

AN ANALYSIS OF THE LEVEL OF SOCIO-ECONOMIC DEVELOPMENT IN LONGDING DISTRICT, ARUNACHAL PRADESH

*Thesis Submitted to Department of Geography, Rajiv Gandhi University for the Degree of
Doctor of Philosophy in Geography*

Submitted by

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Regn. No. RGU/RS-676/2016

Under the supervision of

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Rajiv Gandhi University, Rono Hills, Doimukh
Arunachal Pradesh, India**

2020



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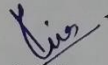
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PLAGIARISM CERTIFICATE

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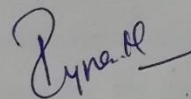
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DECLARATION

I, hereby, declare that the thesis entitled 'An analysis of the level of socio-economic Development in Longding District, Arunachal Pradesh' which I am submitting for the degree of Doctor of Philosophy in Geography to Rajiv Gandhi University Rono Hills, Itanagar, has been carried out by me under the guidance of Dr (Mrs) Kiran Kumari, has not previously formed the basis for the award of any degree or diploma in any other University or Institute.

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Research Scholar

ACKNOWLEDGEMENT

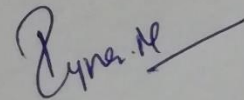
I would like to express my deep sense of gratitude to my Supervisor Dr (Mrs) Kiran Kumari, Professor and Head, Department of Geography, Rajiv Gandhi University, Itanagar for her incessant encouragement. She has always been gracious enough to give me valuable suggestions and guide me at every stage in the preparation of the Thesis.

I would like to owe my special thanks to all my teachers, Prof. Tomo Riba, Prof. N.C. Singh, Prof. Nishamani Kar, Prof. S. K. Patnaik, Dr. S. Saikia, Dr. Gibji Nimasow and Dr. Tage Rupa Sora, Department of Geography, Rajiv Gandhi University for their valuable suggestions and their support to bring out this academic work, and I am also very thankful to all the Ph. D. Research Scholars for providing their cooperation and continuous help.

I express my gratitude to my mother for her blessings and good wishes for the accomplishment of this pursuit. She has been a constant source of inspiration to foster my morale in my academic pursuits. My heartfelt regards goes to my in-laws without whose blessings I couldn't have completed my research work. I am also thankful to my sisters for their selfless love and moral support whenever I needed during the study.

I owe my thanks to my husband Dr Pongkhu Monwangham without whom completion of this thesis would not have been possible. I am grateful to him for accompanying me, encouraging me during my pursuit of PhD thesis and for creating life together. He was always around whenever I felt that it is impossible to continue. I deeply appreciate his belief in me. I appreciate my daughter Christina Among and son Pongju for the patience they showed during my thesis writing. I would like let them know that playing with them and telling them bedtime stories were really distracting me from my writing but seeing them also gave me strength to finish my research work and hold the family together for our next journey.

Above all, I dedicate this thesis to the memory of my late father Mr Modang Tamang who is always with me in my spirit.



Mrs. Modang Reena

Place: Rajiv Gandhi University

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INTRODUCTION

1.1 INTRODUCTION

Development is an all pervading theme. It is not a discipline nor is it a body of knowledge particularized to any academic field. It is fundamental concern to all. It is perennial and open ended topic. It relates more to perspective, elucidate and illustrative instances. It is formless, shapeless and action dominant, any worthwhile intellectual interpretation to provide explanation to this more or less axiological dominant event will prove to be an endless quest.

Development can be appropriately stated as a process which improves the quality of life. Viewing society as a spatial structure it has been observed that social and economic processes vary from place to place, in addition to the varying natural phenomena, of the people in different and even contradictory spatial patterns of distribution and socio-economic disparities. Economic Planning has been used in a country as an instrument for bringing about uniform development. Programmes of development have been taken up in the country in a planned way through the various Five Year Plans but it has been observed that inequalities in terms of socio-economic development are not declining over time. Socio-economic development embraces changes taking place in the social sphere, mostly of an economic nature. Even though economic aspects come to the fore in the research on change in the economy (a study of economic phenomena and processes), they cannot be isolated from social aspects.

Development is the process which improves the quality of life. Development is a multidimensional phenomenon. Some of its major dimensions includes: the level

of economic growth, level of education, level of health services, degree of modernization, status of women, level of nutrition, quality of housing, distribution of goods and services and access to communication. In India, the progress of development among major states is not uniform. The spatial structure of social, economic, political, historical, natural and other forces of its spatial organization (Sharma and Kumar, 1993). This has led to the widening the gap between haves and have not, within the country and within the region at the micro level. The spatially uneven development in the state has created new challenges and constraints.

Socio-economic development is made up of processes caused by exogenous and endogenous factors which determine the course and direction of the development. It should also be noted that socio-economic processes do not work in isolation from other processes and that usually they are preceded by, or are consequences of, other processes. Factors of socio-economic development themselves cannot be described closer in general terms because they differ depending on the set of conditions produced by a concrete historical and geographical situation in which socio-economic changes takes place. The definition of socio-economic development as a series of changes involves stating what characterizes those changes and what determines them. In other words, we have to determine what changes count as socio-economic development.

Of recent, the concept of sustainability has been popular. It has been defined that “sustainability is that development which meets the need of the present without compromising the ability of future generation to meet their own need.”(Brundt and Commission, 1987, United Nation: Rio Declaration 1992, UNECE, 2001). According to this reference, it means sustainable development is about finding better ways of

doing things, both for future and the present. We might need to change the way we work land live now, but this doesn't mean our quality of life will be reduced.

According to the National Human Development Report, 2001, the district or areas bordering Assam and within the district areas near the urban, administrative centers have better infrastructural facilities than the interiors. Arunachal Pradesh has been the home of a number of tribes and sub-tribes, and many of them have limited mobility beyond their well-defined local boundaries. Inter regional disparities in the State, therefore, have an additional implication—as in many cases, it may reflect inter-tribal disparities to a certain extent. Though the state has been relatively free from secessionist violence and insurgency, its development performance, particularly in terms of the human development indicators, has not been satisfactory. Among the eight north-eastern states, Arunachal Pradesh occupies the fourth position in terms of per capita NSDP and it was at the bottom in terms of HDI.

1.2 CONCEPT OF DEVELOPMENT

Development is a multidimensional process. There are, therefore, many interpretation of it. In geographical literature, there are certain works, which attempted to define development. Notable example include Brookefiels 1 (1975) Interdependent Development, Roberts 2 (1978), cites of peasants, Mabogunges 3(1980), the development process- a spatial Perspective, Chisholms 4 (1982) modern world development A Geographical perspective and Harries 5 (1982), Rural Development: Theories of peasants present its own, very different view of development. Mabogunge has identified four main ways in which the term development has been used. Development as an economic growth, as modernization, a distributional justice and socio economic transformation.

