total population, North district ranks the highest with 34.87 per cent.

Due to lack of non-availability of census data it is difficult to give a clear picture of internal-migration. According to 1981 the East district received largest proportion of in-migrants (39.10 per cent) from different districts of the State.

Seasonal migration is mainly practised by the animal herders of Lachen and Lachung of Chungthang sub-division of North district, Gnathang revenue block of Gangtok sub-division of East district and Sheep rearer of Western ranges (West district). But, the system of migration practised by the seasonal migrants of Lachen and Lachung sub-divisions is different from seasonal migrants of other areas. This

system of migration hampers in the socio-economic development of the place and people of Lachen and Lachung areas.

Although inter-district and seasonal migration have brought changes in the growth of population at district and revenue block level but it has no impact on the size of population of the State as a whole.

CHAPTER - V

PATTERN OF POPULATION COMPOSITION

In the population studies, the population composition assumes great significance as its attributes like age, sex, marital composition, fertility and mortality have considerable impact on other demographic and socio-economic characteristics of population, such as growth, migration, working force, dependency burden, occupational pattern, etc. It is in this background, the present chapter is devoted to the treatment of the attributes like age, sex and marital status of the population of Sikkim at different temporal and spatial unit level.

SEX RATIO

The sex ratio of Sikkim is 878 as against the Countries average of 929 (1991). The sex ratio of the State is found to be lower compared to those of its neighbouring States of North-Eastern Region except Arunachal Pradesh.

Table 5.1: Sex Ratio of the Population of North-East India, 1991

| States | Total Population | Tribal Population |
|-------------------|------------------|-------------------|
| Arunachal Pradesh | 861 | 998 |
| Assam | 925 | 967 |
| Manipur | 961 | 959 |
| Meghalaya | 947 | 997 |
| Mizoram | 924 | 982 |
| Nagaland | 890 | 946 |
| Tripura | 946 | 965 |
| Sikkim | 878 | 914 |
| India | 929 | 922 |

Source: (i) Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

(ii) Calculated from Census of India, 1991, Sikkim, S-22, P-I, *Provisional Population Totals*.

The main cause of deficiency of female in the State is not essentially a function of natural sex-ratio but mainly due to male dominated in-migration tribal people from outside the State.

Table 5.2: Distribution of Population by Age and Sex, 1991

| Age Group | Population | Percentage | | | Sex Ratio |
|-----------|------------|------------|------|--------|-----------|
| | | Person | Male | Female | |
| 0-4 | 51406 | 12.65 | 6.44 | 6.21 | 964 |
| 5-9 | 55022 | 13.55 | 6.77 | 6.78 | 1000 |
| 10-14 | 52953 | 13.05 | 6.68 | 6.37 | 950 |
| 15-19 | 43211 | 10.63 | 5.53 | 5.10 | 922 |
| 20-24 | 39268 | 9.66 | 5.08 | 4.58 | 901 |
| 25-29 | 35632 | 8.77 | 4.59 | 4.18 | 910 |
| 30-34 | 27760 | 6.83 | 3.72 | 3.11 | 837 |
| 35-39 | 23456 | 5.77 | 3.29 | 2.48 | 754 |
| 40-44 | 18247 | 4.49 | 2.60 | 1.89 | 726 |
| 45-49 | 14611 | 3.59 | 2.11 | 1.48 | 702 |
| 50-54 | 12410 | 3.05 | 1.84 | 1.21 | 663 |
| 55-59 | 8754 | 2.15 | 1.30 | 0.85 | 655 |
| 60-64 | 7,950 | 1.96 | 2.13 | 1.76 | 724 |
| 65-69 | 4,392 | 1.08 | 1.16 | 0.99 | 747 |
| 70-74 | 3,139 | 0.77 | 0.84 | 0.69 | 724 |
| 75+ | 3,027 | 0.75 | 0.77 | 0.72 | 820 |

Source: Ram, R.K. and Tamang, Lakpa, 1998 "Demography and Development of Human Population in Sikkim" in Rai, S.C., Sundriyal, R.C, and Sharma, E. (eds.) *Perspective for Planning and Development*, Pub. Sikkim Science Society, Gangtok and Singh, B. and Singh, M.P., New Delhi, P: 138.

Further insight can be obtained when comparison is made between tribal and non-tribal sex-ratio. It is observed that the former has a higher sex ratio (914) than the latter (868). If compared with the tribal sex ratio of the North-Eastern States, Sikkim has the lowest number of females per thousand males (Table 5.1). When the sex ratio of the indigenous tribal groups of the State are examined it is found that the Lepchas have 944 females and the Bhutias 918 females per 1000 males. From the above discussion it is clear that less in-migration of tribal males from outside the State is the main cause of high tribal sex-ratio.

The age sex break-up (Table 5.2) of sex ratio provides certain other interesting results. It is observed that the sex-ratio is high in the lowest age group of 0-4 years (964) and 5-9 years (1000). It indicates that birth of female child is high in the former age group, on the other hand, male Child mortality is high in the latter group. In the working age group (15-55 years) the sex ratio is low (850), although sex-ratio at birth is high (Table 5.2). It is mainly due to male dominating in-migration in the working age groups, as mentioned earlier. It is interesting to note that after the age of 55 years sex ratio has an increasing trend. In the age group of 55-59 years, the sex ratio is 655 and after the age of 60 years, it is 744. This is principally because of out-migration of male population at the higher age after the retirement from service and secondly, high male mortality as a result of high age difference between male and female at marriage in certain pockets of the region.

RURAL-URBAN SEX RATIO

In Sikkim, the population is mostly rural. The proportion of urban population is only 9.1 per cent. The difference between rural and urban sex-ratio is quite high. The rural sex ratio is 892 whereas, urban is only 750 (1991). The lower ratio in the urban areas can be attributed to the fact that there is predominance of non-agricultural occupation in the town areas which attracts less female participants. Hence, male selective in-migration to the urban areas is obvious and it is the normal situation in other states of the country also. However, due to problem of insufficient and costly accommodation as well as high cost of living, only the

earning males migrate to the urban areas leaving their family behind in the native villages.

Table 5.3: Spatial Variation of Rural and Urban Sex Ratio, 1991

| State / District | Rural | Urban |
|------------------|-------|-------|
| Sikkim | 892 | 750 |
| North District | 836 | 581 |
| East District | 883 | 759 |
| South District | 898 | 693 |
| West District | 919 | 760 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

When we consider sex-ratio at town-level, it is found that Nayabazar has the highest proportion of female (866) in 1991. It is a small town where main function is collection of agricultural produce like potato, ginger, cardamom, etc., from the surrounding rural areas of Soreng sub-division. Unlike the other towns of the State, male selective in-migration to this town is less mainly due to its slow socio-economic development. In other urban areas like Gangtok, Singtam and Rangpo of East district and Jorethang of South district, sex-ratio ranging between 712-778, which is at par the State's average of 750. This situation is mainly caused by male selective in-migration. On the other hand, sex-ratio is the lowest in Gyalshing (626) in West district and Mangan (581) in North district. Such a deficiency of female in these two urban areas, besides other factors, are due to the difference in the mortality pattern of males and female, and because of out-migration of females, for job, education, marriage, etc. Low sex ratio (620) in Namchi town (South district) is due to male selective in-migration caused by development of educational institution and expansion of urban activities. In addition to that, in-migration of males and out-migration of females for higher studies and job are also important.

Table 5.4: Sex Ratio of Different Towns of Sikkim, 1981 and 1991

| Town | 1981 | 1991 |
|-----------|------|------|
| Mangan | 523 | 581 |
| Gangtok | 718 | 764 |
| Singtam | 625 | 712 |
| Rangpo | 622 | 778 |
| Namchi | 744 | 620 |
| Jorethang | 658 | 719 |
| Nayabazar | 744 | 866 |
| Gyalshing | 616 | 625 |

Source: (i) Census of India, 1981, Sikkim, S-19, P-XIII, A & B, *District Census Handbook*

(ii) Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*

Lot of variations are noticed when the rural sex-ratio is considered at district level. It is found that, West district has the highest proportion of rural sex-ratio with 919, followed by South district (898). On the contrary, a deficiency of sex-ratio is noticed in North (836) and East (883) districts. Large number of females in the former two districts are mainly due to concentration of large proportion (97 per cent) of non-tribal agrarian population.

At sub-division level, Soreng (928) of West district has the highest. However, Namchi sub-division of South district, Gyalshing of West district and Pakyong of East district have rural sex-ratio ranging between 901-914 (Table 5.5). The main causes behind this are, (i) underemployment, poverty etc. in the rural areas, compell people mainly male to out-migration to urban areas, (ii) most of the work in the agricultural field is done by the females, (iii) due to illiteracy and low educational level, out-migration of female for job and higher education is very low.

Normally, out-migration of female takes place due to matrimonial causes, which also happens rarely.

Table 5.5: Sikkim : Rural Sex Ratio at Sub-Divisional Level, 1991

| Sub-Division | Rural Sex Ratio |
|--------------|-----------------|
| Chungthang | 782 |
| Mangan | 852 |
| Gangtok | 875 |
| Pakyong | 901 |
| Namchi | 914 |
| Ravong | 872 |
| Gyalshing | 910 |
| Soreng | 928 |

Source: Calculated from Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

Low sex-ratio in the North district is related to in-migration of Nepali agricultural labourer to the district. Mangan sub-division of this district (852) receives largest number of male agricultural labourers. The most distinguishing feature is that, Chungthang sub-division of the same district has a high deficiency of female (782). Male selective in-migration of educated and skilled people to the newly established sub-division headquarters at Chungthang and army personal and workers to the border areas are some of the important causes. It is interesting to note that the population of this sub-division headquarters is considered as rural, as a consequence, sex-ratio of this block has tremendously gone down. On the other hand, East district also has low sex-ratio (883). Gangtok sub-division of this district has a low sex-ratio with 875. One of the important causes is that, many male in-migrants of the urban areas of this sub-division reside in the surrounding rural areas. These rural areas are actually the expanded areas of the urban

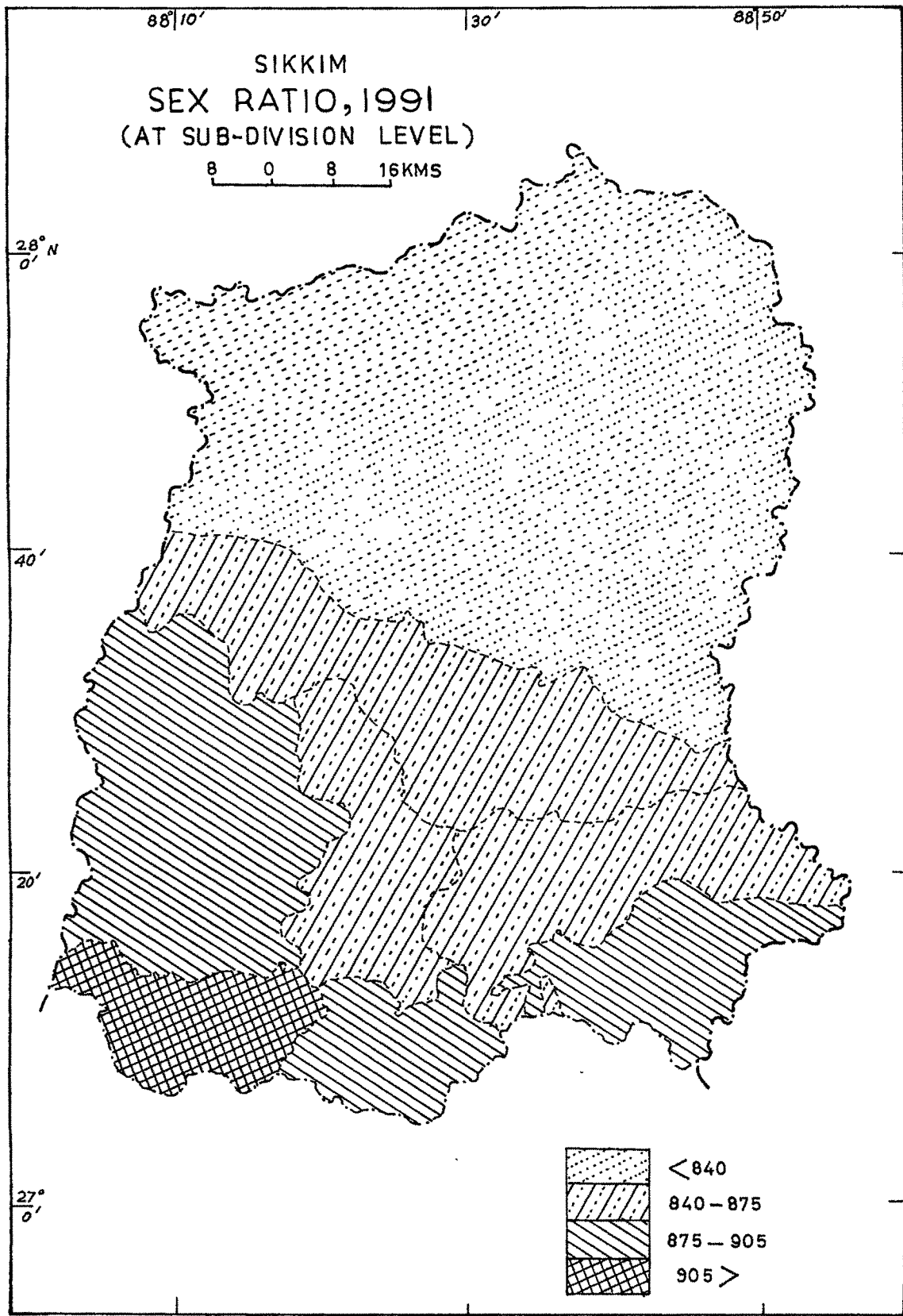


FIG. 5.1

centres Tadong (851), Sichey (890). Upper Chandmari (880) revenue blocks, etc., near Gangtok town are some of the good examples.

PATTERN OF SPATIAL VARIATION IN SEX RATIO, 1991

The pattern of general sex ratio at district level shows that West district with 915 has the highest proportion of females per thousand males. Next to it come South (892) and East (859) districts. North district has the lowest sex ratio. The causes of such pattern are discussed earlier. At sub-division level variations in the pattern of sex-ratio is determined by different socio-economic factors. They are, (i) occupational background of the people, (ii) concentration of tribal population, (iii) urbanization and availability of socio-economic facilities, (iv) proportion of rural population, (v) social System, (vi) literacy and low educational level of the females.

Table 5.6: General Sex Ratio at District and Sub-Divisional Level, 1991

| District | Sex Ratio | Sub-Division | Sex Ratio |
|----------|-----------|--------------|-----------|
| North | 828 | Chungthang | 782 |
| | | Mangan | 842 |
| East | 859 | Gangtok | 847 |
| | | Pakyong | 901 |
| South | 892 | Namchi | 904 |
| | | Ravong | 872 |
| West | 915 | Gyalshing | 905 |
| | | Soreng | 926 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

Soreng, Gyalshing (West district) Namchi (South district) and Pakyong (East district) sub-divisions have a high sex-ratio ranging between 901-926. These areas have predominantly non-tribal people, whose main occupation is agriculture. Here, male selective out-migration is higher than male selective in-migration. On the other hand, Gangtok sub-division with predominantly tertiary occupation and

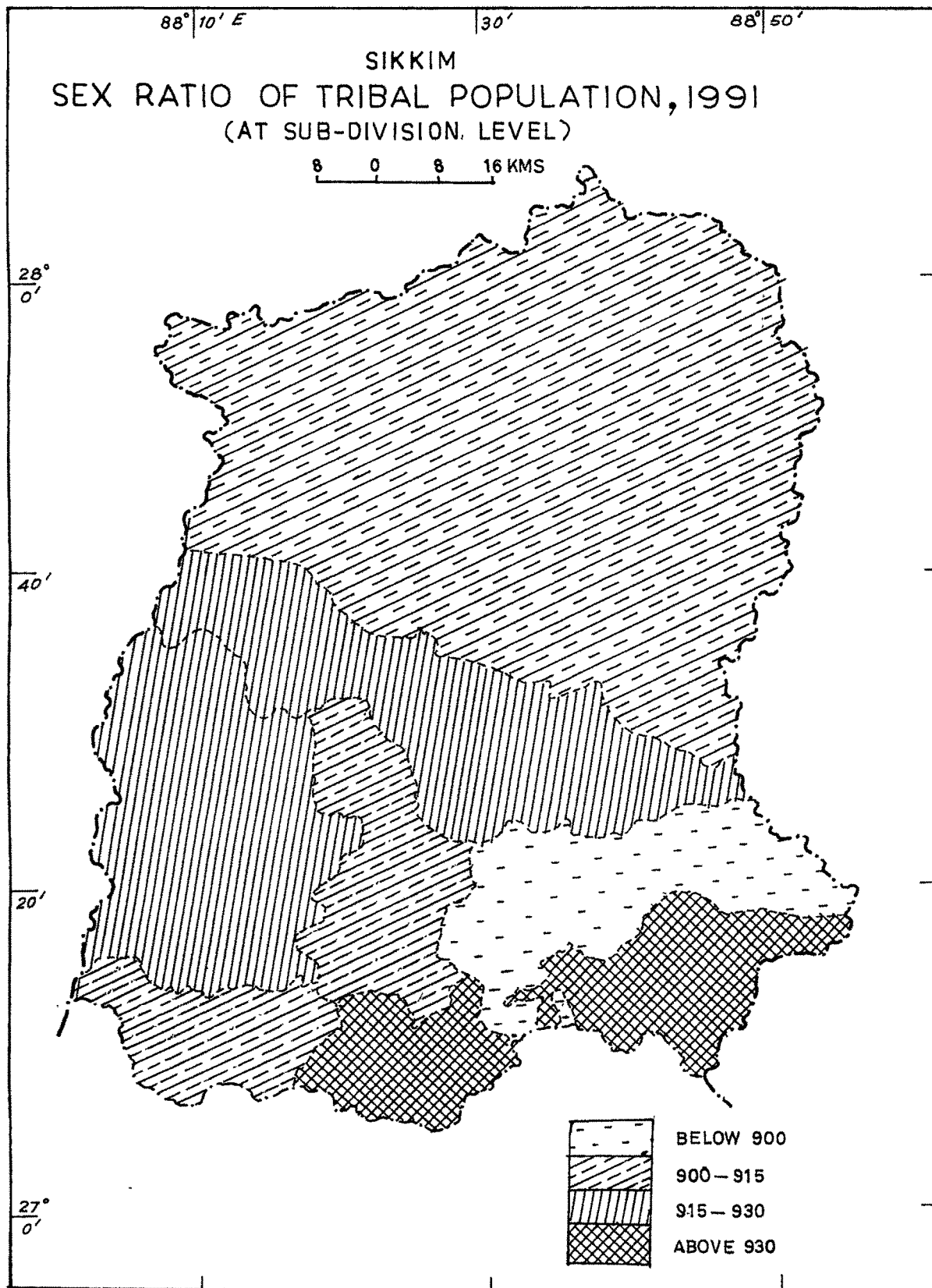


FIG. 5'2

with the availability of socio-economic facilities receives large number of skilled and educated male members from outside as well as from other districts within the State. The sub-divisions with large proportion of tribal population, such as Chungthang (782) Mangan (842) and Ravong (872) have comparatively low sex ratio. This pattern of sex ratio is mainly caused by the social system (discussed earlier) of the people, scarcity of efficient people locally and practise of mixed economy in certain pockets.

TREND OF SEX RATIO, 1901-1991

In the study region, since 1901, male population has out numbered the female. The State suffers a deficiency of females and that has been exhibited in all the decades. Since 1931, there is a declining trend of female in the State.

Table 5.7: Trend of Sex Ratio in India and Sikkim, 1901-1991

| Year | Sex-Ratio | |
|------|-----------|--------|
| | India | Sikkim |
| 1901 | 972 | 916 |
| 1911 | 964 | 951 |
| 1921 | 966 | 970 |
| 1931 | 952 | 967 |
| 1941 | 947 | 920 |
| 1951 | 948 | 907 |
| 1961 | 943 | 904 |
| 1971 | 931 | 863 |
| 1981 | 934 | 835 |
| 1991 | 933 | 878 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

The rate of decrease is more rapid after 1971 when the State's sex ratio has dropped from 863 in 1971 to 835 in 1981. During the last 60 years (1921-1981), the sex ratio decreased from 916 to 835. A convincing explanation about this is the male selectivity of in-migration from the neighbouring countries and from the different parts of India. It is interesting to note that after 1981 the sex ratio of the State has an increasing trend with 878 females per 1000 males (1991). But this ratio is far below the country's average (933). It is obviously due to the decline in the rate of male selective in-migration and decrease of female mortality.

AGE STRUCTURE

An analysis of age structure is essential because it reveals many attributes for population, such as growth, mortality, working force and economic dependency. Age composition data has a wide utility for planners and for those who are concerned with education and welfare programmes.

While examining the population of different age groups it is found that, the population of Sikkim is characterised by considerably large proportion of young population (below 15 years) like most of the State of India. It is mainly because of high growth of population, which is a common feature throughout the country. Juvenile population between 0-14 years constitutes 39.71 per cent (male : 20.13; female : 19.57) of the total population of the State (1991) which is at par the most of the states of the North-East India. The corresponding figure was 39.6 per cent (male : 20.16; female : 19.44) in 1981. There is no change in the juvenile population during the last decade (1981-1991). In this age group proportion of female is more (972). The percentage of population in the age group of 0-4 years is 12.65, with almost equal proportion of males (6.44) and females (6.21). The data shows that birth of female child is not a curse to the society like in many other states of the country. In the next age group (5-9 years) the percentage of population is 13.54 (male : 6.76; female : 6.78). An increase of child population in this age group is due to in-migration of children between 5-9 years. Slight increase in female child population indicates that mortality of male child is more. In the age group of 10-14 years, percentage of population (13.19) is almost same as the

previous age group (5-9 years). But the proportion of population falls sharply in the subsequent higher age groups, that is above 20 years.

The population in the adult age group of 15-59 years, which synchronises the working force, constitutes 55 per cent (male : 30; female : 25) of the total population. The population in the age-group, 15-44 years, which is considered to be the most productive and reproductive age group constitutes 46.15 per cent, which is higher than the percentage of old adult (45-59 years) with 8.91. When the proportion of male and female of the adult age group (15-59 years) is examined, it is found that the difference between the two is 5 per cent. This proves the fact that there is male selective in-migration in the working age group. In the higher age group (60+) proportion of population is only 4.6 per cent (male : 2.61; female : 2.0). Low proportion of aged person beyond the age of 60+ years is caused by low life expectancy of the people and partly due to out-migration of male population on their retirement from the service (Table 5.2).

The broad-base and sharply tapering top of the age pyramid indicates a typical age pattern of underdeveloped region. The broad base indicates a high fertility rate, a declining mortality rate, while the tapering top evidently shows a general low longevity of people in the State. The shape of the pyramid indicates that Sikkim is passing through the second stage of demographic transition (Fig. 5.3).

DEPENDENCY RATIO

Like other developing States of India, Sikkim with a large proportion of child population experiences a high dependency burden. This age group (0-14 years) is economically unproductive and most expensive, because they are to be provided with food, clothing, health care, education, and provision of employment with consequent increase of adult population. High dependency burden is a serious set back in the socio-economic development of the State. According to 1991 census the proportion of old population (60+ years) is 4.61 per cent and children below the age of 15 is 39.71 per cent, they are considered as dependent population. The

SIKKIM
AGE-SEX PYRAMID
1991

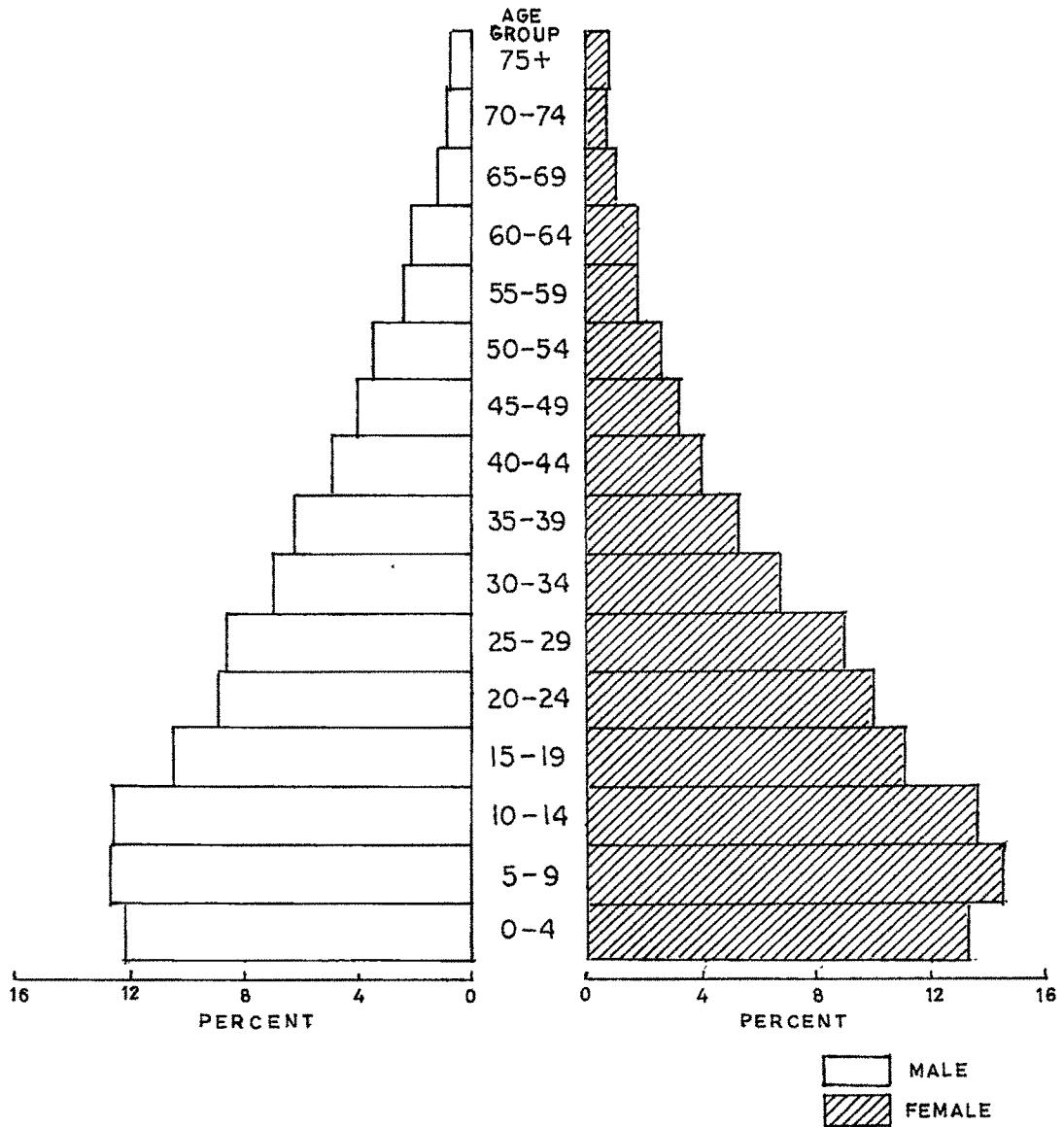


FIG. 5'3

overall dependency ratio* in Sikkim is 80, which is higher than the country's average (79). In 1981 the proportion of population in the 60+ years was 4.38 per cent and child population below the age of 15 years was 39.6 per cent. The overall dependency ratio* in Sikkim was 79 which was less than the National average (85). There is a slight increase of dependency burden during the last decade (1981-1991). It may be due to increasing number of school going children (particularly female) and decline in the mortality rate in old age. Although working age group, i.e., 15-59 years is biologically reproductive, economically productive and demographically the most mobile in nature, their proportion is only 55.66 per cent of the total population in 1991 as against 56 per cent in 1981. Such a condition reduce the per capita income of the people and effects their living standard. The dependency ratio is related to the economic development, urbanization and working force absorption of an area.

Table 5.8: Age Structure and Dependency Ratio in Sikkim, 1991

| State / District | 0-14 | 15-59 | 60+ | Dependency Ratio |
|------------------|-------|-------|------|------------------|
| Sikkim | 39.71 | 55.66 | 4.61 | 80.00 |
| North district | 41.10 | 54.67 | 4.22 | 82.89 |
| East district | 38.26 | 57.57 | 4.15 | 73.67 |
| South district | 40.48 | 54.35 | 5.16 | 83.96 |
| West district | 41.17 | 53.81 | 5.01 | 85.8 |

Source: Calculated from Census of India, 1991, Sikkim, *General Economic Table Dependency Ratio*.

Spatial Variation of Dependency Ratio

An analysis of the rural and urban dependency ratio show that rural areas with 82 has a high dependency ratio than the urban areas (56). It is mainly

$$* \text{Dependency Ratio} = \frac{P_{0-14} + P_{60+}}{P_{15-59}} \times K, \quad K = 100 \text{ (Constant)}$$

Where, P_{0-14} is the population in the age group 0-14 years.
 P_{15-59} is the population in the age group 15-59 years.
 P_{60+} is the population in the age group 60+

because rural areas have a large number of children in 0-14 years age group (40.40 per cent) than the urban areas (32.92 per cent). This proves that the fertility rate in the rural area is much higher than the urban areas. However, in the urban areas, due to high expenditure on a child, people normally prefer small families (less children). Large number of children in the rural area is consequent upon the heavy demand for workers in the agricultural field. The consequence of this are (i) fragmentation of landholding, (ii) decline in the productivity of the land and, (iii) increase of pressure of population on available land. This leads to unemployment problem which further increases the dependency ratio.

Table 5.9: Age Structure and Dependency Ratio of Rural and Urban Areas of Sikkim, 1991

| Area | 0-14 | 15-59 | 60+ | Dependency Ratio |
|-------|--------------------|---------------------|------------------|------------------|
| Rural | 1,47,396 (40.4) | 2,00,045 (54.83) | 17,396 (4.76) | 82 |
| Urban | 11,985 (32.92) | 23,304 (64.02) | 1,112 (3.05) | 56 |

Source: Calculated from Census of India, 1991, Sikkim, *General Economic Table Dependency Ratio*.

At district level, it is found that West district with 86 and South district with 84 have the largest proportion of dependency ratio, which is higher than State's average (80). It is mainly because of predominance of agrarian population in these two districts. Similarly, North district, with a large proportion of population engaged in mixed economy also has a high dependency ratio (83). On the other hand, East district has the lowest proportion of dependent population (74) among the districts although, it cannot be considered as low dependency ratio (Table 5.8). Comparatively low dependency ratio in the East district is related to urbanization and in-migration of large proportion of population in the working age groups.

PATTERN OF MARITAL STATUS

Sikkim has a plural society, where both the Tibetan and Aryan culture exist, as mentioned earlier. Here, marital status composition is not only influenced by the socio-economic and demographic factors but also by their traditional customary laws. Although endogamous system at community level was practised by different communities but at present exogamy has also been observed. Polyandry system of marriage use to be very common among the Bhutias but now this system of sharing one common wife by all the brothers (polyandry) is practised only by some of the Bhutias of Lachen (Ref. case study) and Lachung revenue blocks. This system of marriage was brought to Sikkim by the Tibetans. The Lepchas, on the other hand, are generally polygamous, though polyandry is not very unacceptable to them (Bhattacharya, A. 1994). Polygamy system of marriage is also found to be practised by the different communities of the Nepalese. But the present generation prefers monogamy system of marriage. For instance, earlier Bhutias with more sons and limited resources went in for polyandry as the dominant form of marriage, but now they are polyandrons, polygamous and monogamous. Earlier, the form of marriage practised by the family entirely depends on their economic condition, level of education and social status. However, education and modernization brought lot of changes in this respect in the state.

Like other States of India, Sikkim has a patriarchal society. It is in this backdrop the marital composition of the region is looked at.

In this chapter marital status of the population of the area will be studied by analysing the data on the following categories;(i) never married, (ii) married, (iii) widowed and (iv) divorced or separated.

In Sikkim, 36.69 per cent male and 40.38 per cent female are found to be married as against 48.71 per cent and 39.46 per cent in 1981. The percentage of married male is found to be higher than the country's average with 42 per cent (1981), however, the percentage of married female (39.46) is less (Table 5.10).

Table 5.10: Percentage Distribution of Population by Marital Status (age 10 years and above), 1981

| Marital Status | Sikkim | | India | |
|--------------------------|--------|--------|-------|--------|
| | Male | Female | Male | Female |
| 1. Never Married | 46.88 | 55.63 | 55.29 | 45.77 |
| 2. Married | 48.71 | 39.46 | 42.05 | 45.79 |
| 3. Widowed | 3.44 | 4.22 | 2.43 | 8.02 |
| 4. Divorced or separated | 0.93 | 0.67 | 0.23 | 0.42 |

Source: Census of India, Sikkim, S-19, P-III A & B, P-IV A, *General Economic Tables and Social and Cultural Table*.

To get a better picture, study of the marital status by age group is necessary. The proportion of married female in the age group of 10-14 years, which is below the age of legal marriage, is 0.48 per cent in (1991). The data reveal that the child marriage is still prevalent in the region, it is rarely practised among certain communities. However, proportion of married female is found to be quite high (40.38). This shows the presence of early marriage among the females. As a matter of fact, that early marriage is still practised by some groups among the Nepalese due to a number of socio economic factors. In the age group of 20-49 years, 73.64 per cent male and 78.52 per cent female are married (approx.). In the reproductive age group (20-44 years) percentage of married female (71.44) is higher than the male (63.94). It is mainly due to remarriage and practice of polygamy by different communities. In the higher age group (50+) percentage of married male (24.53) is much higher than the female (15.74) which may be due to high female mortality.

In the study area number of widows (2.54 per cent) are more than widowers (1.58 per cent). After the age of 60 years and above proportion of widows (52.98 per cent) becomes more than the widowers (46.53 per cent). This is mainly due to more age difference between husband and wife at marriage, practice of polygamy

and remarriage. As stated earlier, polygamy is more common among the farmers, while widow marriage are common among the tribes.

Table 5.11: Sikkim : Marital Status, 1991

| Marital Status | Male | Female |
|-----------------------|---------------------|---------------------|
| Never Married | 1,32,690 (61.30) | 1,07,660 (56.65) |
| Married | 79,415 (36.69) | 76,743 (40.38) |
| Widowed | 3,432 (1.58) | 4,839 (2.54) |
| Divorced or Separated | 855 (0.39) | 766 (0.40) |
| | 2,16,427 | 1,90,030 |

Source: Census of India, 1991, Sikkim, *General Economic Table and Social-Cultural Table* (unpublished).

The proportion of widows are very high in the rural areas (93.09 per cent) than in the urban areas (6.30 per cent). Besides other factors, it may be due to illiteracy, lack of proper medical facilities and practice of witch doctor, etc.

The percentage of persons divorced or separated is quite insignificant in Sikkim. It is only 0.40 per cent. It may be due to rigidity of traditional laws of different ethnic groups. In many cases it is permissible with social approval. Divorce involves heavy compensation to the aggrieved party. Divorce or separation from wife involves returning of heavy bride price to the wife among certain communities. The prevalence of bride price clearly reflects a better social status of women in the state especially among the tribals. It is striking to note that the proportion of divorce is high in the rural areas (85 per cent) than in the urban areas (15 per cent). It is mainly due to illiteracy.

The proportion of never married persons in the state is 59.13 per cent (male : 61.31; female : 56.65). Percentage of never married person in the rural areas is 91.21 which is far above than the urban areas (8.79). High proportion of unmarried

population especially male is the result of many socio economic causes, viz., (i) high bride price, (ii) polyandry system of marriage to avoid fragmentation of land holding among the tribes etc.

Summary Statement

In Sikkim the overall sex ratio is 878 females per 1000 males, which is lower than the sex ratio of the North-Eastern States and the country's average. Deficiency of females in the State is mainly due to male selective in-migration of non-tribal people from outside the State.

It is observed that tribal sex ratio (914) is higher than that of the non-tribals (868) in the State. The sex ratio of the indigenous tribal groups like the Lepchas (944) and the Bhutias (918) are considerably high.

When sex ratio is examined in different age groups it is found that in the lowest age group, viz., 0-4 years, sex ratio is high (964). Again in the next age group, it is the highest (1000). Low sex ratio (610) in the working age group (15-59 years) clearly indicates that male selective in-migration of population from outside the State is high. Again in the higher age group of 60+ an increase of females of 744 as against 655 per 1000 males in 55-59 age group shows that there is an out-migration of males after the retirement from service.

The urban sex ratio (750) of the State is lower than rural (892). Low sex ratio in the urban areas is mainly due to male selective in-migration, predominance of non-agricultural occupation, etc. Among the towns Nayabazar has the highest sex ratio (866) and Mangan has the lowest (581), (Table 5.4). This variation of sex ratio among the towns are related to degree of socio-economic development, difference in the mortality patterns of male and female, out-migration of females for job, education, marriage, etc., and rate of in-migration of people from outside the State.

Further, insight can be obtained when rural sex ratio is studied at district and sub-division levels. Among all West district (919) has the highest rural sex

ratio (Table 5.3). This is mainly due to concentration of large proportion (97 per cent) of non tribal agrarian population in the district. On the other hand, North district has the lowest rural sex ratio (836).

At sub-division level, it varies from 928 in Soreng (West district) to 782 in Chungthang (North district) (Table 5.5).

It is worth mentioning that low rural sex ratio in the North district is related to in-migration of Nepali agricultural labourer to Mangan sub-division and, educated and skilled workers to Chungthang sub-division. It is interesting to note that, low rural sex ratio at Gangtok sub-division is mainly because of conversion of some parts of the peripheral area of some towns into rural areas in 1991. For example, Tadong (851), Sichey (890), upper Chandmari (880) revenue blocks near Gangtok towns.

The pattern of sex ratio at district level shows a variation of 915 in West district to 828 in North district. Again at sub-division level Soreng and (926) and Gyalshing (905) of West district have the highest and Chungthang (782) has the lowest. This variation is mainly caused by the level of development of an area, degree of concentration of tribal and non-tribal population and the social systems of different groups.

On the whole, Sikkim has a deficiency of female in all the decades (1901-1991). Since 1921 although the sex ratio has a declining trend, but after 1971 the rate of decrease is found to be maximum (Table 5.7). This is mainly due to male selective in-migration from outside the State. But in 1991, there is an increase of females (878 females per 1000 males). This is mainly due to decrease in the rate of in-migration of people to the State. This clearly indicates that during the last decade (1981-1991) the scope for job, business, etc., have declined due to slow economic development in the State. As a consequence, in-migration of people especially males to the State has gone down, resulting a high sex ratio in the region.

The age structure provides an insight to the demographic pattern of the State. The broad base of the age-sex pyramid with a tapering top reveals that the State has a high percentage of (12.65) of population under the lowest age group (0-4 years). This indicates a relatively high fertility rate and a rapid growth of population, a typical characteristic feature of all underdeveloped areas. The percentage of male (6.44) and female (6.21) population in this age group (0-4 years) shows that birth of female child is not a curse to the society. Juvenile population (0-14 years) constitutes 39.71 per cent and old population above 60 years 4.61 per cent. They are considered as dependent population, resulting an overall dependency burden of 80 per cent in 1991 as against 79 per cent in 1981. This is indicative of enrolment of a large number of children in the school.

The proportion of population in the adult age group of 15-59 years is 55.66 per cent (male : 30.41; female : 25.25) of the total population, which is considered as the total working population of the State. Proportion of male is higher than the females which is evidently because of male dominated in-migration at the working age group.

High dependency ratio in the rural areas (82) is caused by high fertility rate, and agrarian occupation of the people. The consequence is, increase of presence of population on the available land. This leads to unemployment problem which further increases the dependency ratio. Among the districts, East district has the lowest dependency ratio because of large proportion of population in the working age group.

From the analysis of the marital composition it is observed that, in Sikkim proportion of married females is more (40.38 per cent) than married males (36.69 per cent). This shows the prevalence of early marriage among the females. Here, early marriage (below 15 years) is not uncommon, child marriage is not completely eradicated. Presence of a large number of both married males and married females are attributable to factors like, practice of remarriage and polygamy system of marriage by certain groups. In the age group of 60+ years proportion of widows (53 per cent) is more than the widowers (47 per cent). This is related to

age difference between husband and wife at the time of marriage, practice of polygamy and remarriage. On the other hand, percentage of widows is high in the rural areas (93). Practice of divorce and separation is less in Sikkim. Here, in many cases divorce is permissible with social approval. Divorce and separation takes place on different reasons like adultery, maladjustment, cruelty, barrenness, impotency, Chronic sickness, insanity, etc. Either party can divorce and compensation is given to the aggrieved party. In any case, because of rigidity of traditional laws of different groups, divorce is not frequent among the people of the State.

CHAPTER - VI

PATTERN OF ECONOMIC AND SOCIAL CHARACTERISTICS

In the population studies, an understanding of the socio-economic characteristics is of vital importance. An analysis of the economic composition of a population unfolds the diverse economic, demographic and cultural attributes of an area. Among the economic characteristics of population, occupational composition constitutes an important aspect of study which provides a clear picture of the level of economic development of an area. On the other hand, literacy and education level, language, religion, etc., are the important social characteristics of population of an area. Literacy and education level influence significantly the work participation rate. Hence, a study of the social characteristics of population of an area is very necessary to understand its level of progress. This chapter is devoted to analyse the socio-economic characteristics of the study area.

WORK PARTICIPATION RATE

As per the 1991 census, the proportion of workers to total population in the State is 41.51 per cent (male: 51.20; female : 30.41) as against 37.68 per cent (male : 51.56; female : 22.73) for the Country. The percentages of workers for the scheduled tribe and the scheduled caste population are 40.45 (male : 48.58; female : 31.56) and 38.55 (male : 49.57; female : 26.80) respectively. Among the workers 40.45 per cent are main workers, while only a negligible per cent (1.07 per cent) are marginal workers. It shows that a large proportion of people in Sikkim are engaged in work for the major part of the year.

When comparison of the percentage of workers of the State is made with those of the other predominantly tribal States of North-East India, viz., Arunachal Pradesh, Nagaland, Meghalaya, and Mizoram, it is found that Sikkim has the lowest (Appendix VIII). On the other hand, the percentage of workers in the State is higher than those of the non-tribal States like Assam (36.37 per cent) and

Tripura (31.36 per cent). However, such a high percentage of participation rate neither signifies larger opportunities for work nor an excessive pressure on manpower. The rugged terrain and poor economic condition compel the people to work for subsistence. Besides, the participation of female in different economic activities has also caused the higher participation rate in the State. Further, this has also been influenced by the land tenure system of the area. As a matter of fact, as stated earlier, non-tribals are not allowed to buy land from the tribals, and it is more strictly followed particularly in the North district. The consequence is that large proportion of land in the State belongs to the tribal people. And most of the non-tribals (Nepali) work there as tenants. The high participation rate is also accelerated by the practice of wet paddy and cardamom cultivation, which involve participation of a large number of working hands, both males and females. Even the school going children below the age of 15 years and aged people above 60 years are required to work in the fields due to economic urgency. An analysis of distribution of workers by age group reveal that 3.21 per cent children below the age of 15 years and 6.10 per cent above 60 years (1991) are also included in the working force. In Sikkim, like other underdeveloped states, both the young and the aged people are economically active. Hence, the high participation rate is affected by both physical and socio-economic factors.

Spatial Pattern of Workers

An analysis of the data of the work participation rate at district level reveals that West district with 44.86 per cent has the highest proportion of workers, which is above the State's average (41.5). It is followed by North district with 44.1 per cent and South district with 43 per cent. On the other hand, East district with 38.5 per cent has the lowest. The data indicate that besides physical factor, socio-economic condition also plays an important role in the spatial pattern of workers in the State. If we consider the distribution of schedule tribes and schedule castes workers, it is found that West district again ranks highest with 45 per cent and 44 per cents respectively (Table 6.1). It is followed by North and South districts with almost the same proportion of workers, i.e., 42 per cent for S.T. and 39 per cent for S.C. population. East district on the other hand, has the lowest with 37 per cent

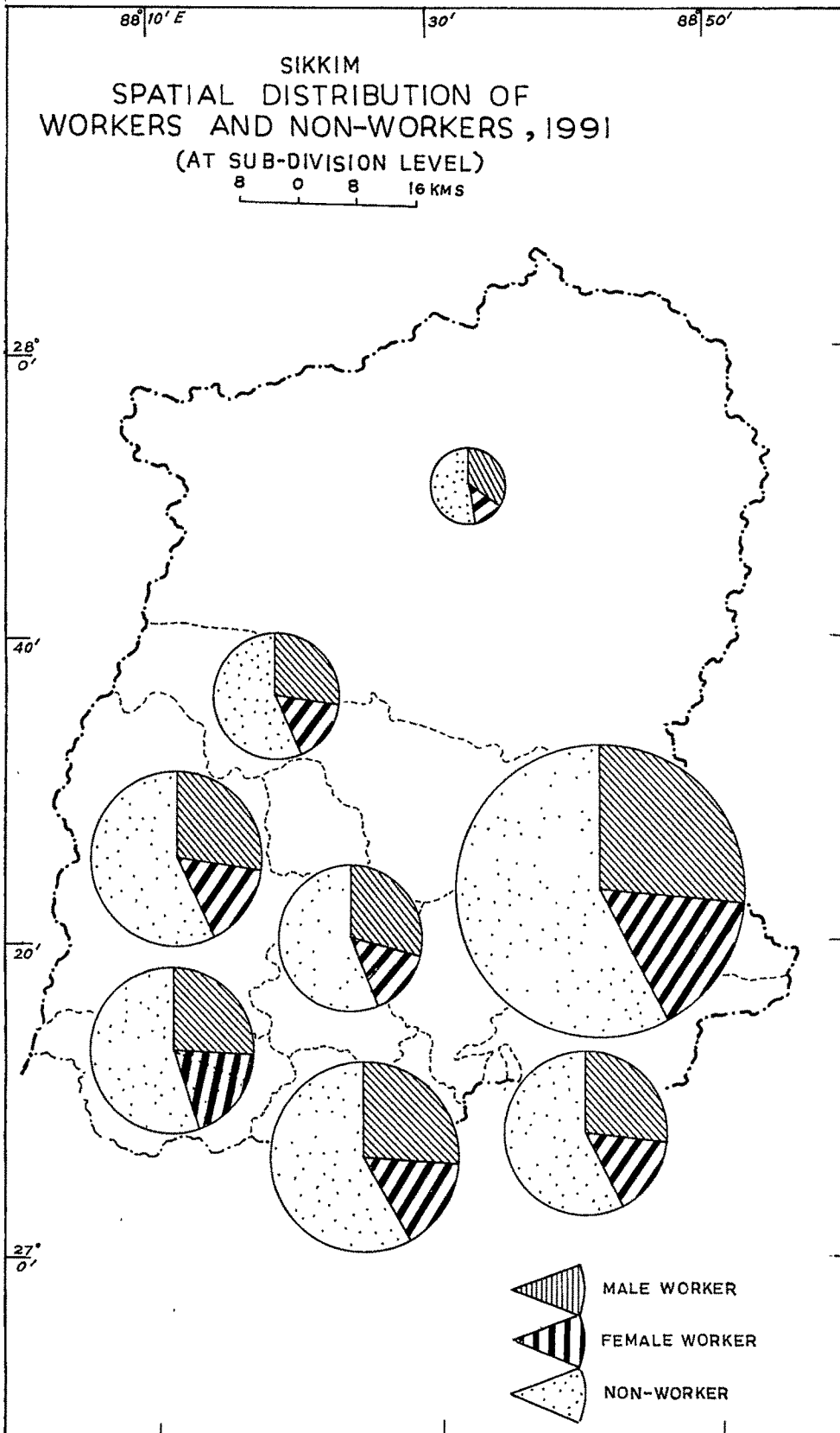


FIG.61

Table 6.1: Sikkim : Work Participation Rate at District Level, 1991

| District | Workers (including marginal workers) as per cent to total population | | | | | | | | | | | |
|----------|--|-------|--------|----------------------------|-------|--------|----------------------------|-------|--------|--|--|--|
| | Total population | | | Scheduled Tribe population | | | Scheduled Caste population | | | | | |
| | Person | Male | Female | Person | Male | Female | Person | Male | Female | | | |
| North | 44.13 | 53.86 | 32.38 | 41.50 | 49.72 | 32.58 | 39.42 | 50.25 | 26.85 | | | |
| East | 38.51 | 50.23 | 24.86 | 36.82 | 45.94 | 26.72 | 36.14 | 47.86 | 23.45 | | | |
| South | 42.78 | 51.82 | 32.66 | 42.19 | 49.59 | 34.21 | 38.75 | 50.05 | 27.11 | | | |
| West | 44.86 | 51.74 | 45.10 | 45.10 | 51.86 | 37.70 | 44.23 | 58.30 | 34.74 | | | |
| SIKKIM | 41.51 | 51.26 | 30.41 | 40.45 | 48.58 | 31.56 | 38.55 | 49.57 | 26.80 | | | |

Source : Census of India, 1991, Sikkim, S-22, P-XII, A & B. Districts Census Handbook.

and 36 per cent respectively. From the data it is clear that the former has a higher work participation rate than the latter. It is mainly because of high female work participation rate among the tribals.

An analysis of work participation rate at sub-division level reveals that Soreng sub-division (West district) has the largest proportion of workers in the State (47.0 per cent). It is followed by Chungthang and Mangan of North district with 46 per cent and 44 per cent respectively. On the contrary, Gangtok sub-division (East district) has the lowest (37 per cent). The rest of the sub-divisions have the work participation rate ranging between 42 per cent and 43 per cent.

High work participation rate is related to many factors, viz., the availability of agricultural land, size of the agricultural landholding, type of occupation and participation rate of the females. The literacy rate is also one of the important factors which affects the participation rate of a place.

Due to rugged terrain there is a scarcity of agricultural land in Soreng, Chungthang and Mangan sub-divisions. Here, the size of the cultivable landholding is small, where people practise traditional methods of cultivation, which needs a large number of helping hands. But the return from the land is very low. This leads to poor economic condition and low standard of living of the people. Hence, in Soreng sub-division, mainly with small landholdings people do not afford to engage agricultural labourers. As a result, involvement of all the family members in the agricultural activities becomes compulsory. This has caused high participation rate of the females in this sub-division (41 per cent). However, low literacy rate and educational level also contribute to the high work participation rate in the sub-division. Chungthang sub-division, on the other hand, is an exception where people practise mixed economy. Here, people rear animal in combination with farming. To supplement their income they also do trading. For this multifarious activities they need more manpower. Hence, engagement of all the family members is unavoidable. On the other hand, in Mangan sub-division there is a tradition that the landlords and the cultivators engage Nepali agricultural

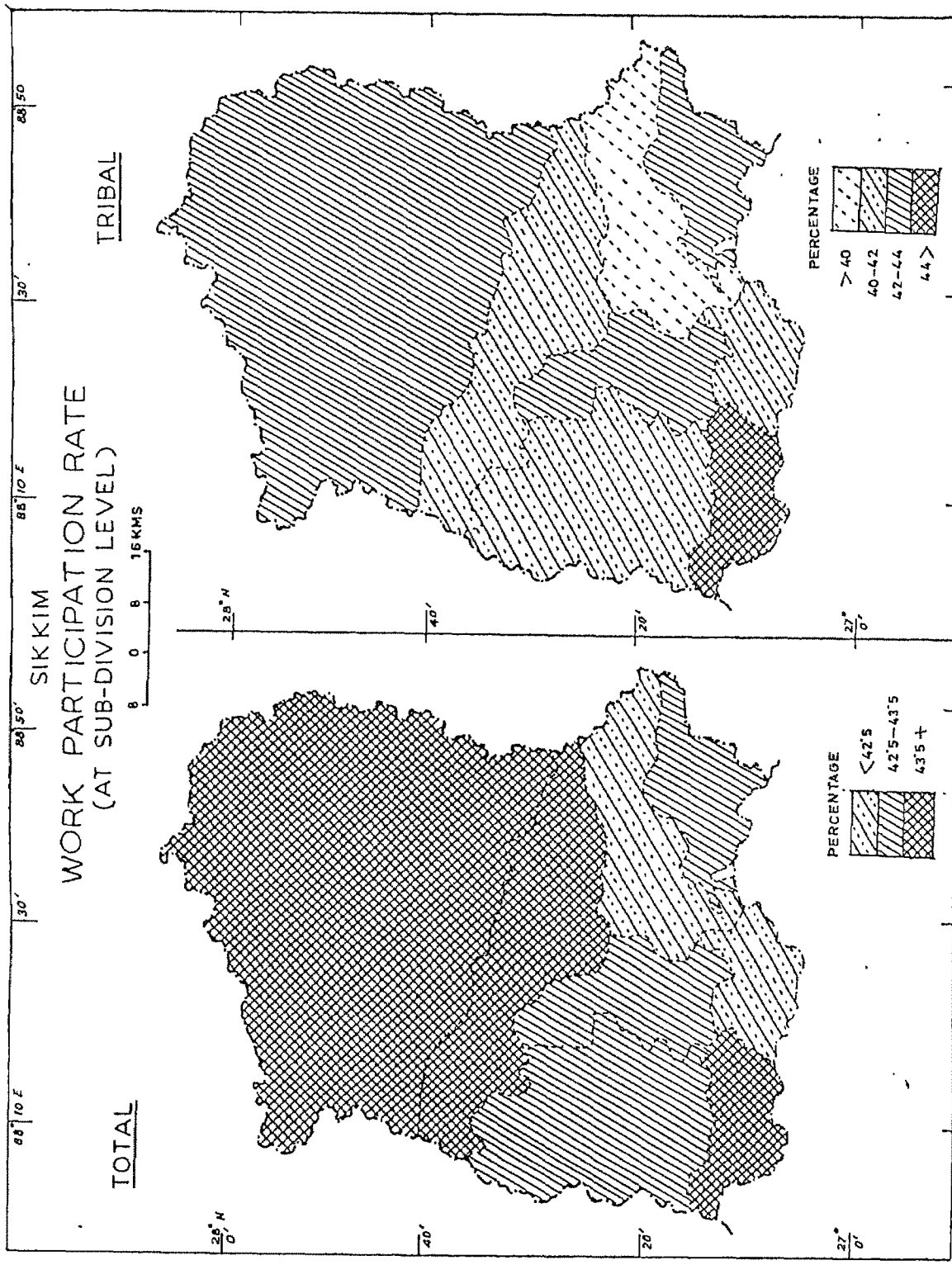


FIG. 6'2

labourers to cultivate their land. This contributes to the high work participation rate in this sub-division.

Low work participation rate in Gangtok sub-division is mainly the result of shifting of occupation of people from primary to tertiary and secondary sectors. Here, urbanization is solely responsible for it. Besides, enrolment of large number of children in the school has also made low participation rate in this sub-division.

Spatial Pattern of Female Participation Rate

According to 1991 census, percentage of female workers to total female population is 30.41 per cent for general, 31.56 per cent for schedule tribes and 26.80 per cent for schedule castes population. Female participation rate in Sikkim is much higher than those of other predominantly non-tribal states like Assam (21.26 per cent) and Tripura (14.31 per cent). It is also higher than the National average of 22.73 per cent.

It is observed that economic contribution of females in the family is not less than males because, they hold equal responsibilities in many respects. Practically they constitute the main power force in the family as well as in the society. The system of agriculture in the hilly areas is such that it requires a large number of helping hands. As a result, involvement of female in the agricultural activities is indispensable. It is observed that, besides the household works, most of the strenuous works in the agricultural field are done by the women. It is also found that the females are engaged in other works too, such as road maintenance, constructions, etc. Females with higher education level are found to hold responsible position in both the government and the non-government establishments. Women with different skills are engaged in many secondary activities like, weaving, painting, tailoring, etc. Many are working in different factories too. Hence, because of economic security, status of women is found to be better in Sikkim than in many parts of the country. It is observed that, because of her economic status, many communities of the State, as mentioned earlier, women carries a 'bride price' as opposite to the dowry system in other states of the country.

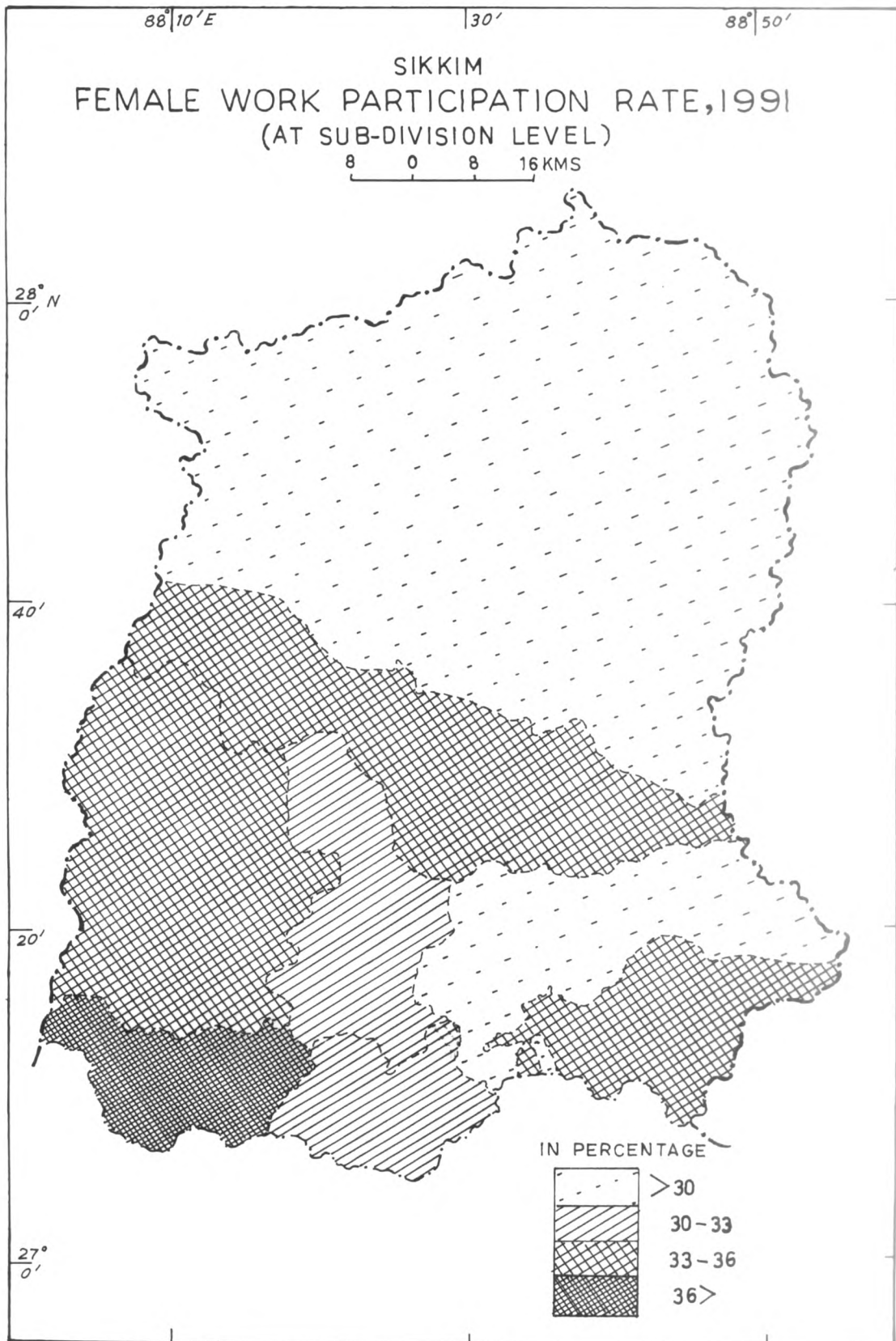


FIG. 6'3

The spatial pattern of female participation rate at sub-division level shows a variation from 41 per cent in Soreng to 22 per cent in Gangtok (Table 6.2) (Fig. 6.4). This variation is related to economic condition of the people and, low literacy rate and educational level. Low literacy rate and high work participation are found to be interrelated. Soreng sub-division is a good example, where, because of low female literacy (36 per cent), a large number of females are engaged in primary activities. This has resulted in a high female participation rate (41 per cent),.

Summary Statement

The proportion of workers to total population of the State is found to be 41.51 per cent. It is higher than the country's average. The percentages of scheduled tribe and scheduled caste workers are also found to be high, i.e., 40.45 per cent and 39 per cent respectively. Out of the total work force 40.45 per cent are main workers. It is worth noting that engagement of workers in large part of the year, neither indicates the availability of large opportunities for jobs, nor an excessive pressure on manpower in the State. High work participation rate is mainly caused by rugged terrain, land tenure system, large participation of female, small land holdings and practice of wet paddy and cardamom cultivation. High participation rate has also been the result of engagement of school going children below the age of 15 years (3.21 per cent) and aged people above 60 years (6.10 per cent) in different sectors. On the whole, high work participation rate is the result of both physical and socio-economic factors. The spatial distribution of workers reveal that West district has the highest proportion of (44.86 per cent) of workforce and East district has the lowest (38.5 per cent). Again at sub-division level Soreng (West district) has the highest percentage of workers (47) and Gangtok (East district) has the lowest (37.26). As discussed earlier, high participation rate is attributable to both physical and socio-economic factors. High participation rate of the female is another important cause of it. However, low percentage of workforce is related to the degree of socio-economic development of an area. Here, enrolment of both male and female children in the school is also responsible for low workforce. From the above discussion it is seen that the

Table 6.2: Sikkim : Work Participation Rate at Sub-divisional Level 1991

| Sub-division | Workers (including marginal workers) as [per cent to total population | | | | | | | | | | | |
|--------------|---|-------|--------|--------|----------------------------|--------|--------|-------|----------------------------|--------|------|--------|
| | Total Population | | | | Scheduled Tribe Population | | | | Scheduled Caste Population | | | |
| | Person | Male | Female | Person | Male | Female | Person | Male | Female | Person | Male | Female |
| Chungthang | 45.84 | 58.73 | 29.36 | 43.09 | 53.54 | 31.60 | 38.67 | 52.99 | 22.95 | | | |
| Mangan | 43.63 | 52.39 | 33.22 | 41.01 | 16.64 | 32.88 | 39.65 | 49.46 | 28.06 | | | |
| Gangtok | 37..26 | 50.35 | 21.80 | 35.11 | 45.27 | 23.75 | 34.92 | 47.53 | 21.28 | | | |
| Pakyong | 42.58 | 49.83 | 34.68 | 43.79 | 22.47 | 38.53 | 41.36 | 49.27 | 32.81 | | | |
| Namchi | 42.39 | 50.91 | 32.97 | 41.74 | 48.51 | 34.63 | 38.52 | 49.88 | 27.06 | | | |
| Ravong | 43.49 | 53.43 | 32.10 | 42.57 | 50.50 | 33.83 | 39.42 | 50.28 | 27.26 | | | |
| Gyalshing | 42.83 | 51.05 | 33.74 | 41.94 | 40.77 | 33.81 | 42.32 | 53.12 | 30.81 | | | |
| Soreng | 47.00 | 52.47 | 41.08 | 49.28 | 53.79 | 44.33 | 46.17 | 53.48 | 38.67 | | | |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, Districts Census Handbook.

presence of a large number of workers indicate slow economic development of the State and its prevailing agrarian character, low literacy rate, etc.

However, participation of female in the State is high (30.4 per cent). It is higher than certain States of North-East India like Assam (21.29 per cent) and Tripura (14.31 per cent). Among the schedule tribes female participation rate is higher (31.56 per cent) than the schedule castes (26.80 per cent). Practice of agriculture in a mountainous topography is quite strenuous. Hence, engagement of females in different sectors, is indispensable. Because of economic security, status of women in the State is better than many States of the country. This could be justified by the fact that, among many groups in the State, females carry a bride price as opposite to dowry system of other parts of the country.

At sub-division level, Soreng (West district) has the largest proportion of female workers (41 per cent) and Gangtok (East district) has the lowest (22 per cent). Besides other factors, low literacy rate and education level and high percentage of female engaged in primary activities are the main causes of high female participation rate.

OCCUPATIONAL STRUCTURE

As per the 1991 census, Sikkim had 68.40 per cent of workers engaged in primary sector, 11.12 per cent in secondary sector and 20.48 per cent in tertiary sector as against 67.53 per cent, 11.97 per cent and 20.50 per cent respectively for the country.

At district level, the percentages of primary workers are higher in the West district (86) and South district (78) compared to those of East district (51.39) and North district (64.58). Physical and socio-economic factors are the main causes of this difference. An analysis of the data at sub-division level shows that there is a variation in the distribution of primary workers from (Table 6.3) 33 per cent of 88 per cent. Among the eight sub-divisions Soreng has the highest proportion of workers (88 per cent) engaged in primary sector. It is mainly caused by small landholdings, poor economic condition of the people and participation of large

number of females. Here, children below the age of 15 years and old people above 60 years are found to be economically active (Ref: Survey). On the other hand, Chungthang sub-division of North district (33 per cent) and Gangtok sub-division of East district (42 per cent) have considerably low proportion of workers in the primary sector. The causes of low proportion of workers in the former are, (i) scarcity of agricultural land due to rugged terrain, (ii) practice of communitarian landholding system, (iii) control of 'Dzomsa' led by a 'Phipon', a form of local self government, on the socio-economic aspects of the people of this sub-division, (iv) the legacy of the past and (v) clan territorial occupance. Originally, people of this sub-division were traders and animal rearers. Hence, at present they practise a multifarious economy to earn their livelihood.

Table 6.3: Distribution of Workers in Different Occupational Categories in Sikkim (in per cent), 1991

| Sl. No. | State/District/ Subdivision | Occupation | | |
|---------|-----------------------------|------------|-----------|----------|
| | | Primary | Secondary | Tertiary |
| 1 | North | 64.40 | 15.29 | 24.32 |
| | a. Chungthang | 32.65 | 43.27 | 24.08 |
| | b. Mangan | 74.68 | 5.66 | 19.66 |
| 2. | East | 51.39 | 17.13 | 31.46 |
| | a. Gangtok | 42.12 | 20.75 | 37.14 |
| | b. Pakyong | 79.14 | 6.35 | 14.51 |
| 3. | South | 78.11 | 8.03 | 13.85 |
| | a. Namchi | 75.69 | 8.35 | 15.95 |
| | b. Ravong | 82.60 | 0.96 | 9.96 |
| 4. | West | 86.26 | 3.78 | 9.96 |
| | a. Gyalshing | 84.40 | 4.40 | 11.20 |
| | b. Soreng | 88.05 | 3.18 | 8.76 |
| SIKKIM | | 68.40 | 11.12 | 20.48 |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *Districts Census Handbook*.

On the other hand, the cause of low percentage of primary workers in the latter are: (i) urbanization and the influence of urban life-style on the rural people, (ii) enrolment of a large number of children, both male and female in the school, (iii) shifting of families from rural to urban areas to avail of better socio-economic facilities. The rest of the sub-divisions have almost same proportion of primary workers ranging between 75 per cent and 81 per cent. (Table 6.3).

The break-up of primary workers shows that the State has 58 per cent cultivators and 7.82 per cent agricultural labourers.

The percentage of cultivators at district level varies from as high as 77 per cent in the West district to as low as 39 per cent in the East district. Again, Soreng sub-division of West district has the highest proportion (81) followed by Gyalshing (74) and Ravong (74) sub-divisions of West and South districts respectively. It is observed that these sub-divisions with very high percentage of cultivators are predominantly inhabited by the Rai and Limboo farmers of Nepali group. In the case of Soreng sub-division, small agricultural landholding owing to rugged terrains and its extremely western location are accentuating the percentage of cultivators. On the whole, large proportion of cultivators clearly indicate a low level of socio-economic development of the people of these sub-divisions.

The distribution of agricultural labourers at the district level, however, shows a different pattern from that of the cultivators. West district has the higher percentage of cultivators (77.4 per cent) at the same time it has the lowest proportion of agricultural labourers (7.28 per cent). Among the four districts, North district has the highest percentage of agricultural labourers (15) and South district has the lowest (5). The West and the East districts have 7 per cent and 8 per cent respectively. This variation is mainly related to economic condition of the people, skill of the farmers and demographic factor like high fertility rate of the farmer. At the sub-division level, Mangan of North district has the highest percentage of (18) agricultural labourers. This is mainly because of, (i) large proportion of agricultural land of the North district is located in Mangan sub-division, (ii) more than 90 per cent of the land owners of this sub-division are tribal people (Lepchas of Bhutias)

who originally were food gatherers, hunters, animal rearers and some of them used to practise shifting cultivation too. As a result, they entirely depend on the Nepali agricultural labourer for cultivation of crops like paddy, maize, cardamom, etc. On the other hand, very low percentage of agricultural labourers in Namchi (5), Ravong (5), and Soreng (6) sub-divisions is mostly caused by high fertility rate of the Rai and the Limboo farmers of Nepali group. Here, most of the farmers have big families hence, both children and old people are required to work in their field to minimize the extra expenditure on daily wages or the cost of engaging agricultural labourer. On the whole, agricultural labourer is very low in those areas where large proportion of people depend on agriculture and predominantly inhabited by the Rais and the Limboos (Nepali).

Workers engaged in livestock rearing, plantation, orchard, forestry, etc., are mostly found in North district. Among all the districts North district has the highest proportion with 3.38 per cent. Besides animal rearing, here people also do cardamom plantation in the forest areas. In some cases, people collect forest products like herbs, medicinal plants, collection of juniper chips, etc., to supplement their income.

In Sikkim, because of the presence of very few mines, negligible proportion of workers are engaged in these activities. Highest percentage of them is found in East district (0.44), especially in Gangtok sub-division (0.58) where copper mines are still in operation.

The State has only 11.12 per cent workers engaged in the secondary sector. At district level, the highest proportion of workers engaged in secondary sector is found in East district (17.13 per cent). This is mainly because of presence of a few industries in Singtam-Rangpo belt and at Gangtok town of Gangtok sub-division (21 per cent). This is followed by North district with 15 per cent. Presence of household cottage industries, mainly weaving of woollen products in the district is responsible for it. Low percentage, i.e., 3.78 of the workforce in the secondary sector in the West district shows that this district is industrially most backward in the State.

It is worth noting that, out of the total workers engaged in secondary sector, the largest proportion (7.09 per cent) is involved in constructions works. At district level, North district has the largest with 12.39 per cent. Being in the frontier region, this district has maximum amount of developmental activities, such as, roads and bridges construction and maintenance, etc., by the Army, GREF and BRO. Besides, establishment of the sub-divisional headquarters at Chungthang has further widened the scope for it. As a consequence, at sub-division level, Chungthang (43.27 per cent) has the highest proportion of workers engaged in construction work.

The present proportion of workers in the secondary sector is actually not the result of development of industries in the State but mainly because of high percentage of workers engaged in construction works.

In Sikkim, the percentage of workers in the tertiary sector is 20.48 per cent of the total work-force. After joining with India in 1975, rapid development of tertiary activities took place in the State. This led to mass shifting of occupation from primary to tertiary sectors, especially by the educated, literate and skilled people. This is more so in the capital town Gangtok, resulting in the highest proportion of workers (31.46 per cent) in the tertiary sector of the East district. This is followed by North district with 21 per cent. The lowest is found in West district with 9.96 per cent. In this respect urbanization, literacy and educational level, accessibility, etc., played an important role. Development of tourism industry has also added the number to this sector.

Out of the total tertiary workers 13.43 per cent is engaged in other services. East district with maximum government and non-government establishments has the highest percentage of workers in other services (20 per cent).

From the above discussion it is clear that Sikkim is basically an agriculture-based State, where industrialization has yet to make a headway. Due to slow economic development the scope of employment in the secondary and tertiary sector is still very limited.

Table 6.4: Tribal and Non-Tribal Workers in Different Occupational Categories in Sikkim (in per cent), 1991

| State/Dist/ Sub-Division | Occupation | | | | | |
|-----------------------------|------------|-------|-----------|-------|----------|-------|
| | Primary | | Secondary | | Tertiary | |
| | N.T. | S.T. | N.T. | S.T. | N.T. | S.T. |
| NORTH | 54.39 | 73.9 | 20.20 | 9.65 | 25.39 | 16.44 |
| Chungthang | 3.48 | 55.94 | 60.21 | 29.15 | 36.29 | 13.89 |
| Mangan | 69.48 | 79.57 | 8.34 | 3.12 | 22.16 | 17.31 |
| EAST | 51.11 | 52.48 | 18.13 | 13.22 | 30.74 | 34.28 |
| Gangtok | 41.96 | 42.68 | 21.85 | 16.53 | 36.18 | 40.78 |
| Pakyong | 77.78 | 85.02 | 7.29 | 2.25 | 14.91 | 12.72 |
| SOUTH | 77.97 | 78.81 | 8.51 | 5.62 | 13.51 | 15.56 |
| Namchi | 75.17 | 79.52 | 8.91 | 4.23 | 15.91 | 16.24 |
| Ravong | 83.78 | 78.18 | 7.95 | 6.85 | 8.26 | 14.96 |
| WEST | 85.43 | 89.61 | 4.17 | 2.16 | 10.38 | 8.21 |
| Gyalshing | 83.50 | 87.67 | 4.92 | 2.47 | 11.57 | 9.84 |
| Soreng | 87.21 | 91.78 | 3.48 | 1.81 | 9.29 | 6.39 |
| SIKKIM | 68.43 | 70.59 | 11.10 | 8.42 | 20.48 | 20.97 |

Source: Calculated from Census of India, 1991, Sikkim, S-22, P-XII, A & B, *Districts Census Handbook*.

An analysis of the tribal workforce shows that the State has 71 per cent in primary sector, 8.42 per cent in secondary sector and 21 per cent in tertiary sector. The distribution pattern of the tribal workforce is same as the general workforce in the primary sector. But when comparison is made with the non-tribals (68 per cent), it is found that proportion of tribal workforce is high (71 per cent). It is worth noting that tribal workforce in the primary sector is high even in those sub-divisions which are predominantly inhabited by the non-tribals. (Table 6.4). On the other hand, in the secondary sector, as usual, proportion of non-tribal workers (11 per

cent) are higher than tribals (8 per cent). However, in the tertiary sector, the percentage of workforce in both the groups are same (non tribal : 20; tribal :21).

From the foregoing discussion it is clear that both the tribal and the non-tribal people of the State have to upgrade themselves socio-economically. From the case study it is clear that, in spite of the better economic condition of the tribal people, particularly of the North district, they are still economically backward and living a low standard of living. This is mainly caused by the social system practised by the tribal people of this district. Among them, the rituals practised by the Buddhists, the system of marriage, etc., bear heavy expenditure. Besides, because of illiteracy and ignorance, people of the North district easily get cheated by the business men from the plains.

In Sikkim, work participation rate of the females is quite remarkable, it is higher than the country's average (22 per cent). In the primary sector, percentage of female workers is 81 which is much higher than the male workers (62 per cent). On the other hand, proportion of female workers is only 6 per cent in the secondary sector, which is less than half of the male workers (14 per cent). Similarly, in the tertiary sector also female workers are less (14 per cent) than the male workers (24 per cent).

In all the districts female participation rate is higher than the male (Appendix IX). Among the districts West district has the highest number of female workers (93 per cent) in the primary sector. In the tertiary sector, although female workers are less than the males but in other services, East district has more female participation rate (20 per cent) than its male counterparts.

When the different sub-categories of the primary sector is considered, it is found that 72 per cent females is cultivator, which is much higher than the male cultivator (51 per cent). This is mainly due to, (i) economic constraint of the people, (ii) practice of traditional method of cultivation which needs more manpower, (iii) large amount of work both in the field as well as at home are required to do by the females, and (iv) low literacy rate. The proportion of female agricultural labourers (7.37 per cent) is less than the males (8.04 per cent).

In the secondary sector percentage of female workers (13 per cent) is found to be almost same as the male workers (15 per cent). It is worth noting that Chungthang sub-division of North district has the highest proportion (50 per cent), which is more than the male workforce (40 per cent). The main causes are, here, a large number of females are engaged in household industry (2.2 per cent), such as weaving of woollen cloth, etc., and secondly, proportion of female engaged in the construction works is higher workers (46 per cent) than the males workers (37 per cent).

In the tertiary sector female workers engaged in other services are higher than the male workers in the East district (20 per cent). Gangtok sub-division of the same district has a substantially high percentage of female workers (25) in other services (Appendix X). This indicates that participation of female workers in both the government and non-government establishment are increasing.

From the above discussion it is clear that although the burden of work on the females are very high, but on the whole, because of the economic status, the status of females in the State is better than many other States of the country.

Summary Statement

Like most States of the country, Sikkim also has a large proportion of workers engaged in the primary sector (68.40 per cent). An analysis of the distribution of workers shows that the West district has the highest percentage of primary workers (86) and East district has the lowest (51.39). Further, at the sub-division level, a variation in the distribution of primary workers is noticed. At this level Soreng (West district) has the highest percentage (88) and Chungthang (North district) has the lowest workers (33) in this sector. Such a high proportion of primary workers is attributable to poor economic condition of the people, small size of the landholdings and high participation rate of the female (94 per cent). Low percentage in Chungthang sub-division is mainly due to practice of mix-economy by the local people. However, here socio-economic development has not made much noticeable impact on the traditional way of living of the people. In Lachen and Lachung revenue blocks of this sub-division, all the activities of the society are

controlled by the 'Phipon' a village head man. On the other hand, low proportion of primary workers in Gangtok sub-division is the result of growing urbanization and impact of urban life style on the rural population, awakening of the people towards education, development of transport and communication net work, etc. Among the primary workers percentage of cultivators is higher (58) than that of the agricultural labourers (7.82). As expected, West district has the highest proportion of cultivators (77 per cent) and East district has the lowest. Again, at sub-division level, Soreng has the largest concentration of cultivators (81 per cent). Here, because of the small size of the landholding and economic constraint, people cultivate their land by themselves. Next to it come the sub-divisions of Gyalshing, Ravong, Namchi and Pakyong with 74.0 per cent, 73.97 per cent, 69.0 per cent and 63.25 per cent respectively. Such a heavy dependence of population on agriculture clearly shows a very low level of socio-economic development of the area. On the whole, it is found that the proportion of cultivators is high in those sub-divisions where Rais and Limboos of Nepali group are the predominant population. High concentration of agricultural labourers is noticed in Mangan sub-division (17.80 per cent) where land belongs to Lepchas and Bhutias. As a matter of fact, originally they were not cultivators; cultivation of crops like paddy, maize, cardamom, etc., were introduced by the Nepalese. Hence, they engaged Nepali agricultural labourer for cultivation of crops. Again, low percentage of agricultural labourers is found in Namchi (5), Ravong (5) and Soreng (6) sub-divisions. Here, fertility rate of the people is high as people prefer big families so that the cost of engaging agricultural labourer could be minimized. As expected, North district has the highest proportion of workers engaged in livestock rearing, plantation, orchard, forest, etc., (3.38 per cent) in the State. On the other hand, Gangtok sub-division of East district has the maximum percentage miners (0.58) in the State because here copper mines are still in operation.

The proportion of workers in secondary sector is quite low in the State (11.12 per cent). Except a few small scale and household industries, and traditional handicrafts institutions, there is no large scale industry in the State. East district has the highest proportion of workers in this sector (17.13 per cent). Gangtok sub-division of the same district has the highest (21 per cent) among the

sub-divisions. It is worth noting that the percentage of workers in the State has been mainly due to the engagement of high proportion of workers in the construction work. Chungthang sub-division ranks highest (40 per cent) out of the total secondary workers, (43.27 per cent) in having a large number of workers in construction activities. In the case of tertiary activities, East district with the capital Gangtok and three urban centres has the maximum number of workers (31.46 per cent). It is more so in Gangtok sub-division (37 per cent). Out of the total tertiary workers of the State 13.43 per cent is engaged in other services.

When comparison of tribal and non-tribal workers is made, it is observed that tribal workers are more than the non-tribals in the primary sector, on the contrary, non-tribals are more in secondary and tertiary sectors (Table 6.4).

Female work participation rate is remarkable in the State. In primary sector proportion of females is more (81 per cent) than the males (62 per cent). West district has the largest proportion of female workers (93 per cent) in this sector. Soreng sub-division of the same district has the highest (94) percentage of female worker in the primary sector. In secondary and tertiary sectors, participation of female is less than the males. In secondary sector Chungthang has the largest number of female workers (50.72 per cent). This is accelerated by engagement of large number of females in the construction work (46.39 per cent). On the other hand, Gangtok sub-division of East district has more female in other services (25.29 per cent) than the males (21.78 per cent) in the tertiary sector. From the forgoing discussion on female work participation rate it is clear that economic status of the female is better in Chungthang and Gangtok sub-divisions than other sub-divisions where participation of females is high only in primary sector.

LITERACY AND EDUCATIONAL LEVEL

Literacy is considered as an important attribute for gauging the level of socio-economic advancement of a society. It's influence on the other attributes of population like, fertility, mortality, migration, occupation, etc., is very high. The trend of literacy, in fact, indicates the direction of social transformation of a region.

It is with these considerations, a treatment of the literacy pattern and educational level of the State is done below.

Literacy Rate

Sikkim is a newly developing State where literacy rate is yet to gain momentum. According to 1991 census, only 56.94 per cent (male literacy : 65.70; female literacy : 46.76) of the States total population can both read and write. Among the North-Eastern states, Sikkim ranks fourth after Mizoram (82.00 per cent), Nagaland (62.00 per cent), Tripura (60.00 per cent) and Manipur (60.00 per cent). But among the various states and Union territories the state ranks 19th in the literacy rate

Table 6.5: Literacy Rate in North-East India, 1991

| State | Total Population | | |
|-------------------|------------------|-------|--------|
| | Person | Male | Female |
| Arunachal Pradesh | 41.59 | 51.45 | 29.69 |
| Assam | 52.89 | 61.87 | 43.03 |
| Manipur | 59.89 | 71.63 | 47.60 |
| Meghalaya | 49.10 | 53.12 | 44.85 |
| Mizoram | 82.27 | 85.61 | 78.60 |
| Nagaland | 61.65 | 67.62 | 54.75 |
| Tripura | 60.44 | 70.58 | 49.65 |
| Sikkim | 56.94 | 65.74 | 46.69 |
| INDIA | 52.21 | 64.13 | 36.29 |

Source: Calculated from Census of India, 1991, Sikkim, S-22, P-I, *Provisional Population Totals*.

Slow development of literacy in the State is due to many factors. They are, (i) political background, (ii) type of economy, (iii) low standard of living, (iv) religious background, (v) degree of urbanization, (vi) degree of development of transportation and communication, (vii) medium of instruction, (viii) inadequate educational facilities and low standard of education.

- (i) Until 1975 Sikkim was under the feudalistic rule. The feudal rulers did not do much for the social development of the region. But the present political set-up has done a lot for the progress of the society by increasing the number of schools and providing different facilities to encourage the children to go to school. In spite of that the literacy rate of the State is not up to the mark.
- (ii) The State has an agricultural based economy. The progress of literacy among more than 80 per cent of the population of the State with farming as an occupation is slow. It is mainly because the demand for literacy and education in this economy is less.
- (iii) The bulk of the population of the State live below poverty level. Even if the education is made free, the extremely poor families prefer their children to help them to earn livelihood, whatsoever less the amount may be, rather than send them for school.
- (iv) The feudal rulers of Sikkim were the followers of Lamaism (Mahayan Buddhism). They converted most of the indigenous people of the State into Buddhism. They always gave more emphasis on the development of monastic education than the formal education.
- (v) Slow urbanization is also one of the causes of low literacy rate in the State. Here, seven out of eight towns are small market towns. Only 9 per cent of the total population of the State are urban. This is also one of the reasons for low literacy in the State.

- (vi) Despite the harsh physiographic conditions a good number of metalled, unmetalled roads and village footpaths are being constructed by the government to link the remote areas with the mainstream. But due to frequent landslides, especially during rainy season, many of them remain closed. However, maintenance of the roads is very poor, it is more so in the remote areas.
- (vii) 'The medium of instruction, if mother tongue of the people, can help accentuate the literacy transition'. (Chandna, 1986). The medium of instruction in the State is English which is one of the drawbacks of low literacy rate. It is because a large number of people of the region do not know English. Hence, parental guidance in study matter is beyond imagination. This increases the number of failures and dropouts in the State.
- (viii) Education facilities presently available in the State is not adequate for the growing population. Besides, the standard of the schools mainly the teaching quality is not up to the mark.

On the whole, the reasons for low literacy rate in the State are a cumulative effect of socio-economic, political and physical factors.

Spatial Pattern of Literacy

In Sikkim the literacy rate varies significantly from one area to another. East district with 65 per cent of its population as literate occupies the first place among the districts, while the West district has the lowest (46 per cent) which is lower than the States average (56.9 per cent). At the sub-division level, Gangtok of East district has the highest literacy rate with 68 per cent. It may be noted that this sub-division has the highest percentage of urban population (18 per cent of the State) with different backgrounds from even outside Sikkim. Further, the attainment of high literacy rate in this sub-division is attributable to its location and presence of the capital at Gangtok since the feudal rule. Besides that, accessibility, better

education facilities, influence of urbanization in the surrounding rural areas and industrialization are the main causes of high literacy rate.

On the other hand, Soreng sub-division of the West district has the lowest level of literacy rate (45 per cent), which is related to ecological constraints due to rugged terrain, farm-based economy, general poverty, accelerated rate of population growth, inadequate education facilities for growing mass, small landholdings and engagement of children for earning livelihood.

Table 6.6: Sikkim : Literacy Rate At Sub-Divisional Level, 1991 (excluding 0-6 yrs), 1991.

| Sub-division | Person | Male | Female |
|--------------|---------------------|-------------------|-------------------|
| Chungthang | 5,585 (48.93) | 3,202 (59.09) | 2,383 (35.29) |
| Mangan | 19,169 (54.89) | 10,579 (64.26) | 8,590 (43.35) |
| Gangtok | 1,13,750 (68.02) | 62,173 (75.90) | 51,577 (58.52) |
| Pakyong | 34,075 (55.48) | 18,090 (63.46) | 15,985 (46.44) |
| Namchi | 51,825 (57.85) | 27,449 (67.03) | 24,376 (47.51) |
| Ravong | 28,162 (47.14) | 15,167 (56.21) | 12,995 (36.55) |
| Gyalshing | 40,501 (46.11) | 21,520 (56.34) | 18,981 (34.51) |
| Soreng | 38,743 (45.11) | 20,253 (53.40) | 18,490 (36.02) |

(Figures within the parentheses indicate percentage to total)

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

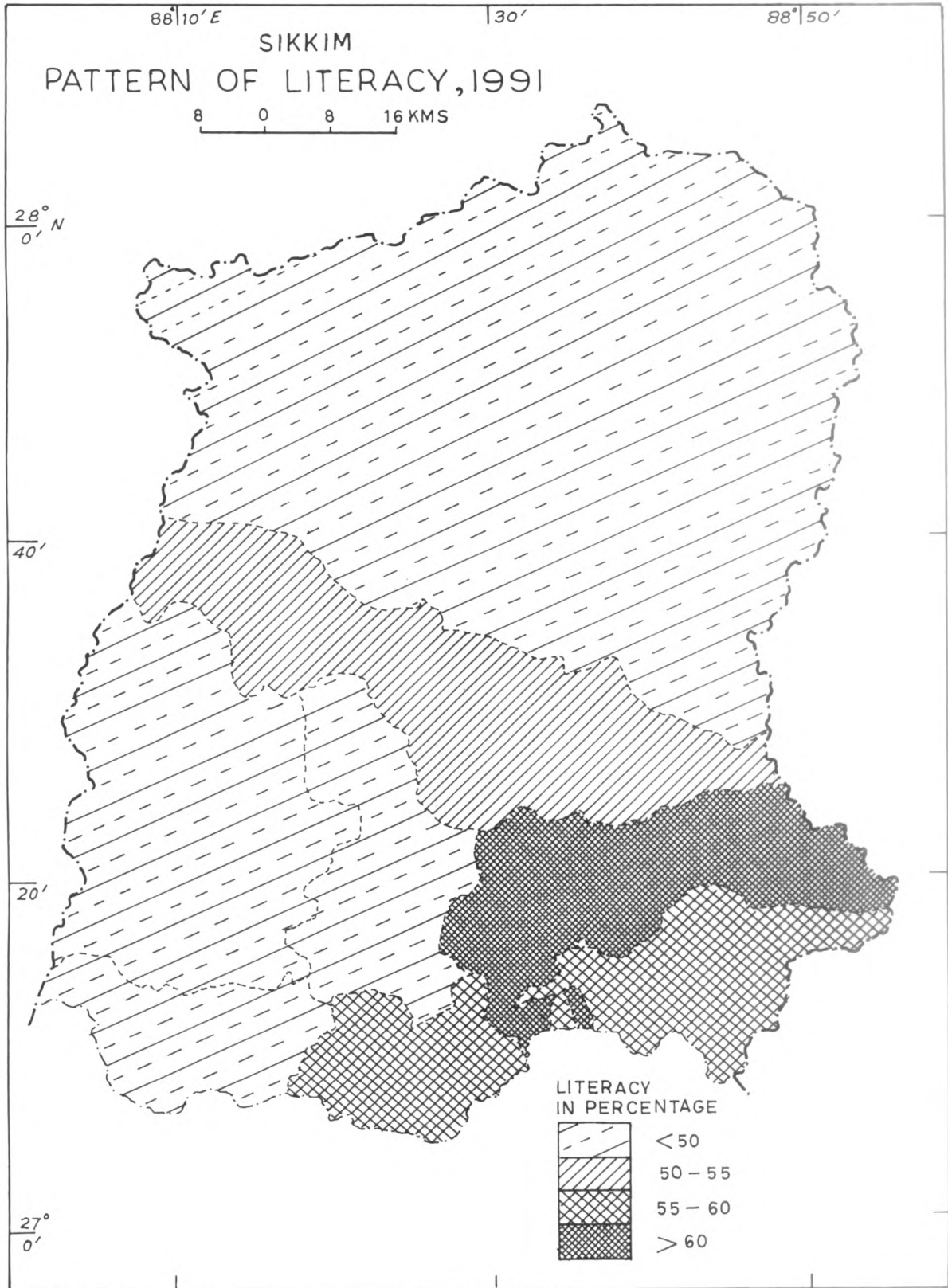


FIG. 6'4

The sub-divisions located in the southern slopes or close to the capital town have medium literacy rate. They are, Namchi (58 per cent), Pakyong (55.4 per cent) and Mangan (55 per cent). In the case of former, the factors like location, accessibility, better education facilities, positive attitude of the people towards education, etc., play important role. But in case of the latter, closeness to the capital town, socio-economic condition of the people, presence of primary schools in the remote areas, etc., play an important role in causing medium literacy rate. However, existence of the district headquarters at Mangan town has also motivated the people of this sub-division towards education.