The end of World War II has witnessed an unrivalled drive of economic and social development by the majority of the world's nations. Since the World War development has been synonymous with economic social and political changes in the countries of Africa, Asia, Latin America, the Carrebeans and the South Pacific. These countries have been variously labeled as under developed, less developed, developing and the third world countries. These people or groups are totally different but unified by their commitment for development (Turner and Hulme 1997). Other writers and scholars only see the commonality among these third world countries. According to Slemana,"development therefore could be defined as the capacity of the state to increase its human resource with aim of achieving higher outcome of production for the satisfaction of the basic need of majority of its citizen and empowering them to make demand on the government."

Dudley Seers pointed out, "the question to ask about a country's development is three: What has been happening to poverty? What has been happening to employment? What has been happening to inequality? If all the three has been declined from higher level, beyond doubt this has been a period of development for the country concerned."(Seers, 1977, P3). To Seers all these three must be at low level before we can declare that society as a developed one. This invariably means that a rise in any one of these central challenges disqualifies that society from being called developed.

Before doing any comprehensive and detailed analysis on the concept of development, it is very important to understand the two perspectives i.e. the Modernization Theory and the Dependency Theory on development. These two perspectives will give the information on why development is necessary.

The unequal distribution of natural resources, growth, lack of technical know-how and discriminatory government policies have resulted in marked disparities in almost all the parts of the world.

Factors which determine the growth and development are:

1. Natural resources like climate, soil, mineral and forest resources play an important role in the development of the area. It provides a natural base and fundamental capacity of regional growth.

2. Human resources like population, infrastructure, health, education, technical know-how etc plays an important role in the development of an area.

These two factors individually or collectively determine the pattern of regional inequalities in any given area.

1.3 STATEMENT OF THE PROBLEM

At present, the signs of socio-economic enhancement are vividly visible in certain corners of this newly created district. Some of the farsighted people of this district have set up tea gardens, dairy farming, animal husbandry, business establishments, fishery, ponds, orchards etc. in a simple and humble manner. One can assert without any doubt that they possess caliber, capacity and real spirit to improve themselves to reach the dizzy heights. What the society need is a pragmatic and real guidance, role models, a little bit of training, minimum finance, incentives and other vital paraphernalia to inch forward. But it is still at large without any proper direction to climb the ladder of socio-economic strata. The people are deprived of basic requisites like minimum calories of food, proper clothing, potable water, road connectivity, health care and sanitary facilities, proper housing, and other required necessities for leading a normal life as a human being.

Socio-economically, Longding district is one of the most backward district of Arunachal Pradesh with large number of school drop outs, lack of health care facilities, poverty, opium addiction, and poor road communication, accompanied by the series of insurgency has become the common feature of the study area which hampered the level of socio economic development of the study area.

The present research work is an attempt to examine the level of agriculture, infrastructure facilities, and socio-economic development at circle level in the Longding district. The study will try to associate between the levels of development based on various socio-economic indicators. Socio-economic development of an area depends on the level of agricultural development and infrastructural facilities. Therefore, attempt shall be made to quantify the status of development at circle level for overall socio-economic development.

It is generally believed that spatial inequalities in the level of socio-economic development of an economy can be better assessed when the analysis is based on data collected for smaller administrative unit, i.e. circle wise. Therefore, in the present study circle has been taken as a unit of study.

1.4 STUDY AREA

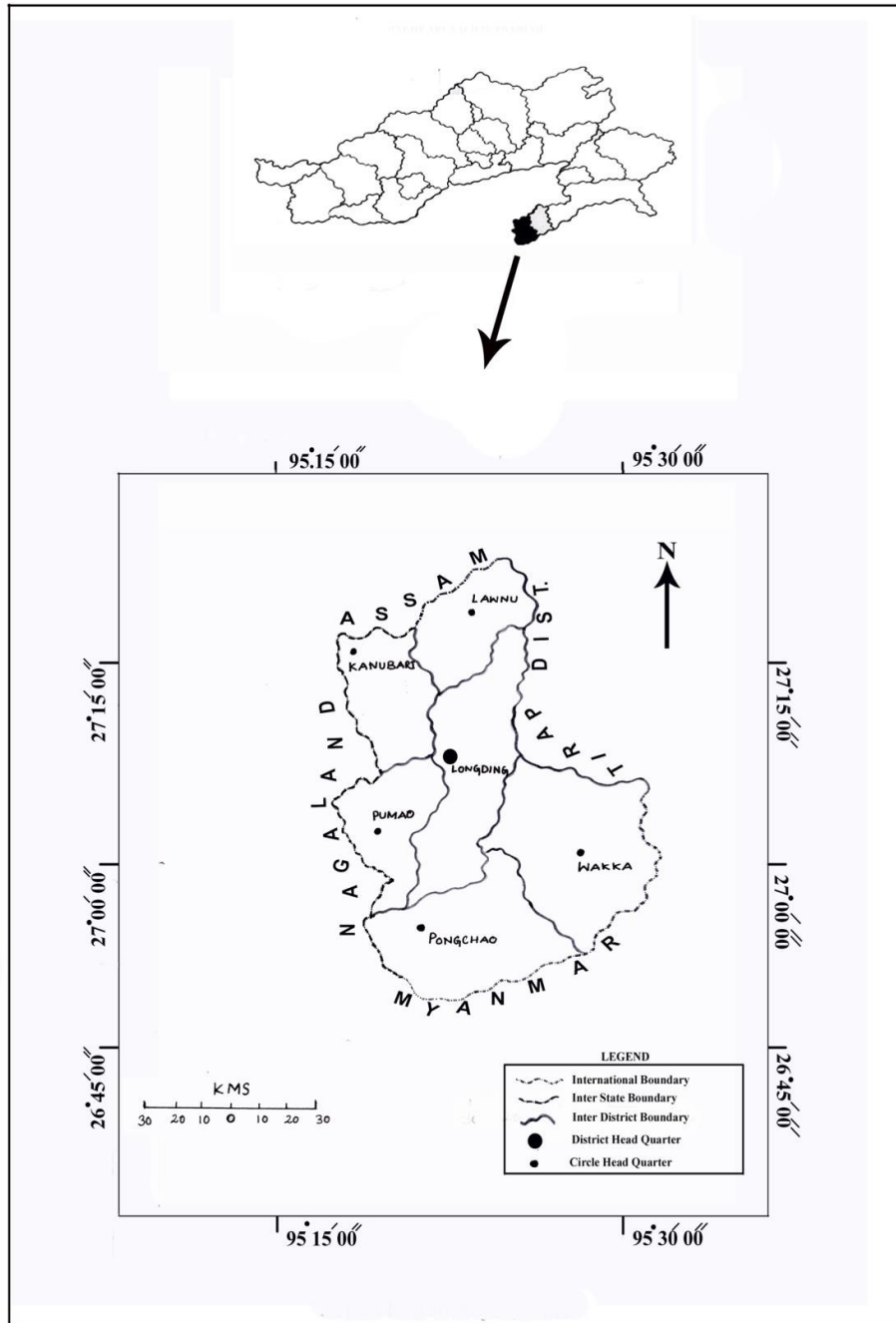
The Longding district is the 17th administrative district of Arunachal Pradesh in North East. Longding district was once a part of Tirap Frontier Agency which was created in 1943 covering some areas of Lakhimpur Frontier Tract with administrative headquarterd at Margherita town in Assam. The Tirap Frontier Agency was later renamed as Tirap Frontier Division under Northeast Frontier Agency Administration Regulation 1954 and administrative headquarter was shifted from Margherita to Khela, which was again shifted to its present site at Khonsa for administrative

convenience. The Tirap Frontier Division was later bifurcated into two districts Tirap and Changlang in 1987. The Longding district became full fledged district of Arunachal Pradesh on 26th September 2011. The district was formally inaugurated on 19th March 2012.