The low literacy rate is observed in those sub-divisions which are located in the relatively high altitudinal zone with remote locations. They are Chungthang (48.9 per cent), Ravong (47.11 per cent) and Gyalshing (46.1 per cent). The main causes of low literacy rate in these areas may be attributed to the rugged topography and inaccessibility. Besides, due to the existence of Bhutia population, inclination towards monastic education (Lamaism) is high. Further, other socio-economic constraints, as discussed earlier, are also the causes of low literacy rate. In Chungthang sub-division, on the other hand, clan territorial occupance, migratory (seasonal) nature of the people and its location in the restricted area (border) are some of the important causes of low literacy rate.

Table 6.7: Sikkim: Literacy Rate At District Level, 1991 (excluding 0-6 yrs).

| District | Person | Male | Female |
|----------|-------------------|-------------------|-------------------|
| NORTH | 13,255 (53.55) | 8,690 (63.06) | 4,565 (41.60) |
| EAST | 96,279 (65.13) | 58,672 (73.10) | 37,607 (55.66) |
| SOUTH | 43,254 (54.08) | 26,923 (63.18) | 16,331 (43.70) |
| WEST | 36,152 (45.62) | 22,941 (54.92) | 13,211 (35.26) |

Source: Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

Among the scheduled tribe population, literacy rate is 59.00 per cent (male literacy 66.80 per cent; female literacy 55.3 per cent) which is high than the State's average (56.9 per cent). On the other hand, scheduled caste people has a literacy rate of 51.03 per cent (male literacy : 58.69; female literacy : 42.76). High literacy rate among the scheduled tribes is mainly due to better economic condition and social status of the people. Unlike the other States of North-East India, as stated earlier, the tribal people of Sikkim are the landlords, their economic condition is better than others. On the contrary, social backwardness and poverty are the main causes of low literacy rate among the scheduled castes.

Trend of Growth of Literacy (1961-1991)

Considering the historical factors and socio-economic conditions of the people, the temporal pattern of literacy may be divided into two phases. The growth of literacy during the feudal rule, i.e. pre-merger period (before 1975) and after joining with India as one of its State, i.e. post-merger period.

From the available information it is found that, during the pre-merger period the level of literacy was miserably low. In 1961 the literacy rate of Sikkim was only 12.33 per cent (male literacy : 19.63; female literacy : 4.26) which increased to 17.74 per cent (male literacy : 25.37; female literacy : 8.90) in 1971. The growth rate during 1961-71 was only 43.88 per cent. The data show that there was a great sex disparity in literacy in the State. This indicates that very little importance was given to upgrade the level of female education during that period. Such a slow growth of literacy of both the males and the females during the pre-merger period is the result of cumulative effect of socio-economic and historical factors. They are, (i) isolated location and rugged terrain, (ii) inaccessibility, (iii) poverty and socio-economic backwardness of the people, (iv) inadequate education facilities for the common people, (v) priority to monastic education by the feudal rulers, (vi) ignorance and lack of awareness of the people towards education.

Further, the State was cut off from the main stream of socio-economic development due to its location, inaccessibility and other political and socio-economic conditions. During the pre-merger period very little importance was

given to improve the condition of the schools and teaching standards to upgrade the literacy rate in the region. At that time, the Buddhist feudal rulers gave more attention to upgrade the monastic education than the formal education. According to Sukhdev Chib, “the feudal rulers might have thought that they could rule the masses so long as they succeeded to keep the subject steeped low in the abyss of illiteracy. They rather wanted the lamas of the monasteries to preach among the people the paramountcy of the king in the form of God”. (Chib, S. 1977). Because of this attitude of the feudal rulers the educational progress and human resource development in the State were extremely slow and highly neglected. Poverty was a perennial problem of the mass. Many people could hardly bear the expense of their children’s school education. Due to economic constraint children also had to work for subsistence. Further, the system of forced labour also deprived many children from school education. Earlier, people of the remote areas were ignorant about the benefit of education. But for those who were aware of the value of education, for them education facilities were inadequate in the region.

Table 6.8: Literacy Rates in Sikkim and India, 1961-1991

| Census Year | Sikkim | | | India | | |
|-------------|--------|-------|--------|--------|-------|--------|
| | Person | Male | Female | Person | Male | Female |
| 1961 | 12.33 | 19.63 | 4.26 | 24.02 | 34.44 | 12.95 |
| 1971 | 17.74 | 25.37 | 8.90 | 29.45 | 39.45 | 18.69 |
| 1981 | 34.05 | 43.95 | 22.20 | 36.17 | 46.14 | 24.88 |
| 1991 | 46.48 | 54.16 | 37.73 | 52.21 | 64.13 | 39.29 |

- Source:
1. Census of India, 1961, West Bengal, V-XVI, P-I, *A General Report*.
 2. Census of India, 1981, Sikkim, *A Portrait of Sikkim*.
 3. Census of India, 1981, *A Hand Book of Population Statistics*
 4. Census of India, 1981, Sikkim, S-19, P-XIII, A & B, *DCH*.
 5. Census of India, 1991, Sikkim, S-22, Part-XII, A & B, *DCH*.
 6. Census of India, 1991, India, P-2, B (I) V-II, *PCA*.

After setting up of a people's government in the State, expansion of educational institutions took place at a rapid rate. After 1975, i.e. during the post-merger period, a sea change has been noticed in the growth of literacy in the State. In 1981, literacy rate of the State increased to 34 per cent (male literacy : 43.95; female literacy : 22.20) which is almost double the literacy rate of 1971 (17.74 per cent). During 1981-1991 the literacy rate increased to 46.48 per cent. Thus, it is apparent that the State has witnessed a remarkable growth of literacy during the post-merger period, i.e. after 1975. It is also interesting to note that female literacy has also increased almost 4 times during the last two decades (1971-91). The reason behind the significant change in the growth rate of literacy are, (i) rapid growth of schools in the rural areas (primary schools: 88 in 1951-54; 191 in 1971-74, 221 in 1976, 415 in 1981 and 766 in 1991 Ref: Census report), (ii) free education, provision of free text books, uniforms and mid day meal to the primary section students, (iii) financial aids for higher education, (iv) development of public schools and encouragement given for the establishment of private schools, and (v) encouragement given to females for going to school. The children were exempted from payment of tuition fees at primary level even before 1979. Besides that, contact with the non-tribal has also indirect effect on the progress of literacy in the State. Job opportunities, however, have motivated even the people of the rural areas for attaining education.

Nevertheless, slow growth rate of literacy during 1981-91 is mainly due to the decrease in the rate of imagination of educated and literate persons to the State.

Literacy By Age-Groups

An analysis of the age -specific literacy rate helps to understand the level of progress of literacy of an area in realistic terms. In Sikkim, the literacy rate in the lower age group of 7-9 years is considerably high, i.e., 65 per cent (male : 69; female : 62). It indicates that people are presently becoming aware of their childrens' education, and hence, the literacy rate in the lower age group is increasing. This has been mainly due to the availability of free primary education

and introduction of mid-day meals to the students of this level, in more than 95 per cent of the revenue blocks of the State. From the village survey it is observed that many families living below poverty level send their children to the school for the provision of mid-day meals. On the other hand, in the next age group, i.e. 10-14 years, the literacy rate is 80 per cent, which is the highest among all the age-groups. From the data it is clear that, late age starting of school still exists in the State. Besides, the number of failures in this age-group (0-14), in different classes of the lower and middle levels is considerably high. This has also caused high percentage of literacy in this age group. Again, the percentages of literates in the age groups of 15-19 years and 20-24 years are quite high (75.24 per cent in 15-19 years; 63.95 per cent in 20-24 years). This indicates that students are quite conscious and intend to continue their education up to a higher level. This change is taking place among the young people mainly due to growing scarcity of job and competition in getting services. In the age groups of 25-29 years, 30-34 years and 35-39 years, literacy rate varies from 54 per cent to 44 per cent. (Appendix Xi). Medium literacy rate at these working age groups are indicative of presence of educated and literate In-migrants from outside the State. High proportion of male literates ranging between 68 per cent to 59 per cent in the corresponding age groups confirms this fact. Literacy rate sharply drops in the next higher age groups and becomes less than 20 per cent beyond the age of 60 years. This clearly shows that the third generation of people of Sikkim is still in learning stage in the field of education.

Sex Disparity In Literature

As in other States of the country, the sex disparity in literacy in Sikkim is quite high. In spite of the progress of literacy in the State during the post merger period (1975-1991), literacy rate of the females is still very low. The prevailing sex disparity in literacy clearly reflects the intra-household inequalities in access to education in the State. It is found that the present sex disparity value⁺ in the State is 0.34. The disparity in literacy between tribal males (66.8 per cent) and females

⁺ Formula - $\{\log p - \log (1-p)\} - \{\log q - \log (1-q)\}$
 where, p = male literacy rate
 q = female literacy rate.

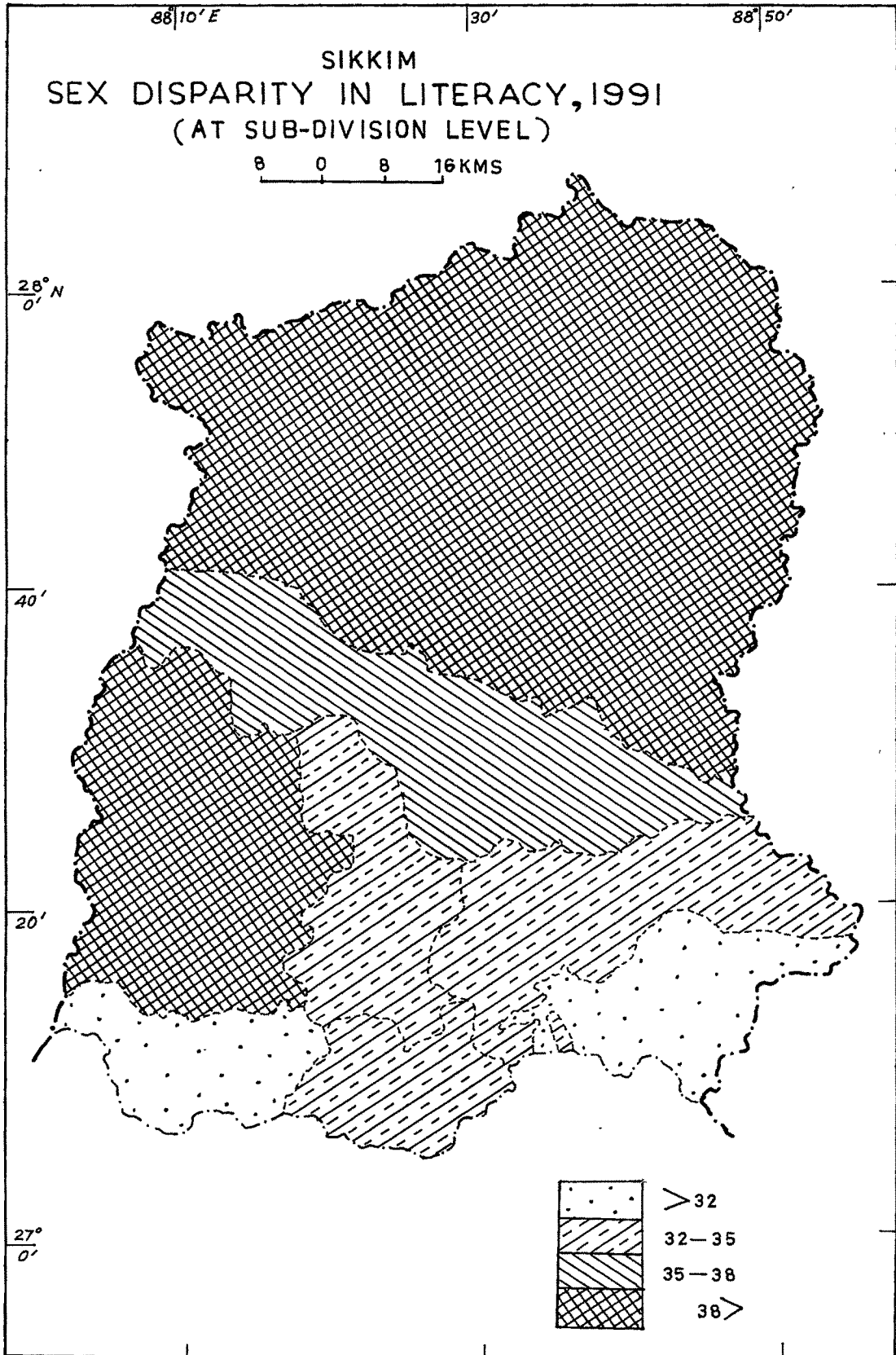


FIG. 6.5

(50.37 per cent) is 0.31 which is less than the State's average (0.34). However, compared to the sex disparity in literacy in the tribal dominated States of the North-Eastern region, viz., Meghalaya (0.14), Mizoram (0.21) and Nagaland (0.24), the disparity in the State is much higher (0.31).

Further, knowledge can be obtained when the disparity in literacy is analysed at district and sub-division levels. Among the districts North district has the highest disparity value (0.38), on the other hand, East district and South district with an equal value of 0.34 have the lowest.

From the analysis at sub-divisions level it is obtained that Chungthang sub-division of North district has the highest sex disparity in literacy (0.42). From the village survey also it has been found that the disparity in literacy is very high among the Bhutias of Chungthang sub-division. Further, low sex-ratio (782 females per 1000 males) in this sub-division clearly indicates the in-migration of educated and skilled people which have also further increased the difference between male and female literacy rates.

Similarly, Gyalshing sub-division of West district has high disparity in literacy (0.39) next to Chungthang. The main cause of high disparity here is the good number of Bhutia population in the sub-division and to some extent, in-migration of educated males to it from other parts of the State and outside. On the other hand, Mangan sub-division of North district has comparatively low sex disparity in literacy (0.37) than Chungthang sub-division of the same district. It is found that a large proportion of tribals of this sub-division belongs to Lepchas among whom disparity in literacy is found to be less than the Bhutias. (Ref: Survey).

It is observed that, sub-divisions with high sex-ratio have comparatively low disparity, viz. Pakyong, (0.30), Soreng (0.31) and Namchi (0.34). These sub-divisions are less affected by in-migration of educated people. Besides, they are predominantly inhabited by the non-tribal people. Gangtok and Ravong sub-divisions, on the other hand, have medium disparity value (0.35). Presence of a considerable male Bhutia people and in-migration of educated tribal people from

different parts of the State and also outside are the main factors for which disparity in literacy in those two sub-divisions is high.

Table 6.9: Literacy Rate and Sex Disparity in Sikkim, 1991

| State/Dist./ Sub-division | Male | Female | Sex-disparity in Literacy |
|---------------------------|-------|--------|---------------------------|
| 1. North | 63.06 | 41.60 | 0.38 |
| 2. East | 73.10 | 55.66 | 0.34 |
| 3. South | 63.17 | 43.70 | 0.34 |
| 4. West | 54.92 | 35.26 | 0.35 |
| 1. Chungthang | 59.09 | 35.29 | 0.42 |
| 2. Mangan | 64.27 | 43.35 | 0.37 |
| 3. Gangtok | 75.90 | 58.52 | 0.35 |
| 4. Pakyong | 63.46 | 46.44 | 0.30 |
| 5. Namchi | 67.03 | 47.51 | 0.34 |
| 6. Ravong | 56.21 | 36.55 | 0.35 |
| 7. Gyalshing | 56.34 | 35.51 | 0.39 |
| 8. Soreng | 53.40 | 36.02 | 0.31 |
| SIKKIM | 65.70 | 46.76 | 0.34 |

Source: Calculated from Census of India, 1991, Sikkim, S-22, P-XII, A & B, *Districts Census Handbook*.

Educational Level

An analysis of the data on the level of educational attainment helps to measure the level and quality of the education achieved by the people of an area. From the table 6.10 it is found that, like most of the States of the country, Sikkim also has a good proportion of literates (13.87 per cent) in the primary level. As

expected, percentage of male literates (15.86 per cent) is higher than that of the female literates (11.57 per cent) in this level. In the next higher level, i.e., middle and matriculation / secondary level, there are 11.28 per cent (male : 12.93; female: 9.36) and 6.98 per cent (male : 8.14; female : 5.63) of the total literates respectively. The percentage of literates has decreased sharply in the next educational level.

Table 6.10: Educational Level in Sikkim, 1991

| Educational Level | Person | Male | Female |
|---|--------|-------|--------|
| Literates without educational level | 20.58 | 23.21 | 17.51 |
| Primary | 13.87 | 15.86 | 11.57 |
| Middle | 11.28 | 12.93 | 9.36 |
| Matriculation / Secondary | 6.98 | 8.14 | 5.63 |
| Higher secondary / Intermediate/ pre-university | 2.20 | 2.83 | 1.48 |
| Non-technical diploma | 0.02 | 0.03 | 0.01 |
| Graduate and above | 1.96 | 2.62 | 1.18 |

Source: Census of India, 1991, Sikkim, *DCHB and Economic Table*, 1991
Census, unpublished.

Thus, the percentage in the higher secondary level is 2.20 per cent (male: 2.83 ; female : 1.48) and in the graduate and above level is only 1.96 per cent (male 2.62 per cent and female 1.18 per cent). (Table 6.10)

From the foregoing discussion, it is clear that the State has made a remarkable progress in the primary level of education. The low percentage of literates in the higher education levels clearly indicates that there is an acute shortage of qualified and skilled people in the State.

It is observed that among the three ethnic groups, Nepali people are somewhat educationally more advanced. The position of Lepcha is again somewhat better than that of the Bhutias. (Based on the data of Chungthang and Mangan sub-division). In the political field also the Nepali have an edge over the other two groups. For example, during the last three decades and now also the Chief minister of Sikkim belongs to the Nepali community.

From the census data (1991) it is found that East district has the highest number of graduates (650) and North district has the lowest (19). South and West district have equal numbers of graduates (90). In both these districts the Nepali population is predominant, as stated earlier. Thus, the influence of education on the social changes of the Nepali people is noticeable.

It is worth mentioning that, there is a marked difference between male and female literacy rate in the educational level. It is found to be highest in the non-technical diploma and graduate and above level. On the other hand, lowest disparity is noticed in the primary level. It is observed that sex disparity in literacy increases rapidly towards the subsequent higher educational level. It is more rapid particularly after matriculation / secondary level.

It is worth noting that, in Sikkim participation of female in different sectors of occupation is remarkable. As stated earlier, participation of females in the primary sector is higher than the males. Further, many females have undergone vocational training facilities for the girls and they are working in Sikkim institute of Cottage industry, Sikkim time corporation and Sikkim Jewels at Gangtok. Further, they are also found to be working in other industries like distilleries, pharmaceutical industry, fruit preservation, etc. Besides, here females always utilize other avenues for self-employment, such as, small business, carpet weaving or knitting the wool, making bamboo products, working as labourer at road making or building constructions, etc.

Educated females are found to be engaged in administrative services and in teaching. It is interesting to note that 20.74 per cent of the employees in the government administrative services are women. On the whole, the contribution of

the women in the socio-economic development of the State is not less than the male.

Summary Statement

The literacy rate of the State, according to 1991 census, 56.94 per cent. Among the States and union territories of the country, Sikkim ranks 19th in literacy rate. Thus, it is yet to make a headway in this respect. The present literacy situation in the State is the result of many factors, such as, political background, type of economy, low standard of living, degree of urbanization, development of transport and communication facilities, medium of instruction in the schools, inadequate education facilities and low standard of living. As matter of fact, rapid progress in literacy in Sikkim has started only after the State became a part of the country. A significant variation of literacy in the State may be noticed when considered at Sub-division level. It varies from 45 per cent in Soreng sub-division to 68 per cent in Gangtok sub-division. It is observed that the latter sub-division with a large proportion of urban population with different back ground from even outside the State, relatively better accessibility and socio-economic set-up has a high literacy rate. Low literacy rate in the former is attributable to farm based economy of the people, large proportion of agrarian population (88 per cent), and ecological constraint due to rugged terrain. The sub-divisions located in the southern slope of the region and close to the capital town, Gangtok have medium literacy rate. They are Namchi (58 per cent), Pakyong (55.4 per cent), and Mangan (55 per cent). The people of these sub-divisions are getting motivated towards education due to availability of facilities in the district headquarters of these divisions. The low literacy rate is noticed in the high altitudinal zone with relatively remote location, occupied by the tribal population belonging to Bhutia tribe. They are, Chungthang (48.9 per cent), Ravong (47.1 per cent) and Gyalshing (46.1 per cent). In the case of Chungthang sub-division, clan territorial occupance among certain Bhutia groups, migratory nature of the people, etc., are some of the important causes of low literacy rate. Proportion of scheduled tribes (59 per cent) are found to be more literate than those of the schedule castes

(51.03 per cent). Social backwardness and poverty are the main causes of low literacy rate among the schedule castes.

The temporal pattern of literacy in the State may be observed in two phases, pre-merger period, i.e. during the feudal rule (before 1975) and post-merger period, i.e. after the State merged with the country. The growth of literacy was slow in the former period, i.e. 12.33 per cent in 1961 and 17.74 per cent in 1971. But in the latter period, rapid growth of literacy is noticed, i.e. 43.88 per cent in 1981 and 46.48 per cent in 1991 (including 0-6 years). Slow growth of literacy in the former period is the result of cumulative effects of both socio-economic and historical factors. Poverty and socio-economic backwardness of the people, inadequate educational facilities for common people, priority to monastic education by the feudal rulers are some of the important causes of low literacy in the pre-merger period. On the other hand, in the post-merger period rapid literacy growth is attributable to expansion of primary schools, provision of free education, free text book facility and mid-day meal to primary section students, development of public and private schools, encouragement given to female education, development of transport and communication facilities, job opportunities, contact with the educated and skilled non-tribal In-migrants, etc., slow growth rate of literacy during 1981-1991 is mainly due to decline in the rate of in-migration of educated and literate people to the State.

Age-break up literacy rate reveals that, in the lower age group (7-9 years) literacy rate is considerably high indicating growing awareness of the people towards education. In many cases, among the families below poverty level, sending of children to the school is related to the provision of mid day meal. Literacy rate of population between 10-14 years (80 per cent) is indicative of late age starting of school and large number of failure in the age groups of 0-14 years. Literacy rate is quite high in the age group of 15-19 and 20-24 years. This clearly speaks about the growing interates of the students towards higher education. In the following age groups (25-29 years, 30-34 years and 35-39 years) medium literacy rate shows the presence of educated and literate In-migrants from outside

the State. A fall in the following higher age groups confirms that the third generation of people of the State is in learning stage.

An analysis of the educational level reveals that although percentage of school going children is high in the lower stage, i.e., primary level (13.87), at the higher level it drops down sharply. This clearly indicates that there is still shortage of educated and skilled people in the State. Among the three ethnic groups Nepalese are educationally more advanced than the Bhutias and the Lepchas. Between the two groups the Lepchas are somewhat in a better position.

Despite the progress in literacy there lies a difference between male and female literacy (0.34). Sex disparity in literacy at sub-division level reveals that disparity in literacy is high among the Bhutias than the Lepchas. Chungthang sub-division with predominantly Bhutia population has high disparity in literacy (0.42). On the other hand, Mangan sub-division with predominantly Lepcha population has relatively low disparity in literacy (0.37). Another distinguishing point is that, sub-divisions with high sex-ratio have comparatively low disparity, viz., Pakyong (0.30), Soreng (0.31) and Namchi (0.34). These sub-divisions are predominantly inhabited by the non-tribal Nepalese. It is worth noting that high disparity in literacy in Chungthang sub-division is mainly because of male selective in-migration of educated and literate people to it from other parts of the State and also from outside. This is mainly due to its frontier location and establishment of a new sub-division at Chungthang.

RELIGION

Among the social aspects, religion significantly influences the demographic, economic and cultural characteristics of population of a region. Its influence is very clear in Sikkim where two-third of the population professed Hinduism. The original religion of the indigenous people was a form of nature worship, variously referred to as 'Mun' religion or shamanism. At present, two religions are professed by the majority of the population of the State, viz., Mahayana Buddhism (Lamaism) and Hinduism. Besides these, there are also a good number of Christians, Muslims, Sikhs and Jains in the State.

Table 6.11: Religious Composition of Sikkim, 1981 - 1991

| Religion | 1981 | Percentage of total population | 1991 | Percentage to total population | Decadal Growth rate 1981-91 |
|------------------------------|----------|--------------------------------|----------|--------------------------------|-----------------------------|
| Hindus | 2,12,780 | 67.25 | 2,77,881 | 68.37 | +30.59 |
| Muslims | 3,241 | 1.03 | 3,849 | 0.95 | +18.75 |
| Christians | 7,015 | 2.22 | 13,413 | 3.30 | +91.20 |
| Sikhs | 322 | 0.10 | 375 | 0.09 | +16.45 |
| Buddhists | 90,848 | 28.71 | 1,10,371 | 27.15 | +21.48 |
| Jains | 108 | 0.03 | 40 | 0.01 | -62.95 |
| Other religion & persuasions | 1,987 | 0.63 | 374 | 0.09 | -81.17 |
| Religion not stated | 84 | 0.03 | 154 | 0.04 | +83.33 |

Source: Census of India, 1981, Sikkim, *Religion*.
Census of India, 1991, Sikkim, *Religion* (unpublished)

The Hindus constitute the largest group with 68.3 per cent in the State. It is followed by the Buddhist with 27.15 per cent. The rest of the groups, viz., Christians, Sikhs, and Jains constitute only 3.30, 0.09 and 0.01 per cent respectively. Other religion and persuasions constitute only 0.09 per cent.

It is worth mentioning here that among the North-Eastern States of the country Sikkim has the highest proportion of Hindu population after Tripura (86.50 per cent). On the other hand, the majority of the Bhutias, the Lepchas and the Sherpas are Buddhists. There are some Buddhists among the Nepalese also, viz., the Tamangs, Gurungs, etc.

Christianity is the third important religion in the State. Although this religion is recorded as a major force of social change in the North-Eastern States but in

Sikkim it gained population only very recently. Majority of the Christians of the State are the Lepchas and the Rais.

The Muslims, the Sikhs and the Jains of the State are migrants from outside the State.

Table 6.12: Sikkim : Decadal Growth of Different Religions at District Level, 1981- 1991

| State/ Dist | Hindus | Muslims | Christi- ans | Sikhs | Buddh- ists | Jains | Other religion & Persu- ation | Religion not Stated |
|----------------|--------|---------|-----------------|--------|----------------|--------|--|---------------------------|
| North | +22.69 | +9.79 | +49.65 | -95.33 | +15 | -73.68 | - | +14 |
| East | +30.07 | +11.31 | +67.14 | +27.27 | +22.61 | -64.95 | +51.11 | - |
| South | +29.47 | +43.95 | +128.37 | -56.52 | +19.57 | 1 | -56.67 | -87.5 |
| West | +34 | +8.09 | +117.82 | -60.00 | +26.88 | - | -94.96 | +106.67 |

Source: Calculated from (i) Census of India, 1981, Sikkim, *Religion*.

(ii) Census of India, 1991, Sikkim, *Religion* (unpublished)

At district level certain variations in the religious compositions are observed. Out of the total population, West district with 74.14 per cent has the largest proportion of Hindus which is followed by South district with 71.22 per cent (1991). On the other hand, North district had the lowest per cent (36.98). This proves that the southern slope of the State, mainly South district and West district are predominant with Hindus Nepalese. On the other hand, overwhelming number of Buddhists (60.20 per cent) are found in the North district due to the concentration of a large proportion of Lepchas and Bhutias here. Again, the largest percentage of Christians is concentrated in the South (4.86) and East (3.04) districts where Rais and Lepchas are large in number. On the other hand, East district has the maximum number of Muslims (1.33 per cent), Sikhs (0.27 per cent) and Jains (0.03 per cent) because of presence of three urban centres. East district also has the largest percentage of population belonging to other religions and persuasions (0.22).

Trend of Religious Composition of Population (1981-1991)

It is interesting to note that during the last decade (1981-1991) population growth of the Christians was the highest among all the religious groups in the State (+91.20 per cent). This high growth may be attributed to the conversion of a large number of both the tribals and the non-tribals into Christianity and also to in-migration of Christians from nearby Darjeeling and Kalimpong areas. The growth rate is second highest among the Hindus (30.59 per cent). It is mainly due to the both natural growth and in-migration of Hindu people from outside the State. Among the Buddhists, Muslims and Sikhs the growth rates are +21.41 per cent +18.75 per cent and +16.45 per cent respectively. The increase of Buddhist population is due to both natural increase and in-migration of students from outside the State to the monastic schools, Lamas (priest), traders and workers belonging to Tibetan refugee groups, etc. The growth of the Muslims and the Sikhs are mainly due to in-migration from different states of the country and most of them belong to the business community. Growth of Muslims in the State has also taken place due to the in-migration of persons from Bangladesh. However, negative growth of population is observed among the followers of other religions and persuasions (-81.17 per cent). The negative growth rate among these groups is likely for the conversion of followers of traditional religions (nature worship) into Christianity.

Further insight regarding decadal variation of people belong to different religious groups can be obtained from an analysis of religious groups at district level. It is found that South (+128 per cent) and West district (+118) have the highest growth of Christians during the last decade (1981-91). As stated earlier, it is mainly due to mass conversion into Christianity by the Rai group (Nepali) and to a less extent by the other groups. Again, the highest growth of Hindus in the West district (+34 per cent) is due to high fertility rate of Hindu Nepalese and in-migration of people due to marriage. (Ref: case study). Similarly, West district also has the highest growth of Buddhist people (+27). High growth of Buddhists has been due to firstly, as there are numbers of important monasteries in this district, in-migration of Buddhist lamas (priest), students and followers from different parts of

the State and outside has taken place. Secondly, it is observed that some Gurungs of this district have changed their religion into Buddhism.

As mentioned earlier, Lepchas, the indigenous people of Sikkim adhere to two religious system simultaneously, that is Buddhism (Lamaism) and the 'Mun' religion or Shamanism, as stated earlier. The Chief function of the Mun is to remove the misfortunes and illness caused by the devils. Among the Lepchas the tradition of 'Mun' and 'Bongthing' have great significance. The 'Mun' and the 'Bongthing' are the main priests. The former is the female priest and the latter is the male priest. The service of 'Mun' is very significance among the Lepchas. They must be present in all the occasions like birth, marriage and especially death of the commoners. Some of the ceremonies are performed by the Bongthing. (This tradition is gradually declining. Lepchas were converted into Buddhism (Lamaism) from the 17th century onward. At present, the teachings and rites of the Tibetan Buddhism dominates the religious scene of the Lepcha people. In each case they are mixing up the indigenous belief and religious practices with the Tibetan Buddhism.

After the arrival of the Scottish and Finnis missionaries some Lepchas were converted into Christianity.

Among the Hindu Nepalese, one of the striking features of the religious practices is the worship of family deity (Kul-Devata). Generally, the rites and rituals are performed by the priests of the same caste.

The Limboos follow their own traditional beliefs, although they have now come to take part in the Hindu festivals like Durga Puja, Dewali etc. In their 'Pagan' religion, they do not have any deity or image of god, but worship a supreme spirit called 'Yumasam' through a Shamanistic priest called Phedangma.

Although the Rais practise Hinduism or Christianity, but some of them still worship local deities like, Jalpa Devi, etc. They also worship a spirit called the 'Khamang' Bhoomi puja, is a religious ceremony in prayer for a good harvest. The 'Bijuwa Dhami' is their religious leader (Priest).

On the whole, the indigenous people are practising a mixed type of religious belief in addition to their original one.

Summary Statement

The religious composition of the State is such that two-thirds of the population profess Hinduism (68.3 per cent), which includes the Nepalese and non-tribal In-migrants from different parts of the country. The next important religion in the State is Buddhism which is followed by the Bhutias, Lepchas, Sherpas and some Nepalese, viz., Tamangs, Gurung, etc. Originally, Lepchas were the followers of tribal religion, (indigenous religion), a form of nature worship, variously known as 'Mun' religion or Shamanism. Christianity is the third important religion mostly professed by a large number of Lepchas and Rais and in small number by the people from different communities. However, the number of Sikhs, Muslims and Jains in the State is small and people of these religions have come from outside the State. Northern part of the State is predominantly occupied by the Buddhists and the southern part by the Hindus. Christians are concentrated in Namchi (South district) and Gangtok sub-divisions (East district). The most distinguishing point is that, among all the religious groups, highest growth rate of population is noticed among the Christians (+91) during the last decade (1981-1991). During this period a large numbers of people from different communities have been converted into Christianity. Among them Rais (Nepali), Lepchas and the followers of other religions and persuasions make the majority.

LANGUAGE AND DIALECTS

Language and dialect are important constituents of social-cultural characteristics of population. In a plural society both act as a unifying factor but sometimes it becomes the cause of tension too. A study of the language and dialects become more relevant in a tiny state like Sikkim, where there are multiple languages and dialects among the three ethnic groups.

The three major languages spoken in Sikkim are Lepcha, Bhutia and Nepali. The former two belong to the Tibeto-Burman group, while the later is an Indo-Aryan language. Due to over whelming majority of the Nepali population, Nepali language has become the lingua-franca of the State. There are four official languages in Sikkim. They are Lepcha, Bhutia, Nepali and Limboo. These languages are also taught in the schools. At present Government has included the Newari, the Rai, the Gurung, the Mangar, the Sherpa, the Tamang and the Sunuwar languages as the official language under the Sikkim official Languages Act, 1977. There are also several dialects which are spoken by different groups of Nepali people, viz., Rai, Mangar, Gurung, Tamang, Newar, etc. But at present, they rarely use their dialects even at home. People coming from different parts of India speak different languages, viz., Hindi, English, Bengali, Tamil, Telegu, Assamese, Malayalam, etc.

The linguistic composition shows that, 63.09 per cent of the total population of Sikkim speak Nepali language (Table 6.14). People speaking Lepcha and Bhutia languages constituted 7.34 per cent and 8.02 per cent respectively. Among the rest of the population 6.64 per cent speaks Limboo language, 3.41 per cent Sherpa, 0.63 per cent Tibetan and 10.87 per cent speak other languages. According to 1981 census, the corresponding figures were 60.97 per cent, 7.08 per cent, 6.81 per cent, 5.67 per cent 3.39 per cent, 1.31 per cent and 6.23 per cent respectively. The above data clearly indicates that during the last decade (1981-91) there has been positive growth of population in all the above mentioned linguistic groups except Tibetan. Of the total population of Sikkim, 69.67 per cent speaks scheduled language, out of which only 6.49 per cent speak languages other than Nepali language. Out of this 4.89 per cent speaks Hindi and 4.37 per cent Bengali and 4.37 per cent non-scheduled languages, excluding the languages spoken in the State (Lepcha, Bhutia, Limboo, Sherpa and Tibetan).

Table 6.13: Percentage of Linguistic Population to Total Population in Sikkim, 1981-1991

| Years | Bhutia | Lepcha | Nepali | Limboo | Tibetan | Sherpa | Others |
|-------|--------|--------|--------|--------|---------|--------|--------|
| 1981 | 6.81 | 7.08 | 60.97 | 5.67 | 1.31 | 3.39 | 6.23 |
| 1991 | 8.02 | 7.34 | 63.09 | 6.64 | 0.63 | 3.41 | 10.87 |

Source: Calculated from (i) Census of India, 1991, India, S-1, P-I of 1997, *Language, India and State*,
(ii) Census of India, 1981, India, S-1, P-I of 1987.

At district level certain variations are observed in the distribution of linguistic groups. Among the four districts, East district had the highest proportion of Bhutias (46), Nepalese (47), Tibetans (58) as per 1981 census. It is mainly because of the socio-economic facilities provided by the capital town. Concentration of Tibetan is mainly due to the presence of market facilities as most of them are traders, as mentioned earlier.

On the other hand, North district has the highest proportion (35 per cent) of Lepcha speaking people. The next largest group in this district is constituted by the Bhutias (16.67 per cent). The proportion of Bhutia speaking people here is somewhat less because of the presence of the clan territorial occupance system of certain Bhutia groups and due to out-migration for studies, jobs, etc. But West district, being the land of the Limboos has largest percentage of Limboo speaking people (72). Sherpa speaking people (35 per cent) are found more in the highlands of the South district than others. (Table 6.14). The speakers of the major Indian languages are In-migrants and they are mostly concentrated in the administrative headquarters, towns and market areas. 40.77 per cent of the speakers of other languages live in the East district.

In Sikkim, English language is used as the official language, as well as the medium of instruction in the schools. Apart from that Hindi is also spoken by a large number of people particularly in the urban areas. However, it is observed

that most of the people of the State understand Hindi and hence, it can be considered as the official lingua-franca of the State.

Table 6.14: Sikkim : Distribution of Linguistic Composition of Population to Total Population at District Level, 1981

| District | Bhutia | Lepcha | Nepali | Limboo | Tibetan | Sherpa | Others |
|----------|--------|--------|--------|--------|---------|--------|--------|
| North | 16.67 | 34.63 | 3.70 | 10.01 | 12.68 | 10.16 | 11.25 |
| East | 46.36 | 23.93 | 46.86 | 7.14 | 57.60 | 25.57 | 40.77 |
| South | 18.06 | 15.44 | 27.04 | 11.02 | 18.63 | 34.84 | 26.77 |
| West | 18.92 | 26.00 | 22.39 | 71.83 | 11.09 | 29.42 | 17.85 |

Source: Census of India, 1981, India, S-1, P-I of 1987.

Summary Statement:

The three major languages spoken by the people of Sikkim are Lepcha, Bhutia, a Tibeto-Burman language; and Nepali, and Indo-Aryan language. The overwhelming majority (63.09 per cent) of population of the State speak Nepali. Hence, this language is considered as the Lingua-franca of the State. Next important languages are the Bhutia (8.02 per cent) and the Lepcha languages (7.34 per cent). It is observed that Nepali speaking people are concentrated in the southern slope of the State. On the other hand, Lepcha speaking people are mostly concentrated in the southwestern part of the North district (central part). On the other hand, Bhutia speaking people are concentrated in the northern half of the north district and also in the northern highlands of East, West and South districts. As expected, speakers of Limboo language are largely confined in the West district (72 per cent). In the State, English is considered as the official language. However, Hindi could be considered as the un-official lingua-franca as it is understood and spoken by most of the people of the State.

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CHAPTER - VII

A CASE STUDY OF VILLAGES

The foregoing analysis of population characteristics and socio-economic profile of the population of Sikkim, at district and sub-division levels, with examples from different revenue blocks, has undoubtedly exposed an overall picture of the temporal and spatial pattern of population in the State. However, substantial variations may be observed within the districts and sub-divisions in respect of various population and socio-economic characteristics. In view of this reality, a micro-level study at revenue block (village) level has been done with a view to get an in-depth idea about the various characteristics prevalent in them. The study is done based on questionnaire survey and field observation in different parts of the State. The revenue blocks (villages) have been selected for survey to cover the settlements of different ethnic groups in different environmental situations from the higher altitudes to the lower ones.

Table 7.1: Structure of Sample Design for Village Survey.

| District | Sub-division | Revenue Blocks (villages) | Total No. of House-holds | Total Popula-tion | % of Tribal Popula-tion | Dominant Popula-tion Group |
|----------|--------------|---------------------------|--------------------------|-------------------|-------------------------|----------------------------|
| East | Gangtok | Nazitam | 109 | 727 | 27.92 (203) | Nepali |
| West | Soreng | Lower Fumbong | 84 | 486 | - | Limboo |
| North | Mangan | Gnon-Samdong | 46 | 288 | 82.29 (237) | Lepcha |
| North | Chung-thang | Lachen | 182 | 1918 | 69.96 (1342) | Bhutia |

NAZITAM REVENUE BLOCK (VILLAGE)

Nazitam revenue block is located 32 kms. southwest of Gangtok town. It lies in the middle slope of the Rongni Chu (river) valley. Except in the north, the village is surrounded by other villages in its three sides. A reserved forest forms

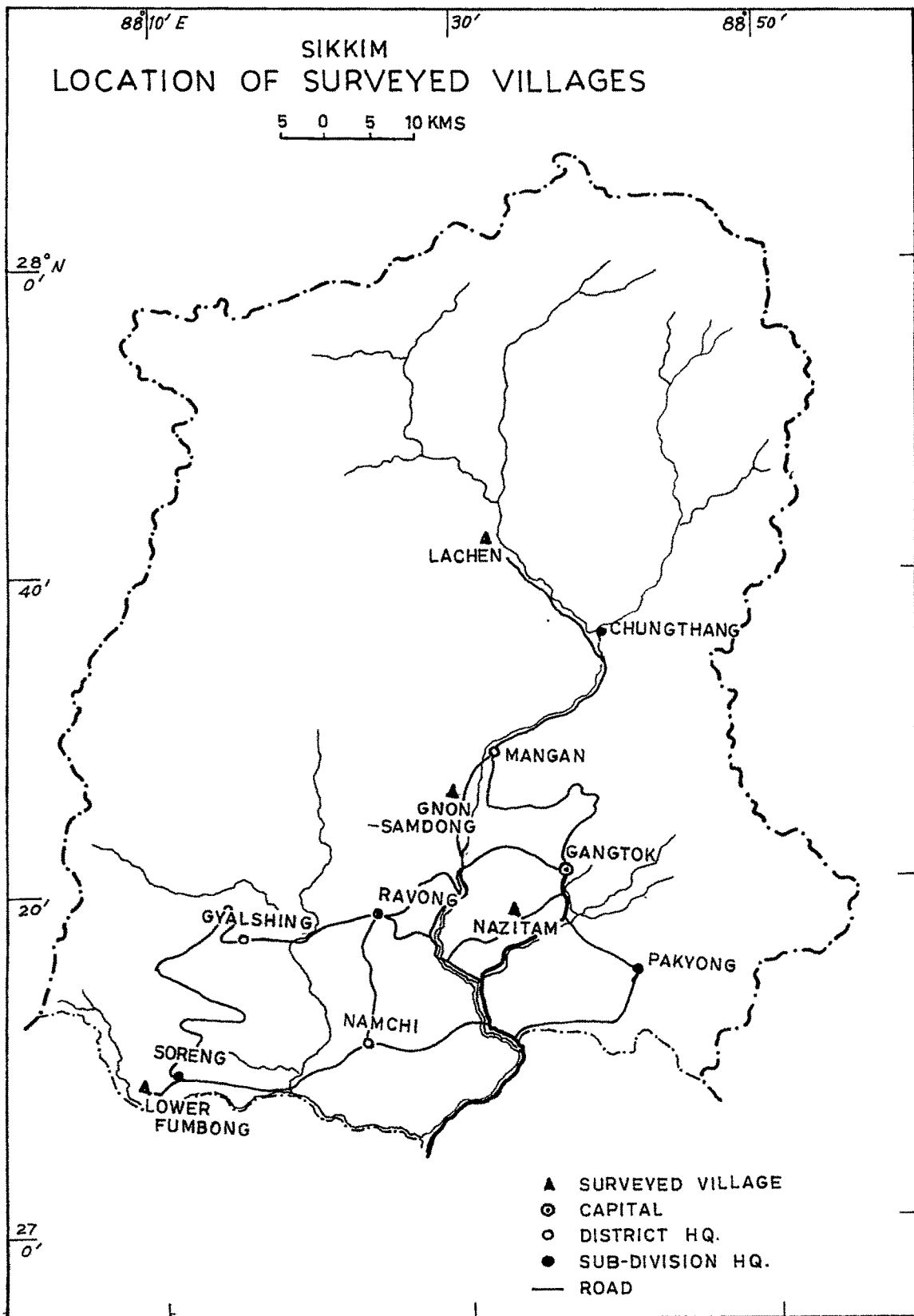


FIG. 7.1

the northern boundary. The metalled road which connects Nazitam, passes through the northern part of the village. There are a good number of footpaths which connect different parts of the village with, the main road. One State transport bus and a number of private taxi jeeps ply between the village and Gangtok town. It is found that because of the steep gradient and distance, people of the lower slope of the village have less accessibility to this. Hence, marketing of their agriculture products like orange, ginger, etc., is rather difficult and uneconomic.

Nazitam revenue block is inhabited by Nepalese (Chettries, Brahmins, Rais, Tamangs, Damais and Kamis) and the Bhutias (Sikkimese). The formers comprising of 71.56 per cent of the total population. The total area of the village is 231.60 hectares (2.3 km²). It is a medium size village with 109 households. The settlement of the village is linear in pattern near the road and spreads gradually towards the southern slope. In the foothills of the village, there are clusters of houses. The houses are usually separated from each other by 'Bari' (vegetable and fruit garden) and 'Khet' (paddy field). Every household have their granaries attached to their house, usually in the ground floor. Livestock sheds are found a little away from the house. There is a primary school in the middle slope of the village. There is a Gompa (Buddhist monastery) in the extreme northeastern corner of the village. A few houses are found scattered above the road also. The houses are cottage type with sloped roofs, with wood and bamboo structure, plastered with either mud or cement. Only a few houses are found to be having bamboo or thatched roofs. The tin sheets is the most common roofing material indicative of the economic status of the households. The Bhutias prefer wooden house while Nepalese have both wooden and bamboo houses. The house type depends on the economic condition of the people. There are three concrete buildings in the village. Both the Bhutia and Nepali houses vary from single or double storeys to raised platformed type. The ground floor is mostly used for storage and living room. Although most of the houses have attached kitchen, those with big families and better economic conditions have separate ones. The kitchens are also used to store fire wood, seeds and in some cases smoked foodstuff like meat. In comparison to Nepali houses, typical Bhutia houses have less windows.

Population Characteristics

Total population of the village is 727 (1997). Tribal population constitutes 28 per cent of the total population. This block has the highest population growth (+29 per cent) among the surveyed villages. In 1991 total population of this village was 562 persons (males : 287; females : 275) as against 405 persons (males : 212; females : 193) in 1981. Thus, the village registered a high decadal growth of 38.77 per cent as against 28.50 per cent for the sub-division. According to the survey report the village is found to have 727 persons (males : 369; females : 358). The village had an increase of 165 persons during 1991-96. During 1981-1996, the growth rate of the village was 79.51 per cent. It is mainly due to both natural growth, and in-migration of people to the village.

There are 20 cases of birth and 3 cases of death recorded in this village (1995-96). The birth rate is 2.74 per cent and death rate is 0.41 per cent. The annual population growth is found to be 2.33 per cent in Nazitam village.

Table 7.2: Nazitam Revenue Block : Age and Sex Composition, 1996

| Age Group | Persons | Males | Females |
|-----------|---------|-------|---------|
| 0-4 | 98 | 51 | 47 |
| 5-9 | 92 | 50 | 42 |
| 10-14 | 85 | 45 | 40 |
| 15-19 | 76 | 40 | 36 |
| 20-24 | 65 | 29 | 36 |
| 25-29 | 75 | 33 | 42 |
| 30-34 | 42 | 19 | 23 |
| 35-39 | 36 | 22 | 14 |
| 40-44 | 29 | 14 | 15 |
| 45-49 | 27 | 13 | 14 |
| 50-54 | 17 | 8 | 9 |
| 55-59 | 17 | 8 | 9 |
| 60+ | 62 | 37 | 25 |

Source : Field Survey, 1996.

According to the 1991 census, the sex ratio of this block was 958 females per 1000 males as against 910 in 1981. During the survey (1996) sex ratio is 970.

Table 7.3: Nazitam Revenue Block : Population Distribution by Broad Age Groups, 1996

| Age Group | Persons | Males | Females | Percentage to Total Population |
|-----------|---------|-------|---------|--------------------------------|
| 0-14 | 275 | 146 | 129 | 37.82 |
| 15-59 | 384 | 186 | 198 | 52.81 |
| 60+ | 62 | 37 | 25 | 8.52 |

Source : Field Survey, 1996.

Nazitam has a large proportion of young children (37.82 per cent) below the age of 15 years. Young children below the age of 5 years constitute about 13.48 per cent of the total population. This shows that, the village has a high birth rate. On the other hand, population above the age of 60 years is only 8.52 per cent. The percentage of population in the working age group (15-59 years) is 52.81 per cent of the total population. Hence, the dependency ratio of this village is 88. High dependency ratio clearly indicates low standard of living of the people.

Size and Composition of Households

During the survey the total number of households of the Nazitam block was 109. Their size vary from 2 persons to 18 persons per household. The average household size is 8 persons. The highest number of households (50.46 per cent) belong to the size class of 3 to 6 members. In the next, the size class of 7 to 10 members constituting 41.28 per cent and more than 10 members 7.34 per cent. The majority of the family of this village is nuclear in type (60.55 per cent) and the rest (39.45 per cent) belong to joint families. Here, son usually after marriage, have separate household and is responsible for his family. Among the Bhutias nucleated type of family is more common than the Nepalese, it may be due to the type of occupation they practice. They are basically farmers and need large number of helping hands in farming.

Literacy and Educational Level

In the first half of the present century, children of the economically better-off families only have gone to the schools. In 1991, the literacy rate of this village was 38.61 per cent (male : 42.86 per cent; female : 34.18 per cent) as against 29.14 per cent (male : 38.68 per cent; female : 18.65 per cent) in 1981. It is much lower than the sub-division's rate (68 per cent). During the survey there were 412 literates, i.e., 56.67 per cent (male : 63.96 per cent; female : 50 per cent) of the total population. Female literacy rate made a perceptible progress in the village.

Table 7.4: Nazitam Revenue Block : Literacy Rates by Age groups, 1996.

| Age Group | Literate persons | | | Percentage of Literates to Total Population | | |
|-----------|------------------|-------|---------|---|--------|--------|
| | Persons | Males | Females | Persons | Male | Female |
| 0-4 | 8 | 3 | 5 | - | - | - |
| 5-9 | 91 | 49 | 42 | 98.91 | 98.91 | 100 |
| 10-14 | 84 | 45 | 39 | 98.82 | 100.00 | 97.50 |
| 15-19 | 68 | 34 | 34 | 89.47 | 85.00 | 94.44 |
| 20-24 | 46 | 23 | 23 | 70.77 | 79.31 | 63.89 |
| 25-29 | 43 | 24 | 19 | 57.33 | 72.73 | 45.24 |
| 30-34 | 18 | 15 | 3 | 42.86 | 78.95 | 13.04 |
| 35-39 | 15 | 11 | 4 | 41.67 | 50.00 | 28.57 |
| 40-44 | 9 | 5 | 4 | 31.03 | 35.71 | 26.67 |
| 45-49 | 7 | 5 | 2 | 25.93 | 38.46 | 14.29 |
| 50-54 | 6 | 5 | 1 | 35.29 | 62.50 | 11.11 |
| 55-59 | 6 | 6 | - | 35.29 | 75.00 | - |
| 60+ | 11 | 11 | - | 17.74 | 29.73 | - |

Source: Field Survey, 1996.

This indicates that people have a positive attitude towards sending female child to the school. It may be due to nearness to the urban areas and also growing employment opportunities after the merger of the State. When we consider literacy by age group, it is found that the age group of 5-9 years has the highest proportion

of both male and female literates. This indicates that the people of this village are aware of sending their children to the school, which is the result of social awakening. Literacy rate, however, gradually decreases in the successive higher age groups. Among the females the rate of decrease of literacy rate is much rapid than the males. After the age of 55 years no females are found to be literate. It may be due to socio-economic backwardness of the people and legacy of the past.

It is interesting to note that proportion of male literates increase in the age group of 50-59 years. It is due to the return of the male to their village after retirement from government services.

An analysis of the educational level on the people of the village indicates that 10.19 per cent (male : 10.59 per cent; female : 9.66 per cent) of the total literates of the village are without any educational level.

Table 7.5: Nazitam Revenue Block : Educational Level of the Literates, 1996

| Educational Level | Total Literate | Male Literate | Female Literate |
|-------------------------------------|-----------------------|----------------------|------------------------|
| Literates without educational level | 42 (10.19) | 25 (10.59) | 17 (9.66) |
| Primary | 168 (40.78) | 89 (37.71) | 79 (44.89) |
| Middle | 136 (33.01) | 84 (35.59) | 52 (29.55) |
| Secondary / Higher secondary | 58 (14.08) | 31 (13.14) | 27 (15.34) |
| Graduate and above | 8 (1.94) | 7 (2.97) | 01 (0.57) |

(Figures within parentheses indicates percentage of total literates)

Source: Field Survey, 1996.

40.78 per cent of the total literate (male : 37.71 per cent; female 44.89 per cent) are educated upto primary level. Literates educated up to middle level is 33.01 per cent (male : 35.59 per cent; female 29.55 per cent) and upto secondary level it is only 14.08 per cent (male :13.14 per cent; female: 15.34 per cent). During the survey there were only 8 literates who studied up to graduation (1.94 per cent) level in the village.

Social Facilities

There is one primary school in the village and one junior school with 314 students upto class VIII in the adjacent village (Martam revenue block). After class VIII, students go to Sang secondary school (next village) as well as Rumtek secondary school situated about 5 kms. away. There is also an English (Missionary) school at Martam, established sometimes after the merger of the State with the country.

Although the village has drinking water facility provided by the State Government Rural Development department, but the supply has remained uncertain. As a result, people have to depend on other source of water, viz., springs and small streams nearby. Almost all the households of the village have electric connection. Among the other social facilities, the village has one post office, one primary health centre and a government agriculture extension farm. There is only one grocery cum stationery shop in the village, where the owner collects milk from the villagers and prepare cottage cheese (both soft and hard), butter, etc., and supply to the market. The villagers go to Gangtok or Singtam for major purchases. For college education, students go to Gangtok or Namchi. For medical treatments of serious ailments, they go to Gangtok and even Siliguri. The way of life of the villagers have changed significantly in the recent years. Many of the houses posses T.V. Sets, one of them with even a private channel disc. The modernisation is the result of education, exposure to urban and outside influences, etc.

Economy

The economy of Nazitam Revenue block is primarily based on subsistence farming. Except a few families with their members in Government Services, rest of the villagers entirely depend on agriculture for their livelihood. The villagers practise sedentary cultivation applying terraced method. A large proportion of land (both the cultivable and forest) belong to the Bhutias (20 families). Among the Nepalese 31 families are land owners and the rest are tenants (Adhiars, Kutdars, Pakhure, etc.) The village has system of individual ownerships system of landholdings.

Rice is the principal agricultural crop of the village. Although, 65.87 per cent of the total cropped area is under paddy cultivation, it is yet insufficient. Maize is the next important crop. Besides these, millet, mustard, pulses, different types of vegetables, Amliso (broom flower plant), etc., are also cultivated in small quantities. The villagers also grow fruits like orange commercially. As a matter of fact, majority of the households do not have surplus rice production. Orange, ginger and cardamom (small proportion) and Amliso are the main commercial crops to supplement their earnings. As regards other subsidiary economic pursuits, every household raise cattle, poultry, goat and pigs for their own consumption as well as to supplement their income. Other activities like Bamboo Basket making, etc. is done mainly for household needs.

Agricultural Holdings

The size of the agricultural holdings varies from less than 1 acre to 25 acres per household. Out of 109 households 53 (48.62 per cent, 1996) are landless. Largest number of households, i.e., 19 (17.43 per cent) have operational landholdings ranging between 2 to 3.99 acres, 15 households (13.76 per cent) less than 2 acres and 10 households between 4 to 6.99 acres and 5 have 7 to 9 acres. In Nazitam block only 7 households (6.42 per cent) have operational holdings ranging between 10 to 25 acres. It is found that the highest proportion of land belongs to the Bhutias while lowest proportion to the Nepalese. It is observed that majority of the landless people in the village are Nepalese, who are engaged

as tenants in the Bhutias' lands or work as daily labourer. The highest proportion of land owned by the Nepalese range between 7 to 9 acres which is only 2.75 per cent of the total households.

Working Force and Occupational Pattern

During the survey (1996), the total number of workers in the village was 365 persons, i.e., 50.20 per cent (male : 51 per cent; female : 49.44 per cent) of the total population of the village.

Out of the total workers 84 per cent is engaged in primary sector, 2 per cent in the secondary sector and 15 per cent in the tertiary sector. Out of all this village ranks second in respect of engagement of workers in the primary and tertiary sectors. In the primary sector, 93.44 per cent workers is cultivators and the rest are agricultural labourers. As stated earlier, the Bhutia families own the largest proportion of land in Nazitam block, they employ Nepali share croppers, i.e., Adhiars, kutiars, etc., for cultivating their lands. There is only one family in the village engaged in household industry while 4.11 per cent is engaged in small business and contracts. About 14.52 per cent of the total workers is employed in other services, mainly petty government job (muster roll) and teaching. Not a single person in the village is found to be engaged in the secondary occupation. Although it is seen that the villagers are gradually shifting to tertiary occupation but it is negligible. The economy of Nazitam block is entirely based on agriculture. Other activities like bamboo basket making, etc., is mainly for household needs.

LOWER FUMBONG (THUMBONG) REVENUE BLOCK (VILLAGE)

Lower Fumbong is situated 27 kms west of Jorethang town in the Soreng sub-division. It is located in the middle slope of the northern valley of the river Rangbong, a tributary of the river Rangit. Altitude of the village is 3000 ft. (approximately). It is also located close to Darjeeling district (West Bengal) and the eastern border of Nepal.

With the district road passing through the village, it does not have problem with regard to transport and communication. Two buses and a number of jeeps (taxi) run everyday through this road. The nearest bus station is Sombaria (market) which is situated 5 kms. north of the village. The interior of the village is connected with the main road by footpaths. To go to the peripheral villages people generally use village footpaths. Earlier, people use to travel to Darjeeling for marketing as well as to admit their children in the schools.

Being close to the eastern border of Nepal, this village is predominantly inhabited by Limboos, a sub-group of Nepalese (90 per cent of the total population of the village), who follows Hinduism. With an area of 105.30 hect (1.05 km²) it is a small size village. The total number of households of the villages are 84. The settlement pattern near the road is, as usual, linear and gradually becomes dispersed with the increase of distance from the road. At some places the houses are closely spaced. The houses are separated from each other by 'baris' and 'khets'.

The pattern of the Limboo houses are same as other Nepali houses. They are invariably built of wood or bamboo with tin or thatch roof. The houses vary from double to single storages. Some houses are plastered with mud while a few with cement. Every house have single to several rooms depending upon the size of the family and their economic condition. Kitchen and Granaries are usually attached to the houses. Like in other villages, here also fire wood is kept over the fire place. Shed for cow, pig, goat and poultry are made away from the house. With the said from the government most of the houses have improved toilets with tin roofs.

Population Characteristics

Total population of the village is 381 persons (males : 194; females : 187) in 1991 as against 302 persons (males : 155; females : 147) in 1981. There is a population growth of 26.16 per cent during 1981-1991. At the time of survey (1996) the total population of the village was 486 persons (males : 259; females: 227). During the last five years (1991-1996) the growth rate of population was 26

per cent. The village has registered an increase of 184 persons (60.93 per cent) during the period 1981-96 which is mainly caused by natural increase and in migration mostly on account of marriage.

During the survey, 10 cases of birth and 2 cases of death have been formed in the village (1995-96). It records a birth rate of 2.06 per cent and death rate of 0.41 per cent in 1996. The annual growth of population of the village is 1.65 per cent.

Table 7.6: Lower Fumbong Village Revenue Block : Age and Sex Composition, 1996

| Age Group | Persons | Male | Female |
|-----------|---------|------|--------|
| 0-4 | 39 | 23 | 16 |
| 5-9 | 76 | 36 | 40 |
| 10-14 | 76 | 47 | 29 |
| 15-19 | 67 | 33 | 34 |
| 20-24 | 37 | 18 | 19 |
| 25-29 | 28 | 16 | 12 |
| 30-34 | 31 | 17 | 14 |
| 35-39 | 31 | 14 | 17 |
| 40-41 | 26 | 11 | 15 |
| 45-49 | 20 | 13 | 37 |
| 60-54 | 12 | 9 | 3 |
| 54-59 | 10 | 6 | 4 |
| 60+ | 33 | 16 | 17 |

Source : Field Survey, 1996.

The sex ratio of this village was 963 per 1000 males in 1991 as against 948 females per 1000 males in 1981, which is higher than the sub-divisions (926) as well as districts (915) ratio. During the survey (1996) the sex ratio of the lower Fumbong village has surprisingly gone down to 876. When percentage of population at different age group is considered, it is found that this village has a good number of children (39.30 per cent) below the age of 15 years (Table 7.6).

Table 7.7 Lower Fumbong Revenue Block : Population Distribution by Broad Age Groups, 1996

| Age Group | Persons | Male | Female | Percentage to total |
|-----------|---------|------|--------|---------------------|
| 0-14 | 191 | 106 | 85 | 39.3 |
| 15-59 | 262 | 137 | 125 | 53.9 |
| 60+ | 33 | 16 | 17 | 6.79 |

Source: Field Survey, 1996.

Proportion of young children below the age of 5 years constitutes only 8.02 per cent of the total population which is lower than Nazitam village (Revenue Block). It may be due to decline in the death rate. On the other hand, population above the age of 60 years is 6.79 per cent. It is due to same reason as in the case of Nazitam village. An increase of population in the age group above 60 years indicates in-migration of people after the retirement from service.

The percentage of population in the working age group (15-59 years) is 53.91 per cent of the total population. The dependency ratio of this village is 86. Low standard of living of the people of the village is the consequence of high dependency ratio.

Size and Composition of Householdings

During the survey the village had 84 households with size of family varying from 1 person to 14 persons per household. The average household size is 6 persons. The highest proportion of households (60.71 per cent) belongs to the size class of 3-6 members which is followed by 29.76 per cent with the size class of 7-10 members . 80.95 per cent of the total families of the village are nuclear in type and the rest are joint families. Limboos, the predominant inhabitant of the village, usually prefer nucleated type of family. It may be due to the type of agriculture they practice and secondly, to reduce the economic burden of the head of the household (usually father).

Literacy and Educational Level

The literacy rate of the village has improved tremendously during the last 15 years. In 1981, the literacy rate of the Lower Fumbong village was only 19.21 per cent (male literacy : 25.16; female literacy : 12.93) which increased to 48.29 per cent (male literacy 56.19; female literacy : 40.11) in 1991. It is higher than the district's literacy (45.62 per cent). During the survey (1996), the literacy rate was 62.14 per cent (male literacy : 69.11; female literacy : 54.19) of the total population of the village. This indicates, that people of this village have positive attitude towards sending the young children, especially the females to the school.

Table 7.8: Lower Fumbong Revenue Block : Literacy Rates by Age Group, 1996

| Age Group | Person | Male | Female |
|-----------|--------|-------|--------|
| 0-4 | 12.82 | 4.35 | 25.00 |
| 5-9 | 86.84 | 91.67 | 82.50 |
| 10-14 | 86.84 | 95.74 | 72.41 |
| 15-19 | 95.52 | 93.94 | 97.06 |
| 20-24 | 83.00 | 94.44 | 78.95 |
| 25-29 | 75.00 | 93.75 | 50.00 |
| 30-34 | 58.06 | 70.59 | 42.86 |
| 35-39 | 41.94 | 71.43 | 17.65 |
| 40-44 | 26.92 | 63.64 | 6.67 |
| 45-49 | 25.00 | 30.77 | - |
| 50-54 | 16.67 | 22.22 | - |
| 55-59 | 10.00 | 16.67 | - |
| 60+ | 3.03 | 6.25 | - |

Source : Field Survey, 1996.

When we consider literacy by age-group, it is found that the age group of 5-9 years, 10-14 years and 15-19 years have the highest proportion of literates (both male and female) accounting for 86.84 per cent, 86.84 per cent and 95.52 per cent respectively. This clearly indicates that children here start schooling at a late age.

Proportion of literate, however, gradually decreases in the successive higher age groups, particularly in the case of females the rate of decline is quite rapid. After the age of 44 years, no females are found to be literate. It may be due to socio-economic backwardness of the villagers, large number of dropouts, etc. It is found that, early marriage and retention of females to help in the household activities are the main causes of large number of dropouts among the females.

Out of the total literates 48.26 per cent (male : 47.89; female : 48.82) are educated up to primary level. Literates studied up to middle level is 28.39 per cent (male : 28.42; female : 28.35) and secondary level is 14.51 per cent (male : 15.79; females : 12.60). There are only 6 graduates (1.89 per cent) in the village but none of them are female.

Table 7.9: Lower Fumbong Revenue Block : Educational Level of the Literates, 1996

| Educational Level | Total Literates | Male Literates | Female Literates |
|--|------------------------|-----------------------|-------------------------|
| Literates without Educational Level | 22 (6.94) | 9 (4.74) | 13 (10.24) |
| Primary | 153 (48.26) | 91 (47.89) | 62 (48.82) |
| Middle | 90 (28.39) | 54 (28.42) | 36 (28.35) |
| Secondary/Higher Secondary | 46 (14.51) | 30 (15.79) | 16 (12.60) |
| Graduate and above | 6 (1.89) | 6 (3.16) | - - |

(Figures within the parentheses indicate percentage to total literates).

Source: Field Survey, 1996.

Social Facilities

There are two schools in the village. One is a government primary school and the other one is a private school (up to class VII). For secondary education

students from upper half of the village go to Sombaria secondary school and from the lower half to Daramdin secondary school (Daramdin R.B.).

The village do not have drinking water problem as the State Govt. department of Rural Development has provided them with tap water. Although the village is provided with irrigation facility but the supply is not perennial. Other sources of water is natural springs. Almost all the households of the village have electric connection. The nearest market is Sombaria (5 kms) where people go for daily necessity, but for big purchases they go to either Jorethang (28 kms) or Nayabazar towns. There is one fair price shop and a panshop in the village. For post and telegraph and bus services, people go to Sombaria. As there is no primary health centre in the village, they have to go to Sombaria for minor treatments. There is a co-operative (Dairy) where milk is collected from the villagers and taken to the government dairy situated in Karfectar (Jorethang) for processing and manufacturing different milk products. Although, lot of social changes have been noticed among the villagers but economically they are still backward. These changes are the result of exposure to outside influence, education, etc.

Economy

Like in Nazitam the economy of the Lower Fumbong village is also of subsistence type. During the survey , 95 per cent of the total population of the village is found entirely dependent on agriculture for their livelihood. The rest (5 per cent) are teachers in the government schools or petty workers in the Government establishments.

The villagers practise sedentary cultivation with terraced method. Lower Fumbong has individual land ownership system. About 94 per cent of the villagers have land but of small size. As a result, they have to depend on other sources of income for livelihood. Besides, working in their own field, the farmers work as tenants (Kutia and Adhia) or on daily basis in their village and sometime in the neighbouring villages too. Beside that, some people are also engaged in government services mainly in teaching and other services like daily labourer,

contractor, carpenter, etc. On the whole, the economic condition of the people of the village is not satisfactory.

Although rice is considered as the principal crop, but because of the small size of the landholdings, a large proportion of the villagers use their land for growing vegetables like potato, ginger in large scale. Besides that, people also grow maize, millets, mustard, pulses, orange, other vegetables, Amliso (for making broom), etc.

Among the other subsidiary economy, people keep cattle, goat, pigs poultry, etc. Milk is one of the good sources of income. Recently, government has taken initiative to develop fishery in the village. For experiment purposes a few small ponds have been dug to cultivate fish in several house-holds. Handicraft like, weaving cloths, bamboo baskets, etc. are not noticed here.

Agricultural Holding

The size of the agricultural landholds of the village varies from less than 0.5 acre to 25.0 acres per household. Among the 84 households, only 8.33 per cent are landless. 26 households (30.95 per cent) have land less than 1 acre which is the highest (27.38 per cent). Again, 23 households have 1 to 1.99 acres, 10 households (11.90 per cent) 3 to 3.99 acres and 8 households (9.5 per cent) 4 to 7 acres. Only one house in the village is found to have 25 acres of land. Other two households have 15 acres and 12 acres each. Highest proportion of land belongs to the Limboo people. The distinctive point is that here, those households have more lands who cultivate paddy and potato and own forest lands.

Working Force and Occupational Patterns

The total number of workers in the village is found to be 243 (50 per cent), which is higher than the districts as a whole (44.86 per cent). Out of the total workers female are more (52.86 per cent) than its male counterpart (47.49 per cent). It is mainly due to poor economic condition of the people and low female literacy.

When occupational categories are considered it is observed that out of the total workers 90 per cent are engaged in the primary sector which is the highest among the surveyed villages. The most distinctive point is that not a single worker of this village is engaged in secondary sector. Only 10.92 per cent of the total workforce is found in the tertiary sector. In this sector, disparity between male (22 per cent) and female (0.84 per cent) workers are very wide. Out of the total male workers in this sector, a good number is engaged in other services, out of which 11 are in teaching.

Gnon-Samdong Revenue Block (Village)

This revenue block is situated in the lower Dzongu area (Lepcha reserve) of Mangan sub-division in the North District. It is located at a distance of 20 kms. from Mangan (district headquarters) and 70 kms. (approximately) from Gangtok. In the north it is separated from Hee-gyathang block by Manmu chu and in the south from Gor block by Monmu chu. The eastern boundary is marked by the river Tista and the western boundary by a reserve forest. In the east, the lower slope of this block forms a gorge with the river Tista. The altitude of Gnon-Samdong varies from 1,300 metres to 2,000 metres (approximately).

The approach to the village is a kuccha jeepable road connected with the State highway near Mangan. This road turns towards south through Dzongu and ultimately joins with Dik chu, which is one of the oldest market centre located near the confluence of river Tista and Dik chu. From both Dik chu and Mangan few jeeps run to this block. During the rainy season, the road often remains closed due to the landslides. In such time, the villagers walk to Mangan or Dik chu to buy their essential commodities or to sell their produces like ginger, cardamom, herbs, tubers, etc.

The surveyed village is divided into two parts. The lower part is known as Gnon the upper part as Samdong. They are separated by rocky ridges unsuitable for habitation. There are 46 households in this block out of which only 8 are in Gnon village. The settlement of this revenue block is dispersed. In Samdong village the settlement near the road make a linear pattern. In Gnon Samdong block

the houses are separated from each other by 'baris' or small 'khets'. Generally, paddy fields are located in the lower slopes away from the houses. Maize, millet, wheat are found to be cultivated in small fields close to the houses. People plant orange, grape, fruit, guava, etc., near the house.

Lepcha houses bear resemblance with those of some of the tribes of Arunachal Pradesh. In recent years there is a change in the materials used for construction of houses, but the basic structure and the plan of the houses are still same. The whole structure is built on raised platform. A ladder made of wood or notched bamboo is used to enter the house. Lepchas use wood, bamboo, thatch with straw as building materials. Thick wooden logs are used for making the pillars and the floors of the house. Mud and cowdung are used for plastering the bamboo walls. The modern trend is however, to use cement and tin to build the house whenever one can afford. Because of the wet climate, they generally make wide slanting roof to protect the wall. In a traditional Lepcha house instead of metal nails, cane and wooden pegs are used to fix the joints. A Lepcha house consists of two medium sized rooms with very few windows. One of the room is used as kitchen and living room and the other as ceremonial room. In some houses a small additional room serves as store house. The space beneath the platform is usually used as cattle shed. There is hardly any furniture in a typical Lepcha house. The kitchen has a raised fire place made of mud and stones. Grains and seeds are kept in the baskets, hung against the wall. Maize and millet are also hung on the rafter of the roof. Sometimes, smoked meat is found hanging in the kitchen.

More than 80 per cent of the total population of this block is Lepcha and the rest are floating people who come here to work. Among them the agricultural labourers are mostly Nepalese (Limboos, Rais and Tamangs), who have migrated from Nepal and a few from other parts of the State. These also include those who are posted in the Government establishment like, schools and departments. Unlike in many other blocks, here, shops are not run by the plainsmen like, Biharis or Marwaris. It is found that majority of the people of this block speak Lepcha language, however, Nepali and Hindi languages are also spoken while communicating with the non-Lepchas.

Population Characteristics

The total area of the block is 6.92 km² and the total population is 288 persons (males : 149; females : 139) in 1997. Of the total population 234 is tribal (males : 128; females : 109). A declining trend of population growth during the last two decade is observed in this block. The total population of this village was 344 persons (males : 192; females : 152) in 1991 as against 518 persons (males : 283; females : 235) in 1981. Thus, the village registered a negative decadal growth of -33.59 per cent (1981-91) as against +15.74 per cent for the sub-division. There is a decrease of 230 persons (-44.40 per cent) during 1981 to 1997. This is mainly due to out-migration of agricultural labourers from this block. It is worth mentioning that there is a positive growth of population among the tribes. In 1991 total tribal population was 217 persons (males : 118; females : 99) against 161 persons (males : 84; females : 77) in 1981. Thus, registering a growth of +47.20 per cent. which is mainly due to natural increase.

During 1996-97, there were 11 cases of birth (males : 5; females : 6) and 2 cases of death (males : 1; females : 1) found in the block. The percentage of birth comes to 3.82 and death 0.7. Thus, the annual growth rate of population comes to 3.12 per cent. Some of the deaths, specially those of children is observed to have been caused due to unavailability of immediate medical treatment and overall ignorance about health care.

Gnon Samdong has a sex-ratio of 830 females / 1000 males in 1981 which decreases to 791 females/1000 males in 1991. During the survey the sex ratio was found to be 932 females per 1000 males. Increase in the sex-ratio is the result of male selective out-migration of mostly temporarily settled Nepali agricultural labourers and secondly, due to out-migration of Lepcha males to the urban areas for higher and better education, job, etc. Same pattern is also noticed in case of the tribal sex-ratio. During the survey (1997), it was 851 females per 1000 males as against 838 females per 1000 males in 1991.

Table 7.10: Gnon Samdong : Age and Sex Composition, 1997

| Age Groups | Persons | Male | Female |
|------------|---------|------|--------|
| 0-4 | 44 | 22 | 22 |
| 5-9 | 41 | 24 | 18 |
| 10-14 | 44 | 25 | 19 |
| 15-19 | 30 | 9 | 21 |
| 20-24 | 24 | 14 | 10 |
| 25-29 | 23 | 8 | 14 |
| 30-34 | 12 | 9 | 3 |
| 35-39 | 20 | 10 | 10 |
| 40-44 | 12 | 9 | 3 |
| 45-49 | 12 | 4 | 8 |
| 50-54 | 7 | 4 | 3 |
| 55-59 | 4 | 1 | 3 |
| 60+ | 14 | 9 | 5 |

Source: Field Survey, 1997.

Like the other villages, Gnon-Samdong also has a large proportion of children. Population below the age of 15 years constitutes 44.74 per cent (Table 7.11) of its total population. Childrens below the age of 5 years is 15.28 per cent, which indicates a high birth rate. Out of the total population 50.3 per cent are working population. The population above the age of 60 years constitutes only 4.86 per cent, which indicates that the longitivity of the people of the village is very low. This is primarily due to ignorance of health care and poverty. It is observed that only 50.34 per cent of the total population of the village is economically productive. Hence, the dependency ratio comes to 99, which is the highest among the surveyed villages.

Table 7.11: Gnon Samdong Revenue Block : Population Distribution by Broad Age Groups, 1997

| Age groups | Persons | Male | Female | Per cent to Total |
|------------|---------|------|--------|-------------------|
| 0-14 | 129 | 70 | 59 | 44.79 |
| 15-59 | 145 | 69 | 75 | 50.30 |
| 60+ | 14 | 9 | 5 | 4.86 |

Source: Field Survey, 1997.

Size and Composition of Households

As stated before, the total number of households are 46. The sizes of the families vary from 3 to 18 persons per household. The average size of the household is 8 persons. Out of the total households 26.26 per cent has a size class of 3 to 6 members and 13.13 per cent, 7 to 10 members. It is found that out of the total households 67.39 per cent (31 households) has nuclear family and the rest joint family supplemented by relatives and seasonal labourers. Presence of a large number of nuclear families is due to separation of the sons from the family after the marriage. This is done probably to reduce the economic burden of the head of the household. The youngest sons are usually found to stay with the parents.

Literacy and Educational Level

During the pre-merger period (before 1975) Gnon Samdong had a very low literacy rate. After the merger, it has increased at a rapid rate due to expansion of government schools, provision of free education and development of transport and communication facilities. In 1981, the literacy rate of the village was 22.20 per cent (male : 34.63; female : 7.23). It has almost doubled to 43.60 per cent (male : 49.43; female : 36.18) in 1991, which is at par the Mangan sub-division (43.47 per cent) and higher than Nazitam (East district), lower Fumbong (West district) and Lachung (North district) revenue blocks. Thus, the village made a appreciable progress in literacy during the last decade. In 1997, the literacy rate of the village rose to 67.71 per cent (male : 75.84; female : 58.99). Although female literacy of the village has tremendously improved after 1981, a high degree of sex disparity in literacy still exists. When the literacy by age group is considered, it is found that the young people between the age group of 10-14 years has the highest proportion of literates (97.73 per cent). It is followed by the age group of 15-19 years (93.33 per cent). Literacy rate gradually decreases in the successive older age groups. From the data it is very clear that a large proportion of children of this village has started school at a late age. Dropouts among the females are high

because of high work participation in the agricultural activities. No female is found literate above the age of 45 years.

With regard to the level of education of the literates, it is found that 15.38 per cent (male : 15.93; female : 14.63) of the total literates have literacy without any educational level (Table 7.12). These mainly include the dropouts in the primary stage. Out of the total, 44 per cent (male : 43.36; female : 46.34) are literate has studied upto the primary level and 11.79 per cent (male : 12.39; female : 10.98) literates upto secondary / higher secondary level. There are 2 boys who have passed class XII, but there is no graduate in the village.

Table 7.12: Gnon Samdong Revenue Block : Educational Level of the Literates, 1997

| Educational Level | Total | Male | Female |
|---|--------------|-------------|---------------|
| Literate without educational level | 30 (15.38) | 18 (15.93) | 12 (14.63) |
| Primary | 87 (44.00) | 49 (43.36) | 38 (46.34) |
| Middle | 55 (28.21) | 32 (23.32) | 23 (28.05) |
| Secondary ? H.S. | 23 (11.79) | 14 (12.39) | 9 (10.98) |
| Graduate and above | - | - | - |

(Figures within parentheses indicate percentage to total literates).

Source : Field Survey, 1997.

Social Facilities

The village has two primary and one middle schools. One primary school is located at Gnon and the other one is at Samdong. Gnon Primary school has 23 students (male : 13; females : 10) and 3 teachers (2 females; and 1 male). There is one junior high school at Samdong, which has 99 students (53 males; and 46 females). This school has 12 teachers (8 males and 4 females). Here, male students outnumber the females, which shows that people are still socially backward.

As regards other social facilities it is found that the village has tap water for drinking purpose. Other alternative sources of water are springs and streams. Almost all the houses of the village have electricity. The village does not have any post office and health unit. People go to Hee-gyathang (5 kms) to avail of these facilities. There is only one fair price shop which remains closed most of the time. The nearest markets are Dikchu and Mangan. People of Lower Dzongu usually prefers to go to Dikchu because they can procure goods on credit, repayable in-kind when the cardamom is harvested. There is one agriculture and one horticulture farms in the village. Many villagers are employed in these government farms on temporary basis. The village has its own monastery (gompa).

Village Economy

The economy of this village may be characterised as partly subsistence and partly commercial. More than 70 per cent of the total population of the village is engaged in agriculture. It is the mainstay of the villagers. They practise wet and dry farming on terraced slopes. Cardamom is cultivated in the inner slopes of ridges in the shade of trees. In the lower slope of the Gnon and Samdong area paddy is cultivated. In the Samdong area, which is located at a higher altitude than Gnon, wheat, millet, dry rice, buck wheat, maize, mustard and barley are grown. Among the cash crops, Cardamom and Ginger are mostly grown. It is seen that farming is supplemented by gathering of minor forest produce and hunting. Cultivation of fruits, vegetables, soyabean and tapioca have been introduced recently. As the land is rocky, only 63 per cent of the total land is under cultivation, out of which 59.79 hectares are irrigated. Besides, people rear cow, goat, pig, poultry, etc., to supplement their earnings. Animal plays an important role in the socio-religious life of the villagers. Cane and bamboo objects are made only for domestic use.

Agricultural Landholding

The size of the agricultural landholding in the village varies from 3 acres to more than 15 acres. There is one house with 37 acres and two households with more than 50 acres of land. The majority of the households (19 households) have

operational holding of 5-10 acres (57.58 per cent) which is followed by less than 5 acres (21.2 per cent). Out of the total, 13 households (28.26 per cent) are landless. Ownership of land in the village is individual. Some of the villagers have land in the neighbouring villages also. One of the striking feature of the village is that, households practising wet paddy cultivation and cardamom have larger land holdings than others.

Working Population and Occupational Categories

The total number of workers in the village is 108 persons (Males : 61; females : 47) constituting 37.5 per cent of the total population as against 43.63 per cent of the sub-division as a whole. The proportion of workers in this village is found to be the lowest among the surveyed villages. It is observed that 73 per cent of the total workers of this block is engaged in the primary sector, 1.0 per cent in secondary, and 26 per cent in tertiary sectors. It is interesting to note that among all the surveyed blocks, Gnon Samdong has the highest proportion of workers in the tertiary sector. When the occupational pattern is considered, it is found that 59.26 per cent of the total workers are cultivators. Here, female cultivators (54.69 per cent) outnumber the male counterpart (45.31 per cent). This may be due to the presence of large proportion of illiterates and dropouts among the females. In Gnon Samdong, cultivators are the owners of the land. Out of the total workforce, 13.89 per cent (male : 53.33; female : 46.67) are agricultural labourers. Here, most of the agricultural labourers are seasonal migrators of Nepalese origin. There is a total lack of alternative economic activities other than agriculture. Hence, as mentioned earlier, proportion of workers in secondary and tertiary sectors are negligible. Only one person in this block is found to be engaged in the secondary sector. Out of the total workers in the tertiary sector 4 males and 2 females are engaged in teaching, 13 persons are in petty government job and 1 in army. Besides, there is 1 carpenter, 2 Lamas, 2 drivers and the rest 2 have their own small business.

Lachen

Lachen revenue block is situated 58 kms. north of Mangan town and 28 kms northwest of Chungthang. It is a rectangular shaped valley which is surrounded by tall ridges. The altitude of the area is 2,700 metres (approximately). The climate is cold and dry. The maximum annual temperature is 13°C and minimum is 2°C. From November to March minimum temperature remains below (-) degree. Almost half of the year the village remains covered by snow. Annual rainfall of this village is 16.52 mm. Heavy rainfall takes place mostly during summer.

The original name of the village is 'Lamaten', which later corrupted to Lachen. The total area of Lachen revenue block is 36.36 square kilometres, which includes Dongkung, Thanggu, Muguthang, Lachen, Chaten and Rabom villages. People of this revenue block inhabit in climate zones varying from temperate to Alpine. Because of harsh physiographic condition a large proportion of area of this revenue block is not suitable for habitation.

It is observed that, because of its location transport and communication link of the village is not satisfactory. The village is connected to Mangan town, via Chungthang (sub-division headquarters) by a 58 kms. long metalled road along the Lachen Chu. From Chungthang this river has to be crossed by three bridges to reach Lachen. During the rainy season the road remains closed for many days due to land slide. At such times people take hill tracts to reach Lachen. From Lachen this road is unmetalled. It connects Lachen with Dongkung via Thanggu.

Lachen is one of the oldest village in the North district. It is inhabited by the Bhutia people who had migrated through one of the eastern pass of the State, from 'Ha valley' of North Bhutan. Besides, there are few Tibetan families (refugee) found scattered throughout the revenue block. Because of harsh physical conditions settlement of this revenue block is clustered in certain pockets. More than 80 per cent of the households is confined within the Lachen village. A small number of households are found in Thanggu and Muguthang in the north of Lachen village and, Chaten and Rabom towards south.

The gradient of the Lachen valley is from west to east. On the western higher area there are two gompas (Monastries). One of them is for the nuns (females). Most of the houses around the gompas belong to the Lamas. The main road (unmetalled) pass through the lower part of the village, along which houses are closely spaced and linear in pattern. On the whole, the settlement in the village is unplanned and clustered in pattern. The school and the gompas are connected with the main road by an unmettaled road. The houses in the village are separated from each other by court yard and small kitchen gardens. Poultry or pig sheds are made close to the house. The characteristic feature of this village is that, it has a community hall locally known as 'Dzumsha' where decisions regarding socio-economic activities of the village are made by the 'phipun' the village headman. This village is surrounded by small fields where buck wheat, radish, turnip and mustard are cultivated.

Like the other villages, here also, a change in the pattern of the houses and building materials is noticed. Although the oldhouses of the Lachenpas are invariably made of wood and barks but the new houses are made of both wood and cement. People prefer tins or tiles instead of barks for making the roof. On account of damp climate, houses are made on a raised platform. The space below the platform is covered by shingles or wood. Sometimes they use the lower space as store room. The space below the verandah and the stairs invariably used for storing fire wood. Usually, each house has two to three medium size rooms. The space near the entrance is a kitchen cum living room. It contains a few low tables (Chuckchi) and devans covered with home made blankets or carpets in one side. Other half of the room is used as kitchen where there is a fire hearth made on a raised platform. During the cold season, to keep the room warm, they normally do not put off the fire in the hearth. Near the fire place there is a wash basin and a few wooden shelves or cupboard to keep the utensils. In Lachen, every household has a good collection of utensils made of brass, copper and china clay. They keep their kitchen and the utensils very clean. Smoked meat and skin bags containing animals fat are found hanging on the rafter of the ceiling . Seeds are also kept on the baskets or bags made of skin. Above the fire place the roof has an opening through which smoke can go out. In one of the room, every household has a loom

and a basket of wool. Normally, the entrance of the house has a thick curtain made of cotton or yak wool to protect the room from cold wave.

One of the distinguishing feature of this village is that before the winter starts, mass slaughtering of cattles takes place. Each and every household slaughter cattles worth ten to forty thousand and store them for the winter season. Another distinctive point is that the economic disparity between the rich and the poor in this village is less.

Population Characteristics

The total population of the village is 1,918 persons (males : 1025; females : 893) in 1997. It is found that, this block has a very low population growth compared to Nazitam and Lower Fumbong blocks. In 1991 the total population of the block was 1,640 persons (males : 977; females : 663) as against 919 persons (males : 474; females : 445) in 1981. Thus, this block registered a high growth of 78.45 per cent which is much higher than the sub-division's growth rate (47.75 per cent). High growth rate during 1981 to 91 is mainly due to in-migration of people engaged in different government establishments and to a less extent natural increase.

During the survey, there were 49 cases of birth and 9 cases of death found in the block (1996-97). The birth rate comes to about 2.55 per cent and death rate to 0.47 per cent. The population of the village increased at an annual growth rate of 2.08 per cent. The deaths were caused by non-availability of proper medical facilities, ignorance of health care. The cases of deaths were mostly children and aged persons.

The sex ratio of the village is 871 females per 1000 males (1997) as against 678 females per 1000 males in 1991. This is because of out-migration of males from this block for education, job, etc. The tribal sex ratio is 890 females per 1000 males as against 859 in 1991. The cause is same as the general sex ratio.

Table 7.13: Lachen Revenue Block : Population Distribution by Age Groups, 1997

| Age Group | Persons | Male | Female |
|-----------|--------------|-------------|-------------|
| 0-14 | 641 (33.4) | 311 (30.30) | 330 (36.95) |
| 15-59 | 1,157 (60.3) | 637 (62.12) | 520 (58.26) |
| 60+ | 120 (6.28) | 771 (7.57) | 43 (4.78) |

(Figures within the parentheses indicate percentage to total)

Source: Field Survey, 1997.

The most characteristic feature of the population composition of the village is that, among all the surveyed villages this block has the lowest percentage of young population (33.4 per cent) in the age group of 0-14 years. It is due to low fertility rate and the type of economic activity they practice. The proportion of population in the age group 15-59 years is 60.3 per cent. Aged people above 60+ years constitutes 6.28 per cent of the total population. Thus, unlike the other areas this village has a small percentage of economically population. The dependency ratio is 66 which is less than other surveyed villages.

Size and Composition of the Households

In the surveyed village, the size of the family members in each household varies from 2 persons to 19 persons. The average size of the household is 6 persons. It is found that 53 per cent of the total households has a family size class ranging between 6 persons to 9 persons and 31 per cent has 2 persons to 5 persons. This village has the largest number of joint families (56 per cent) than the rest of the surveyed villages. Only 44 per cent household belongs to nuclear family. Presence of large number of joint families in this village is due to practice of multifarious economy and prevalence of polyandry system of marriage.

Literacy and Educational Level

Prior to 1906 there were no school in this village. The first school was established in 1907. Later, in 1913 another school was established for the Lamas.

Despite this, the literacy rate of Lachen block was very low. In 1991 the proportion of literates in this block was 31.95 per cent (male literacy : 82.82; female literacy : 17.18) as against 25.24 per cent (male literacy : 83.62; female literacy : 16.38) in 1981. Increase in the literacy rate is mainly due to expansion of primary education, hostel facility for the children, free education, development of transport and communication facility etc. During the survey (1997), i.e. after 6 years, the literacy rate further increased to 46.15 per cent (male literate : 63.16; female literate : 35.96). Although the village made an appreciable progress in literacy during the last 16 years, but it is the lowest among the surveyed villages. Here, female literacy has also made a good progress, however, unfortunately a high degree of sex disparity in literacy still prevails. This is mainly due to the type of economy they practised, large number of dropouts, etc.

When literacy by age group is considered it is found that, the proportion of literates in the age group of 4-14 years is the highest (37.72 per cent). In the next comes 15-19 years with 15.35 per cent. High literacy rate in the younger age groups is due to increase of government primary schools with free education and mid-day meal facility. However, literacy rate in the subsequent higher age groups declines at a faster rate. Female literates are almost nil in the higher age groups.

Table 7.14: Lachen Revenue Block : Percentage of Literacy Rate in Different Educational Level, 1997.

| Education Level | Total | Male | Female |
|-------------------------------------|-------|-------|--------|
| Literates without Educational Level | 15.00 | 19.31 | 7.22 |
| Primary | 53.50 | 46.20 | 66.26 |
| Middle | 15.78 | 15.86 | 15.66 |
| Secondary / Higher Secondary | 14.47 | 16.55 | 10.84 |
| Graduate and above | 1.31 | 2.06 | - |

Survey : Field Survey, 1997.