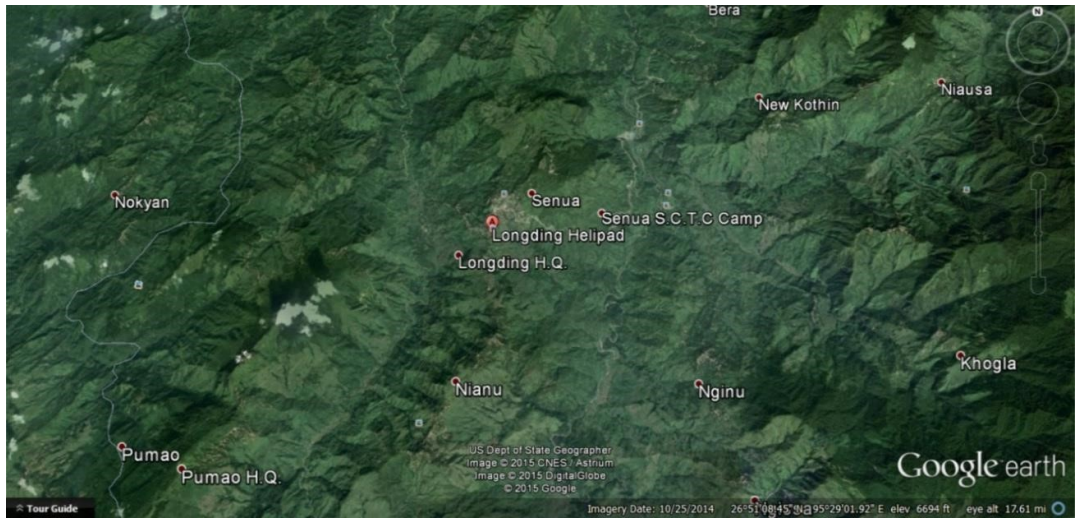
The latitudinal extension of the district is 93°57-95°23'E and longitudinal extension of 27°69-29°27'N. It shares its boundary with Tirap district in the East, Nagaland in the West, Assam in the North and Myanmar in the South. The total geographical extension is 1063 sq.km. According to 2011 Census, the total population in Longding district is 56,953 out of which 28710 are males and 28243 are females.

The study area consists of six Circles and four CD Blocks.

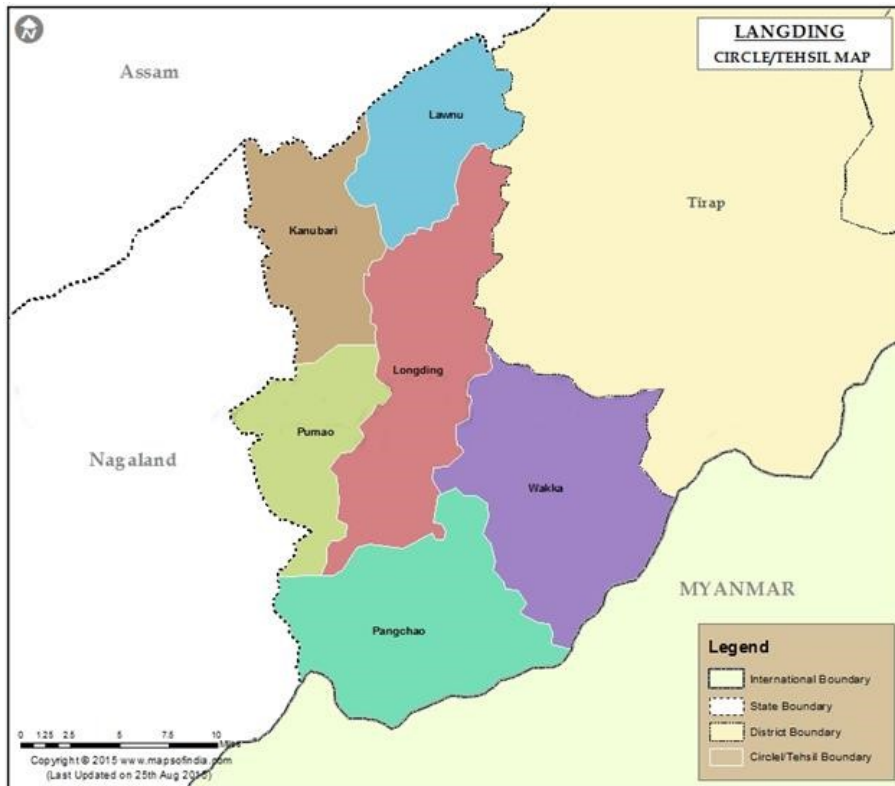
Table 1.1: No. of Circles with Villages in Longding District		
Name of CD block	Name of Circle	No. of Villages/Town
Kanubari	Kanubari & Lawnu	15+17=32
Niausa	Longding & Pumao	14+5=19
Pongchao	Pongchao	13
Wakka	Wakka	13
Total		77
Source: District Census Handbook, Tirap		



Map 1.1 Map of Longding District



Map 1.2 Physiography map of Longding District (Google Earth image)



Map 1.3 Study area: Circle map of Longding District.

The tribe inhabiting the district is known as Wancho. The Wanchos are martial tribes who at one time actively engaged in head-hunting. However, the practice is now extinct since many years. Wanchos are famous for their wood carving and beads work. The social life is governed by the traditional chieftainship system assisted by the councils of elders. Most of the people live in the villages. The life-style is community based. Most of them earn their livelihood through farming and other activities such as govt. employment, govt. contract works, contract works in forest products, trade in local products and agricultural labour etc. The agriculture is primarily of the shifting type (jhum) though slowly people have started adopting terrace farming too. With low agricultural productivity, the district is considered as one of the most backward region in the state.

The study covers three main sectors namely social, economic, and infrastructural sectors. Despite several plans initiated by the government, the plans were never implemented properly due to preparation delay, budgetary allocation, existence of anti-social elements etc. This study is an attempt to bridge the gap that exists today in a sphere of social and economic field.

1.5 OBJECTIVES

The main objective of the present study is as follows:

1. To assess the geo-environmental background of the study area as the basis of development.
2. To study the physical infrastructures available and its role in facilitating development in the study area.
3. To quantify and examine the social demographic and economic status of the people in the study area.
4. To assess the overall level of development in the study area.

1.6 RESEARCH QUESTIONS

Based on a prior knowledge and views on various aspects of socio-economic development gathered from literature available at regional and national scale, following hypotheses have been formulated for investigation of the issues highlighted for objectives:

1. Demographic parameters especially adverse sex ratio adversely impacts the economic development in households.
2. Educational plays a positive role in income generation and economic development at household level.
3. Physical infrastructure availability and access to the facilities at village level act as a conditioning factor in development of the study area.
4. Inequality at inter-village level is a reflection of differential achievements in social infrastructure, economic endowment and physical infrastructure.
5. Industrial sector is poor due to various social, political, and economic reasons.

1.7 DATA BASE

A variety of data sources is used for the baseline study as well as current socio-economic scenario and wellbeing of the people of the study area. For baseline and previous timeline based data is collected from secondary sources viz. Census report, District Statistical Bulletin for different years, Block level statistics, Arunachal Pradesh Government Five Year Plan and District Planning Report.

Far and wide travelling was undertaken in the district to collect primary data. Structured questionnaire were framed to gather the primary information. The

interactions with the government officials, the village head, the farmers and the laymen proved of great use in understanding the ground realities regarding the development of inequalities.

A detailed framework on sample and sampling has been mentioned in the methodology section.

1.8 METHODOLOGY

Socio-economic development is a multi-dimensional process and it cannot be fully evaluated by a single indicator. Moreover, a number of indicators when analyzed individually do not provide an integrated and easily comprehensible picture of the reality. It necessitates for construction of a composite index of socio-economic development based upon optimal combination of different developmental indicators.

In the present study, an attempt is made to analyze inequalities that exist among various circles of the District. Inequalities are studied in three sectors, i.e. economic, social and infrastructure. In the present study, the suitable indicators as perceived from various studies, through literature review is being included in analysis for evaluating the level of development and inequalities. The indicators will be evaluated at household and circle levels of the district as per research design. The data collected has been computed, tabulated, and depicted through various figures. The maps have been developed in different chapter for explaining the context of the research. The graphs have been drawn to depict and explain the context wherever required.

In the present study, 12 indicators in the economic, social, and infrastructural sector will be taken to measure the level of development and inequalities thereof in

the various circles of Longding district. There are 8500 households in the study area (Census, 2011); Out of it a sample size of 340 households (about 4 percent) was taken. Selection of Village and Households is ideally done in a random manner where all geo-environmental factors are playing an equal role, e.g plain area. In the present study area, topography and controls of accessibility have a major role to play in socioeconomic development. Thereby, a stratified sampling using altitude as a criterion will be utilized in selection of villages. Thereafter, the households will be selected in a random manner.

Table 1.2 Circle wise No. of Villages, Population and households			
Name of Circles	No. of Villages	Population	Households
Kanubari	15	7152	1329
Lawnu	17	4946	935
Longding	14	16897	2924
Pumao	5	4934	705
Pongchau	13	11808	1786
Wakka	13	11216	1747
<i>Source: District Census Handbook 2011</i>			

List of indicators for measuring inequalities are:

-Economic Sector:-

1. Economic activities in primary, secondary and tertiary sectors.
2. Marginal and non marginal workers. (Male and female)

-Social Sector:-

3. Demographic Parameters.
4. Literacy (Male and Female)
5. Level of education.
6. Health care facilities.

-Infrastructural Sector:-

7. Educational Institute.
8. Health care centre.
9. Transport and communication.
10. Water.
11. Electricity and power
12. Banking facilities.

The focus of the study is on economic, social and infrastructural dimensions. So, the level of development in the study is explained by using the statistical technique Z-Score and Composite Index of development. Following formula was used for calculation-

$$Z_i = \frac{X_i - \text{Mean}}{SD}$$

Where,

Z_i is the standard score of the i th variable,

X_i is the individual observation,

\bar{X} is the mean of the variable.

SD is the standard deviation.

Further the result of the standard score obtained for different indicators was aggregated by the composite score (CS), so that the inequalities in the level of social and infrastructure development of the district can be obtained. This is expressed as-

$$\text{Composite Score} = \frac{\sum Zi}{N}$$

1.9 SIGNIFICANCE OF THE STUDY

Longding district is economically backward with low productivity in agriculture and low infrastructural facilities. Not much work from the geographical point of view has been carried out regarding its status of socio economic development so far. The works available are generally ethnographic in nature focusing on the socio-cultural life of the people in the frame of continuity and change. It is due to this reason, research work on this topic is selected, and such studies will go a long way in solving the problems of inequalities in socio-economic development.

1.10 LIMITATIONS OF THE STUDY

Every investigation and study has certain limitations; similarly the present study faces number of problems. The study could have been more meaningful and representative if there is availability of the desired data of some important indicators of the district. The level of social and economic development could not be accessed due to non availability of the data pertaining to the decadal census of 1980-1990, 1991-2001. The data like-

1. Very meager data on climatic conditions which could not suffice to deal with the element of climate in detail.

2. Infant mortality rate, Female mortality rate etc of the circle wise data is not available.

3. Number of multipurpose cooperative societies per thousand of population is not available.

4. Circle wise data for the parameter of industrial development like production, investment are not available. So, the data about industries and productions of the district which is available in NABARD Data has been taken for the study.

The meager census data was not sufficient to come into the final conclusion. The census data is not available for the Longding district because the data was merged with the data of Tirap district. Earlier the study area was merged with the Tirap district, only in the year 2011 it was separated from Tirap and made a separate district called Longding.

The census data was not sufficient to explain position or status of the level of socio economic development because of the illiteracy and ignorance of the people.

The present data is the outcome of the available data collected officially as well as self generated data to examine the level of development at the circle level. Non availability of the data in some of the selected component has forced the researcher to change the approach accordingly.

1.11 LITERATURE REVIEW

United Nations Research Institute on Social Development (UNRISD) study in 1970 was concerned with the selection of the most appropriate indicators of socio-economic development, with the analysis of relationship between these indicators at different levels of development and the construction of a synthetic index of

development. The study considered the relationship between social and economic development as more appropriate for measuring development. The study employed 73 social and economic variables which were reduced to 42, and then 18 highly correlated core indicators for making comparisons between countries or for measuring level of development. Nine social and nine economic indicators were included in the core indicators. Thirteen of the indicators were developmental as they show commonly accepted development values such as health and agricultural productivity and the five remaining indicators were structural indicators.

Schwartzberg (1962) studied the socio-economic development of India. He has given the three approaches to map the economic development in India. He used composite index to determine the level of development for regional analysis.

Schultz T.W (1966) mentioned that the agricultural sector of an economy needs careful handling and planned stimulation as otherwise; it can arrest the development of the entire economic development.

Das (1971) examined the classification of districts according to their degree of development given in 1961 census. The correlation Matrix of the socio economic variable is first examined in order to weed out the less significant one and found a set of variable which approximately stands for economic and social development. Secondly, a Principal Component Analysis is carried out and the district is classified according to the value of Principal Component. The results from these two analyses are compared, and on the basis of these comparison author summarizes his own result with rank values for the district.