From the survey it is found that the educational level of the literates in this block is very low. Out of the total literates largest proportion (53.50 per cent) have studied only upto primary level. In the middle level the proportion of literate is

15.78 per cent and in the secondary / higher secondary level, 14.47 per cent. In the graduate and above level percentage of literate is only 1.31. Out of them there are two graduates and one junior engineer. It is worth mentioning that proportion of females in the primary level is quite high, which indicates that there is no restriction for the female education in this block. People are quite aware of educating their children especially females. But in the higher educational level proportion of females are quite low. It is found that there is no female graduate in this block.

Social Facilities

Despite its remote location this block is provided with different social facilities like many other villages of the State. Through out the revenue block there are 4 primary schools and 1 middle school. There is a hostel in the middle school at Lachen village where the villagers leave their children during the period of migration. There are 160 students (males : 106; females : 54) in this school out of which 70 are hostel borders (males : 50; females : 20). There is also one handicraft training institute in the village.

Regarding other social facilities, there is 1 public health sub-centre, 1 post office in this block. This village has the provision of drinking water. Almost all the houses have electricity but the supply is uncertain . There is a micro hydal station at Chaten (near Lachen) from where electricity is supplied to the area. Besides, there is one animal husbandry office, a veterinary hospital, SIB office and one police out post. Besides, there is a Yak breeding centre at Thanggu, 27 kms from Lachen. The village has one co-operative society and 7 (small) grocery shops. For a number of daily necessity they depend on the army supply. For major purchase the villagers go to Chungthang (28 kms) or Mangan town (58 kms). For better treatment they go to Gangtok.

The Village Economy

The people of Lachen block practise a multifarious economy, in which animal husbandry, farming and trading are combined to provide a wide range of

income. Besides, they have a household industry for weaving woollen cloths for domestic use and for sale also. It is found that the villagers of this block were purely pastoral people before the closure of the border. Later, they shifted to a more settled economy. They have adopted high altitude farming and animal husbandry. But because of limited arable land, they have to depend on other activities, such as gathering of medicinal herbs, juniper chips from the forest, weaving, trading, construction work, etc. At present, trade occupies a small part of their economy. The people of this block have land at different altitudes hence, they migrate towards higher altitude in summer and lower in winter for farming as well as for grazing animals like Cattle, Sheep, Yak, Mules, etc. Here, people cultivate crops like buck wheat, barley maize and root crops like radish, potato, turnip, etc. During their stay at different places of the migration tract, people also gather herbs, medicinal plants, vegetable dye, wood, etc., from the forest.

Agricultural Landholdings

The most distinctive point is that the people of this block follow communitarian landholding system where forests / pastures and agricultural land belong to the individual families but with a strong community regulation of land usages. The land inheritance pattern is such that father's land is divided equally among the sons. To avoid fragmentation of landholdings and protect the limited property polyandry system of marriage is still preferred by many families.

The size of the agricultural landholdings varies from less than 1 acre to 2 acres. Majority of the households (46 per cent of the total households) have an operational landholding of 1-1.5 acres (23 per cent). Only 14 per cent of the households has more than 2 acres of land. The most distinguishing point is that there are no landless families in Lachen block and tenancy is not allowed here.

Working Population and Occupational Patterns

It is worth noting that Lachen block has the highest proportion of workers (60 per cent) among the surveyed villages, which is higher than the participation

rate of the sub-division (46 per cent). Out of the total workers 54 per cent is male and 46 per cent female.

The most distinctive feature is that here, same person is found to be engaged in various occupations to supplement their income. For instance, one person may be engaged in farming, animal rearing, weaving, running a shop, carpentry, etc. Sometimes, people are also found doing construction work on contract basis or as a daily wage labourer. Hence, it is very difficult to find out the actual proportion of workers engaged in a particular sector. However, it is observed that approximately, 78 per cent of the total workers is engaged in the primary sector, 16.19 per cent in secondary and 6.26 per cent in the tertiary sectors. Among the surveyed blocks Lachen has the highest proportion of workers in the secondary sector. In the primary sector, 44 per cent workers is engaged in animal rearing and farming and 17 per cent in weaving, farming and business. It is found that 12 per cent of the total workers are engaged in petty government job and in teaching. It is observed that, 9.45 per cent practise Lamahood in the village monastery in combination with farming and animal rearing. Out of the total female population of this block, 60 per cent female of different age groups is engaged in agriculture, weaving, animal rearing, shop business, etc. Here, the economic status of the women is found to be higher than other surveyed villages. However, because of the heavy workload, female dropouts in the school is high leading to high sex disparity in literacy as well as in educational level.

Summary Statement

From the above study it emerges that the revenue block (village) with predominant Bhutia population is located at a relatively higher altitude than those with Lepchas and Nepalese. The settlement pattern of the former is compact and located within the valleys, whereas the latter are dispersed and scattered from middle to the lower slopes. All the surveyed villages have metalled road approaches but the frequency of movement of vehicles in Nazitam and Lower Fumbong are higher than Gnon-Samdong and Lachen blocks. The Nazitam block, for being closer to Gangtok, is in a better position in respect of social facilities than

the rest. The house types and building materials used by the people of the four are gradually changing. It is however, noticed that majority of the houses in the Lachen and Gnon-Samdong block are still traditional type. This is mainly because of the higher transportation cost modern construction material owing to distance from the market, relatively easy availability of raw materials and the convenience to use as well as climate factors. In Lower Fumbong and Nazitam, animal sheds are, constructed a little away from the houses while in Gnon-Samdong and in Lachen, they are found close to or attached with the houses. The common feature of these villages is the presence of vegetable yards (baris) very close to the houses. The main agricultural fields (khet) start beneath the vegetable garden in Nazitam and Lower Fumbong blocks, while in case of Gnon-Samdong, the agricultural fields are located away from the houses at lower altitude.

Among the surveyed villages, Gnon-Samdong has the largest proportion (82 per cent) of tribal people out of the village total population, next to it comes Lachen block with 70 per cent. Nazitam block has only 28 per cent tribal people. It is worth noting that Lower Fumbong has no tribal population.

Regarding population, Nazitam block has the highest while Gnon-Samdong has a negative growth rate. Despite a high annual natural growth the overall negative growth in Gnon Samdong Village is due to out-migration of agricultural labourers (Nepalese) from this block. Low growth rate at Lachen block is due to low in-migration, polyandry system of marriage, etc. Number of females per thousand males in Gnon-Samdong (933) and Nazitam (970) villages are higher than the other two.

When population by broad age group is concerned, Gnon-Samdong has the highest (44.79 per cent) and Lachen the lowest proportion (33.40 per cent) of children in the age group of 0-14 years. The percentage of population in the working age group (15-59 years) is highest in Lachen (60.30 per cent) and lowest in Gnon-Samdong (50.30 per cent). On the other hand, largest proportion of old people is noticed in Nazitam (8.60 per cent) and lowest in Gnon-Samdong (4.86 per cent). With a low proportion of working population, Gnon-Samdong shows

highest dependency ratio (99) followed by Nazitam (88). Lachen has the lowest proportion of dependent people (66).

Average size of the households in the surveyed villages are 6-8 persons. Lower Fumbong has the highest proportion of nucleated families (81 per cent) and Lachen the lowest (44 per cent).

As regards literacy, Gnon-Samdong has the highest proportion (68 per cent) next to which comes Lower Fumbong (62.40 per cent), lowest proportion of literates are found in Lachen block. High proportion of literates is related to, expansion of primary education and low work participation rate. It is interesting to note that the highest number of literates in the primary level is observed in Lachen block and lowest in Nazitam block. In the medium level Nazitam has the highest number of literates. In all the villages, the number of literates in the subsequent higher education level decreases. The survey reveals that Gnon-Samdong block is yet to have a graduate. In the survey, it is also found that in all the four villages people are quite aware of educational need of their children, but because of their socio-economic conditions the dropout rates is very high.

The people of Nazitam, Lower Fumbong and Gnon-Samdong practise subsistence economy. They grow different types of wet and dry crops like paddy pulses, wheat millet etc. They also grow commercial crop like ginger and cardamom and oranges. Live-stock is a part and parcel of their farming economy. The people of Lachen practise mixed economy. As expected, Lachen block has the highest work participation rate (60 per cent) and Gnon-Samdong the lowest (38 per cent). Female work participation rate is the highest in Lower Fumbong block (53 per cent) which is higher than its male counterpart (47 per cent). Regarding occupational categories, Lower Fumbong has the highest proportion of workers in the primary sector followed by the Nazitam block. Lachen has the highest percentage of workers in the secondary sector while Lower Fumbong has none. In the tertiary sector, Gnon-Samdong ranks highest (26 per cent) and Lachen lowest (6.26 per cent) .

As regards basic social facilities, all the surveyed villages have primary and middle schools, public health centre or sub-centres, drinking water, electricity, motorable road, footpaths, postoffices, etc. Among all the surveyed villages Nazitam is found to have access to better social facilities due to its nearness to Gangtok.

PART - III

SYNTHESIS AND CONCLUSION

CHAPTER VIII

ETHNIC AND POPULATION ZONES

ETHNIC ZONES

From the foregoing discussions it becomes evident that the three ethnic groups of Sikkim, viz., the Lepchas, the Bhutias and the Nepalese are concentrated in different parts of the State. Because of diverse ethnic roots, characterised by distinctly different modes of living and because of varied environmental backgrounds the groups have occupied separate altitudinal and climatic zones, which suit them. In any case, it is already mentioned in Chapter IV that more than 90 per cent of the total population of the State is rural and the groups occupy specific rural areas. Only in the urban centres the groups are highly inter-mixed. Therefore, on the basis of the habitable rural areas their unit being the revenue blocks or villages by the groups, the ethnic zones have been identified. Broadly, the zones may be designated as follows :

- i) Upper Himalayan Bhutia Zone.
- ii) Central Himalayan Lepcha Zone.
- iii) Southern Himalayan Nepali Zone.

Upper Himalayan Bhutia Zone

The Bhutia people came here from neighbouring high hills of Tibet. They preferred to live in the cool and dry highlands because they originally lived in such environmental conditions in Tibet. This zone includes the whole of Chungthang sub-division of North district and highlands of the Mangan (North district), Gangtok, Pakyong (East district), Ravong ((South district) and Gyalshing (West district) sub-divisions. This zones stretches from the middle altitude to high Himalayan zone where height varies from 1,500 metres to 3,800 metres. This zone is characterised by rugged topography with limited agricultural land, cool and dry climate. Uneven relief causes lots of hurdle in the accessibility.

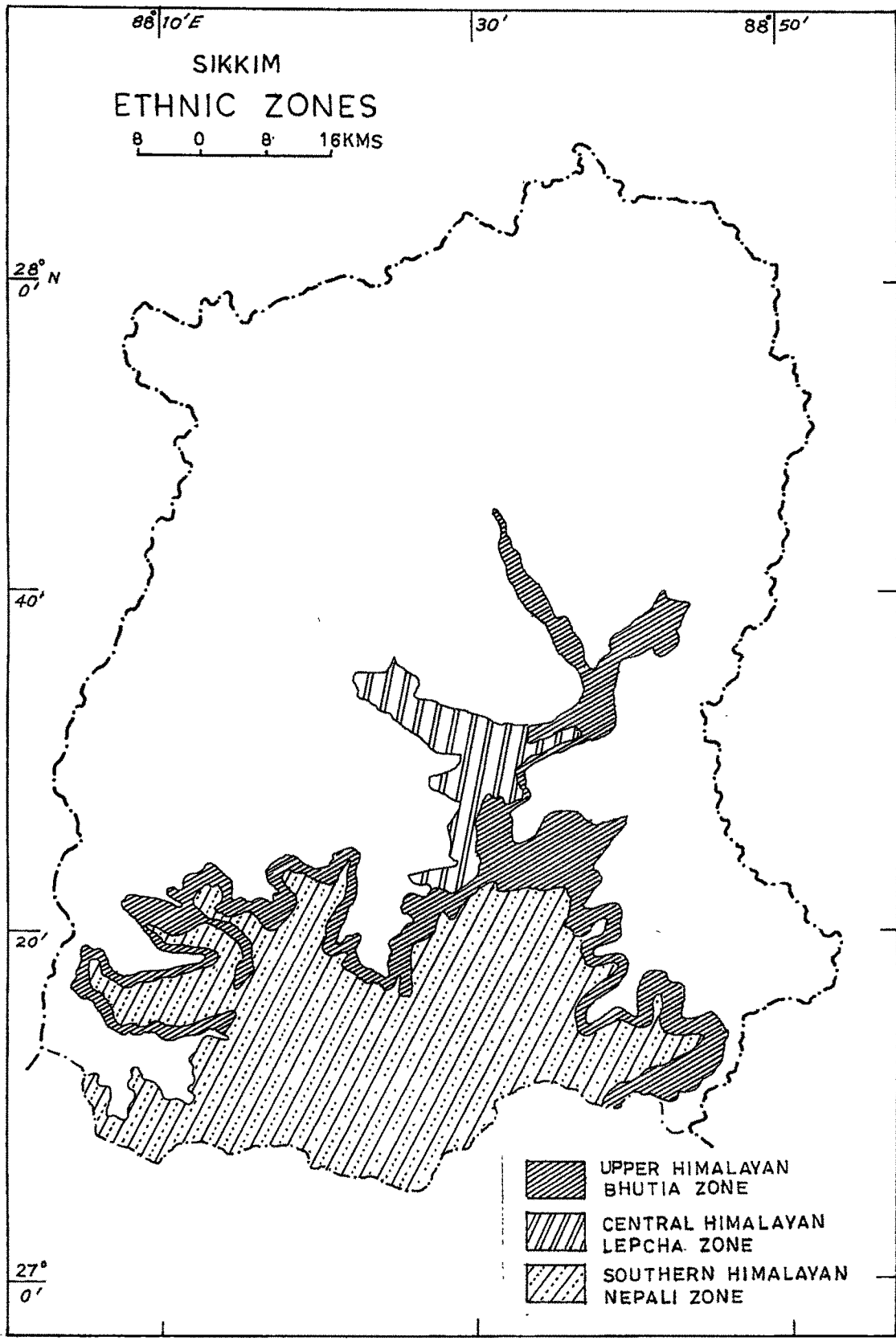


FIG.72

The northern and eastern boundaries of the zone are covered by thick forests and snowclad mountains, which lie near the Chinese occupied Tibet and Bhutan border respectively. In the West lies the Singalila range separating the zone from Nepal. The north-western part of the zone is covered by the Lepcha reserve 'Dzongu' (Lepcha zone) and the entire southern part of the main zone is occupied by the Nepalese.

As expected, the largest number of Bhutias of the State is concentrated in this zone. However, the spatial distribution of the Bhutias within the zone varies from North to South. The most distinguishing feature is that, in the northern part of this zone (North district) more than 90 per cent of the permanent inhabitants are Bhutias. As mentioned earlier, in the extreme north, which lies in the high to medium Himalayan zone, two sub-groups of Bhutia tribe, viz., Lachenpa and Lachungpas, who are living in separate areas, i.e., in Lachen and Lachung revenue blocks respectively. The separate entity of the two groups exists in the fact that they follow clan territorial occupancy system. These groups are originally from the 'Ha Valley' of northern Bhutan. The other revenue blocks of the northern part of the zone (North district) is occupied by the Bhutia coming from different parts of Tibet. A small number of Limboos, Sherpas and Tibetan refugees are also found in this part of the zone. On the other hand, in the southern part of the zone, Bhutias live together with the Nepalese, the Lepchas and the plainsmen. The exclusive majority of the Bhutias in the northern part of the zone is due to mainly to the adoption of innerline policy in order to restrict the Nepali settlement to this part. Besides, because of the frontier location of the zone, free movement of outsiders without a permit is also not allowed within it. However, in the southern half of the zone, a large concentration of Bhutias is also noticed in the eastern part.

The Bhutias of this zone speak language of Sino-Tibetan (Tibeto-Burman) origin (Bhutia language). They also speak Nepali, which has over the times become a sort of 'lingua franca'. Many of them speak Hindi and those who are educated, converse in English.

The total population of this zone is 44,093 (male : 23,795; female: 20,248) and its area is 319 square kilometers. It is found that with 19.29 per cent of the total habitable rural area of the State this zone accommodates 11.93 per cent of the total rural population (1991). Again, out of the States total population (Rural and Urban) this zone constitutes 10.84 per cent. It is found that Gangtok sub-division of this zone has the highest proportion of population (23.84 per cent) next to which come Gyalshing (21.27 per cent) and Mangan (19.47 per cent) sub-divisions. Tribal population constitutes 39.37 per cent of the total population of the zone (Appendix XIV).

It is observed that the Bhutia zone is characterised by relatively less percentage of people engaged in primary sector (60.37). The proportion of Bhutias in the secondary and tertiary sectors is considerably high (Appendix XIV).

In respect of social characteristics it may be found that Bhutias are the follower of Buddhism or Lamaism, a combination of Mahayana Buddhism, Tantrism and Tibetan Bon religion. In their religion the monastery or gumpa plays an important role. Most of the villages in the zone have their own gumpas, which are looked after by the Lamas. It is observed that some Bhutias of the zone adhere to two religions, viz., Buddhism (Lamaism) and Shamanism. For example in Lachen and Lachung revenue blocks religious functions are performed by the Lamas, Paus and Nejojums (Shamanism). The primary function of the Pau (male priest) is to cure illness and the Nejohum (a female priest) is at the time of marriage, naming or funeral ceremonies, etc. The most distinctive feature of this zone is that the Bhutia females are allowed to become Lamas. The female Lama is called 'Anne'. The important festivals of the Bhutias (Sikkimese) are the Sagadawa, the Pang-Lhabso, the Losoong, the Lhabab-Duchen, etc.

The Bhutias cremate the dead body in their own cremation ground. Before disposal, the body is kept for a period of 3 to 49 days depending on the Status of the deceased in the society. The Lamas conducts all the necessary rites from the beginning to the end. Like the Hindus, the Bhutias have no restriction in taking

food, in the matter of dress or cutting of hair during the death of parents or relatives.

In the Bhutia society three systems of marriages are prevalent, they are monogamy, polygamy and polyandry. Now, the latter two systems of marriage are rarely practised by them. In this zone, till very recently, polyandry system was followed on a wide scale by the people of Lachen and Lachung, but now it is declining.

Among the Bhutias, mode of acquiring mates is by negotiation and service. The boy's party offers bride-price to the girls parents before the negotiation of the marriage. They generally have matrimonial relation with the Lepchas, the Sherpas and the Tamangs, otherwise, it is endogamous at the community level. The Bhutias generally marry at a late age. Divorcee is permitted only with the approval of the society. Remarriage is common among them.

Like the Nepalese and the Lepchas, the Staple food of the people of this zone is rice. Their traditional food comprises 'tsampa' (barley flour), buck wheat, thukpa (Noodles in soup), momos, etc. They are mostly non-vegetarian and eat chiefly beef and pork. Dried beef is considered as a delicacy. They chew 'Churpi' pieces of dried cheese made out of Yak or Cow milk. During festivals they prepare various types of snacks, such as Khabtse, fongui - amcho, etc. Like the Lepchas they are also fond of drinking home-brewed alcohol called 'Chhang' (the Chi of the Lepchas) made of millet.

The Bhutia dress of both the males and females is called 'kho' 'Po-Kho' for the male and Mo-kho for the female, commonly known as Bo-kho for both the genders. Under the kho, a man wears a double breasted high-necked shirt (tson-ta-ti and a pant (gya-ton). A woman wears a long loose sleeved blouse (honju) under the kho. The kho is held at the waist by a long piece of cloth called kera.

Central Himalayan Lepcha Zone

This zone is located on the valley slopes of the left bank of the river Tista. It stretches from Chungthang sub-division in the north (Bhutia zone) to the Ravong and Gangtok sub-divisions in the south, covering in total 22 revenue blocks. There are two approaches to the Western part of this zone. One from the Mangan town in the east and the other from Dikchu market area in the South. The southern approach is unmetalled and as such it remains closed due to landslide during the rainy season. The western part of this zone is covered by thick forest, above which lies the Kanchanjunga group of peaks. It is found that more than half of the villages (revenue blocks) of this zone is located within Dzongu area, the Lepcha reserve. Being in the direct path of the monsoon, this zone receives heavy rainfall during the monsoon season. Climate differs from sub-tropical to temperate type. Because of the remote location and rugged topography, population here is sparse. The settlements of this zone are scattered from middle to lower slopes. The average height of this zone is about 4,000 ft. Due to steep slope there is scarcity of agricultural land here. The villages which are located on the right bank of the river Tista are fairly thickly populated and relatively prosperous than those located on the left bank valley slopes. It is mainly because the location of the right bank villages is on the State highway and also their nearness to Mangan town. The sizes of the villages of this zone are medium to small. About 50 per cent of the villages have population between 500-1,999 persons.

This zone covers an area of 193 km² and has a total population of 15,041 persons (male : 8196; female: 6845), i.e. 4.02 per cent of the total population of the State. It is found that more than 50 per cent of the total population of the zone are tribals. Lepcha is the predominant group in the zone. The rest are floating population who are either engaged in government job or work as agricultural labourer. Most of these labourers are seasonal migrators coming mostly from Nepal. Lepcha is spoken by majority of the people of this zone, however, Nepali and Hindi languages are also spoken by some people.

In this zone the primary source of livelihood of the people is the land hence, most of them are engaged in primary occupation (Appendix XIV). The percentage of Lepchas engaged in tertiary sector is relatively higher (24.40 per cent) than the other two zones, but in the secondary sector proportion of workers is negligible.

Like the other hill tribes of North-East, the Lepchas earlier used to practise their traditional religion (Shamanism). They were converted to Buddhism by the Bhutias from seventeenth century onward. At present, their religion is a mixture of Lamaist Buddhism and many rituals from their original 'Mun' practices. Like the Bhutias, the importance of gumpas and Lamas are significant in the lives of the Lepchas. In their traditional religion the Chief function is to ward off misfortunes and illness. Its observance is necessary in all occasions, like birth, marriage, death of the commoners, etc. Mun (either male or female) and Bongthing are their traditional priests. All their traditional rites and rituals are performed by their traditional priests, in some cases by the Lamas too. With the gradual changes in their occupational pattern and life style, the practice of shamanistic ritual among the Lepchas is declining. The Lepchas worship different deities, for the family, clan, village and region. Their clan deities are named after the names of peaks or rivers. Their most important festival is Namsoong (Bhutia's Losoong) which is the festival of harvest and new year. Tendong Hlo Rum Fat is their another important festival. They also observe other Sikkimese Buddhist festivals. Traditionally, Lepchas used to dispose the dead bodies in three different ways - by cremation, burial and throwing into the river. The method adopted depends on the condition of the deceased and on the advice of their priests and Lamas. But with the increasing influence of Buddhism, cremation of dead has become a common practice. Like the Bhutias, they also keep the dead bodies in the house for a period ranging between one to forty-nine days, according to the advice of Lamas. They do not observe particular restrictions on foods. The length of the death ceremony called Sanglian depends on the economic status of the deceased.

Unlike the Bhutias and the Nepalese, the negotiation of Lepcha marriage is not done by the parents but by two go between (Bek-bo) representing each party. (Basin, V., 1989). Before the marriage is held the boys party has to carry presents

like a load of Chi (alcohol brewed from millet), pigs, copper pots, cloths, etc., as bride-price. For them social norms are quite flexible. Although some of the Lepchas are found to be polygamous but now monogamy is in vogue. As for marriage they follow community endogamy and clan exogamy. They have matrimonial relations with the Bhutias also. Divorce is regulated by the customary laws. Remarriage is permissible among the Lepchas too.

The traditional staple food of the Lepchas is rice. They also take maize, barley and wheat. Like the Bhutias, they too prefer pork and beef. Lepchas are known as born botanists and possess the knowledge of various edible plants and tubers. The bamboo shoots, 'Nakeema', a local vegetable product and various types of mushrooms are their favourite delicacy. They also have the tradition of taking fermented and preserved food, such as 'Kinema' (fermented soya bean), 'Chi', home brewed millet alcohol, etc.

The traditional dress of the Lepcha men is called 'gada' which is a stripped cloth loosely worn down upto the knee and 'Phomu' a trouser up to the calf. A woman dress is called 'dumdyan', a full length robe, held at shoulders by a pair of broaches and tied at the waist by a hand woven strip of cloth known as 'namrek'. Over the dumdyan a loose coat called the 'Pago' is worn.

Southern Himalayan Nepali Zone

This zone covers the southern slope of the Sikkim Himalaya. This is, in fact, the largest zone with 1,147 km², i.e., about 69.35 per cent of the total area of the State. It also contains the highest number of population, i.e., 3,10,537 persons, or 84 per cent of the State's total population. The tribal people constitute only 18.28 per cent of the zone's total population. Among all the zones Nepali zone has the lowest proportion of tribal population. This zone stretches from the Donkya range in the east to the Singalila range in the West. It is dissected by the river Tista and its tributaries. The valleys are comparatively broad and flat with moderate slopes. The direction of the gradient of this zone is from east to west, hence, eastern part are more accessible and habitable than the western. Here, climate varies from sub-tropical to temperate type depending on the altitude. The settlements are

mostly confined within 300 metres to 2,000 metres. However, maximum concentration is noticed below 1,800 metres. The population of this zone is unevenly distributed over 322 revenue blocks. The average size of the villages (revenue blocks) is medium. About 52.38 per cent of the villages have population between 500-1,999 persons.

This zone is predominantly inhabited by the Nepalese. Like the Bhutia zone, here also different part is inhabited by the sub-groups of Nepali people. For instance, the western and the central parts of the zone are predominantly inhabited by the Kirati Nepalese, viz., the Limboos, the Rais respectively and in the eastern part by the Brahmans, Chettris and Newars (Pradhans), as stated earlier. The higher slopes of the zone is mostly occupied by the Gurungs, Tamangs and also by the Bhutias, Sherpas and the Lepchas.

This zone is characterised by relatively large percentage of workers in the primary sector (77) and lower percentage in the secondary and tertiary sectors. The majority of the people under this zone are Hindus. Among them some follow their indigenous ritualistic practices in combination with the religion they have adopted. For instance, the Rais, the Limboos, the Sunuwars, the Yakhas, etc., adhere to both Hinduism and their traditional practice (Shamanism). As mentioned earlier, their traditional religion ceremonies are performed by their own priests, viz., the 'Bijuwa' of the Rais, 'Phedangba' of the Limboos and the 'Dhamis' and 'Jhankris' amongst the rest. The Chettris and the Thakuris known to be descendants of the 'Khas' tribe distinctly worship their clan deities 'Kul devta'. Community worship of 'Kul devta' on a assigned day is called 'Dewali'. There are a number of rituals practised by the different sub-groups of Nepalese. They are Nwaran (naming ceremony), Bhatkhowai or Annaprashan, Chewar (hair cutting of sons), etc.

Among the Nepali sub groups, as mentioned above, some are Buddhists. A good number of people of these groups who adopted 'Hinduism', earlier, have in the recent years taken up Christianity.

The important festivals of the Hindu Nepalese are Dasain (Dussehra), Tihar (Diwali) and Maghe (Makar) Sangkranti. During Dasain, the goddess Durga is worshipped. On this day, the elders of the family put tika on the foreheads of the younger people with their blessings. During Tihar (Diwali) the orthodox Hindus like Bahun and Chettris worship goddess Laxmi in the form of cows (Gai Tihar). On different days offerings of specially prepared food is given to the ox, the dog and the cows. The boys and girls visit houses singing traditional songs (Deosi and Bhailani) and offering prayers for the prosperity of the families. In Maghe Sankranti prayers are offered at the confluence of rivers. The most distinctive point is that, except for certain orthodox rituals, all the sub-groups including the Buddhist Nepalese celebrate these festivals.

The people of Nepali zone dispose of dead body by both cremation and burial methods. The death pollution is observed for a period ranging between three to thirteen days. Unlike among the Bhutias and the Lepchas, there is restriction in food and dress among the Nepalese. Many of them also clean shave their hair during that period.

In marriage, the Nepalese follow exogamy at the clan level and endogamy at the community level. The age at marriage is relatively lower than the Bhutia and the Lepchas. Marriage takes place by negotiation, however, by and large elopement is also permissible. The polygamy use to be a common practice in the past but at present it is rare. The practice of dowry is not prevalent among the Nepalese. The bride is given ornaments, dresses and other gifts by the groom's family. Divorce is not allowed unless there is a genuine cause behind it. Except among the Bahuns, remarriage is allowed among the Nepalese of this zone.

The staple diet of the Nepalese of this zone is rice, chapati, pulses and vegetable. The Brahmins are vegetarians and donot drink. Other groups generally are non-vegetarians. Some sub-groups take pork, beef and buffalo. Like the Lepchas, Nepalese also take fermented and dried food like Gundruk and Sinki made of vegetable leaf and radish.

The traditional costume of Nepali men consist of the 'daura', a knee length double breasted shirt and 'suruwal', a trouser. They wear a sleeveless coat on top of the 'daura' and a cap. Women wear 'Choubandhi', a double breasted blouse and 'gunue', which is worn at the waist by a long strip of cloth (Patuka). They use a shawl made of cotton or silk to cover the upper part of the body known as pharia. Most of the men, however, wear pant shirt and women sarees, salowar, kameej or other modern dresses.

It is already stated that the people of the three ethnic groups are concentrated in different zones. Nevertheless, with rapid changes in the political and socio-economic scenario, particularly after the merger of the State with the main stream, the ethnic concentration is gradually breaking down. People have started settling in more convenient location in the urban areas and society is fast becoming pluralistic. The influence of the costumes and traditions of each group on the other is apparent on their cultural activities. It is observed that, the influence of the Bhutia culture is more on the Lepchas than on the Nepalese. The influence of the plainsmen on the three ethnic groups cannot also be undermined. The cultural identity of the people of Dzongu, in Lepcha zone and Lachen and, Lachung revenue blocks of the Bhutia zone are found intact.

It is found that, the present day Sikkimese society, while retaining their indigenous ethnic characteristics on the whole, displays a significant socio-cultural integration. As mentioned before, the advent of Bhutias to Sikkim had the most significant influence on the Lepchas. The Lepchas later embraced Buddhism and with the inter-community marriages, a kind of new social order got established in the State. The Bhutias introduced new customs, traditions and food habits, these are influencing even the present day Nepali community.

The coming of Nepalese into the erstwhile kingdom not only changed its demographic profile but also brought changes in the socio-economic condition of the people. They introduced their indigenous farming techniques, viz., terraced cultivation and several commercial crops like cardamom, ginger, etc., which are still in practice in the State. The Nepali language eventually became a kind of

lingua-franca for different ethnic groups and sub-groups. The Newars of Nepali who had come to Sikkim primarily to mine metals and mint-coins, have made significant contribution in the metal craftsmanship of the State. They are good businessmen and have been helping in the development of trade and commerce in the State. The art of paper making from a locally available plant called 'Argyelli' was introduced by the kagate community (Nepali), who also played an important role in furthering traditional learning particularly in the monasteries.

The Bhutia and Lepcha communities, on the other hand, influenced the Nepali society indirectly to a great extent. The caste system that was so strict in the place of their origin became less rigid and inter-caste marriages among the Nepalese gradually became more acceptable. The rigid caste system followed by the Newars of Nepal also became almost non-existent in Sikkim. They now commonly call themselves as 'Pradhans' and inter-caste marriage is quite common among them.

It is observed that both the Buddhists and the Hindus pay equal reverence to each others religions. They take part in their religious ceremonies and functions freely. The practice of offering the sacred scarf (Khada) of the Bhutias has become common among all the communities residing in Sikkim. Thus, the Sikkimese society as found today has evolved through an unconscious socio-economic and cultural contact between the different groups amidst its historical and political developments.

POPULATION ZONE

From the foregoing discussion in Chapter IV, V and VI the spatio-temporal pattern of the demographic and socio-economic characteristics of the various parts of the State clearly emerges. In the present Chapter a synthesis of these traits are done to divide the State into different population zones. Among the demographic and socio-economic variables, density, literacy rate, tribal population and the occupational categories, i.e., primary, secondary and tertiary are taken into consideration so that the level of socio-economic development of an area could be found out. To examine the average standard condition of different variables, Z-

score⁺ values are calculated and then ranks are given to the Z-Score values. The average of Z-Score ranks shows the position of the zone in terms of demographic and socio-economic level of the sub-divisions of the State.

Table 8.1: Z - Score Values at the Sub-Divisional Level

| Sub-division | Density | Literacy | Tribal Population | OCCUPATION | | | Total |
|--------------|---------|----------|-------------------|------------|-----------|----------|-------|
| | | | | Primary | Secondary | Tertiary | |
| Chungthang | -1.12 | -0.54 | +1.65 | -1.92 | +2.40 | +0.68 | 1.42 |
| Mangan | -0.83 | +0.17 | +1.57 | +0.25 | -0.45 | +0.21 | -0.9 |
| Gangtok | +1.76 | +2.10 | +0.13 | -1.44 | 0.69 | +2.08 | 6.63 |
| Pakyong | +0.32 | +0.36 | -1.08 | +0.48 | -0.40 | -0.34 | -0.06 |
| Namchi | +1.34 | +0.69 | -0.97 | +0.30 | -0.25 | -0.19 | 1.59 |
| Ravong | -0.11 | -0.79 | -0.22 | +0.65 | -0.81 | -0.82 | -2.53 |
| Gyalshing | -0.41 | -0.93 | -0.42 | +0.75 | -0.55 | -0.69 | -2.58 |
| Soreng | -0.94 | -1.07 | -0.67 | +0.94 | -0.64 | -0.95 | -3.6 |

Source: Calculated from Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

Table 8.2: Z-Score Ranks at the Sub-Divisional Level

| Sub-division | Density | Literacy | Tribal Population | OCCUPATION | | | Rank of Z-Score values |
|--------------|---------|----------|-------------------|------------|-----------|----------|------------------------|
| | | | | Primary | Secondary | Tertiary | |
| Chungthang | 8 | 5 | 1 | 8 | 1 | 2 | 4 |
| Mangan | 6 | 4 | 2 | 6 | 5 | 3 | 4 |
| Gangtok | 1 | 1 | 3 | 7 | 2 | 1 | 2 |
| Pakyong | 3 | 3 | 8 | 4 | 4 | 5 | 3 |
| Namchi | 2 | 2 | 7 | 5 | 3 | 4 | 3 |
| Ravong | 4 | 6 | 4 | 3 | 8 | 7 | 5 |
| Gyalshing | 5 | 7 | 5 | 2 | 6 | 6 | 5 |
| Soreng | 7 | 8 | 6 | 1 | 7 | 8 | 6 |

⁺ $Z = \frac{x - \bar{x}}{\beta}$, Where x represents the variable, \bar{x} represents the mean of the variables
 β represents the Sd. deviations of the variable.

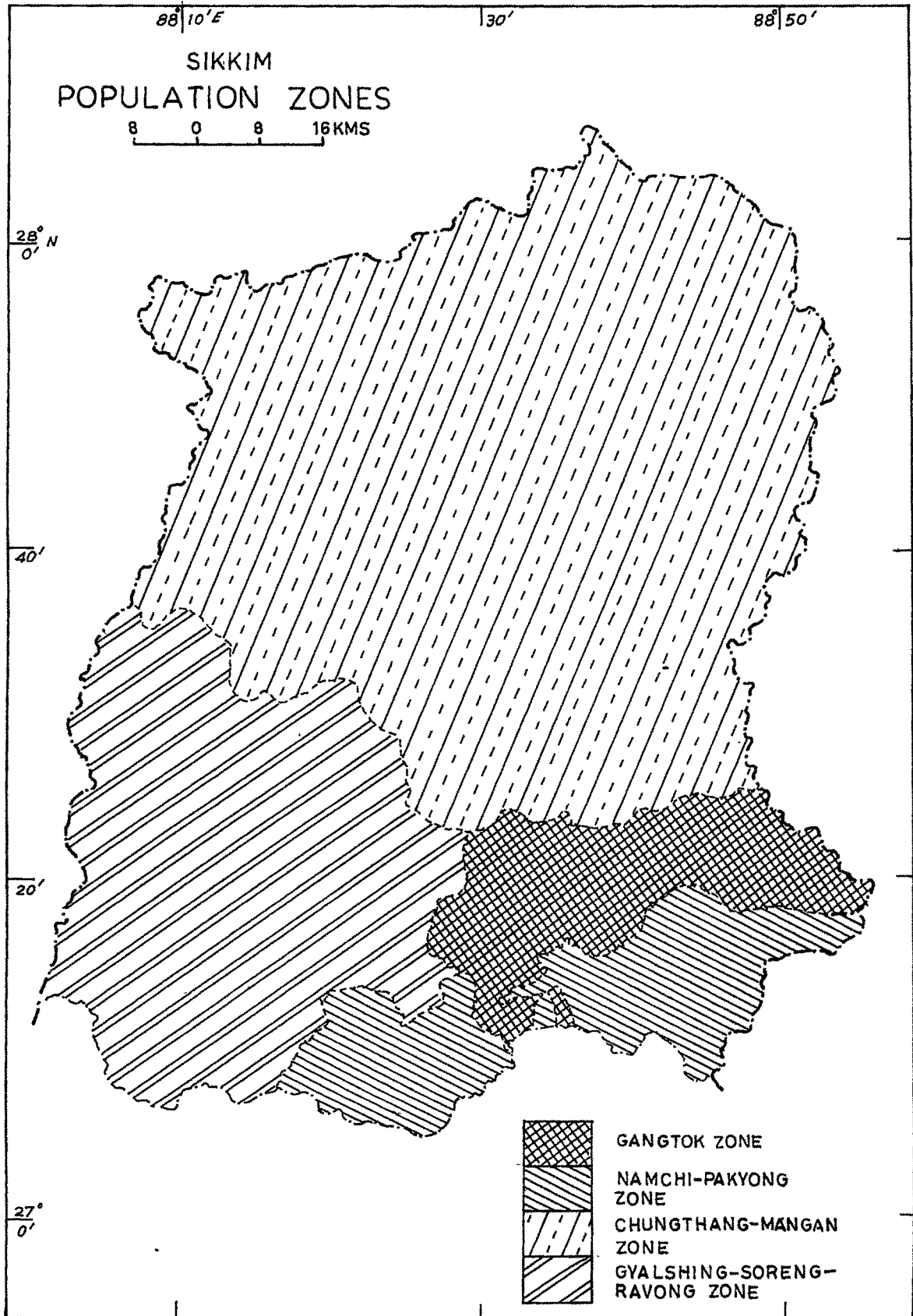


FIG.7.3

On this basis the sub-divisions have been grouped in four zones following an interval of 1 unit of rank. On this basis Gangtok sub-division occupies the top position, Namchi-Pakyong second position, Chungthang-Mangan third position and Ravong - Gyalshing - Soreng the fourth position. Thus, four population zones in the State have been identified:

- i) Gangtok Zone.
- ii) Namchi - Pakyong Zone.
- iii) Chungthang - Mangan Zone.
- iv) Ravong - Gyalshing- Soreng Zone.

Gangtok Zone

This zone covers whole of Gangtok sub-division of East district. It stretches from the Donkya range, bordering Tibet (China), and Bhutan in the East to South districts. The altitude of the zone varies from 300 metres to 3,800 metres. The general slope of the zone increases from West to East and South to North. The western part of the zone is dissected by the river Tista and some of its tributaries. The slopes of the southern and western part of this zone is gentle in nature and valleys are open. Hence, this part of Gangtok zone is more accessible than the other parts. The settlement of this zone is mostly concentrated in the river valleys of Tista and its tributaries, viz., Dikchu, Rongni chu and Rangpo chu. Gangtok, the capital of the State is located on the spur in the northern reach of the river Rongni chu. The eastern part of the zone has rugged terrain and snowclad mountains. This part is not suitable for habitation. For being close to the eastern border, large part of this zone is a restricted area. Hence, this side is mostly occupied by the army people and the animal rearers, belonging to, Bhutia, Sherpa communities and also a few Tibetan refugees. The southern and the western part of this zone is inhabited by the Nepalese. The northern and eastern highlands, and around the Buddhist monastries of this zone are inhabited by the Bhutias. People coming from other states of the country, the Tibetan refugees, and also people from the

neighbouring countries are concentrated in the urban areas and near the important monasteries. The southwestern part, i.e., Singtan-Rangpo belt is mostly occupied by the scheduled caste people (Nepali). On the whole, this zone is predominantly inhabited by the Nepalese. Due to lack of data it is difficult to tell the exact number of Nepalese, but approximately it is more than 70 per cent of the total rural population of the zone. Hence, the lingua-franca of this zone is Nepali.

The total population of the zone is 1,37,070 persons (male: 74,223 persons; female: 62,847 persons). With 8.43 per cent of the total area it supports 76.81 per cent of the total population. The total tribal population is 30,238 persons (male : 15,971 persons; female : 14,262 persons) constituting 22.06 per cent of the total population of the zone. The most distinctive point is that, this zone has the largest proportion of population and smallest percentage of the land in the State. As expected, arithmetic density of population is 229 persons per km², but its physiological density goes up to 647 persons. This clearly shows that there is a heavy pressure of population on its cultivated land. Agricultural density is 97 which also shows that the pressure of agricultural population on the limited cultivable land is high. The population of this zone is unevenly distributed over 87 revenue blocks (villages) and three urban centres. The size of the villages varies from medium to large. Out of the total, 41 revenue blocks have a class size of population of 500 to 900 persons and 21 revenue blocks (24.14 per cent) have 2,000-4,999 persons. Among the zones Gangtok has the largest size revenue blocks (2) with a class size of 5,000 to 9,999 persons. They are Central Pendam (5,809) and West Pendam (5,011). About 58 per cent of the total revenue block has more than 500 persons. The average inter-village distance is about 2.92 kms. Again, 23.25 per cent of the total population of the zone is urban. Among all the zones, it has highest proportion of urban population. With a population of 25,024 persons, Gangtok (1951) is the oldest and the most important town of the State. Its administrative and educational characteristics have intensely influenced the pattern of population characteristics as well as the socio-economic development of the zone.

The growth of population of the zone is 28.50 per cent during 1981-91, which is at par the State's average (28.47 per cent). High population growth is related to in-migration rather than natural increase. Here, maximum in-migration is noticed in the urban areas and in the surrounding rural areas. Sex ratio of the zone is found to be 846 per 1000 males (Appendix XV). Comparatively low sex ratio is indicative of male selective in-migration to the zone. Here, tribal sex ratio (893) is relatively higher than the general which shows that the in-migration of population is predominated by the non-tribal population.

The most distinctive feature of this zone is its high literacy rate (68.02 per cent, excluding 0-6 years). This zone has the highest percentage of literacy among the zones, which is higher than the State's average (56.94 per cent) in 1991. However, including 0-6 years age group, the literacy rate of the zone is 58.58 per cent in 1991 as against 43.78 per cent in 1981. Increase of literacy is mainly due to expansion of educational facilities to the remote areas and improvement of transport and communication facilities in this zone. Gangtok town is the base for higher and better education facilities in the State. Besides, in-migration of non-tribal literates to the zone also contributing in the progress of literacy rate in this zone. The first school of the State was established at Gangtok when it was the capital of Chogyal's Kingdom. Hence, some people of this zone had the privilege to have school education from the beginning of 20th Century. But maximum growth in literacy is observed only after the State had joined the main stream of development (in 1975). The male literacy rate is 52.77 per cent and the female is 32.13 per cent. This clearly indicates the existence of sex disparity in literacy in the zone.

The work participation rate (37.26 per cent) of this zone is the second lowest among the zones. The most distinguishing feature of this zone is its low female work participation rate (21.80 per cent) which is also the lowest among the zones. This shows that the socio-economic condition of the zone is much better than other zones. Enrolment of female child in the school is high. Here, large proportion of educated females is engaged in government services, schools and in other non-government establishments. The overall pattern of work participation

rate of both male and female of the zone is changing due to expansion of education facilities and people's awareness towards the importance of education for a better prospect. However, this zone has the lowest proportion of population engaged in primary occupation (42.12 per cent). Out of this 31 per cent are cultivators and 0.64 per cent are agricultural labourers. Again, proportion of workers engaged in tertiary sector is 37.14 per cent. Out of this 22.69 per cent is engaged in other services. This is mainly because of impact of urbanization, relatively high literacy rate, availability of higher education facilities, vocational training facilities and in-migration of educated workers. As industrial development of the zone is in infancy stage hence, only 20.75 per cent is engaged in secondary occupation. Out of this 12.26 per cent is occupied in construction work and only 1.01 per cent in household industries.

There are a number of government and private small scale industries which provides employment opportunities in this zone. According to the statistical profile of Sikkim published by Bureau of economics, there are 155 small scale industrial units registered with the department of industries, but out of that some of them have already closed down. Sikkim time corporation, Sikkim Jewels limited, tea corporation, fruit preservation are some of the small industries under public sector which are in operation. There is one LPG bottling plant (recently established), 3 distilleries (2 recently established) and other small industries located in the Singtam - Rangpo (industrial) belt of this zone. Besides that, there are also 3 hydel power stations in this zone. Because of presence of these industries, this zone has comparatively high proportion of workers engaged in secondary occupation.