Ali Mohammad (1975) has studied agriculture and nutrition in Kher, Sitapur, and Barbanki district (U.P). The work is based on direct survey of sample household. He made a comprehensive study of natural environment like physiographic and

climate of the region which affect agricultural production of the area. The works provides a few suggestions for future development of agriculture and for raising the standard of living in the region. He emphasized that standard of living of the people regulates the status of socio-economic life of people.

Ahluwalia (1978) examines time series evidence on rural poverty over past two decades i.e. 1956-1973. The time series showed that the incidence of poverty fluctuates in response to variation in real agricultural output. Author analysed that there is inverse relationship between poverty and agricultural output per head.

Narain, Rai and Sarup (1991) attempted to examine the level of development of different states with the help of composite index based on optimum combination of number of socio-economic indicators. Seventeen major states and ten smaller states of country were included in the analysis. The data on various indicators for the year 2001-2002 were used in the study. The levels of development were examined separately for agricultural, infrastructure and overall socio-economic sector. Author observed wide inequality among different states. He analyses overall socio economic development was positively associated with the development of agricultural sector. The infrastructural facilities and literacy status also influences the socio-economic development in the positive direction.

Ganguly (1995) attempted to examine the imbalance in socio economic development of Arunachal Pradesh in terms of communication. He described communication as the main hindrance in development of the state. As the road connecting to the other region has to pass through Assam which affects the distribution of goods and services and the process of socio economic integration also.

Narain, Rai and Sarup (1996) measured the level of development of various districts of Maharastra with the help of composite index based on optimum

combination of forty three indicators. Twenty nine districts of the data were included in the study. The district wise data for the year 1991-92 on forty three indicators were used. The level of development was examined separately for agricultural, industrial, infrastructure and overall socio-economic development. He analyzed that the socio economic development was positively associated with the growth and progress of development in agricultural and industrial sector in the state. The study revealed that the low developed district required improvement of various dimension in most of the indicators for enhancing the overall socio-economic development.

Narain, Rai, and Bhatia (1997) examined the level of development of different districts of Karnataka. In their study the level of development was obtained with the help of composite index based on 39 indicators. The indicators of development were examined separately for agricultural, industrial, infrastructure and overall socio-economic development. Wide disparities were observed among different states. The socio economic development was positively associated with growth and progress of agricultural development. Author suggested for bringing uniform development, potential target for various indicators have been estimated for low developed states.

Saikia (1998) measured the level of socio economic development in the North –East by taking 21 indicators like workers in agricultural/allied activities, percentage to main workers, net sown area, fertilizer consumption per cropped hectare, per capita food grain production, bank credits to farmers, literacy, total numbers of urban towns and road length.

Das (1999) examined that in India the progress of socio-economic development among major states is not uniform. Author examined the existence of the existing variability on interstate development and thereby identifying indicators responsible for the diversity of development. A composite index based on several indicators have

been developed using principal component analysis and states were arranged according to the indices derived using four broadly accepted components (a) economic production (b) common minimum needs (c) health and services and (d) communication. The findings of the analysis support the general perception about states.

Quarado, Heijman and Folmer (2001) in their paper adopted multidimensional approach to analyze socio-economic inequality for the country of Hungary. The multidimensionality of inequality is taken into account by using a multiple of social and economic indicator that is combined into a composite index. Measure of multidimensional inequality and principal component analysis is used to construct the composite index. The result thus obtained was used to identify the least favoured and most favoured region.

Das (2002) has described in details about sustainable rural area development of Kimin-Doimukh community block, Papum Pare district of Arunachal Pradesh.

Narain P, Sharma SD, Rai SC, Bhatia V.K (2005) examined the level of development of different district of Kerala with the help of composite index based on thirty nine indicators. The district wise data for the year 2001-2002 in respect of these thirty nine indicators were used for all the fourteen district of Kerala. Wide inequalities were observed in the different socio economic sectors within the district. Infrastructural facilities are found to be positively related to socio economic development.

Arunachal Pradesh Human Development Report (2006) emphasized the Human Development Index for the Arunachal Pradesh on three indices viz, Education, Health and Income.

Chaudhuri Shaswati and Bhuyan Ratna (2005) examined that unfortunately for North East India as per the latest UNDP estimates on Human Development Index (HDI) and infrastructural index all the states of the region are ranked in the lowest category in respect of infrastructural index among the states of the region while in respect of HDI Mizoram ranks among the highest category while rest of the states are all clubbed in the lower middle category. The biggest impediment in economic growth of North–East India is therefore market imperfections. Both labour and land market which form the basic inputs of production are imperfect in North East India. Therefore, growth and effective play of market forces are essential for inducing the growth impetus in the region. They act as a controversial force for reducing the backward region to a new realm of diversified opportunities in every field of social, economic and political interaction.

Nayyar (2008) examines socio-economic inequalities among the state in India. He took a panel data study for 16 Indian states for the period from 1978-79 to 2002-2003. In his study he found that (a) the states are not converging to identical levels of per capita income in the steady state, and (b) once factor that affect steady-state level of income are controlled for, the poor states grow faster on average than the rich ones. There is an increase in the dispersion of per capita income across state over time which is the indicative of Indian states converging to increasingly divergent steady states. In his analysis he identified per capita public investment as important determinant of a steady state level of income.

Hazarika, Sanjoy (2010) in his study on seeking solution to North East India analysed that North East dealt with many multiple issues and problems and challenges. There are many challenges, issues that need attention like security, human right etc.

Mohiuddin S and Hashia S (2012) measured the level of socio and economic development of the Kashmir valley. The various indicators like agriculture, industry, education, health, road communication etc. has been assigned statistical weight derived through factor analysis method. The changes in the index value have been examined to trace the direction of development which gave the aggregate picture of change in the level of development of all tehsil over a two period i.e 1981-2001.

Mandal (2014) examines that tribal economy is characterized by collection of their social, institutional, technological and finally economic arrangement through which community seek to enhance their material and social well being. He examines that in spite of several developmental programmes implemented by government to enhance the socio-economic status of the tribals. But such programmes have not yielded a desired result. There is a vast gap between the rich and the poor and this vast gap is because of the existence of social corruption with no social audit.

Kumari Reena (2016) identified the gap between rural and urban in terms of standard of living characterized by monthly percapita consumption expenditure in Bihar. The analysis depicts there is a need to bring poor and vulnerable people under mainstream by providing equal distribution of wealth and equal opportunities to them.

Kumar P Nomita (2019) analysed the pattern and trend in inter district disparities in the level of development particularly in the level of income, physical and social development by using multivariate analysis. It found wide regional disparities across districts in the availability of social and economic infrastructure which have persisted and prolonged overtime amongst the four broader economic region i.e. central, eastern and Bundelkhand. Bundelkhand region present the grim scenario with almost six out of seven districts falling in the category of backward

districts of India. The author suggested more rigorous effort toward developing economic and social infrastructure particularly in laggard districts of the east. This would also help in accelerating the pace of economic growth and employment opportunities and reducing regional disparities in development of Uttar Pradesh.

1.12 CHAPTERIZATION

In order to attain the objectives of research, the proposed research work is being tentatively divided into following ten chapters covering various aspects of the study.

Chapter I: Introduction – covering conceptual framework including introduction, study area, statement of the problem, aim and objectives, data sources and methodology, literature review and organization of the work.

Chapter II: Geographical background of Longding District.

Chapter III: Social and Cultural dimension of Longding District.

Chapter IV: Spatial pattern of Economic inequalities

Chapter V: Spatial pattern of Social inequalities.

Chapter VI: Spatial pattern of Infrastructural inequalities.

Chapter VII: Analysis of indicators for development and inequality at Circle level.

Chapter VIII: Analysis of Survey work: Field experiences.

Chapter IX: Conclusions and Suggestions.

GEOGRAPHICAL BACKGROUND OF LONGDING DISTRICT

2.0 INTRODUCTION

Each region has its own geographical entities which comprises of various physical and cultural entities and each one distinguishes from another. These entities collectively influence the socio economic development of the area. So it is important to understand the geographical phenomena before analyzing the socio economic condition of the area.

Arunachal Pradesh shows a wide variation in topography. There is a wide variation in the topography of Arunachal Pradesh. The topography is characterized by the undulating hilly terrain, lower hill slope, river valley and gigantic rivers.

Topographically, Arunachal Pradesh has been divided into four distinct physiographic divisions-

1. The Himalayan Range.
2. The Mishmi Hills.
3. The Naga Patkai Ranges.
4. The Brahmaputra Plain.

All these ranges were raised during the late Himalayan Orogeny. The area under study is lying in Naga Patkai ranges. It is made of tertiary sandstone, mudstone, shale, and occasional limestone.

2.1 LOCATION AND EXTENT

Longding district is the 17th administrative district of Arunachal Pradesh. It has a total geographical extension of the district is 1192 sqkm. The latitudinal extension of the district is 93°57'-95°23' E and longitudinal extension of 27°69-29°27 N. Altitude is 886 mtrs above the sea level. Being situated in the sub-Patkai region the whole area is hilly and undulating. The hills have been denuded due to jhum cultivation except few foothills area adjoining the Assam plains. Situated in the eastern part of Arunachal Pradesh it is surrounded by Tirap District in the east, Mon district of Nagaland in the west, Sivasagar district of Assam in the north and Myanmar in south.

The Patkai hills in the south of the study area forms the international boundary between India and Myanmar. The hills in the region are the branches of Patkai range and from a distance they look like successive spurs.

The tribes inhabiting the district are known as “**Wancho**” who were once known for the practice of fierce head hunting.

The total geographical extension of the study area is 1192 sqkm. According to Census operation A.P, the total population of the district is 56,953 out of which 28710 are males and 28243 are females.

Longding district was created by bifurcating erstwhile Tirap district of Arunachal Pradesh on 26th September 2011 by Arunachal Assembly. The district was formally inaugurated on 19th March 2012 and it became the 17th administrative district of Arunachal Pradesh.

There are six administrative circles in Longding district. They are -

1. Kanubari
2. Lawnu.
3. Longding.
4. Pumao.
5. Pongchau.
6. Wakka.

Sl. No.	Name of Circle	Area (in sqkms)	Area (in %)
1	Longding	234.77	22.06
2	Kanubari	240.77	22.62
3	Lawnu		
4	Wakka	244.17	22.94
5	Pongchau	229.13	21.53
6	Pumao	115.61	10.87
Total		1064.45	100.00
<i>Source: District Census Handbook, 2011</i>			

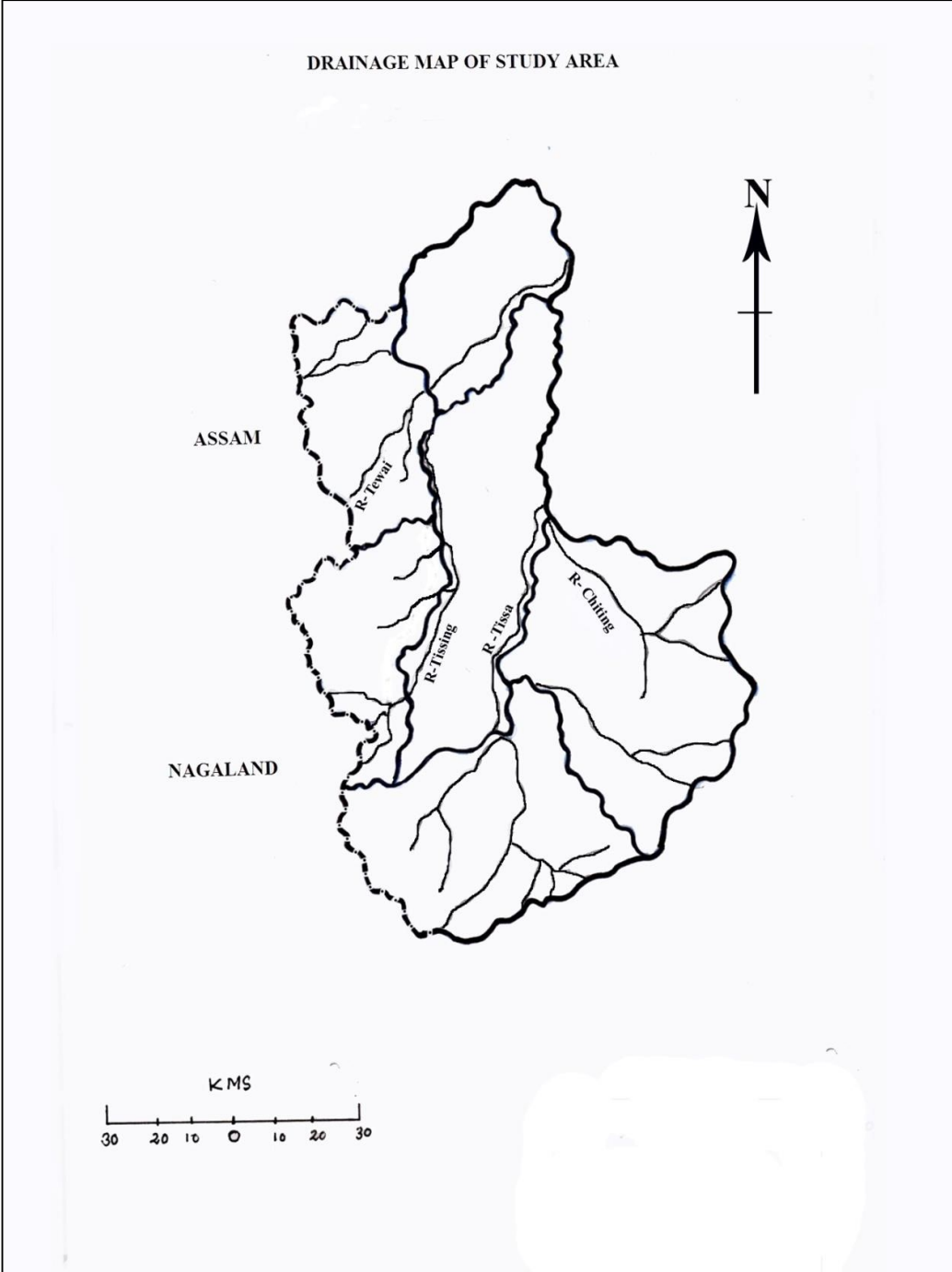
2.2 DRAINAGE

Surface drainage means surface flow of water through stream ranging from the tiny rivulet to mighty rivers. According to Strahler (1963), the evolution and development of drainage system and their emerging features are the result of geological structures and steepness of slope. The major rivers and tributaries transversing the state are Siang, Kameng, Subansiri, Lohit, Tirap etc. All these rivers are fed by the snow melting from the Himalayas.