In regard to the availability of social facilities, this zone is in a better position than the other three zones. If the education facilities are considered, it has 166 primary schools, 15 middle, 14 secondary and 5 higher secondary schools. Besides, there is one public school and numbers of private schools in this zone. For higher education it has one degree college, one law college and one Sheda (college). This area also has one pharmaceutical institute and a number of vocational training centres. Recently, one medical and engineering institute were started by the Manipal group of industrialists.

However, here almost all the revenue blocks have electricity and 77 blocks have supply of drinking water. The zone has 30 post offices. Most of the villages are connected by roads of different status. About 60.83 per cent of the rural population of this zone is served by pucca road. Here, proportion and frequency of passenger and goods carrying vehicles are satisfactory. Further, this zone is directly connected with Siliguri by National Highway 31(A). There are also two helipads in this area. On the whole, this zone have experienced socio-economic development much earlier than any other zones. It is observed that, most of the better socio-economic facilities are confined within the urban areas, particularly in Gangtok town. As a consequence, rate of in-migration from the rural areas of the State, as well as outside, led to over crowding in this urban area. Hence, a proper planning is absolutely necessary for the expansion of developmental activity, to other market centres and also to rural areas, so that an equal distribution of socio-economic facilities could be made possible to avoid over crowding in one place.

NAMCHI-PAKYONG ZONE

Stretching from Donkya range in the (Tibet-China) east to the Soreng sub-division of West district, this zone covers two sub-divisions, viz., Namchi and Pakyong of South and East districts respectively. Although these sub-divisions are separated by a part of Gangtok sub-division and river Tista but because of some similarities in socio-economic and demographic characteristics they are taken as one zone. The southern part of this zone is bordered by West Bengal and a part of Bhutan. However, the northern part is covered by Gangtok and Ravong sub-divisions of East and South districts respectively. The central and western part of this zone have comparatively open valleys and gentle slopes hence, these parts of the zone are most thickly populated. The altitude varies from 300 metres to 3,000 metres (approximately). This zone lies in the mid-Himalayan range of the State. The Eastern part of the zone receives higher rainfall than that of the West. Namchi Sub-division in the western part is considered as one of the driest parts of the State. Climate of the zone varies from sub-tropical hot humid to alpine type. This zone is predominantly inhabited by the Nepali people. The distinctive feature of this zone is that the western part, i.e., Namchi sub-division is predominantly

occupied by the Rai people (Kirati Nepali) and the eastern part by the Brahmins and Pradhans of Nepali group. The highland areas of the eastern part of this zone is inhabited by the Sikkimese Bhutias, Bhutias from Bhutan, Sherpas and the Gurungs. In the western part, the number of tribal people is very less. There are a few revenue blocks which have Lepcha people. For instance, Kanamtek revenue block (Namchi Sub-division) has more than 60 per cent Lepcha people. Besides, a small number of Tamangs, Mangars, Chettris, Sherpas, etc., also lives in this zone.

The total population of this zone is 1,04,909 (males : 55,128; female : 49,781). With 14.12 per cent of the total area, it supports 25.81 per cent of the total population. The most distinctive feature of population of this zone is its lowest proportion (6.23 of tribal population among the zones. The total tribal population is 6,541 (males : 3,327; females : 3,214). Except in the high altitudinal areas and around the monastries, this zone is predominantly inhabited by non-tribal Nepalese.

The population of this zone is unevenly distributed over 130 revenue blocks and 10 forest blocks. The size of the villages varies from medium to small. Out of the total villages 54.29 per cent (76 villages) have their population size between 500-1,999 persons and 29.29 per cent (41 villages) with 200-499 persons. The inter-village distance is 3.25 kms. in the east and gradually decreases towards the West (2.02 kms). It is mainly because of the rugged terrain in the eastern part of this zone. The average inter-village distance of the zone is 2.64 km. There are two urban centres in this zone, they are Namchi (district headquarters) and Jorethang, which are located in the southwestern corner of the zone. Towards the east there are three small market centres, viz., Pakyong (sub-division headquarters), Rhenok and Rongli towns. The latter two are the oldest centres and they were important since there was a trade route from Kalimpong (W.B.) to Chumbi valley through Jelep-la (Pas). After the closure of India and Tibet border (1962) the importance of these market centres have declined. For the people of the eastern part of this zone, Gangtok and Kalimpong (W.B.) are the nearest towns. However, Siliguri is the closest city of the zone. The total urban population is 2,569 persons (males :

1517; females : 1052) constituting 2.45 per cent of the State's total urban population (1991).

The arithmetic density of the zone is 154 persons per km². Density is comparatively high towards the west of the zone (196 persons/km²). It is mainly due to availability of agricultural land, development of urban centres, accessibility, etc. The physiological density is 289 which indicates a high pressure of population on the available habitable land. Again, agricultural density is 90 which shows that pressure of farming population over the agricultural land is high. From the above analysis it is clear that large proportion of people of this zone are dependent upon limited farm land. As mentioned earlier, the western part of this zone has comparatively less rainfall than the eastern part. Hence, in this part of the zone (Namchi Sub-division), people cultivate mainly pulses, vegetables and fruits. However, towards the east (Pakyong sub-division) paddy is cultivated, livestock keeping is a part and parcel of the farming economy of the people of this zone.

The growth rate of population is 29.16 per cent during 1981-91, which is the second highest in rank among the zones. High growth rate is attributed to both natural increase and in-migration of population to the zone. From different sources of information and observations it is found that fertility rate of the Nepali people is higher than any other ethnic groups of the State. The most distinctive feature of this zone is high sex ratio (903), which is found to be highest of all the zones. On the other hand, tribal sex ratio (966) is much higher than the general. This clearly indicates that male selective in-migration especially tribal to this zone is low.

The literacy rate of the zone is 56.90 per cent (male literacy : 65.6; female literacy : 47.08) excluding 0-6 years. The rate of literacy increases from 35.53 per cent in 1981 to 46.60 per cent in 1991 (including 0-6 years). This is mainly due to expansion of education facilities in this zone. However, the disparity between male and female literacy is still high in this zone.

The total working force is 42.5 per cent (male: 50.49; female: 38.64). Out of the total workforce 74.9 per cent are engaged in primary sector, 7.38 per cent in the secondary and 14.98 per cent in the tertiary sectors. It is observed that the

participation of female workers is higher than the males in the primary sector (male: 70 per cent; female : 83 per cent). This is mainly due to low female literacy rate in this zone. If the working categories are considered it is found that, largest proportion of population in the primary sector is cultivators (65 per cent) and only 8.35 per cent is agricultural labourers. On the other hand, in the secondary sector, large proportion of workers (11.56 per cent) is engaged in construction work. In the tertiary sector proportion of workers in the other services is 13.25 per cent. This shows that economically the zone is still backward in comparison to the Gangtok zone.

Regarding the availability of social facilities, this zone is slightly in a better position than the other, (except Gangtok zone). There are 216 primary, 60 middle, 13 secondary and 4 higher secondary schools in the zone. There is one degree college and one B.Ed. college in this zone. These colleges are located in the western part of the zone. People of the eastern part mostly attends the colleges located in Gangtok. Besides, there are a number of private schools in both eastern and western parts of the zone. In respect of medical facilities, this zone has 2 hospitals, 5 dispensaries and 17 public health centres. For better treatment people go to Siliguri. There are 34 post offices in this zone. Out of the total, 129 villages have drinking water facility and 118 villages have electricity. Further, 60 per cent of the total rural population is served by pucca road. There are 44 bus stops in this zone. A number of government buses and private jeeps ply every day.

It is worth mentioning that socio-economic development of the zone is clearly reflected in the changes in the living style, shifting of occupation, type of the house, etc., of the people of this zone. Impact of education on the social value and attitude is noticed in the revenue blocks located around the headquarters and the towns. The people of the eastern part of the zone was acquainted with education and a better culture due to its closeness to Kalimpong (W.B.). It is worth mentioning that, due to its nearness to the plains, presence of wide valleys and gentle slopes, this zone has a better scope for socio-economic development in future.

CHUNGTHANG-MANGAN ZONE

This zone covers both the sub-divisions of North district. It stretches from the Donkya range in the east, i.e., Tibetan border to the Singalila range in the west, i.e., Nepal border. The northern part is covered by the watershed of the river Tista, and the southern part by rest of the districts of the State. A large part of this zone is covered by thick forests and snowclad mountains. This zone is characterised by rugged terrain and harsh climate. Here, relief causes lots of hurdle in the accessibility. The height of the zone varies from 1200 metres to 5484 metres. Gradient of slope decreases from north to south. The central part is dissected by the river Tista and its tributaries. Most of the settlements of the zone are concentrated within the river valleys. Although the settlements is found up to 2,100 metres, but nucleus of settlement consisting of army and animal herders' camps are found up to 4,000 metres., which are temporary in nature. Due to steep slope and scarcity of habitable land settlement pattern of the villages are compact in nature in the northern part of this zone. On the others hand, it is dispersed in the southern part. The northern part of the zone is predominantly inhabited by the Bhutias and the southern part by the Lepchas. However, a good number of revenue blocks in the eastern Valley slopes of the river Tista in the southern part is inhabited by the Bhutias and, a small number of Limboos and Sherpas. On the basis of the voter's list (18 years and above) it is found that 42 per cent of the total population of the zone is Lepcha and 29 per cent Bhutias.

The total population of this zone is 31,240 persons (males : 17,090; female : 14,150) and the total area is 4,226 km². It is worth mentioning that, this zone with highest proportion of land area (59.55 per cent) has the smallest percentage (7.90) of population of the State. This is because only 9.23 per cent of the total area of the zone is habitable. The total tribal population is 17,301 persons (male : 9004; female : 8,297) which constitutes 55.38 per cent of the total population of the zone.

The population of this zone is scattered over 45 revenue blocks (villages) and 8 forest blocks. The size of the villages varies from medium to small. The

northern part, i.e., Chungthang sub-division has the largest proportion of small size villages with size class of population less than 200 persons. On the other hand, southern part, i.e., Mangan sub-division has the largest number of medium size villages (44 per cent) with size class of 500-1,999 persons. It is worth-noting that the largest size village of the State is located in the northern part of this zone (Lachen revenue block).

On the whole, it has the highest number of revenue blocks (39.62 per cent) with a size class of 500-1,999 persons and lowest number of large size revenue blocks (3.78 per cent) with a population of 2,000-4,999 persons among the zones. The inter-village distance is 5.21 kms. in the southern part and abruptly increases towards the north (27.55 km). High inter-village distance is one of the cause of slow socio-economic development of the zone. The total urban population is 2.57 per cent (803 persons), because there is only one urban centre at Mangan. Here, sparseness of population is related to rugged terrain, inaccessibility, scarcity of agricultural land, innerline policy to restrict the movement of the people, etc.

The arithmetic density of population is extremely low (7 persons per km²). Physiological density is 150 persons per km² and agricultural density is 42 persons per km². - these indicate that pressure of population on the available agricultural land is relatively low. It is mainly because of multifarious economy by the people of especially northern part.

This zone has experienced a low rate of population growth (18.09 per cent) during 1981-91 as against 103.28 per cent in 1971-81. Decline in the growth rate is due to the stagnation in job and other opportunities. In-migration of population is solely responsible for the growth of population in this zone. Contribution of natural increase is negligible. About 41.42 per cent of the total population of the zone is found to be in-migrants (1991).

The overall sex ratio is 827 females per 1000 males, which is the lowest among the zones. Tribal sex ratio is 921. Like the other zones here, also male selective in-migration of non-tribals to the zone is high.

The literacy rate is 53.54 per cent (male literacy : 63.05; female literacy : 41.60). Development of literacy in this zone is mainly because of establishment of the first school in this zone (Lachen R.B.) in the beginning of this century and later, expansion of primary schools in the remote villages. This is an indication of social awakenings of the people towards education. However, disparity between male and female literacy is quite high. This is attributable to the type of occupation practised by the people of the northern part of the zone (Chungthang S.D.) Varied type of occupations, viz., animal rearing, trading, agriculture to a small extent, household industries and household works, all these require engagement of a large number of females. As a consequence, female literacy rate is lagging behind the male literacy despite having no restriction in female education among these Bhutias. Secondly, migration of educated males to the zone is responsible for such disparity. It is worth noting that literacy rate is high among the Lepchas living in the southern part of this zone than the Bhutias of the northern part. Sex disparity in literacy is also found to be relatively less. It is because here, sedentary agriculture is the mainstay of the people. Besides that, closeness of the area to Gangtok town and comparatively low rate of in-migration of educated males to this part of the zone are some of the important causes.

Another distinguishing feature of the zone is its high work participation rate, i.e., 44.13 per cent (male : 53.86; female : 32.38), which is the highest among all the zones. Out of the total workforce 62.79 per cent are engaged in primary sector, 14.28 per cent in secondary and 25.77 per cent in tertiary sectors. It is observed that in the secondary and the tertiary sectors, this zone ranks second next to Gangtok zone. High proportion of workforce in the secondary sector is mainly caused by engagement of large number of workers (12 per cent) in the construction work and in the household industries (1.17 per cent). Similarly, in the tertiary sector large proportion of workers are engaged in other services (13.25 per cent). It is found that participation of female workers in the primary (68.14 per cent) and secondary (12.37 per cent) sectors are found to be higher than the males (primary sector : 50.35 per cent; secondary sector : 6.16 per cent). On the other hand, it is low in the tertiary sector. This is mainly due to low literacy rate of the females. In the northern part of this zone, agriculture is done at a very small

scale. In the higher altitudinal areas barley, buck wheat, millet and vegetables like potato for seed, turnip and radish are cultivated. In the lower altitude cardamom, maize, wheat, millet and vegetables are grown. In the lower valley slopes paddy is also cultivated.

During the last two decades though the region witnessed development of many social facilities, but because of remote location, inaccessibility and nature of occupation of the people in certain areas, viz., Dzongu (the Lepcha reserve) of Mangan sub-division and, Lachen and Lachung of Chungthang sub-division - this zone is still socio-economically backward in comparison to other zones. Almost all the revenue blocks of this zone have primary schools. There are 80 primary schools, 20 middle schools, 6 secondary and 1 higher secondary schools. For college education students go to either Gangtok or Namchi towns. Regarding medical facilities, it has 6 public health centres. There is no hospital in this zone. Nearest hospital is at Gangtok. There are 12 post offices. Although drinking water and electricity is provided to almost all the villages but supply is irregular. There are a few micro hydal project for the supply of electricity. 65.18 per cent of the total rural population of the zone is served by pucca road. Here, roads are maintained by the border road organization (BRO). There are 31 bus stops. Frequency of movement of the buses and jeeps are less in this zone. People of the remote areas, in the higher altitude, especially near the border, use army vehicle for transportation.

Thus, Chungthang-Mangan zone can be considered as a distinct population zone because of its sparse population, clan territorial occupance of certain groups, mixed economy, low population growth, scarcity of agricultural land, inner line policies, high participation rate of females in the secondary and the tertiary sectors and lack of adequate socio-economic facilities.

Ravong - Gyalshing - Soreng Zone

This zone includes three sub-divisions, viz., Ravong of South district and Gyalshing and Soreng of West district. The northern part is covered by Mangan sub-division (North district). In the east and the south lie, the Gangtok sub-division

of East district and Namchi sub-division of South district respectively. In the extreme West is the snow clad Singalila range which stretches from north to south. On the west of this range is Nepal. This zone stretches from the high Himalayan zone in the northwest to middle Himalayan zone. Obviously, the gradient of the zone increases from east and south towards west and north. The altitude varies from 300 metres to 5,484 metres (approximately). Kanchenjunga peak is the highest point of this zone. A number of important peaks of the state are located in the western part of this zone. The ruggedness of the topography increases towards the west. The river Rangit and its tributaries have dissected the zone from northwest towards south. The climate varies from sub-tropical humid to Arctic types. The temperature varies with the height. Rainfall is relatively high towards northern and western parts.

The total area is 1593 km² covering 155 revenue blocks and 14 forest blocks of the State. Total population is 1,33,238 persons (males : 69986; females : 63252). It is found that with 22.45 per cent of the total area of the State it constitutes 32.78 per cent of the total population (1991). This zone has the second highest numbers of population in the State. It is observed that only 56 per cent of the total area of this zone is habitable. Tribal population constitutes 21.20 per cent (male : 21.10 per cent; female : 19.26 per cent) ranking second among all. Like the other zones, here also, most of the tribal people are concentrated in the high altitudinal areas and around the monasteries. Gyalshing sub-division with all these characteristics has the highest proportion of tribal population in the zone. On the whole, Nepalese are the predominant inhabitant of the zone. As stated earlier, different sub-groups of Nepalese predominate the different parts of this zone. Among the tribes proportion of Lepchas are relatively less here. However, there are some religious spots in the west for instance, Khechoperi lake (Gyalshing sub-division), where a few Lepcha settlements are noticed. Some of them are also found in the northern part of the zone.

The arithmetic density of population is 84 persons per km². It is found to be higher in the east than in the western part. The physiological density is 109 persons per km²., which indicates a high pressure of population on the available

habitable land. However, among the zones it has the lowest. On the other hand, agricultural density is 300 persons per km². which is the highest among the zones. This clearly indicates that large proportion of people are dependent on the limited agricultural land. Rugged terrain and steep slopes are the main causes of small size of the landholdings. It is interesting to note that agricultural density is found to be higher towards south (Soreng sub-division). The main crops grown here are maize, millet, wheat and a number of vegetables, etc. Potato is grown in large scale in the southwestern part. In the lower slopes of the valley, paddy is cultivated. Cardamom is grown mostly in the damp western slopes. Livestock is a part of farming which supplements their income.

The settlements are sparsely distributed over the zone. The size of the villages varies from medium to small. It is found that 60.47 per cent of the total revenue blocks of this zone has population ranging between 500-1999 persons. Only 4.19 per cent blocks (villages) has large number of population (2,000-4,999 persons). About 26 per cent of the blocks has population ranging between 200-499 persons. The inter village distance is 2.71 kms. in the south (Soreng sub-division), which gradually increases from 3.35 to 3.96 kms. towards north and west respectively. On the whole, the inter-village distance of the zone is 3.34 kms. This is one of the hurdle of socio-economic development of the area.

There are two urban centres, they are, Gyalshing (also a district headquarters) and Nayabazar. The latter is located in the southeastern corner of the Soreng sub-division near Jorethang town. Besides, a number of market centre, viz., Ravong, Rimbi, Sombaria, etc., are found here. Most of these markets are collection centres of cardamom, potato, ginger, orange, etc. Among all Rimbi is the oldest market centre located on the bank of the river Rangit near the boundary between South and West districts. The total urban population of the zone is 1,762 persons (male : 1001; female : 761) constituting 1.30 per cent of the total of the State.

The most distinctive point is that this zone has the highest growth of population (30.58 per cent) among the zones. The growth rate is comparatively

higher in the southern part (Soreng Sub-division) than in other parts. As mentioned earlier, Nepalese, the predominant inhabitant of the zone has relatively high fertility rate than the other groups. Hence, here, high growth rate is related to both high natural growth and in-migration. This zone has the same proportion of sex ratio (903 females per 1000 males) like zone II. Sex ratio is found to be higher in those parts of the zone where in-migration is relatively low.

In respect of the literate persons it is seen that 46 per cent of the total population is literate (male literate : 55 per cent; female literate : 36 per cent), excluding below 7 years. Gyalshing sub-division of this zone has large proportion of literates and Soreng sub-division has the lowest. In this zone Limboos are found to be socio-economically backward than the other groups. Among all this zone has the lowest proportion of literates in the State. During the last decade (1981-1991) literacy rate has increased from 25 per cent to 37 per cent. It is worth mentioning that here sex disparity in literacy is the highest among the zones.

In regards to workers it is found that 43.49 per cent of the total population are workers. Out of the total, 85 per cent are engaged in primary sector, 4.76 per cent in secondary and 9.96 per cent in tertiary sectors. This clearly indicates that a large proportion of population live below poverty level. It is worth noting that this zone has the largest proportion of workers in the primary sector. Here, work participation rate of the females in the primary sector is found to be highest (92 per cent), which is indicative of the socio-economic backwardness. In the primary sector 76.36 per cent are cultivator and only 0.83 per cent are agricultural labourers. People engaged in household industry is negligible (0.83 per cent). The proportion of workers in the other services is also low (7.36 per cent), showing a deficiency of educated and skilled people in this zone.

Regarding the social facilities, there are 304 primary, 68 middle and 20 high schools. For college education students go to Gangtok or Namchi towns and also to West Bengal. This zone has a number of private schools too. Here, there are 2 hospitals, 6 dispensaries and 22 public health centres. For better treatment people go to Gangtok or Siliguri. Total number of post offices are 44. Although a large

number of revenue blocks have drinking water facilities, but supply is found to be very uncertain. More than 90 per cent of the revenue blocks have electricity. About 64 per cent of the total rural population is served by pucca road. There are 73 bus stops in this zone (1991). The number of buses and jeeps and, the frequency of movement gradually decreases, as expected, toward the higher altitude.

Slow economic development of this zone is directly related to the physical factor, social backwardness and poor economic condition of the people. But there is an exception in case of the southern part (Soreng sub-division) of this zone. This part, despite having comparatively gentle slope, better location, i.e., closeness to the Bengal plain, accessibility is found to be socio-economically relatively backward, than the rest.

Summary Statement

From the foregoing discussion, it is apparent that each population zone has distinct demographic and socio-economic characteristics. When considered the demographic aspects, it is seen that Gangtok zone, with an area of 8.43 per cent of the State's total, has the highest concentration of population (77 per cent) in the State. Tribal population constitutes 22 per cent of the total population of the zone. The arithmetic density is found to be quite high (229 persons/km²). Relatively high physiological density (647) in this zone shows a high pressure of population on its available agricultural land. Here, population growth and sex ratio are directly related more to in-migration, than natural growth. This zone is predominantly inhabited by the Nepalese next to which comes the Bhutias and the Lepchas. As expected, the urban areas have a mixed type of population. A good number of tribal people including Tibetan refugees is found in Gangtok town. Among the four zones, this with three urban centres also has the highest percentage of urban population (23.25).

The IInd zone, i.e., Namchi-Pakyong zone has 26 per cent of the population, which is almost double the proportion of its available land (Area : 14.12 per cent). Hence, pressure of population on the available land here is also high. (Appendix XV). In this zone population growth is affected by both natural increase and in-

migration . The most distinctive feature of this zone is that it has the lowest proportion of tribal people (6.23 per cent) in the State. Their concentration decreases towards western part. The predominant population of the zone is the Nepalese. The western part is inhabited by the Rais (Nepali) and the eastern part by the Brahmans and Pradhans (Nepali). Here, urbanization is still in the infancy (urban population : 2.45 per cent).

From the analysis it is observed that the demographic pattern of the IIIrd zone is somewhat different from those of other zones. This zone covers the largest proportion of the areas of the State (60 per cent) accommodating the smallest percentage of population (8 per cent) It is worth mentioning that 55 per cent of the total population of the zone is tribal belonging to Lepcha and Bhutia tribes. Among all this zone has the lowest growth of population (18 per cent). It is mainly due to migration of population as natural increase is less here. The pressure of population on the available land has not yet reached the optimum point. Urbanization is found to be very slow.

The IVth zone has an area of 22.45 per cent of the total, constituting 33 per cent of the total population of the State. Tribal people constitute 21.20 per cent of the total population of the zone. They are mostly concentrated in the northern and a small number in the south-western highlands of this zone. Here, population growth is the maximum (31 per cent) among the zones, which is mainly related to natural growth and to a less extent to in-migration. Because of high agricultural density (300), pressure of population on the available land is very high. It is worth mentioning that this zone has the lowest proportion of urban population (1.30 per cent), showing a very slow growth of urbanization.

In respect of social and economic characteristics, it is observed that 1st zone has the largest proportion of literates; (68 per cent) on the other hand, IVth zone has the lowest (46 per cent). Despite the expansion of primary education in the IVth zone, low percentage of literates is chiefly due to socio-economic backwardness of the people.

As regards work participation rate, it is found that the IIIrd zone has the highest proportion of workers (44.13 per cent) and Ist zone the lowest (37.26 per cent) in the State. The high work participation rate in the IIIrd zone is mainly due to physical constraint prevalent in this zone and the practice of mixed economy which requires a good number of workers. On the contrary, enrolment of a large number of children in the school is the main cause of low work participation rate in zone I. When the occupational categories are considered it is found that, among all the zones, IVth zone has the maximum workers in the primary sector (85 per cent). Next to it comes the IInd zone with 75 per cent. It is worth noting that zone I has the lowest proportion of workers in the primary sector (42 per cent).

As expected, the number of workers engaged in the secondary sector is very less in the entire State. It is found that zone I has the highest percentage of workers (20.75) in this sector, next to which comes the IIIrd zone with 14.28 per cent. The lowest proportion of workers in this sector is found in zone IV (4.76 per cent). Relatively high proportion of workers in the secondary sector in zone I is due to the establishment of certain medium and small scale industries in Gangtok - Singtam-Rangpo belt. But in the III zone, considerably high percentage of workers in the secondary sector is for the fact that some people are found to be engaged in household industries, such as weaving, painting thankas, wood curving, etc.

In the tertiary sector, Zone I, obviously has the highest proportion of workers (37.14 per cent), next to which comes zone III with 25.77 per cent. The lowest number of workers in this sector is found in zone IV (9.96). In the case of zone I, high percentage of workers in this sector is due to generation of employment opportunity in the capital town Gangtok, especially after the merger of the State with the mainstream. In this respect urbanisation has played an important role. In both zone I and zone III, engagement of a good number of workers in other services, such as white collar job has contributed high participation of workers in the tertiary sector.

If the divisions of the occupational categories are considered, it is found that in the primary sector, IVth zone has the largest proportion of cultivators (76 per

cent) and IIIrd zone has the highest percentage of agricultural labourers (10.70 per cent). Existing proportion of workers in the secondary sector in the Ist and IIIrd zones, as mentioned earlier, is mainly due to high proportion of workers in the construction work. Zone I has the highest percentage of workers (23) in construction work next to which comes the IIIrd zone (13.24). In other services Gangtok zone, i.e., zone I has the highest with 23 per cent.

The above discussion clearly shows the position of the zones in regard to their demographic and socio-economic characteristics. It is found that zone IV is the most backward one in respect of socio-economic development. Therefore, while planning and formulating policies for socio-economic development of different areas of this state, priority should be given to the problems of this zone. However, zone III also needs special attention in respect of development of transport and communication network. The backward communication system in this zone is because of rugged terrain, innerline policy and its strategic location near the border. To reduce the growing pressure of population in the urban areas of zone I especially in Gangtok town, decentralization of the socio-economic facilities are urgently required. On the other hand, the growing pressure of population on the available agricultural land in zone II is leading to out-migration of literate and educated people from the rural areas to the urban areas especially Gangtok town. To avoid this, development of small scale and medium scale industries are highly necessary in this zone.

It is observed that, the physiographic condition of the areas covered by the four zones is highly conducive to further development of the age old occupational tradition of animal rearing and cultivation of horticultural crops. This, on one hand, will ensure better economic gains to the people, while on the other, it will reduce the pressure of population on the limited land available for crop cultivation. Hence, development of animal husbandry along with horticulture in all the four zones would be the best possible economic activity for the people of the State.

It is worth noting, however, that the State Sikkim as a whole is one of the backward States of the country in so far as its socio-economic development is

concerned. Therefore, the State requires special attention for speedy socio-economic development, especially of the areas like Gyalshing, Soreng, Ravong, under zone IV and Chungthang, Mangan under zone III. Specifically better socio-economic facilities should be made available to the rural areas for proper utilization of potential resources and to maintain a balance between the growing population and available resources in all parts of the zones. In regard to demographic attributes it is worth recording that the State is facing the problem of in-migration of people from outside the State in large number over the last few decades. As a result of this, pressure of population is increasing on its available resources, socio-economic facilities, employment opportunities, etc. Therefore, necessary steps should be taken to check heavy in-migration of people from outside the State.

CHAPTER - IX

SUMMARY AND CONCLUSION

The present work, as dealt with in the previous chapters, is concerned with the geographical analysis of the demographic and socio-economic characteristics of Sikkim. The study area is a tiny land-locked mountainous State inhabited by different ethnic groups exhibiting a distinct physical and socio-economic characteristics of its own. The demographic profile of the State has undergone a sea-change after its merger with the Indian Union in 1975. A detailed examination of the demographic, social and economic characteristics of the State is but a pre-requisite for micro level planning for the socio-economic upliftment of its populace. The present work is primarily aimed at examining the spatio-temporal pattern of the various attributes to obtain an indepth knowledge on the causes and consequences of such pattern in the State. The variables taken for study are: - population distribution, density, growth, migration, age-sex composition and some socio-economic variables like working force, literacy and educational level, religion, language and dialect. Towards the end certain measures for socio-economic development of the region are suggested on the basis of the findings of the study.

Chapter I include the research problem, significance of the study, its objectives and the methodology applied in the study. In Chapter II, a review of the relevant literature in this line is done in order to obtain guidelines and basis for the present study. It may be pertinent to mention here that an indepth analysis of the problems at times has not reached the expected level due to unavailability of the required data.

For a comprehensive understanding of the geographic personality of the State, the historical background, geo-physical setting, economical setting and the peopling of the area are highlighted in chapter III.

The history of Sikkim, in true sense, commenced with the consecration of Phuntshog Namgyal as the Chogyal (king) of Sikkim by the Bhutias. With the migration of a large number of Bhutias from Tibet and increase of their influence in the local affairs, necessity of a ruler seemed to have arisen in order to establish their domain in Sikkim. The Namgyal dynasty ruled over the Himalayan kingdom for long 332 years. During the early eighteenth century, Sikkim faced several invasions by the Gorkhas of Nepal from the west and the south and by the Bhutanese from the east. These invasions paved way for the settlement of some of the intruders in Sikkim. The arrival of British and their gradual intervention in the affairs of the kingdom finally opened doors for the mass migration from the neighbouring countries, particularly from Nepal to it as cultivators, labourers as well as miners, etc. After the independence of India from the British rule, Sikkim continued to remain as a protectorate of India. During this period, in-migration of people from other parts of the country was not much, but the main migration took place from around the mid-seventies to early eighties when Sikkim became the 22nd State of Indian union. The State has undergone tremendous demographic and socio-economic changes during the last one hundred years. At present, the population of the State comprises three major ethnic groups, viz., the Lepchas, considered to be the autochthons of Sikkim, the Bhutias and the Nepalese (Gorkhalis, Kiratis, and Newars). Besides, a good number of Tibetan refugees, Bhutanese and people from different parts of the country as well as from the neighbouring countries reside in the State. With regard to socio-economic development, the pace was very slow during the pre-merger period, but after 1975, i.e., during the post-merger period, remarkable changes in this respect have been noticed. Politically too, Sikkim has passed over to democratic system of Government from autocracy.

Chapter III deals with the historical, physical and economic setting, peopling of the area and their influences on the demographic and socio-economic characteristics of its people. The State lies in the inner mountain ranges of Eastern Himalayas. The topography of Sikkim is almost same as any other young mountain terrain featured with high mountain peaks, gorges, sharp crests, ridges, narrow valleys, passes, lakes, etc. The region has no open valleys or plains. The

altitude of the region increases abruptly from the North Bengal Plains up to 5,000 metres within a short distance. Numerous seasonal and perennial rivers and their tributaries dissect the region. The river Tista divides the region into two unequal parts. The central basin is the catchment area of the river Tista and its affluents. The settlement of people is found to be mostly concentrated within the river valleys. Despite its small size, the State has extremely varied types of climate ranging from sub-tropical to Alpine type. The vegetation cover also varies from tropical forests to Alpine meadows that support different species of plants and animals. Different varieties of orchids and medicinal plants grow abundantly in these forests. The region has, similarly, varied types of soils, mostly derived from sedimentary and metamorphic rocks, which are loose in structure, thin and light in texture and mostly mixed with gravels.

Economically Sikkim is a very backward state and like any other North-Eastern hilly states it has also been sustaining an economic environment which is yet to be free from the primitive elements. The physical resource base on which the development of the region depends is rather limited. The economy of the State is agrarian, and rugged topography and poor soil conditions sets limitations in the agricultural development. It is found that only 9.46 per cent (1990-91) of the total area is under cultivation on which more than 66 per cent of the work force of the State are directly engaged. The average size of the landholdings is 2.11 hectares. Like other North-Eastern states, low per capita land and low productivity are characteristic features of the agricultural economy of the State. The land tenure system of the past as well as that of present has an important bearing on the agricultural practice and productivity of land. In general, people follow individual landholding system, but in selective pockets like Lachen and Lachung revenue blocks where agricultural land is scarce, communitarian ownership of land is found to be firmly established. It is observed that the crops and the methods of cultivating them have undergone changes in the last 100 years. The agricultural experts are of the opinion that Sikkim has immense potential for the development of horticulture. It is found that animal husbandry has played a crucial role on the rural economy of the State since past. It is an integral part of the farming economy. The cattle population of the State is estimated to be 3.5 lakhs, which includes

cows, goats, sheep and yaks. The cattle provide major share of income to the people of the northern high lands in the Chungthang block.

Although Sikkim possesses a fairly wide variety of mineral resources, they are not found to be economically viable for exploitation. Needless to say, the State is one of the most backward industrially. Although a good number of industrial units are found to have been registered under the medium and small sectors, a very few of them are found in operation. It is observed that the State has tremendous potential for waterpower generation. It provides all the suitable conditions for hydel power development. It is, however, found that till 1996-97 the State has been able to produce a meagre 33.10 MW of electricity which is far short of its present need.

Chapter IV deals with the demographic aspects, such as distribution, density, growth and migration of population of the State at sub-division level. From the analysis it is found that the population of Sikkim is sparsely populated and unevenly distributed. The present distribution pattern is the result of a combined effect of physical, socio-cultural and political factors. The altitudewise distribution of population reveals that mid-altitudinal zone, i.e., between 600 to 1,800 metres, with 31.30 per cent of the total area, has the highest concentration of population (74.40 per cent) in the State. More than 70 per cent of the villages, majority of the towns and market centres are located in this belt. This indicates that the distribution of population here is influenced by conducive physical conditions chiefly, the favourable climatic conditions and availability of cultivable land. The lower altitudinal zone (below 600 metre) with 8.85 per cent of the total area supports 20.55 per cent of the total population. Despite having unsuitable climate for habitation and occurrence of diseases like Malaria, Influenza, etc., a few commercial towns have grown on the bank of the rivers Tista and Rangit. The high latitudinal zone (above 1,800 metre) covers 59.85 per cent of the total area and shares only 5.05 per cent of the total population. Here, habitation is concentrated within 2,100 metres. Above this height settlement is semi-permanent to temporary. This is because of physiographic conditions and other factors like clan territorial occupance and imposition of restriction on the free movement of people because

of the presence of international borders. Religion is also one of the determinants of population concentration. The ethnic groupwise distribution of population is related with the socio-economic pattern of each group. Besides, historical and political factors are seen to have played a crucial role. It is observed that Nepali farmers are concentrated in the gentle slope of the southern districts (East, South and West districts). On the other hand, the animal rearers, like Bhutias of Lachen and Lachung revenue blocks, the Sherpas, the Gurungs, etc., occupy the highland areas and the Lepcha farmers and food gatherers reside within the middle slopes of the river valleys of Dzongu area of Mangan Sub-division. It is found that while tribal people are concentrated in the remote areas of the high altitudinal zone, the non-tribals are found near the urban areas, mines, in the industrial belts and areas where agricultural land is available. The Mangan and Chungthang sub-divisions of North district (55 per cent), Gangtok (East district), Ravong (South district) and Gyalshing (West district) sub-divisions (22 per cent to 29 per cent) have large number of tribal people.

When the population distribution in the rural and urban areas is considered, it is found that the Gangtok town has the largest proportion of urban people (67.62 per cent) in the State. Among the sub-divisions, Gangtok with three urban centres has the highest percentage of urban population (86.13 per cent). Majority of the urban areas are located in the southern slope of the State. Out of the total population of the State, 90.9 per cent are rural. Out of this the largest proportion (62 per cent) lives in the medium size villages (500 to 1,999 persons). There are very few large size villages with the population above 2,000 persons (7.16 per cent). They are mostly concentrated in Gangtok sub-division. It is found that 70 per cent of the total population of South and West districts lives in the medium size villages and 96.62 per cent population of the North district lives in small size villages (less than 200 persons). However, in the East district more than 45 per cent people live in big size villages. The inter-village distances vary from 2 km. to 27 km. (Table 4.9). Here, inter-village distances are closely related to the physical conditions of the area. From the analysis it is obtained that sub-divisions located in the southern slopes of the State have less inter-village distances; hence, they are

in a more advantageous position in respect of socio-economic development than the sub-divisions of the northern highlands.

The population density of the State is 57 persons per km². The sub-divisions located in the northern and western highlands of the State have very low density of population (2 - 58 persons per km²). The sub-divisions located near the southern boundary like Namchi, Soreng and Pakyong have medium population density (115 - 200 persons per km²). Gangtok sub-division is found to have the highest density with 229 persons per km². Those revenue blocks, which were a part of Gangtok urban area until 1981, have exceptionally high density of population. They are Arithang (13,413), Upper Tadong (7,748), Upper Tathangchen (5,177), Upper Burtuk (3,413), Upper Sichey Gaon (2,940) and Chandmari (1,229). When the actual man-land ratio in terms of physiological and agricultural density of population is considered, it is found that Sikkim ranks third lowest after Mizoram and Nagaland. The Gangtok sub-division (647) has the maximum pressure of population on the available agricultural land and Chungthang sub-division (137) has the lowest. Among the North-Eastern states Sikkim ranks third in respect of agricultural density (91). The type of occupation practised by the people determines this density. Agricultural density is the lowest in the Chungthang sub-division where people practise multifarious economy, a combination of animal rearing, farming, trading, weaving, etc. On the other hand, it is high in the southern slope where agriculture is the mainstay of the people. The high physiological and agricultural density in the State is indicative of high pressure of population on the available agricultural land, with highly inevitable consequences like soil erosion and associated natural calamities. On the whole, this creates serious environmental problems jeopardising the natural habitat of the State.

From the trend of population growth it is revealed that in the first half of this century the growth pattern (Table 4.16) was very sluggish. In the second half the population growth had an increasing trend. In a period of 90 years (1901-1991) of the population history of Sikkim, maximum growth of population is noticed during 1981 (50.77 per cent), which was double the growth rate of the country (25 per

cent) as a whole. This clearly indicates that the maximum in-migration of the people from outside took place after Sikkim became the 22nd State of the Indian Union in 1975. On the whole, the State witnessed a very high growth rate registering a growth index of 234.47 per cent, which was higher than the country's growth index (165.58 per cent). This clearly reflects that immigration and in-migration from the different parts of the country and to a large extent from across the borders have been a common feature in Sikkim. This has been, therefore, the most important factor responsible for the change in the demographic scenario of the State after 1975. Natural increase of population is a continuous process; its impact on the population growth of the State is perceptible mainly after the immigration of the Nepalese who are considered to be the most fertile among all the groups. Since 1981 to 1989 natural growth rate of population of the State was almost constant (20 to 23 per cent), after which a declining trend was noticed. This clearly tells that people are becoming more conscious about their living standards, which gets reflected in people's tendency to shift their occupation from primary to secondary sectors. Development of the transport and communication, exposures to new ideas, increasing educational facilities, etc. are responsible for it. During the last decade (1981-91) growth rate of population among the non-tribals (30 per cent) is found to be higher than the tribals (23.47 per cent). It is observed that Sikkim has the lowest growth of tribal population among the North-Eastern states. The West district has the maximum growth of tribal population (28 per cent) in the State. There are some exceptions where maximum growth of tribal population is noticed in some of the revenue blocks. They are predominantly inhabited by the Bhutias and located near the urban centres or monasteries. Lowest growth rate of tribal population is noticed in the revenue blocks of the North district with the exception of Chungthang block. In 1971-81, growth of urban population was the highest (159 per cent) which could be attributed to mainly in-migration of population to the urban centres of the State. But the negative growth rate (-27 per cent) during the last decade (1981-91) is mainly due to the reduction of the boundaries of Gangtok, Singtam, Namchi, Jorethang and Gyalshing towns. A study of the rural population growth reveals that the East district has the highest growth (53 per cent) and the North district the lowest (18 per cent) in 1981-91. It is found that the growth of rural population in all the sub-divisions of the southern

slope (East, South and West districts), except Gangtok are uniform (28 to 29 per cent) because they have some common characteristics. In the North district, Chungthang Sub-division has a high growth of rural population (47.75 per cent) due to in-migration of population to the newly created sub-divisional headquarters at Chungthang. Lowest growth of rural population in Mangan sub-division is mainly related to out-migration of agricultural labourers. Among the ethnic groups the Nepalese have the highest growth of population (30 per cent), next to it comes the Lepchas (28 per cent) and the Bhutias (20 per cent) during 1981-91. On the whole in-migration, besides natural growth, is solely responsible for the present demographic scenario of the State.

From the available records, it is found that in-migration of population to this region dates back to early 15th century. The intensity of migration increased after the arrival of the British in the State. Mass in-migration took place mainly after the merger of the State (1971-81), that is to the extent of about 15.56 per cent of the then total population of the State. But in 1991 a decline in the trend of in-migration (8.96 per cent) to the region is noticed, which is indicative of slow economic development of the State. It is found that the State receives maximum in-migrants from the neighbouring state of West Bengal (51.08 per cent) followed by Bihar (20.60 per cent) and Uttar Pradesh (7.34 per cent). Among the in-migrants, the majority are Nepalese from West Bengal. As regard immigrants, maximum of them come to the State from the neighbouring Nepal (85.69 per cent). The Majority of these migrants are concentrated in the East district and the Mangan sub-division of North district. The in-migration affects the demographic pattern of the State in two ways. Firstly, it affects the population growth of the region, and secondly, male selective in-migration substantially reduces the overall sex ratio thereby increasing the sex disparity in literacy and work participation. It also leads to increase in the number of people in the working age group. Among the four districts, the East district receives the highest proportion of in-migrants (56.30 per cent) and the West districts the lowest (11.20 per cent). Within the State also the East district receives the highest number of in-migrants (39.10 per cent) from the different parts of the State. Seasonal migration is a regular phenomenon among the Bhutias of Chungthang sub-division of North districts. This system of migration

acts as a hurdle in the overall socio-economic development of the people of the place. The inter district and seasonal migration, however, do not seem to be having impact on the growth of population of the State as a whole.

Chapter V is devoted to analyse the attributes of population composition, such as age, sex and marital status of the people at different temporal and spatial levels. The sex ratio is found to be strikingly low in the State (878) in comparison to the North-Eastern states and the country as a whole (927). The tribal sex ratio is found to be higher (914) than that of the non-tribals (868). The indigenous tribes like the Lepchas and the Bhutias have 944 and 918 females per 1000 males respectively. The sex ratio in different age groups reveals that the sex ratio in the lower age groups, i.e., 0 to 4 years (964) and 5 to 9 years (1,000), are more than the working age group, i.e., 15 to 59 years (610). This shows that the male selective in-migration of working population from outside the State is high. An increase of sex ratio in the high age group (60+ years) shows the nature of out-migration of males after the retirement from services. For the above reason, i.e., the male-selective in-migration, the urban sex ratio is relatively lower (750) than its rural counterpart (892). Among the towns, Naya Bazar in West district has the highest sex ratio (866) and Mangan in the North district has the lowest (581) (Table 5.4). Rural sex ratio is found to be the highest in the West district and the lowest in the North district. Among the sub-divisions Soreng has the highest (928) and Chungthang the lowest (782). High sex ratio is indicative of the presence of non-tribal agrarian population and low sex ratio due to in-migration of skilled and educated people. Gangtok sub-division is an exception where low rural sex ratio is related to conversion of some parts of the peripheral areas of the three urban centres into the rural areas (1991). Since 1901 Sikkim has a deficiency of females, which seems to have gone down further after 1971 (Table 5.7).

The age structure of the State indicates that like all the underdeveloped areas, Sikkim also has a relatively high fertility rate and consequently a rapid growth of population. The broad base of the age-sex pyramid with tapering top indicates high percentage of children (12.65 per cent) below the age of 5 years. Old people (60+ years) constitute only 4.61 per cent of the population. The

juvenile population (0 to 14 years) forms 39.71 per cent of the total population. These two groups are considered as dependent population, hence, forming a dependency burden of 80 per cent in 1991. Dependency ratio is higher in the rural area (82) than in the urban areas (56). West district has the highest dependency ratio (86) and East district has the lowest (74).

From the analysis of the marital composition it is revealed that the proportion of married females (40.38 per cent) is more than the males (36.69 per cent). Here, early marriage (below 15 years) is not uncommon, and also the practice of child marriage has not yet completely died down. Large numbers of married males and females are indicative of prevalence of remarriage and polygamy. Presence of large number of widows (53 per cent) than widowers is related to age difference between husbands and wives at the time of marriage. Divorce is permissible with social approval but it is not frequent.

Chapter VI deals with the economic and social characteristics of the study area. In the beginning of the chapter the pattern of work participation and occupational structure among the people of the State are presented. It is found that 41.51 per cent of the total population of the region are workers. The work participation rate among the scheduled tribes is 40.45 per cent and that of scheduled caste is 39 per cent. Although 40 to 45 per cent of the total work force is main workers but that neither indicates availability of large opportunities for job nor an excessive pressure on manpower in the State. High participation rate is mainly due to physical as well as socio-economic factors. Engagement of school going children (below 15 years) and old people above 60 years in different sectors is another cause of high participation rate. At sub-division level Soreng (West district) has the highest percentage of workers (47) and Gangtok (East district) has the lowest (37.26). The work participation of females in the State is higher (30.4 per cent) than certain states of North-Eastern India like Assam (21.29 per cent) and Tripura (14.31 per cent). The female participation rate is higher among the scheduled tribes (31.56 per cent) than the scheduled castes (26.80 per cent). Economic status of the women in the State is better than many states of the

country. At sub-division level, Soreng has the largest proportion of female workers (41 per cent) and Gangtok has the lowest.