Drainage system of Arunachal Pradesh is characterized by-

1. Arunachal Pradesh receives bulk of rainfall especially during the monsoon.
2. Situated in the topographical front of the tabular plateau the state enjoys a climate transition between the tropical humid climate of Assam plains and the temperate condition of the high mountain on its northern border land.
3. Being part of young folded Himalayan mountain system, the drainage network of the state is still in an evolutionary stage and is immature and is controlled by the greater and the lesser Himalayas in the western part and the frontal range of Mishmi hills of the eastern part of the state .
4. The major river of the state belong to antecedent category.
5. The main ranges, peaks, passes and escarpment of the greater Himalayas have controlling impact over the evolution and development of state drainage pattern which also act as a water divide.

The drainage system of the study area comprises of rivers Tissa, Tissing and Tewai. Tissa is the biggest river in the district. Tissa river originates in southwest part and flows directly toward northward direction and ultimately merge into Brahmaputra in the plains near Disangmukh in the Sibsagar district of Assam. In the plain this river is called Disang. Tissing is another big river of the area, flowing in south to north direction between Niauxa and Pumao villages. Tiwai is another tributary of Tissa is located between Chopnu and Russa village. Some of the tributaries of Tissa flow toward south westerly direction while other in south north and west east direction.



Map 2.1 Drainage Map of Longding District

2.3 SOIL

Soil consists of mechanical mixture and chemical compounds of the materials found on the surface of the earth. They contain both inorganic and organic materials. The process of soil formation is influenced by the physical and chemical character of the parent rock. The soil types of Arunachal Pradesh are based on three main soil forming processes –

1. The pedzolisation of the upper most part of the greater Himalayan range where the action of glacier forms.
2. Depositional processes which formed skeletal soil processed by glacier and alluvial soil formed by the action of river.

On account of these operative soil processes, National Atlas and Thematic Mapping Organization (NATMO) Calcutta has divided Arunachal Pradesh into eleven soil types region which can be grouped into three main soil categories –

1. Alluvial Soil – On the basis of period of genesis there are four types of alluvial soil-young alluvial, old alluvial, Tarai and Bhabhar. On the basis of physical makeup, the alluvial soil may be grouped as sandy, sandy loam, silty loam and silt. Old alluvium is found only in patches generally along foothills. The new alluvium consists of recently deposited silt and sand and is rich in organic content over the hills. This soil is confined only to narrow valley bottoms.

2. Denudation Soil – NATMO (National Atlas and Thematic Mapping) has given nomenclature as red gravel, red sandy, red loamy and laterite soil. The soil became red in colour due to oxidation of the iron content present in them. Laterite soil is found at the medium altitude. It is a leached soil and hence not fertile.

3. Poor Mountain Soil –mountain soil are found over high altitudes (above 4500m). This soil remains frosted in winter and mixed with fluvio-glacial deposit. Because of low temperature, chemical decomposition is of lesser intensity. Mountain soil is not fertile.

The soil of the study region is predominantly laterite soil. However, patches of red sandy and alluvial soil are also found in the region. Red soils are normally found on the hillslopes. This soil became red because of oxidation of the iron present in them. Although red soil is commonly found over the hills, there are patches of sandy soil which tend to be sandy near the riverbanks. Laterite soil is found at the medium altitude of the hills. It is leached soil and not fertile. In the plains, alluvial origin soil of varying depths with texture of silt is generally rich in clay are found. Big and small boulder exclusively occupy the area making the soil unfit for cultivation. The shortage of plain land and less fertile slopes due to the high leaching is responsible for the low productivity of crops. The region is a part of Patkai range.

Table 2.2 Distribution of soil of Longding district		
Major soil	Area (in 000 ha)	Percent
Laterite soil	107	90
Alluvial	9.52	8
Black	-	-
Sandy	2.38	2
Total	118.9	100.00
<i>Source: Department of Agriculture, Longding</i>		

2.4 CLIMATE

According to Critchfield (1979, “the process of exchange of energy and mass between the earth and the atmosphere over a long period of time results in condition which we call climate.” Climate plays a decisive role in affecting the economic pattern, way of life, mode of living etc.

The Tropic of Cancer passes across the southern part through Mizoram and Tripura. Therefore, the climate of North-East India is essentially a tropical climate. At the same time being within the monsoon belt of the south and South-East Asia, the region is under the tropical monsoon climate, but its location and topography, encircled on three sides by high mountain ranges and the presence of a precipitous plateau (Meghalaya) thwart the course of the incoming south-west monsoon winds, have rendered its climate somewhat different from that of the other parts of India.

The factors influencing the climate of North –East India are:-

1. The situation and alignment of the hills, plateaus and mountains and region.
2. The seasonal change in the pressure condition over the Bay of Bengal on the one hand and over the north-western landmass of India on the other.
3. The Tropical Oceanic (south-west monsoon) airmasses that blow over this region.
4. Occasional visit of the westerly (Mediterranean) lows in winter.
5. Presence of local mountain and valley winds.
6. Presence of numerous vast water bodies and extensive forest and development of local cyclones.

The presence of haze, mist and fog and occurrence of dust storm in the spring weather of the Brahmaputra valley are the important characteristics of the region.

Considering the temperature, pressure and humidity conditions of their temporal distribution, the weather conditions of the the North-East India can be divided into four seasons-

1. Winter Season.
2. Pre-Monsoon Season.
3. Monsoon Season.
4. The season of Retreating Monsoon.

The climatic condition of the study area varies from place to place due to its diverse topography. It is largely influenced by the elevation and terrain of the place. The climatic condition ranges from hot and humid. In lower belt the plain bordering Assam like Kanubari it is very hot in summer. Winter is very cold in Pongchau and Wakka. Winter season starts from the later part of November to February. Premonsoon season starts from March to May. Thunderstorms are frequent during pre monsoon period. Very heavy and frequent Monsoon shower continue from May to middle of the September.

The month of July has the highest rainfall with an average precipitation of 487.4 mm and average of 26 rainfall days. The average maximum and minimum temperature is 32°C and 25°C during summer and 23°C and 10°C during winter respectively.

Broadly the Climate of the District is divided into four season-

1. The cold weather season - December to February
2. The hot weather season – March to May.
3. The south west monsoon season- June to August.
4. The post monsoon season- September to November.