In regard to occupational categories the State has a good number of workers in the primary sector (68.40 per cent). This is more so in Soreng sub-division of West district, where size of land holdings is small, female work participation rate is high and economic condition of the people is poor. Chungthang and Gangtok have very low proportion of workers in this sector. It is mainly due to the practice of mixed economy in case of former and urbanisation in case of latter. Among the primary workers, a good number are cultivators and only a small proportion is agricultural labourers. It is found that proportion of cultivators is high in those sub-divisions where Rais and Limboos of Nepali sub-groups are the predominant population. High concentration of agricultural labourer is noticed in Mangan sub-division where people mostly depend on Nepalese labourers for cultivation of crops. North district has the largest number of workers engaged in the livestock rearing, plantation, orchards, etc.

In contrast to the above, proportions of workers in the secondary and tertiary sectors are remarkably low. Areas with a good number of small and medium scale industries, engagement of workers in household industries and different type of construction works have relatively large number of workers in secondary sector. Gangtok and Chungthang sub-divisions are the best examples. Gangtok sub-division with three urban centres and the capital at Gangtok has a good number of workers in the tertiary sector.

As is generally the case, the proportion of tribal workers is more in the primary sector and on the contrary, non-tribals are found to be more in the secondary and tertiary sectors. It is observed that participation of females in the primary sector is exceptionally higher than in the secondary and tertiary sectors. Participation of large proportion of females is noticed in those areas where agriculture is the mainstay of the people. Apart from that poverty, low female literacy, etc., are also some of the important causes. Economic status of women is found to be fairly good in areas where mixed economy is practised. In such areas,

enrolment of female students is higher and a good number of them are engaged in tertiary sector, thereby, displaying overall better economic condition of the people. Chungthang and Gangtok sub-divisions are good examples in that regard.

With a literacy rate of 56.94 per cent Sikkim ranks 19th among the states and the Union territories of the country. It is observed that those areas with a good number of urban populations having different cultural background, better accessibility and socio-economic facilities have a relatively higher literacy rate. Again, areas with farm based economy, large number of agrarian population, and physiological constraints like rugged terrain have low literacy rate. Low literacy rate is also noticed in the high altitudinal zones inhabited by tribal people, mostly the Bhutias. The scheduled tribe people of the State are found to be more literates (59 per cent) than the scheduled caste (51.03 per cent). Sub-divisions located around Gangtok town are found to have medium literacy.

The temporal pattern of literacy of the State reveals that the growth of literacy was very slow in the pre-merger period (before 1975) than the post-merger period. Poverty and socio-economic backwardness of the people, inadequate educational facilities for the common people, priority to monastic education by the feudal rulers were some of the important causes of low literacy. On the contrary, rapid growth of literacy in the post merger period is mainly due to expansion of primary schools, free education policy of the Government, mid-day meal to the primary students, encouragement to female education, establishment of private schools, development of transport and communication facilities, etc.

From the age break up of literacy rate it is obtained that literacy rate is high in the lower age group (7 to 9 years) and highest (80 per cent) between 10 to 14 years. It is also high in the age group of 15 to 19 years and 20 to 24 years, showing growing interest of the people towards education. An analysis of the educational level reveals that although the proportion of literates is high in the primary level, but at higher level there is a deficiency. This clearly indicates that the State still faces shortage of educated and skilled people. Among the three ethnic groups, the Nepalese are educationally more advanced than the Bhutias

and the Lepchas. Despite the progress in literacy, there exists sex disparity in literacy. A study at sub-division level reveals that in the North district the Bhutias have higher sex disparity than the Lepchas. Another distinctive feature is that areas with high sex ratio have low disparity in literacy. The sub-divisions predominantly inhabited by the Nepalese have relatively low sex disparity in literacy.

When religious composition is considered, it is found that two third of the population of the State profess Hinduism (68.3 per cent) which includes mostly the Nepalese and the non-tribal in-migrants. Next comes Buddhism, mainly followed by the Bhutias, Lepchas, Sherpas and some Nepali sub groups, viz., Tamangs, Gurungs, etc. Christianity is the third important religion mostly followed by the Lepchas, Rais and people from different communities. The followers of Sikhism and Jainism and Islam religions are very small. It is observed that the northern half of the State has mostly Buddhist population and the southern slope, the Hindus. Highest concentration of Christians is noticed in Namchi and Gangtok sub-divisions. It is interesting to note that highest growth of population is noticed among the Christians (+91 per cent) during 1981-91.

The three major languages spoken by the people of Sikkim are Lepcha, Bhutia, both being Tibeto-Burman language, and Nepali, an Indo-Aryan language. The majority of the people speak Nepali (63 per cent). Hence, in course of time, it has become a sort of lingua franca in the State. Speakers of Bhutia language constitute 8.02 per cent and Lepcha, 7.34 per cent. The Nepali speaking people are found to be mostly concentrated in the southern slopes, while Bhutias and Lepcha speaking are concentrated in the northern highlands as well as the highlands of East, South and West districts. As expected, speakers of Limboo language are largely confined within West district (72 per cent). Although, Bhutia, Lepcha and Nepali languages are recognised as official languages, English is traditionally used as official language. The plainsmen as well as most of the people of the State including the tribal Lepchas and Bhutias speak Hindi.

In Chapter VII an empirical study of the population pattern at micro level, i.e., revenue block level has been done to obtain a further insight into the demographic and socio-economic condition of the people. From the study, it is revealed that the influence of physical environment is reflected in the distribution pattern of different groups, their house types and use of building materials, agricultural practices, availability of social facilities, degree of development of transport and communication facilities and pace of socio-economic transformation. In respect of certain demographic attributes, the surveyed blocks exhibit similar characteristics. For instance, predominance of large proportions of young population, almost same percentage of literates in the primary level, engagement of large number of workers in the primary sector, etc. are common to all the revenue blocks. However, they also have difference in many respects. Villages predominantly inhabited by the Bhutias are located at a relatively higher altitude than those by the Lepchas and the Nepalese. The structure, design and the building materials used by the people for the construction of houses in the four villages are undergoing transformation, but in Lachen and Gnon-Samdong blocks majority of the houses are still of traditional type. While the Bhutias use wood and tree barks, the Lepchas and the Nepalese use bamboo, wood and thatch for the construction of houses. This clearly reflects varying relationship between ecological environment and habitat in different parts of the region depending upon the availability of building materials from immediate surroundings. Significant difference is also noticed in regards to agricultural practice. The people of Nazitam and Lower Fumbong practise subsistence economy. The Lepchas of Gnon-Samdong block, during the last few decades have changed their occupation from hunting, food gathering, shifting cultivation to sedentary cultivation. At present, people of these three villages grow crops like paddy, pulses, wheat, millet, etc. Besides, they grow commercial crops like ginger, orange and cardamom. In Gnon-Samdong, large areas are found to be under cardamom cultivation. In all these villages, keeping livestock is a part and parcel of their farming economy. It is interesting to note that the people of Lachen practise a mixed type of economy, which is a combination of pastoralism, farming supplemented by trading, weaving, etc. Practice of multifarious economy by these people is noticed mainly after the closure of the northeastern border in 1962. Thus the type of occupation followed

by these people is not only controlled by the physical environment in which they inhabit, but also by the political situation, exposure to better agricultural techniques, etc.

In respect of tribal population, it is found that more than 82 per cent of the total population of Lachen is tribal, next to it comes Gnon-Samdong with 70 per cent. Nazitam is predominantly inhabited by the non-tribal Nepalese (72 per cent). The most striking point is that Lower Fumbong does not have any tribal population. It is predominated by the Limboos (Nepalese), who have but mostly tribal characteristics.

As regards the growth of population, Nazitam has the highest growth rate, which is mainly due to easy excess to medical facility, in-migration of people caused by marriage, relatively better standard of living of the people, etc. On the other hand, lowest growth rate in the Lachen block is accountable to low in-migration to the village, presence of polyandrous system of marriage, limited excess to better medical facility due to remote location, etc. The most distinguishing feature is that Gnon-Samdong has negative growth rate (-16 per cent). Despite a high annual natural growth rate negative growth rate is caused by out-migration of agricultural labourers (Nepalese) from the village. All the surveyed villages have a deficiency of females over males. However, Nazitam and Gnon-Samnog have more number of females than the other two. Presence of large proportion of children in Gnon-Samdong village leads to high dependency burden (90); on the contrary, low proportion of children in Lachen block resulted to low dependency burden (66).

Among the surveyed villages, exceptionally lowest proportion of workers is found in Gnon-Samdong village. It is mainly due to engagement of large number of seasonal labourers for the cultivation of crops and secondly, enrolment of large number of children in schools. In Lower Fumbong village female labourers outnumber their male counterparts. When occupational categories are considered, it is found that 73 per cent to 90 per cent of the total population of each village is engaged in primary sector. A good number of workers of Lachen are engaged in

secondary sector, on the other hand, more than 26 per cent of workers of Gnon-Samdong are engaged in tertiary sector. It is observed that in the primary sector female workers outnumber the male.

The proportion of literates is found to be the highest in Gnon-Samdong village (68 per cent). Here, high literacy rate is related to the low work participation rate of the people. The percentage of literacy is the lowest (46.15) in Lachen. It is mainly due to practice of multifarious economy, practice of seasonal migration, remote location, low excess to better social facilities, etc. Female literacy is found to be the lowest in Lachen block, which is creating a wide disparity in male and female literacy. The social facilities like schools, health centres, drinking water, electricity, transport and communication, post office, etc. are found to be present in all the villages or close to the villages, but easy excess to better social facilities are seen only in case of Nazitam block with a better communication link to nearby Gangtok town.

The different ethnic groups of Sikkim, viz., the Lepchas, the Bhutias and the Nepalese are found to be concentrated in different altitudinal zones according to the suitability to their mode of living. Three ethnic zones are identified taking the habitable revenue blocks into consideration. The Upper Himalayan Bhutia zone covers the cool and dry highland areas with an altitude varying from 1,500 to 3,800 metres. The majority of the population (90 per cent) of the northern part of this zone are the Bhutias and the Lepchas. The most distinguishing feature of this zone is that in the far north two groups of Bhutias, viz., the Lachenpas and the Lachungpas live independently in Lachen and Lachung revenue blocks in Chungthang sub-division. They follow clan territorial occupancy system, as stated earlier. In the southern part, the Bhutias live together with the Nepalese and the Lepchas. The exclusive majority of Bhutias in the northern part of the zone is primarily due to the preferred physical conditions suitable to their mode of living as well as the Government policy imposing restrictions on outsiders to settle in this zone. The Bhutias of this zone speak the language of Sino-Tibetan origin. They also speak Nepali and Hindi. With 19.29 per cent of total area, this zone shares

11.93 per cent population of the State. The tribal population constitutes about 39.37 per cent of the total population of this zone.

The central Himalayan Lepcha zone mostly covers the valley slopes of the left bank of the river Tista. More than half of this zone is covered by Dzongu, the Lepcha reserve area. Because of the remote location, the area lacks proper infrastructural facilities like transport and communication. The average height of this zone is 1,500 metres. This zone is characterised by steep slopes with scattered settlements in small to medium sized villages around the agricultural lands. The people of this zone speak Lepcha, but Nepali and Hindi languages are also used to communicate with the outsiders. The total area of this zone is 193 km² (11.36 per cent) and the total population is 15,041 persons (4.02 per cent). The tribals constitute about 50 per cent of the total population of this zone. The Lepchas are the predominant population and the rest are floating population, who are either Government service holders or agricultural labourers.

Southern Himalayan Nepali zone covers the southern slope of the State. This zone is the largest one covering an area of 1,147 km², which is 9.35 per cent of the total area. It has also the highest number of population of 3,10,537 persons (84 per cent of the total). The most distinctive feature of this zone is the low proportion of tribal population accounting to 18.28 per cent of the total population. This zone is dissected by the river Tista and its tributaries. The valleys are comparatively broad and flat with moderate slopes. The settlements are mostly concentrated in the areas within 300 to 2,000 metres. The size of the villages is mostly medium. This zone is predominantly inhabited by the Nepalese with concentration of Limboos in the western part, Rais in the central part and Brahmins, Chettris and Pradhans (Newars) in the eastern part. Other sub-groups of the Nepalese are found scattered throughout the zone. In respect of social traits, it is observed that the Bhutias are the followers of Lamaist Buddhism. Some of them also adhere to their indigenous religious practices. The role of the monastery and the Lama is of utmost importance in the socio-religious lives of the Bhutias. Their religion also allows the females to become nuns. The important festivals of the Bhutias are Losoong, Sagadawa, Pang-Lhabso, Lhabab-Deuchen,

etc. They cremate their dead bodies and have a somewhat strange practice of keeping the dead bodies from 2 to 49 days depending on the status of the family of the deceased. In the Bhutia society three forms of marriages are prevalent, viz., monogamy, polygamy and polyandry. The Bhutias at present mostly follow monogamy, which is due to the modern influences and cultural contacts with other groups. The Bhutias generally marry at late age. The groom's party has to offer bride price at the time of negotiation of the marriage. Divorce is permissible with the approval of the society and re-marriage is not uncommon. The traditional food and the type of dresses of the Bhutias are of Tibetan origin. Their occupation varies from farming in the southern part to multifarious type of economy, as stated earlier.

The Lepchas follow Buddhism in combination with shamanism. As in the case of the Bhutias, the monastery and the Lamas play equally important role in the Lepcha society. Their most important festival is Namsoong (Bhutias Losoong), Tedong-Hlo-Rum-Fat, etc. They also observe other Sikkimese Bhutia festivals with equal reverence and jest. Their socio-cultural lives are deeply influenced by the Bhutia culture since the latter have been converted into Buddhism by the Bhutias from Tibet. The method of disposal of dead bodies of the Lepchas is same as that of the Bhutias. Traditionally, the Lepchas used to throw the dead bodies in the river, bury or cremate them as per the nature of death and advice rendered by their priests, Bongthing. As regards the Lepcha marriage, traditionally they practise community endogamy and clan exogamy, but the popularly accepted form at present is monogamy. Like the Bhutias, the Lepchas also offer bride price. Customary laws regulate the divorce. Re-marriage is permissible among the Lepchas. As the Lepchas were originally hunter-food gatherers, their food consists of varieties of wild vegetables and fruits. Their staple food is rice; however, they also take barley, wheat, etc. Like the Bhutias the Lepchas are also mostly non-vegetarian and they prefer pork and beef. They have their own traditional dresses for both men and women.

The population in the Nepalese zone are by and large farmers. The majority of the Nepalese are Hindus, while the rest are either Buddhists or Christians. The

important festivals of the Hindus are the Dasain (Dussehra), Tihar (Dewali) and Maghe (Magh) Sankranti. One interesting feature about the religious festivals is that except for orthodox rituals, all the sub-groups including the Buddhist Nepalese celebrate them. The Hindus normally cremate their dead bodies but some of the sub-groups like Rais, etc. also follow the burial method. They mostly follow exogamy at the clan level and endogamy at community level in marriage. The age at marriage of the Nepalese is relatively lower than other groups. Monogamy is the most common form of marriage practised by them, although a few stray incidents of polygamy are also noticed. The practice of dowry is not common among the Nepalese. Divorce is not common and except among orthodox Brahmins; remarriage is permissible. The staple diet of the Nepalese consists of rice, pulses and vegetables. Like the Lepchas the Nepalese also eat fermented and preserved vegetables like kinema (fermented Soya bean), gundruk (dried mustard leaves), sinki (dried radish), etc. The Nepalese have their own traditional dresses but they mostly wear modern Indian dresses like pants, shirts, saris and salwar kameez.

Although the three ethnic groups are concentrated in separate zones with the rapid political and socio-economic changes, particularly after the merger of the State in India, the ethnic concentration is being somewhat loose. The customs and traditions of different groups are being influenced by each other and in that respect the influence of Bhutia culture on the Lepchas is found to be quite significant. This is mainly because of the religious affinity of these two groups. The influence of the people from the plains on the three ethnic groups cannot also be undermined. In some areas like Dzongu, a Lepcha zone, and in the Lachen and Lachung blocks the external influences have been less because of their remote location and adherence by their people to traditional life style.

A synthesis of the demographic and socio-economic characteristics is done in Chapter VIII to divide the State into separate population zones. On the basis of the variables like density, literacy rate, tribal composition of population and occupational categories, the sub-divisions are grouped into four population zones. The Gangtok zone has the highest concentration of population in the State. It is predominantly inhabited by the Nepalese group. Tribal population constitutes 22

per cent of the total population of the zone. Besides high arithmetic density (229), it has a relatively high physiographic density (647) indicating high pressure of population on its available agricultural land. Population growth and sex ratio are related more to in-migration than natural growth. Among all the zones, it has the highest proportion of urban population (23.25 per cent). This zone has the lowest proportion of workers (37.26 per cent) out of which 42 per cent are engaged in the primary sector. Among the four zones it has the highest percentage of workers engaged in both secondary (21) and tertiary (37) sectors. Gangtok zone also has relatively large proportion of literates (68) in the State. In respect of availability of social facilities too this zone enjoys a better position.

The Namchi-Pakyong zone with 14.12 per cent of the total area has 26 per cent of the total population of the State. It has the distinction of having very low proportion of tribal population (6.23 per cent). The overall density is 154 persons per km². Physiological (289 persons per km²) and agricultural (90 persons per km²) densities are also high. The pressure of population on the available agricultural land here is not as high as in the first zone. Both natural increase and in-migration affect growth of population. The zone is predominantly inhabited by the Nepalese. The western part of the zone is inhabited by the Rai sub-group and the eastern part by the Brahmins and Pradhans. Urbanisation is found to be slow here with urban population constituting only 2.45 per cent of the total population. Working population constitutes 42.49 per cent of the total population. 75 per cent of the total workers are engaged in the primary sector, out of which 65 per cent are cultivators. Due to very slow industrialisation, proportion of workers in secondary sector is comparatively low. With the social transformation, the workers in the tertiary sector are gradually increasing. This zone has a literacy rate of 56.9 per cent which is at par with the State's average of 57 per cent. In terms of social facilities, this zone shows a better position than those in zone III and zone IV.

The third zone, i.e., Chungthang-Mangan zone has a different demographic pattern. With 60 per cent of the total area, it shares only 8 per cent of the total population of the State. The tribal population constitutes 55 per cent, which is the highest amongst the four zones. The northern half of the zone is inhabited by the

Bhutias and the southern half by the Lepchas. Here the population growth is found to be the lowest (18 per cent). Here the growth rate is more affected by the migration of population rather than by the natural increase. The sex ratio is affected by male selective in-migration. The density of population in this zone is very low (7 person per km²). The pressure of population on the available land is not high as physiological density is 150 and agricultural density is only 42. Urbanisation process is very slow here because of its remote location, closeness to international borders, hostile terrain and consequently slow development of transport and communication, and also for restriction on the movement of people from outside. The work participation rate is 44 per cent. Out of the total population, 63 per cent are engaged in the primary sector. The proportion of cultivators is only 23 per cent, which indicates that farming is not the main occupation of the people of this zone. The proportion of workers in the secondary (14.28 per cent) and tertiary (26 per cent) sectors are quite high. This is mainly due to engagement of a good number of workers in various activities like household industries, construction work, business, etc. The literacy rate (54 per cent) is indicative of the social awareness of the people towards education. However, for the people of this zone access to better social facilities is difficult because of its remote location and poor transport and communication facility.

The zone IV has an area of 22.45 per cent with 33 per cent of the total population of the State. Out of the total population of the zone, 21.20 per cent are tribals. A large proportion of the population is concentrated in the northern highlands of this zone. It has a remarkably high growth of population (31 per cent) because of both natural increase and in-migration. Among the four zones, this has the highest agricultural density (300). Here, the pressure of population on the available agricultural land is very high, which is mainly because of scarcity of agricultural land, small size of landholdings, etc. Because of slow urbanisation, the urban population constitutes only 1.3 per cent of the population of this zone. The literacy rate in this zone is low (46 per cent), which is indicative of social and economic backwardness of the people of this zone. Proportion of workers is expectedly high (43.48 per cent). More than 85 per cent of the workers are engaged in primary occupations, out of which 76.36 per cent are cultivators. Low

percentage of workers in the secondary and tertiary sectors speak of the socio-economic backwardness of the people of this zone. As regards to availability of social facilities, a good number of villages in this zone still lack basic amenity because of remote location, inaccessibility, etc.

The major conclusions drawn out of the work are put as follows: -

1. No simple relationship between the population concentration and the relief is found to exist in Sikkim. Here, distribution of population has been the result of cause and effect relationship between permissive and restrictive factors of physical environment on the one hand, and social and political factors on the other. Unsuitable climate for habitation, occurrence of diseases like Malaria, Influenza, etc., in the lower altitudinal zone and inaccessibility, prevalence of inner line policy restriction in free movement, especially in the north and the eastern border in the higher altitudinal zone are some of the prevailing conditions, which explain the above phenomena;
2. The distribution of ethnic groups in different specified areas is found to have associated with apart from socio-economic conditions, historical and political factors. It is evident in the concentration of Lepchas in the central parts, which were once wide spread throughout the State but driven out by the Bhutia immigrants from the north and the Nepalese from the south. The restriction of Nepali settlement in the North made by the Bhutia rulers, and the extension of the then kingdom's boundary towards west lead to the concentration of Nepalese in the southern parts and the dominance of the Lepchas and the Bhutias in the northern highlands;
3. A north-south divide is distinct in the State with the northern part characterised by rugged hilly terrain and high inaccessibility, the southern part by relatively less rugged areas, higher accessibility, more habitable and agricultural land, and presence of a number of urban centres. This divide broadly conforms to the tribal and non-tribal occupation of the areas, i.e., the north belonging to the tribes and the south mostly to the non-tribals;

4. The low density of population of the State (57 persons/km²) is somewhat a misnomer when the actual picture of man-land ratio in terms of physiological (332 persons/km²) and agricultural density (91 persons/km²) is taken into account. As a matter of fact, the pressure of population on the limited arable land is quite high. To exemplify, Gangtok sub-division has the highest physiological density (647 persons/km²), and the districts located in the southern slope, where agriculture is the mainstay of the people, have significantly high agricultural density (102 persons/km²);
5. The population growth in the State has been quite rapid during the last few decades, particularly after the merger of the State with India. Apart from high natural increase, a large proportion of migration from the neighbouring states of the country is found to have contributed to the high growth. If the present trend of population growth continues, the State with its limited physical resources including agricultural land will certainly face serious socio-economic consequences in the near future;
6. Age-sex selective in-migration of people from outside is seen to have cast a great impact on the State's demographic pattern, particularly in the lowering of sex ratio and the remarkable increase in the working age group population. Seasonal migration based on pastoralism is also affecting the socio-economic development of the people, especially in areas like, Lachen and Lachung revenue blocks of Chungthang sub-division because of the unsettled nature of the habitation of the people in such areas;
7. The age structure of the population of the State forms a typical pyramid, similar to that of most areas of the developing countries. Here, a large proportion of children below 14 years (39.7 per cent) and a good number of old people above 60 years (4.61 per cent) are creating a high dependency burden (80 per cent) on the working age group of population;
8. Work participation rate in the State is found to be higher (41.51 per cent) than the country's average of 37.68 per cent. It's high work participation rate in the State, however, does not indicate a high level of economic

development of it or better economic condition of its people, as a large proportion of them is engaged in the primary sector (68.40 per cent). Slow economic development combined with limited employment opportunity and infrastructural facilities are found to be principal factors behind small number of workers in the secondary and the tertiary sectors. Occasional shifting of workers from primary to secondary and tertiary sectors is also found to be taking place at a snail's pace;

9. The heavy dependence on subsistence agriculture is found to be the primary cause of low level of economic development of the State, with a large proportion of people living even below poverty line. The situation is more conspicuous in the southern districts, where agriculture is the main source of livelihood of the people and the number of females exceeds even over the males in the agricultural works. However, the practice of diverse economy based on pastoralism, farming, trading, weaving, etc., and with the cultivation of cardamom in the northern part of the State, i.e., Chungthang sub-division, and farming and cultivation of commercial crops like cardamom in Mangan sub-division are bringing positive changes in the economic condition of the people in these areas;
10. The level of literacy in the State is yet low (57 per cent) ranking 19th among the states and the Union territories of the country. The progress of literacy during the post-merger period has however, been quite significant with an increase of 57 per cent in 1991 from 18 per cent in 1971. Disparity in literacy between male and females is quite high and it is more so in the areas like Chungthang, Gyalshing and Mangan sub-divisions occupied mostly by the sub-groups of Bhutias, Lepchas and Limboos. The disparity in educational level between males and females is also quite marked in the State;
11. In terms of religious groups the northern [part of the State is predominated by the Buddhists and the southern part by the Hindus. People belonging to other religions like Sikhism, Jainism and Islam are mainly concentrated in

the urban areas, market centres, etc., though their number is small. The most striking point noticeable among the different religious groups is the very high growth rate of population among the Christians during the recent period (91 per cent during 1981-91);

12. The Nepalese constitute the largest linguistic group in the State (63 per cent) and Nepali language has emerged as the lingua-franca in it. The exclusive domains of Bhutias, Lepchas, Limboos, however, continue to exist in their respective territorial units;
13. Distinct ethnic zones are found to exist in the State with Bhutias occupying the northern part and other highland areas, Lepchas the central part and the Nepalese the southern part of the State. However, ethnic concentration is gradually breaking down with the change in the political and economic scenario in the State. Cultural influence of one group over the other is also being quite marked, with however, Lepchas having been more influenced by the Bhutia culture than the Nepalese;
14. Population zone in terms of socio-economic development level is traceable in the State. Gangtok sub-division (Gangtok zone) with the capital of the State, besides two urban centres; location of more commercial and industrial establishments, and infrastructural facilities is relatively advanced compared to the other zones. The areas comprising south and southeastern, i.e., Namchi-Pakyong zone stand next to the above in terms of development level. The northern areas under Chungthang and Mangan sub-divisions (Chungthang-Mangan zone) predominantly inhabited by the Bhutias and the Lepchas are marked by inaccessible terrain, although people are somewhat economically better off due to their practice of diverse economic activities including the cultivation of commercial crop cardamom. The Limboo and the Rai dominated areas under Gyalshing, Soreng and Ravong sub-divisions (Gyalshing-Soreng-Ravong zone) are the socio-economically most backward ones among the four zones. These population

zones, although arbitrary in nature, are likely to bear significance for development planning.

It may, however, be mentioned here that, in view of inaccessibility of most of the areas of the State and non-availability of relevant data at the desired level leaves further scope for improvement of the present work in a number of directions. Intensive works on various social groups and also at micro-spatial unit levels will certainly provide further insight into the problem. In any case, the present work as an exploratory one from geographic perspective is expected to have significant academic value and practical significance.

In the light of the observations made in the foregoing, certain suggestions which may have bearing towards the improvement of socio-economic conditions of the people of Sikkim are put below:

1. In view of increasing pressure of population in the middle altitudinal zone, i.e., a large part of the southern districts, generation of economic opportunities in the higher and lower altitudinal zones is urgently necessary. There is ample scope for the development of agro-based and forest-based industries, milk processing and manufacturing of milk based product industry, other industries like, weaving of woollen products, etc., in the high altitudinal zones. Similarly, in the lower altitudinal zone, agriculture and forest based industries like fruit preservation, distilleries, drug industry, saw mill, plywood industry, paper making industry, etc., will flourish. certain industries in this line have already been started in this zone. In all the zones there is abundant water power resources for the development of hydel electric power projects. Simultaneously, steps should also be taken to motivate a rural people of a middle altitudinal zone so that they come to focus to cultivate horticulture crops in a large scale, increase plantation of commercial crops like cardamom, tea, different spices, etc., and rearing of livestock, such as beef cattle, milch cattle, goat, pig and poultry to supplement their income and reduce the pressure on the limited cultivable land. Besides, infrastructural facilities should be made available to the

people of this zone for starting small scale cottage industries, like handmade paper making, artisen, wood curving, metal work, bamboo work, carpentry, etc.,

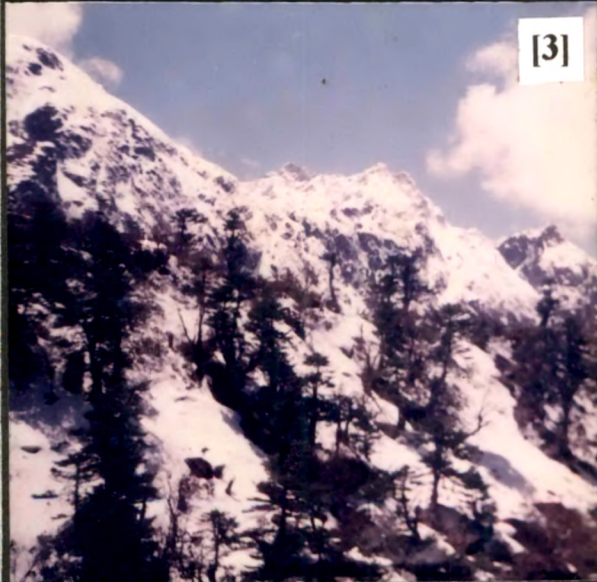
2. High concentration of population in Gangtok, the State's capital and the only big urban centre, is leading to overcrowding in its limited available land which gentle slopes suitable for human settlement and also high pressure of population on its available social facilities. To reduce further concentration of population, immediate steps should be taken to develop the other small urban centres and potential market centres of the State with provision of all necessary urban facilities.
3. The proportion of educated, trained and skilled persons is yet very low in the State. Expansion of educational facilities including provision for vocational training and technical institutes is highly necessary to mitigate the shortage of such personnel. Therefore, urgent steps should be taken to redress the problem of shortage of educated and skilled personnel in the State. It is necessary not only for improvement of State's human resources but also to prevent migration of persons from other parts of the country.
4. Transport and communication deserves top priority while making development plant, because it is the greatest constraints in the socio-economic development of an underdeveloped and strategically sensitive State like Sikkim.
5. Females are the main workforce of the society in the State. Hence, special attention should be given for their upgradation by providing free education, special incentives for higher education and better health care facilities. For that, proper care should be taken to improve the existing facilities and introduce the new ones. Besides, encouragement of family planning and abolition of polyandry and polygamy system of marriage in certain parts of the State is very necessary.

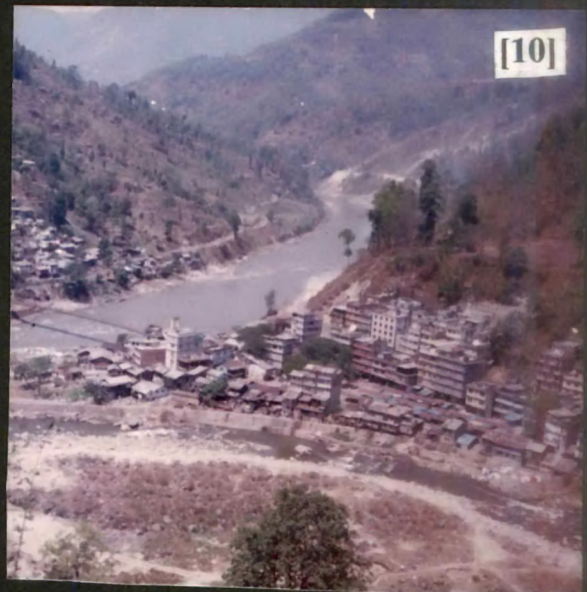
6. Existence of innerline policies in North district especially in Dzongu (Lepcha reserve), Lachen and Lachung revenue blocks (Bhutia) may preserve the distinctive identity of the people but, on the other hand, it is becoming a hurdle in the socio-economic development of the people of this district. Certain modification in the existing policy in accordance with the present situation is expected to bring some positive change in the social and economic condition of the people of this area.

7. The geographical setting and socio-economic condition of different tribal and non-tribal groups and sub-groups differ considerably from one area to another. Hence, same type of development schemes for all parts will not be effective towards achieving a balanced socio-economic development in the State as a whole. Therefore, any kind of development planning needs to be oriented from socio-economic as well as spatial perspective of different zones. In other words, development of areas occupied by different ethnic zones should be geared in such a way so that all the groups may reap the benefit of development equally. Only a balanced development of all the groups will reduce the feeling of inequality as discrimination promote social harmony and unity among all section of the people of the State.

The above are only a few suggestions, and in fact, development measures in all socio-economic fronts in general and region specific measures in particular have to be stepped up to remove the existing level of backwardness in the State.

PHOTOGRAPHS







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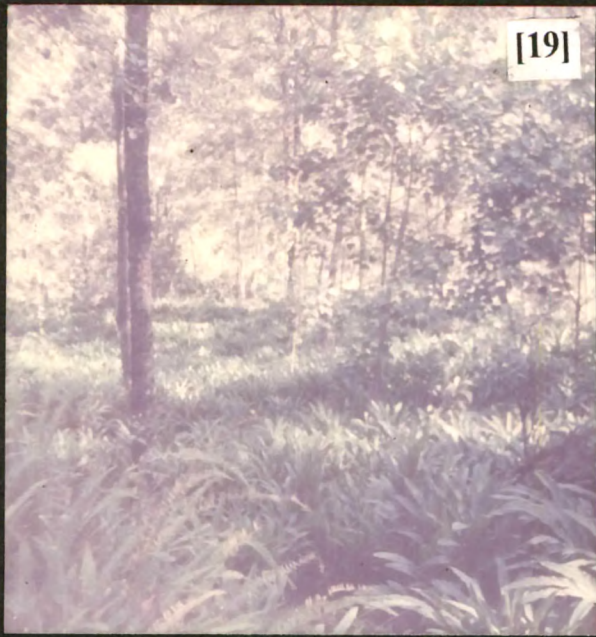
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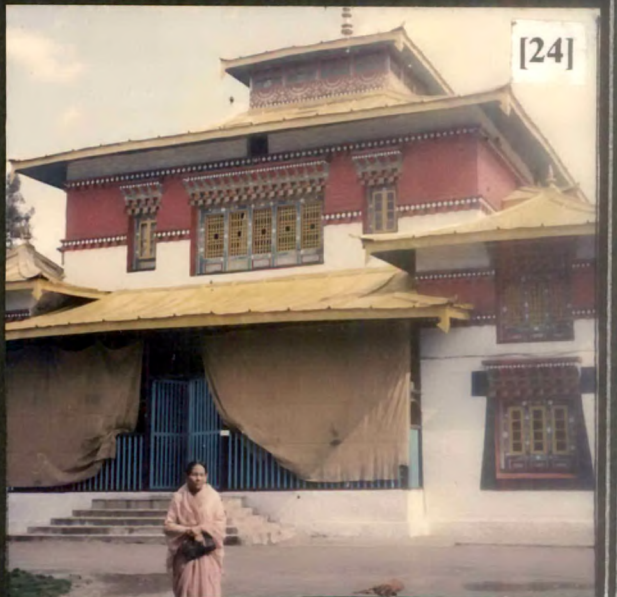
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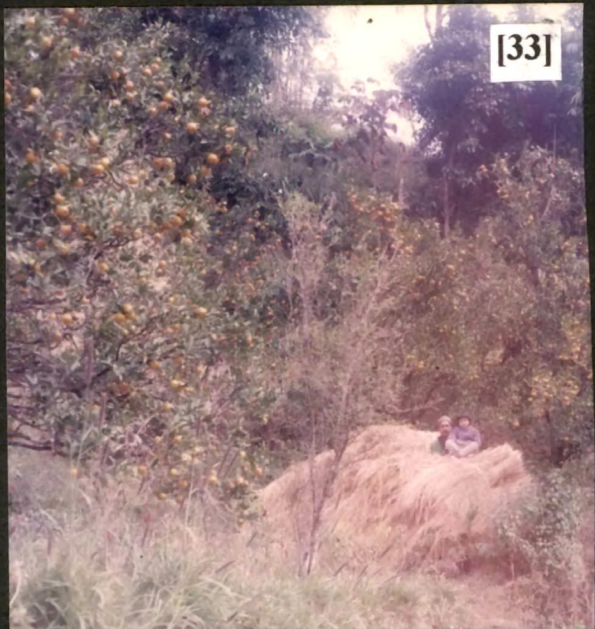
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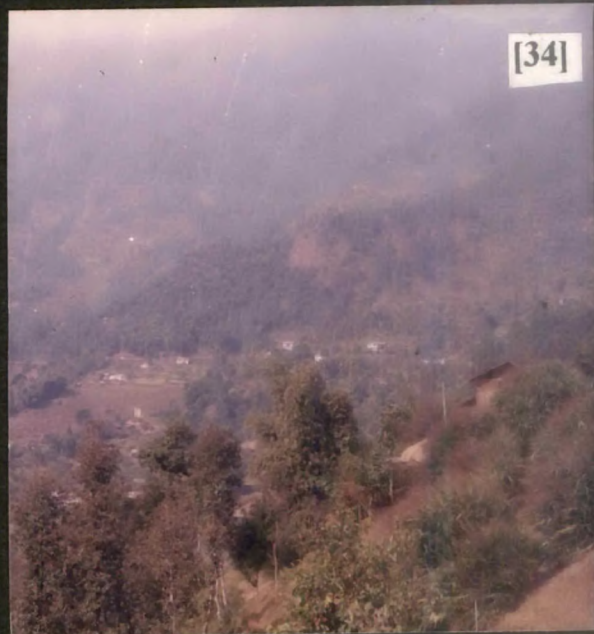
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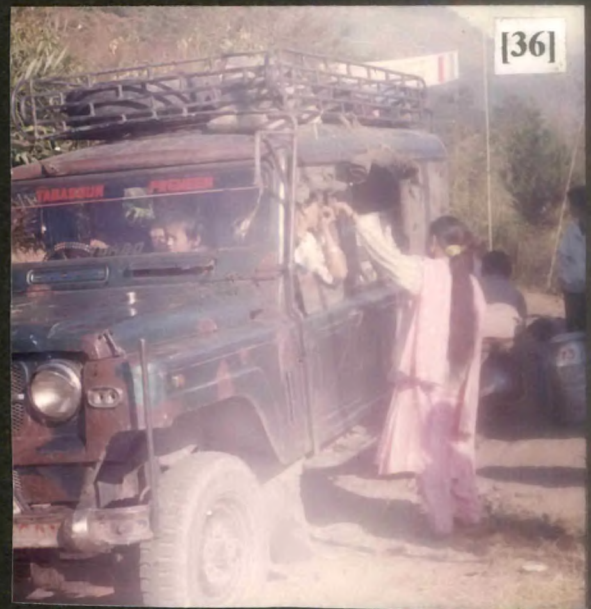
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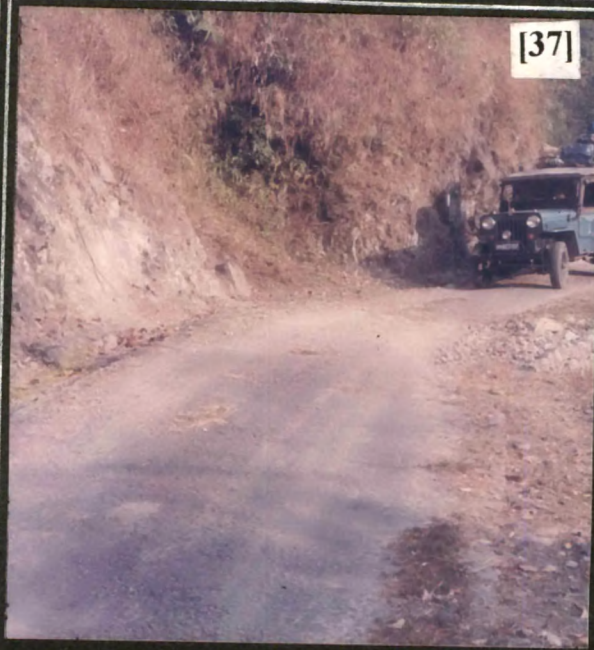
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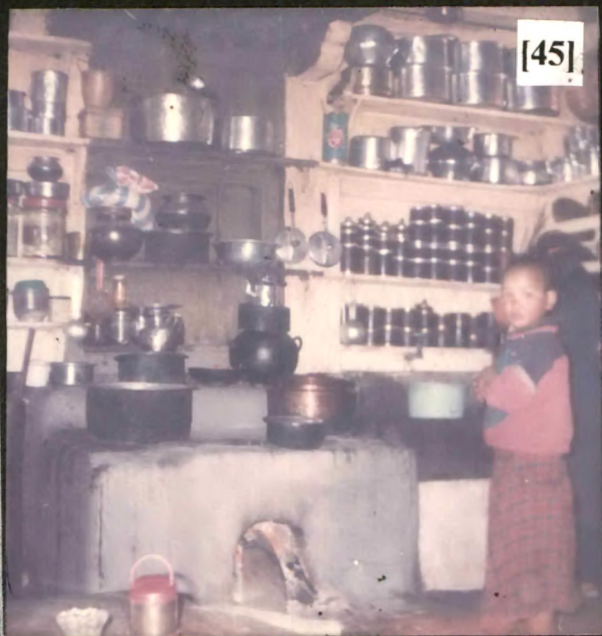


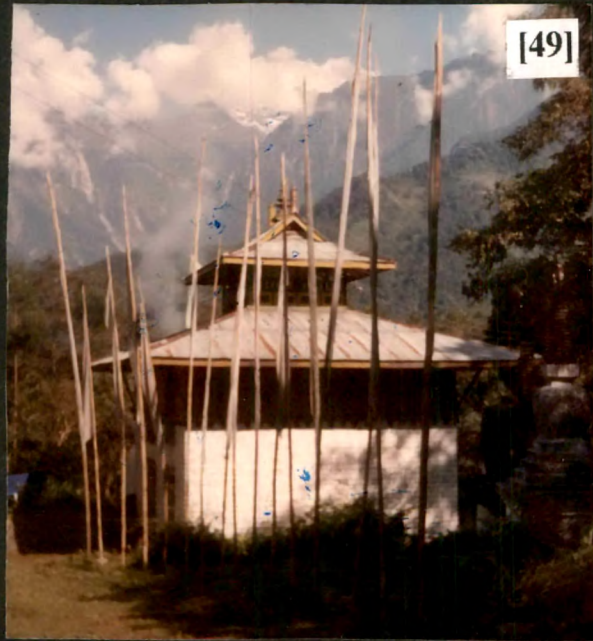
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TERMS AND TERMINOLOGY

| | | |
|------------------|---|---|
| Morang | - | Terai area. |
| La | - | Pass |
| Chu | - | River |
| Cho | - | Lake |
| Cha-chu | - | Hot spring |
| Khola | - | Stream |
| Dzumsha | - | Traditional Social Organisation of the Lachenpa and Lachungpa of North Sikkim. It is an assembly/a council composed of heads of separate households. |
| Dzong | - | District |
| Dzongpon | - | Governor |
| Phipun | - | Elected administrative head for 11 months who looks after all the social and economic aspects of the village. |
| Khada | - | Scarf |
| Gompa | - | A Buddhist Monastery |
| Chuckchi | - | A low table |
| Kazis | - | The Kazis were the hereditary ministers during monarchical rule. |
| Bek-bu | - | Lepcha word for go-between in marriage negotiation. |
| Bod-pa | - | People of Bod of Tibet. |
| Losoong | - | Called Namsoong by the Lepchas, and also known as Sonam Lasoong, celebrated on the first four days of the eleventh month of the Tibetan Calendar. It is a harvest festival of the Buddhist. |
| Loossar | - | The Tibetan New Year. This marks the preaching of the Dharma by the Lord Buddha to the devil. It is also called Gewa Lossar. |
| Chogyal | - | A king |
| Revenue Block | - | The smallest unit of administrative division having permanent settlements. |
| Tribe | - | A tribe is a social group living in a contiguous territory and having a common language, totem, culture and tradition. |
| Scheduled tribes | - | Those tribes in India which are recognised and listed as such under Article 341 of the Indian Constitution. |

Appendix - I

Sikkim: Primary Abstract of the Districts and Sub-Divisions.

| State/ Districts/ Sub- divisions | Area (km ²) | Population 1991 | Density (per km ²) | | Decinial Growth Rate (%) | | Sex Ratio | | Literacy Rate (%) | |
|---|----------------------------|--------------------|-----------------------------------|------|-----------------------------|---------|-----------|------|----------------------------------|----------------------------------|
| | | | 1981 | 1991 | 1971-81 | 1981-91 | 1981 | 1991 | 1981 (excluding 0-4 years) | 1991 (excluding 0-6 years) |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
| North Dist. | 4,226 | 31,240 | 6 | 7 | 103.28 | 18 | 789 | 828 | 35.00 | 54.00 |
| East Dist. | 954 | 1,78,452 | 145 | 187 | 62.07 | 28.60 | 797 | 859 | 47.81 | 65.13 |
| South Dist. | 750 | 98,604 | 101 | 131 | 42.85 | 29.78 | 854 | 892 | 37.87 | 54.06 |
| West Dist. | 1,166 | 98,161 | 64 | 84 | 29.59 | 30.55 | 906 | 915 | 27.58 | 45.62 |
| Sub- Division | | | | | | | | | | |
| Chungthang | 3,286 | 7,033 | 1 | 2 | - | 47.75 | - | 782 | - | 48.93 |
| Mangan | 940 | 24,207 | 23 | 26 | - | 15.74 | - | 842 | - | 54.89 |
| Gangtok | 598 | 1,37,070 | 106 | 229 | - | 28.50 | - | 847 | - | 68.02 |
| Pakyong | 356 | 41,382 | 90 | 116 | - | 28.95 | - | 901 | - | 55.5 |
| Namchi | 323 | 63,527 | 152 | 197 | - | 29.30 | - | 904 | - | 47.14 |
| Ravong | 427 | 35,077 | 62 | 82 | - | 30.38 | - | 872 | - | 47.14 |
| Gyalshing | 868 | 50,383 | 44 | 58 | - | 29.19 | - | 905 | - | 46.11 |
| Soreng | 298 | 47,808 | 122 | 160 | - | 31.35 | - | 926 | - | 45.11 |
| SIKKIM | 7,096 | 4,06,457 | 45 | 57 | 50.77 | 28.47 | 835 | 878 | 39.58 | 56.94 |

Source: Calculated from (i) Census of India, 1981, Sikkim, S-19, P - XIII - A & B, Districts Census Handbook.

(ii) Census of India, 1981, Sikkim, S-19, P - XII, Census Atlas.

(iii) Census of India, 1991, Sikkim, S-22, P - XII, A & B, Districts Census Handbook.

Appendix - II

Birth Rate and Death Rate for India and Sikkim, 1981 - 1991.

| Year | India | | | Sikkim | | |
|------|------------|------------|---------------------|------------|------------|---------------------|
| | Birth Rate | Death Rate | Natural Growth Rate | Birth Rate | Death Rate | Natural Growth Rate |
| 1981 | 33.9 | 12.5 | 21.4 | 31.0 | 8.9 | 22.1 |
| 1982 | 33.8 | 11.9 | 21.9 | 31.6 | 9.5 | 22.1 |
| 1983 | 38.7 | 11.9 | 21.8 | 34.5 | 10.9 | 23.6 |
| 1984 | 33.7 | 12.6 | 21.3 | 31.7 | 10.2 | 21.5 |
| 1985 | 32.9 | 11.8 | 21.1 | 33.1 | 10.7 | 22.4 |
| 1986 | 32.6 | 11.1 | 21.5 | 32.1 | 11.7 | 20.4 |
| 1987 | 32.2 | 10.9 | 21.3 | 33.3 | 10.3 | 23.0 |
| 1988 | 31.5 | 11.0 | 20.5 | 33.8 | 10.1 | 23.7 |
| 1989 | 30.6 | 10.3 | 20.3 | 31.4 | 9.1 | 22.3 |
| 1990 | 30.2 | 9.7 | 20.5 | 26.3 | 7.3 | 19.0 |
| 1991 | 29.5 | 9.8 | 19.7 | 22.5 | 7.5 | 15.0 |

Source: Sample Registration Bulletin, Volume - 29, No. 2, 1995, July, Office of the R.G.I.

Appendix - III

Trend of Population Growth in North-Eastern States 1971-91

| States | Total Population | | Tribal Population | | Non-tribal Population | |
|-------------------|------------------|---------|-------------------|---------|-----------------------|---------|
| | 1971-81 | 1981-91 | 1971-81 | 1981-91 | 1971-81 | 1981-91 |
| Arunachal Pradesh | 35.15 | 36.83 | 19.53 | 24.75 | 94.30 | 64.79 |
| Assam | 36.05* | 12.65 | DNA | DNA | DNA | DNA |
| Manipur | 32.46 | 29.29 | 16.00 | 62.94 | 39.92 | 16.65 |
| Meghalaya | 32.04 | 32.86 | 32.19 | 41.03 | 31.40 | 1.01 |
| Mizoram | 48.55 | 39.70 | 47.43 | 41.49 | 66.83 | 13.63 |
| Nagaland | 50.05 | 56.08 | 42.24 | 62.98 | 25.49 | 19.90 |
| Tripura | 31.92 | 34.30 | 29.61 | 46.14 | 32.86 | 29.59 |
| INDIA | 25.00 | 23.51 | 35.81 | 31.24 | 24.19 | 22.88 |

DNA Data Not Available *

Source: Calculated from

- (i) Census of India, 1971: *Spatial Tables for Scheduled Tribes and Scheduled Castes*.
- (ii) Census of India, 1981: Pt.II (B) (i) *Primary Census Abstract*, Registrar General Delhi.
- (iii) Census of India, 1991, Sikkim, S-22, P-XII, A & B, *District Census Handbook*.

Appendix - IV

Districtwise Growth of Scheduled Caste and Scheduled Tribe Population in Sikkim, 1981-91

| | State / Districts | Total | Population | | Actual Increase | Percenta ge Increase |
|------------------|----------------------|-------|------------|--------|--------------------|----------------------------|
| | | | 1981 | 1991 | 1981-91 | 1981-91 |
| Scheduled Caste | Sikkim | | 18,281 | 24,084 | +5803 | 31.74 |
| | North | T | 800 | 1111 | +311 | 38.88 |
| | East | T | 9740 | 12,482 | +2,742 | 28.15 |
| | South | T | 4207 | 5,564 | +1,357 | 32.26 |
| | West | T | 3534 | 4,927 | +1,393 | 39.42 |
| | Sikkim | | 73,623 | 90,901 | +17,28 | 23.47 |
| Scheduled Tribes | North | T | 14702 | 17,301 | 2,599 | 17.68 |
| | East | T | 30540 | 37,632 | 7,082 | 23.22 |
| | South | T | 13310 | 16,671 | 3,361 | 25.25 |
| | West | T | 15071 | 19,297 | 4,226 | 28.04 |

Source: Calculated from (i) Census of India, 1981, Sikkim, S-19, P-XIII, A & B. *District Census Handbook*.

(ii) Census of India, 1991, Sikkim, S-22, P-XII, A & B *District Census Handbook*

Appendix -V

Growth of Urban Population of the North-Eastern States, 1971-1991.

| State | 1971-1981 | 1981-1991 |
|-------------------|--------------------|-----------|
| Arunachal Pradesh | 139.63 | 152.98 |
| Assam | 363.18 (1971-1991) | |
| Manipur | 165.36 | 34.73 |
| Meghalaya | 63.98 | 36.36 |
| Mizoram | 222.61 | 160.27 |
| Nagaland | 133.95 | 74.74 |
| Sikkim | 159.73 | -27.60 |
| Tripura | 38.93 | 85.75 |
| India | 46.14 | 36.19 |

Source: Census of India, 1991, India, S-1, P-II, *Rural-Urban Distribution*

Appendix - VI

Volume of In-Migration in Sikkim, 1981.

| Place of Last Residence | Total In-migrants | | |
|---|-------------------|------|--------|
| | Persons | Male | Female |
| A. Various States of India | | | |
| 1. Andhra Pradesh | 137 | 72 | 65 |
| 2. Assam | 565 | 333 | 232 |
| 3. Bihar | 7433 | 6002 | 1381 |
| 4. Gujarat | 31 | 13 | 18 |
| 5. Haryana | 891 | 550 | 341 |
| 6. Himachal Pradesh | 147 | 76 | 71 |
| 7. Jammu and Kashmir | 130 | 92 | 45 |
| 8. Karnataka | 48 | 27 | 31 |
| 9. Kerala | 374 | 241 | 133 |
| 10. Madhya Pradesh | 132 | 75 | 57 |
| 11. Maharashtra | 156 | 78 | 78 |
| 12. Manipur | 92 | 50 | 42 |
| 13. Meghalaya | 102 | 56 | 46 |
| 14. Nagaland | 60 | 23 | 37 |
| 15. Orissa | 130 | 99 | 31 |
| 16. Punjab | 272 | 132 | 140 |
| 17. Rajasthan | 615 | 411 | 204 |
| 18. Tamil Nadu | 112 | 44 | 68 |
| 19. Uttar Pradesh | 2107 | 1294 | 813 |
| 20. West Bengal | 16626 | 8677 | 7049 |
| Union Territories | | | |
| 21. Andaman & Nicobar Island | 22 | 16 | 06 |
| 22. Arunachal Pradesh | 25 | 18 | 07 |
| 23. Chandigarh | 11 | 08 | 03 |
| 23. Dadra & Nagar Haveli | 01 | 01 | - |
| 24. Delhi | 346 | 187 | 159 |
| 25. Goa, Daman & Diu | 04 | 02 | 02 |
| 26. Mizoram | 74 | 40 | 34 |
| B. Other Countries | | | |
| 1. Nepal | 15,929 | 9842 | 6,087 |
| 2. Bhutan | 779 | 432 | 347 |
| 3. Bangladesh | 69 | 48 | 21 |
| 4. China | 1,687 | 926 | 761 |
| 5. Other Countries in Asia Beyond | 79 | 56 | 23 |
| 6. Countries in Europe (excluding USSR) | 6 | 2 | 4 |
| 7. Countries in the Americas | 34 | 20 | 14 |
| 8. Unclassified | 6 | 1 | 5 |

Source: Calculated from Census of India, 1981, Series - 19, Part, VAKB, Migration Table.

Appendix - VII

Total In-Migrants by Place of Last Residence, 1991

| Place of Last Residence (1) | Total In-migrants | | |
|-----------------------------------|-------------------|-------------|---------------|
| | Person (2) | Male (3) | Female (4) |
| A. Various States of India | | | |
| 1. Andhra Pradesh | 100 | 58 | 42 |
| 2. Assam | 281 | 139 | 142 |
| 3. Bihar | 2478 | 1766 | 712 |
| 4. Gujarat | 25 | 13 | 12 |
| 5. Haryana | 151 | 92 | 59 |
| 6. Himachal Pradesh | 88 | 60 | 28 |
| 7. Jammu and Kashmir | 228 | 183 | 45 |
| 8. Karnataka | 40 | 19 | 21 |
| 9. Kerala | 163 | 105 | 58 |
| 10. Madhya Pradesh | 88 | 44 | 44 |
| 11. Maharashtra | 121 | 79 | 42 |
| 12. Manipur | 128 | 63 | 65 |
| 13. Meghalaya | 57 | 30 | 27 |
| 14. Tripura | 29 | 19 | 10 |
| 15. Nagaland | 61 | 35 | 26 |
| 16. Orissa | 60 | 33 | 27 |
| 17. Punjab | 283 | 193 | 90 |
| 18. Rajasthan | 203 | 140 | 63 |
| 19. Tamil Nadu | 111 | 58 | 53 |
| 20. Uttar Pradesh | 883 | 472 | 411 |
| 21. West Bengal | 6142 | 3005 | 3137 |
| Union Territories | | | |
| 22. Andaman & Nicobar Island | 19 | 11 | 8 |
| 23. Arunachal Pradesh | 52 | 31 | 21 |
| 24. Chandigarh | 21 | 8 | 13 |
| 25. Dadra & Nagar Haveli | 14 | 7 | 7 |
| 26. Delhi | 117 | 67 | 50 |
| 27. Goa, Daman & Diu | 27 | 16 | 12 |
| 28. Mizoram | 42 | 34 | 8 |

Source: Census of India, 1991, *Migration Table* (Unpublished)

Appendix -VIII

Work Participation Rate in the States of North East India, 1991.

| States | Workers (including marginal workers) as per cent to total population | | | | | | | | | | | |
|-------------------|--|-------|--------|----------------------------|-------|--------|----------------------------|-------|--------|--|--|--|
| | Total Population | | | Scheduled Triba Population | | | Scheduled Caste Population | | | | | |
| | Person | Male | Female | Person | Male | Female | Person | Male | Female | | | |
| Arunachal Pradesh | 47.46 | 54.21 | 39.61 | 45.85 | 47.61 | 44.09 | 44.27 | 64.27 | 12.36 | | | |
| Assam | 36.37 | 50.32 | 21.29 | 41.19 | 48.29 | 33.84 | 34.40 | 49.36 | 18.13 | | | |
| Manipur | 41.51 | 45.36 | 37.50 | 46.67 | 47.33 | 45.97 | 38.96 | 46.71 | 30.99 | | | |
| Meghalaya | 43.06 | 49.09 | 36.69 | 43.21 | 48.63 | 37.78 | 35.71 | 53.64 | 13.88 | | | |
| Mizoram | 49.36 | 54.37 | 43.94 | 47.56 | 51.08 | 43.98 | 79.16 | 89.95 | 10.64 | | | |
| Nagaland | 44.20 | 48.61 | 39.25 | 41.96 | 43.68 | 40.15 | - | - | - | | | |
| Sikkim | 41.51 | 51.26 | 30.41 | 40.45 | 48.58 | 31.56 | 38.55 | 49.57 | 26.80 | | | |
| Tripura | 31.36 | 47.48 | 14.31 | 35.80 | 45.93 | 25.32 | 35.80 | 45.93 | 25.32 | | | |
| INDIA | 37.68 | 51.56 | 22.73 | | | | | | | | | |

Source: Census of India, 1993, India, S-I, P-1.

Appendix - IX

Sikkim : Occupational Categories at District Level, 1991.

| Occupational Categories | SIKKIM | | | | | | | | | | | | EAST DIST. | | | | | | SOUTH DIST. | | | | | | WEST DIST. | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------|
| | NORTH DIST. | | | | EAST DIST. | | | | SOUTH DIST. | | | | WEST DIST. | | | | SOUTH DIST. | | | | WEST DIST. | | | | | | | | | | |
| | P | M | F | | P | M | F | | P | M | F | | P | M | F | | P | M | F | | P | M | F | | P | M | F | | | | |
| Primary Sector | 68.40 | 62.29 | 80.75 | 64.58 | 60.38 | 73.68 | 51.39 | 45.86 | 65.43 | 78.11 | 72.61 | 88.39 | 86.26 | 81.98 | 92.89 | 57.84 | 50.96 | 71.74 | 46.24 | 40.37 | 58.95 | 39.27 | 33.39 | 54.20 | 70.78 | 64.69 | 82.18 | 77.41 | 72.27 | 85.40 | |
| i) Cultivators | 7.82 | 8.04 | 7.37 | 14.94 | 15.59 | 13.54 | 8.39 | 8.38 | 8.46 | 5.12 | 5.40 | 4.58 | 7.28 | 7.47 | 6.99 | 2.52 | 2.99 | 1.58 | 3.38 | 4.40 | 1.18 | 3.29 | 3.54 | 2.65 | 2.11 | 2.37 | 1.62 | 1.49 | 2.14 | 0.48 | |
| ii) Agricultural Labourers | 0.23 | 0.30 | 0.06 | 0.00 | 0.00 | - | 0.44 | 0.56 | 0.13 | 0.09 | 0.14 | - | 0.06 | 0.09 | 0.02 | 11.12 | 13.79 | 5.75 | 14.69 | 15.29 | 13.38 | 17.13 | 19.92 | 10.09 | 8.03 | 10.58 | 3.25 | 3.78 | 5.45 | 1.18 | |
| iii) Livestock, Forestry, etc | 0.77 | 1.00 | 0.33 | 1.29 | 1.54 | 0.75 | 0.92 | 1.13 | 0.38 | 0.68 | 0.89 | 0.29 | 0.46 | 0.64 | 0.19 | v) a. Household industry | 0.77 | 1.00 | 0.33 | 1.29 | 1.54 | 0.75 | 0.92 | 1.13 | 0.38 | 0.68 | 0.89 | 0.29 | 0.46 | 0.64 | 0.19 |
| iv) Mining & Quarrying | 3.26 | 3.94 | 1.89 | 0.99 | 0.92 | 1.15 | 5.61 | 6.35 | 3.73 | 2.71 | 3.41 | 1.41 | 0.89 | 1.19 | 0.42 | b. Other than household industry | 3.26 | 3.94 | 1.89 | 0.99 | 0.92 | 1.15 | 5.61 | 6.35 | 3.73 | 2.71 | 3.41 | 1.41 | 0.89 | 1.19 | 0.42 |
| v) a. Household industry | 7.09 | 8.84 | 3.54 | 12.39 | 12.82 | 11.47 | 10.60 | 12.43 | 5.99 | 4.63 | 6.28 | 1.54 | 2.42 | 3.61 | 0.56 | vi) Construction | 7.09 | 8.84 | 3.54 | 12.39 | 12.82 | 11.47 | 10.60 | 12.43 | 5.99 | 4.63 | 6.28 | 1.54 | 2.42 | 3.61 | 0.56 |
| v) b. Other than household industry | 20.48 | 23.93 | 13.50 | 20.72 | 24.32 | 12.93 | 31.46 | 34.22 | 24.47 | 13.85 | 16.79 | 8.34 | 9.96 | 12.56 | 5.92 | vi) Tertiary Sector | 20.48 | 23.93 | 13.50 | 20.72 | 24.32 | 12.93 | 31.46 | 34.22 | 24.47 | 13.85 | 16.79 | 8.34 | 9.96 | 12.56 | 5.92 |
| vi) Construction | 5.29 | 6.79 | 2.08 | 3.05 | 3.72 | 1.62 | 8.66 | 10.56 | 3.88 | 3.66 | 4.94 | 1.27 | 2.14 | 2.95 | 0.87 | vii) Trade & Commerce | 5.29 | 6.79 | 2.08 | 3.05 | 3.72 | 1.62 | 8.66 | 10.56 | 3.88 | 3.66 | 4.94 | 1.27 | 2.14 | 2.95 | 0.87 |
| vii) Trade & Commerce | 1.82 | 2.61 | 0.24 | 0.91 | 1.28 | 0.11 | 3.25 | 4.31 | 0.59 | 1.21 | 1.83 | 0.04 | 0.49 | 0.79 | 0.04 | viii) Transport, Storage & Communication | 1.82 | 2.61 | 0.24 | 0.91 | 1.28 | 0.11 | 3.25 | 4.31 | 0.59 | 1.21 | 1.83 | 0.04 | 0.49 | 0.79 | 0.04 |
| viii) Transport, Storage & Communication | 13.43 | 14.54 | 11.20 | 16.74 | 19.31 | 11.18 | 19.53 | 19.35 | 20.00 | 8.97 | 10.01 | 7.02 | 7.31 | 8.81 | 5.00 | viii) Other Services | 13.43 | 14.54 | 11.20 | 16.74 | 19.31 | 11.18 | 19.53 | 19.35 | 20.00 | 8.97 | 10.01 | 7.02 | 7.31 | 8.81 | 5.00 |

Source: Calculated from Census of India, 1991, Sikkim, S-22, P- XII, A & B.

Appendix - X

Sikkim : Occupational Categories at Sub-Divisional Level, 1991.

| Occupational Categories | Work Participation (Per cent to Total Workers) | | | | | | | | | | | | | | | | | | | |
|--|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------|--|
| | Chungthang | | | | | Mangan | | | | | Gangtok | | | | | Pakyong | | | | |
| | P | M | F | P | F | P | M | F | P | F | P | M | F | P | M | F | P | M | F | |
| | (2) | (3) | (4) | (5) | (7) | (6) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | |
| PRIMARY | 32.65 | 28.90 | 42.28 | 74.68 | 82.16 | 57.89 | 42.12 | 37.72 | 54.77 | 79.14 | 73.90 | 88.61 | 63.25 | 57.17 | 74.22 | 14.40 | 14.66 | 13.92 | | |
| i. Cultivator | 24.85 | 20.36 | 36.40 | 53.01 | 65.05 | 34.00 | 31.26 | 26.48 | 44.97 | 63.25 | 57.17 | 74.22 | 63.25 | 57.17 | 74.22 | 14.40 | 14.66 | 13.92 | | |
| ii. Agricultural Labourer | 5.90 | 6.21 | 5.11 | 17.80 | 15.83 | 18.77 | 6.39 | 6.55 | 5.93 | 14.40 | 14.66 | 13.92 | 14.40 | 14.66 | 13.92 | | | | | |
| iii. Livestock, Forestry, Hunting, Fishing, etc. | 1.86 | 2.29 | 0.78 | 3.87 | 12.89 | 5.13 | 3.88 | 3.97 | 3.65 | 1.49 | 2.05 | 0.47 | 1.49 | 2.05 | 0.47 | | | | | |
| iv. Mining and Quarrying | 0.03 | 0.04 | - | - | - | - | 0.58 | 0.72 | 0.19 | 0.01 | 0.02 | - | 0.01 | 0.02 | - | | | | | |
| SECONDARY | 43.27 | 40.38 | 50.72 | 5.66 | 3.30 | 6.81 | 20.75 | 23.09 | 14.02 | 6.35 | 8.99 | 1.59 | 6.35 | 8.99 | 1.59 | 0.63 | 0.93 | 0.10 | | |
| v.a. Household Industry | 2.33 | 2.42 | 2.11 | 0.97 | 0.39 | 1.26 | 1.01 | 1.19 | 0.51 | 0.63 | 0.93 | 0.10 | 0.63 | 0.93 | 0.10 | | | | | |
| v.b. Other than Household Industry | 1.18 | 0.78 | 2.22 | 0.94 | 0.87 | 0.98 | 7.13 | 7.73 | 5.39 | 1.08 | 1.60 | 0.14 | 1.08 | 1.60 | 0.14 | | | | | |
| vi. Construction | 39.76 | 37.19 | 46.39 | 3.74 | 2.04 | 4.57 | 12.60 | 14.16 | 8.12 | 4.64 | 6.46 | 1.35 | 4.64 | 6.46 | 1.35 | | | | | |
| TERTIARY | 24.08 | 30.72 | 6.99 | 19.66 | 14.54 | 22.16 | 37.14 | 39.19 | 31.24 | 14.51 | 17.11 | 9.80 | 14.51 | 17.11 | 9.80 | 3.44 | 4.71 | 1.17 | | |
| vii. Trade and Commerce | 2.02 | 2.50 | 0.78 | 3.39 | 1.86 | 4.13 | 10.42 | 12.26 | 5.13 | 3.44 | 4.71 | 1.17 | 3.44 | 4.71 | 1.17 | | | | | |
| viii. Transport, Storage & Communication | 1.30 | 1.81 | - | 0.80 | 0.15 | 1.11 | 4.04 | 5.16 | 0.82 | 0.94 | 1.41 | 0.08 | 0.94 | 1.41 | 0.08 | | | | | |
| ix. Other Services | 20.75 | 26.40 | 6.21 | 15.48 | 12.53 | 16.91 | 22.69 | 21.78 | 25.29 | 10.12 | 10.99 | 8.55 | 10.12 | 10.99 | 8.55 | | | | | |

| Work Participation (Per cent to Total Workers) | | | | | | | | | | | | | | |
|---|--------------|-------------|-------------|--------------|-------------|--------------|--------------|-------------|-------------|--------------|-------------|--------|------|--------|
| Namchi | | | | Ravong | | | | Gyalshing | | | | Soreng | | |
| Person | Male | Female | Person | Male | Female | Person | Male | Female | Person | Male | Female | Person | Male | Female |
| (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) | (24) | (25) | | | |
| 75.69 | 68.41 | 88.25 | 82.60 | 79.80 | 88.71 | 84.40 | 80.19 | 91.58 | 88.08 | 83.84 | 94.02 | | | |
| 69.06 | 61.00 | 82.98 | 73.97 | 71.01 | 80.47 | 74.06 | 69.20 | 82.36 | 80.64 | 75.45 | 87.97 | | | |
| 4.95 | 5.11 | 4.68 | 5.44 | 5.92 | 4.39 | 8.62 | 8.60 | 9.45 | 6.01 | 6.32 | 5.57 | | | |
| 1.54 | 2.08 | 0.59 | 3.19 | 2.88 | 3.86 | 1.72 | 2.39 | 0.56 | 1.28 | 1.88 | 0.42 | | | |
| 0.14 | 0.22 | - | - | - | - | - | - | - | 0.13 | 0.18 | 0.05 | | | |
| 8.35 | 11.74 | 2.51 | 7.69 | 8.62 | 4.84 | 4.40 | 5.99 | 1.68 | 3.18 | 4.89 | 0.76 | | | |
| 0.53 | 0.79 | 0.10 | 0.96 | 1.08 | 0.70 | 0.59 | 0.75 | 0.32 | 0.35 | 0.53 | 0.09 | | | |
| 3.48 | 4.65 | 1.47 | 1.29 | 1.29 | 1.30 | 1.09 | 1.37 | 0.62 | 0.70 | 1.02 | 0.25 | | | |
| 4.34 | 6.30 | 0.95 | 5.44 | 6.25 | 2.84 | 2.71 | 3.87 | 0.74 | 2.14 | 3.35 | 0.42 | | | |
| 15.95 | 19.85 | 9.23 | 9.96 | 11.57 | 6.44 | 11.20 | 13.81 | 6.74 | 8.76 | 11.27 | 5.22 | | | |
| 4.52 | 6.25 | 1.55 | 2.08 | 2.72 | 0.68 | 2.31 | 3.18 | 0.83 | 1.97 | 2.72 | 0.92 | | | |
| 1.64 | 2.57 | 0.05 | 0.41 | 0.57 | 0.04 | 0.58 | 0.81 | 0.05 | 0.47 | 0.78 | 0.03 | | | |
| 9.78 | 11.03 | 7.63 | 7.47 | 8.28 | 5.71 | 8.36 | 9.82 | 5.86 | 6.32 | 7.78 | 4.26 | | | |

Appendix - XI

Sikkim: Literacy Rate by Age Group, 1991

| Age-Group | Total Population | | | Literates/Literacy rate | | |
|-----------|------------------|--------|--------|-------------------------|-------------------|-------------------|
| | Person | Male | Female | Person | Male | Female |
| 7-9 | 31,781 | 15,666 | 16,115 | 20,793 (65.42) | 10,879 (69.44) | 9,914 (61.52) |
| 10-14 | 52,953 | 27,151 | 25,802 | 42,429 (80.12) | 22,742 (83.76) | 19,687 (76.30) |
| 15-19 | 43,211 | 22,479 | 20,732 | 32,512 (75.24) | 18,033 (66.42) | 14,479 (69.83) |
| 20-24 | 38,268 | 20,652 | 18,616 | 25,128 (63.99) | 15,335 (74.25) | 9,793 (52.61) |
| 25-24 | 35,632 | 16983 | 18649 | 19400 (54.44) | 12735 (68.28) | 6665 (39.25) |
| 30-34 | 27,760 | 12,652 | 15,108 | 13,531 (48.74) | 9,567 (63.32) | 3,964 (31.33) |
| 35-39 | 2,34,557 | 10,088 | 13,368 | 10,302 (43.91) | 7,862 (58.81) | 2,440 (19.29) |
| 40-49 | 32,858 | 13,704 | 19,154 | 11,659 (35.48) | 9,673 (50.50) | 1,986 (4.19) |
| 50-59 | 21,164 | 8,412 | 12,752 | 5,644 (26.66) | 4,992 (39.15) | 652 (7.75) |
| 60+ | 18,508 | 10,608 | 7,900 | 3,557 (19.21) | 3,154 (29.73) | 403 (5.10) |

(figures within parentheses indicate percentage of literates in each age group)

Source: Census of India, 1991, Sikkim (Unpublished data) collected from census deptt.

Appendix - XII

Sex-Disparity In Literacy of North-Eastern States of India, 1991

| State | Literacy | | Sex Disparity in Literacy |
|-------------------|----------|--------|---------------------------|
| | Male | Female | |
| Arunachal Pradesh | 51.45 | 29.69 | 0.40 |
| Assam | 61.87 | 43.03 | 0.33 |
| Manipur | 71.63 | 47.60 | 0.44 |
| Meghalaya | 53.12 | 44.85 | 0.14 |
| Mizoram | 85.61 | 78.60 | 0.21 |
| Nagaland | 67.62 | 54.75 | 0.24 |
| Tripura | 70.58 | 49.65 | 0.39 |
| India | 64.13 | 39.29 | 0.44 |

Source: Calculated from Census of India, 1991, Sikkim, S-22, P-I, *Primary Census Abstract, (Provisional Population Total)*.

Appendix - XIII

Sikkim : Distribution of Population of each Religion at District Level, 1981.

| State/ Districts | Hindus | Muslims | Christians | Sikhs | Buddhists | Jains | Other religion & Persuasion | Religio n not stated |
|---------------------|-------------------|----------------|----------------|---------------|-------------------|---------------|-----------------------------------|----------------------------|
| Sikkim | 212780 (67.27) | 3241 (1.03) | 7015 (2.22) | 322 (0.10) | 90,848 (28.71) | 108 (0.03) | 1987 (0.63) | 84 (0.03) |
| North | 9,415 (35.59) | 143 (0.54) | 429 (1.86) | 492 (0.08) | 16304 (61.63) | 19 (0.07) | 55.5 (0.04) | 50 (0.19) |
| East | 94816 (68.33) | 2109 (1.52) | 3247 (2.34) | 264 (0.19) | 38048 (27.42) | 97 (0.07) | 180 (0.13) | - N |
| South | 54246 (71.40) | 653 (0.36) | 2097 (2.76) | 23 (0.03) | 18,918 (24.90) | - N | 30 (0.04) | 8 (0.01) |
| West | 54303 (72.22) | 346 (0.46) | 1173 (1.56) | 15 (0.02) | 17,572 (23.37) | - - | 1767 (2.35) | 15 (0.02) |

Note N : Negligible

Source: Census of India 1981, *A Portrait of Population, Sikkim*, Directorate of Census Operation Government of Sikkim.

(Fig within the parentheses indicate percentage to total)

Appendix - XIV

Sikkim : Selected Attributes of Different Ethnic Zones.

| Ethnic Zones | Area (rural) km ² | Total Population (rural) | | | Tribal Population | Decadal Growth Rate | Density (persons per km ²) | | |
|-----------------------------------|---------------------------------|-----------------------------|-------------------|-------------------|----------------------|---------------------------|---|----------|--------------|
| | | Person | Male | Female | | | Arithmetic | Physical | Agricultural |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Upper Himalayan Bhutia Zone | 319 (19.29) | 44093 (11.93) | 23795 (12.19) | 20298 (11.65) | 17360 (39.37) | +56.63 | 138 | 180 | 40 |
| Central Himalayan Lepcha Zone | 193 (11.36) | 15041 (4.02) | 8196 (4.11) | 6845 (3.92) | 7570 (50.00) | +16.02 | 78 | 70 | 18 |
| Southern Himalayan Nepali Zone | 1147 (69.35) | 310537 (84.05) | 163475 (83.70) | 147062 (84.43) | 56773 (18.28) | +38.52 | 271 | 296 | 92 |

| Sex Ratio | Literacy Rate | | | Working Force | | |
|-----------|---------------|--------|--------|---------------|----------------|---------------|
| | Tribal | Person | Female | Male | Person | Female |
| (11) | (12) | (13) | (14) | (15) | (16) | (17) |
| 852 | 878 | 43.0 | 51.28 | 33.35 | 17059 (38.69) | 12502 (52.54) |
| 829 | 946 | 44.20 | 51.34 | 35.39 | 5798 (38.55) | 4011 (48.94) |
| 899 | 919 | 44.37 | 52.13 | 35.75 | 127802 (41.16) | 82514 (50.47) |

| Occupational Categories | Occupational Pattern | | | | | | |
|-------------------------|----------------------|-----------|---------------|--------------|---------------------------|-------------------------|--------------|
| | Primary | Secondary | Tertiary | Cultivator | Agricultural Labourers | Household Industries | Construction |
| (19) | (20) | (21) | (22) | (23) | (24) | (25) | (26) |
| 60.37 | 19.07 | 21.00 | 8155 (47.80) | 1301 (7.68) | 150 (0.88) | 2958 (17.34) | 2649 (15.53) |
| 66.97 | 5.06 | 24.43 | 2247 (38.75) | 1479 (25.51) | 75 (1.29) | 1067 (18.40) | 150 (2.59) |
| 76.56 | 9.08 | 14.64 | 84033 (65.75) | 9974 (7.80) | 744 (0.58) | 13300 (10.41) | 7336 (5.74) |

(Figures within parentheses indicate percentage to total)

II. Namchi - Pakyong Zone:

| Sub-Division | Total Revenue Block | Area (km ²) | Population | | | Tribal Population | | | Decadal Growth Rate |
|--------------|---------------------|-------------------------|-------------------|------------------|------------------|-------------------|----------------|----------------|---------------------|
| | | | Person | Male | Female | Person | Male | Female | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Namchi | 91 | 323 | 63527 | 33365 | 30162 | 4174 | 2097 | 2077 | +29.29 |
| Pakyong | 39 | 356 | 41382 | 21763 | 19619 | 2367 | 1230 | 1137 | +28.95 |
| Total | 130 | 679 (14.12) | 104909 (25.81) | 55128 (25.47) | 49781 (26.20) | 6541 (6.23) | 3327 (6.04) | 3214 (6.46) | +29.16 |

| Arithmetic (11) | Density (per km ²) | | Sex Ratio | | | Literacy (Out of the total) | | |
|--------------------|-----------------------------------|----------------------|-----------------|----------------|------------------|--------------------------------|------------------|------------------|
| | Physiological (12) | Agricultural (13) | General (14) | Tribal (15) | Person (16) | Male (17) | Female (18) | Female (18) |
| 196 | 291 | 93 | 904 | 990 | 29979 | 18398 | 11581 | 11581 |
| 116 | 287 | 91 | 901 | 924 | 18904 | 11480 | 7424 | 7424 |
| 154 | 289 | 90 | 903 | 966 | 48883 (46.60) | 29878 (65.61) | 19005 (47.09) | 19005 (47.09) |

| Person | Occupational Categories | | | | | | | | | | |
|------------------|-------------------------|------------------|-------------------------|------------------|------------------|----------------|-----------------|---------------|-----------------|-----------------|----------------|
| | Working Force | | Occupational Categories | | | | | | | | |
| | Male | Female | Person | Female | Person | Female | | | | | |
| (19) | (20) | (21) | (22) | (23) | (24) | (25) | (26) | (27) | (28) | (29) | (30) |
| 26931 | 16987 | 9944 | 20258 | 11588 | 8670 | 2236 | 1989 | 247 | 4269 | 3362 | 907 |
| 17649 | 10845 | 6804 | 13144 | 7899 | 5245 | 1055 | 961 | 94 | 2409 | 1829 | 580 |
| 44580 (42.49) | 27832 (50.49) | 16748 (33.64) | 33402 (74.93) | 19487 (70.01) | 13915 (83.05) | 3291 (7.38) | 2950 (10.60) | 341 (2.04) | 6678 (14.98) | 5191 (18.65) | 1487 (8.88) |

| Cultivator | Occupational Pattern | | | | | Other services |
|------------|-----------------------|--------------------|--------------|--------|--------|----------------|
| | Agricultural Labourer | Household Industry | Construction | Trade | | |
| (31) | (32) | (33) | (34) | (35) | (36) | |
| 18484 | 1325 | 143 | 1161 | 1211 | 2618 | |
| 10504 | 2391 | 105 | 771 | 572 | 1681 | |
| 28988 | 3716 | 248 | 1932 | 1693 | 4299 | |
| (65.02) | (8.35) | (0.56) | (4.33) | (3.80) | (9.64) | |

(Figure within the parentheses indicate percentage to total)

III. Chungthang - Mangan Zone:

| Sub-Division | Total Revenue Block | Area (km ²) | Population | | | | Tribal Population | | | | Decadal Growth Rate |
|--------------|---------------------|-------------------------|------------|--------|--------|---------|-------------------|---------|--------|--|---------------------|
| | | | Person | | Female | | Person | | Female | | |
| | | | (4) | (5) | (6) | (7) | (8) | (9) | (10) | | |
| (1) | 5 | (3) | 7033 | 3947 | 3086 | 4075 | 2135 | 1940 | | | |
| Chungthang | | | | | | | | | | | |
| Mangan | 40 | 940 | 24207 | 13143 | 11064 | 13226 | 6869 | 6357 | | | +11.58 |
| Total | 45 | 4226 | 31240 | 17090 | 14150 | 17301 | 9004 | 8297 | | | +18.09 |
| | | (59.55) | (7.69) | (7.90) | (7.45) | (55.38) | (52.69) | (58.64) | | | |

| Arithmetic | Density (per km ²) | Sex Ratio | | | | Literacy (Out of the total) | | | |
|------------|--------------------------------|---------------|------|--------------|---------|-----------------------------|---------|--------|--|
| | | Physiological | | Agricultural | | Person | | Female | |
| | | (12) | (13) | (14) | (15) | (16) | (17) | (18) | |
| 2 | 137 | 20 | 781 | 908 | 2733 | 1892 | 841 | | |
| 25 | 154 | 49 | 841 | 925 | 10522 | 6798 | 3724 | | |
| 7 | 150 | 42 | 827 | 921 | 13255 | 8690 | 4565 | | |
| | | | | | (53.54) | (63.05) | (41.60) | | |

| Working Force | | Occupational Categories | | | | | | | | | | | |
|---------------|---------|-------------------------|---------|---------|---------|-----------|--------|---------|---------|----------|---------|------|--------|
| | | Primary | | | | Secondary | | | | Tertiary | | | |
| | | Person | Male | Female | Person | Male | Female | Person | Male | Female | Person | Male | Female |
| (19) | (20) | (21) | (22) | (23) | (24) | (25) | (26) | (27) | (28) | (29) | (30) | | |
| 3224 | 2318 | 906 | 1051 | 670 | 381 | 1393 | 936 | 457 | 775 | 712 | 63 | | |
| 10562 | 6886 | 3676 | 7605 | 3964 | 2741 | 576 | 466 | 110 | 2002 | 1517 | 485 | | |
| 13786 | 9204 | 4582 | 8656 | 4634 | 3122 | 1969 | 1402 | 567 | 3552 | 2229 | 548 | | |
| (44.13) | (53.86) | (32.38) | (62.79) | (50.35) | (68.14) | (14.28) | (6.16) | (12.37) | (25.77) | (24.22) | (11.96) | | |

| Occupational Pattern | | | | | |
|----------------------|-----------------------|--------------------|--------------|--------|----------------|
| Cultivator | Agricultural Labourer | Household Industry | Construction | Trade | Other services |
| (31) | (32) | (33) | (34) | (35) | (36) |
| 800 | 190 | 75 | 1280 | 65 | 668 |
| 2328 | 1285 | 86 | 313 | 283 | 1158 |
| 3128 | 1475 | 161 | 1593 | 348 | 1826 |
| (22.69) | (10.70) | (1.17) | (11.56) | (2.52) | (13.25) |

(Figures within parentheses indicate percentage to total)

IV. Gyalshing - Soreng - Ravong Zone.

| Sub-Division | Total Revenue Block | Area (km ²) | Population | | | Tribal Population | | | Decadal Growth Rate |
|--------------|---------------------|-------------------------|-------------------|------------------|------------------|-------------------|------------------|------------------|---------------------|
| | | | Person | Male | Female | Person | Male | Female | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Gyalshing | 64 | 868 | 50353 | 26429 | 23924 | 10993 | 5732 | 5261 | +29.80 |
| Soreng | 47 | 298 | 47808 | 24817 | 22991 | 8304 | 4343 | 3961 | +31.35 |
| Ravong | 44 | 427 | 35077 | 18740 | 16337 | 8950 | 4691 | 4259 | +30.70 |
| Total | 155 | 1593 (22.45) | 133238 (32.78) | 69986 (32.34) | 63252 (33.29) | 28247 (21.20) | 14766 (21.10) | 13481 (19.26) | +30.58 |

| Arithmetic (11) | Density (per km ²) | | Sex Ratio | | | Literacy (Out of the total) | | |
|-----------------|--------------------------------|-------------------|--------------|-------------|------------------|-----------------------------|------------------|--|
| | Physiological (12) | Agricultural (13) | General (14) | Tribal (15) | Person (16) | Male (17) | Female (18) | |
| 57 | 343 | 120 | 905 | 918 | 18675 | 12125 | 6550 | |
| 56 | 371 | 149 | 926 | 912 | 17477 | 10816 | 6661 | |
| 82 | 209 | 68 | 871 | 908 | 13275 | 8525 | 4750 | |
| 84 | 109 | 300 | 903 | 913 | 49427 (46.02) | 31466 (55.26) | 17961 (35.59) | |

| Working Force | | Occupational Categories | | | | | | | | | | | |
|---------------|---------|-------------------------|---------|---------|---------|-----------|--------|--------|--------|----------|--------|------|--------|
| | | Primary | | | | Secondary | | | | Tertiary | | | |
| | | Person | Male | Female | Person | Male | Female | Person | Male | Female | Person | Male | Female |
| (19) | (20) | (21) | (22) | (23) | (24) | (25) | (26) | (27) | (28) | (29) | (30) | | |
| 21310 | 13446 | 7864 | 17985 | 10783 | 7202 | 938 | 806 | 132 | 2387 | 1857 | 530 | | |
| 22191 | 12998 | 9193 | 19540 | 10897 | 8643 | 706 | 636 | 70 | 1945 | 1465 | 480 | | |
| 14455 | 9919 | 4536 | 11940 | 7916 | 4024 | 1113 | 855 | 220 | 1440 | 1148 | 292 | | |
| 57956 | 36363 | 21593 | 49465 | 29596 | 19869 | 2757 | 2297 | 422 | 5772 | 4470 | 1302 | | |
| (43.48) | (51.96) | (34.13) | (85.35) | (81.39) | (92.02) | (4.76) | (6.32) | (1.95) | (9.96) | (12.29) | (6.03) | | |

| Occupational Pattern | | | | | |
|----------------------|-----------------------|--------------------|--------------|--------|----------------|
| Cultivator | Agricultural Labourer | Household Industry | Construction | Trade | Other services |
| (31) | (32) | (33) | (34) | (35) | (36) |
| 15782 | 1837 | 126 | 579 | 493 | 1781 |
| 17894 | 1334 | 77 | 474 | 438 | 1403 |
| 10693 | 786 | 139 | 787 | 301 | 1080 |
| 44369 | 3957 | 481 | 1840 | 1232 | 4264 |
| (76.36) | (6.83) | (0.83) | (3.17) | (2.13) | (7.36) |

(Figures within parentheses indicate percentage to total)

APPENDIX - XVI

VILLAGE SURVEY : HOUSEHOLD SCHEDULE

A. INTRODUCTION:

1. Location of the Village :
 - (i) Name of the village/Revenue Block :
 - (ii) Sub-Division :
 - (iii) District :
2. Distance of the village from District/Sub-divisional Headquarters:
3. Total Number of Households in the village/Revenue Block:
4. Household Serial No. :
5. (i) Name of the Family Head :

Age _____ Sex _____ Tribe/Caste
- (ii) Family type : Joint / Nuclear
- (iii) Total Family Members :
- (iv) Religion :

B. POPULATION ASPECTS:

1. Family Structure:

| Family members | Relation with the family | Age | Sex | Educational Level | Occupation | | |
|----------------|--------------------------|-----|-----|-------------------|------------|-----------|----------|
| | | | | | Primary | Secondary | Tertiary |
| 1. | | | | | | | |
| 2. | | | | | | | |

2. Number of births during last 5 years.

| | Total | Male | Female |
|--------------|-------|------|--------|
| Birth | | | |
| Death | | | |

3. Causes of death:

| Sl. No. | Sex | Age | Causes of death |
|---------|-----|-----|-----------------|
| 1. | | | |
| 2. | | | |

9. (i) Number of Migrants:

| | Person | Male | Female | Cause of Migration |
|-------------|--------|------|--------|--------------------|
| Inmigrants | | | | |
| Outmigrants | | | | |

C. Economic Aspects:

1. Main occupation of the family :

2. Type of agriculture practised : Wet / Dry cultivation.

3. (i) Persons engaged in cultivation : Male _____
 Female _____

(ii) Persons engaged in animal rearing: Male _____
 Female _____

(iii) Persons engaged in Small Scale Industry: Male _____
 Female _____

(iv) Persons engaged in Govt. Services: Male _____
 Female _____

(v) Persons engaged in other works: Male _____
 Trade, business, daily labour, part-time workers, etc.) Female _____

3. Income and Expenditure Pattern of the family :

(i) Monthly / yearly Income _____

(ii) Monthly / Yearly Expenditure _____

4. Land Use Pattern :

(i) Total area:

(ii) Built up area:

(iii) Cultivated area:

(iv) Pasture land :

(v) Forest land:

5. Average size of landholding

6. Land Ownership: Individual land / Community land.

7. Name of the Crops grown : _____

8. Name of the Cash Crops : _____
9. Name of the horticulture : _____
(Fruits & Vegetables) : _____
10. Any marketable surplus : Yes / No.
11. Whether self sufficient in food production: Yes / No.
12. Other source of income:
- a) Sale of horticultural product:
 - b) Live stock Products:
 - c) Products of cottage industry:
 - d) Construction work:
 - e) Trade and business :
 - f) Other services:
- D. Social Facilities:
- a. Number of Educational Institution:
 - i. Primary School:
 - ii. Jr. High School:
 - iii. High / Higher Secondary School
 - b. Is the village provided with electricity / water supply: Yes / No.
 - c. Medical Facilities:
 - i. Hospital:
 - ii. Dispensary:
 - iii. Primary health Centre:
 - iv. Primary health sub-centre:
4. Does the village has road link:
5. Is there any shop in the village:
6. Distance from the nearest market:
7. Distance from the nearest town:

Personal Observations:

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