There is no meteorological station in the district and rainfall recording stations. So, it is very difficult to describe and interpret the micro level variation. The climatic data which are available in the District Agriculture Office is used to describe the climate of the entire area.

2.5 RAINFALL

Precipitation is the most important element of climate which accelerates hydrological process and also generates water resource in an area. Its seasonal variation and distributional pattern are of vital concern to access the amount and quality of the available water for various users.

Graph 2.1 Mean rainfall of Longding District

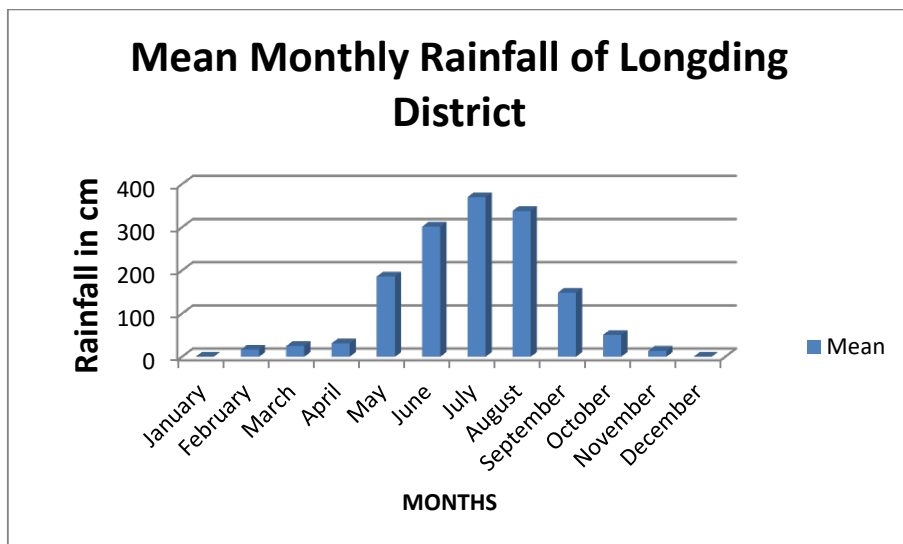


Table 2.3 Mean monthly rainfall of Longding District 2015-2017				
Month	2015	2016	2017	Mean
January	Nil	Nil	Nil	0.00
February	50	Nil	Nil	16.67
March	26	25	23	24.67
April	32	30	31	31.00
May	200	180	178	186.00
June	350	274	280	301.33
July	370	369	370	369.67
August	350	339	325	338.00
September	165	160	120	148.33
October	53	54	45	50.67
November	20	11	10	13.67
December	Nil	Nil	Nil	0.00
<i>Source: Department of Agriculture, Longding district</i>				

From Table No. 2.3, it becomes evident that in winter season the rainfall is always scanty and the farmers of the region has to bear the brunt of these variations. The irregular and uncertain monsoon rains plays havoc with the farmer which is the backbone of the economy in the region. The element of rainfall has been conspicuously held responsible for creating disparities particularly in the field of agriculture in the district.

2.6 NATURAL VEGETATION

Forest is the most invaluable renewable resources which has been playing significant role in sustaining human life and maintaining environmental balance of the earth. Ancient people were solely dependent on forest for their sustenance. Even today most of the tribal people derive significant part of their food from the forest.

Forests are the mainstay of the economy, and the livelihood of the people has been closely linked and heavily dependent on forest resources since time immemorial.

North–East India is rich in various types of natural vegetation. Climate, physiography and soil of the region have provided favourable condition for luxuriant growth of natural vegetation. The region has one of the heaviest rainfall of the region. Although the average annual rainfall of the region is about 250cm, it varies from place to place. These variations have given rise to various types of flora in North-East India. The favourable climatic conditions, augmented by fertility of the soils have provided luxuriant growth of numerous species of plant.

The varied climatic condition, topography and physical features of Arunachal Pradesh have given rise to varieties of forests. There are more than twenty forest types recognized in the state as per Champion and Seths classification. These can be broadly classified into the tropical, subtropical, temperate and alpine which is mainly based on climate and species composition. The natural vegetation of Arunachal Pradesh can be divided into the following groups:-

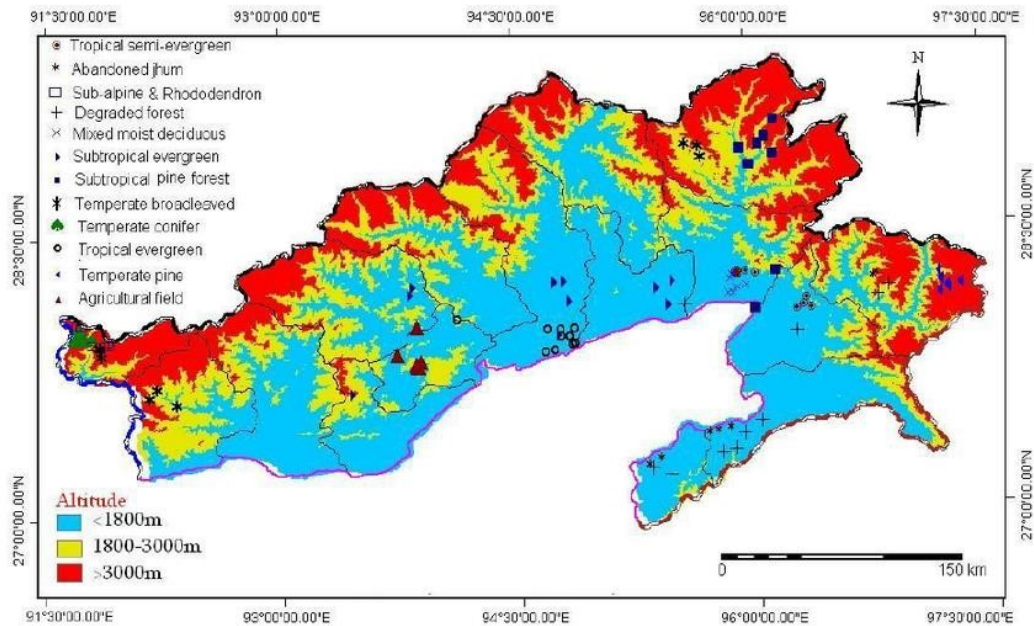
1. Tropical Evergreen Forest: tropical evergreen forests are found in those parts of the region where average annual rainfall is more than 200 cm. There trees grow tall with evergreen foliage.

2. Tropical Deciduous forest: Deciduous forests are found in those areas of North East India where the average annual rainfall is 80 cm to 200 cm. In Arunachal Pradesh, the deciduous forests are limited to a very narrow zone of foothills. Economically, the most important product of the deciduous forests is the Saal and Teak forests known for its hardness.

3. Tropical Grassland and bamboo trees: Bamboo trees are seen throughout Arunachal Pradesh. Grassland is not very common in Arunachal Pradesh and it is not climogenic also. Some of the grasses found on the hillslopes of Arunachal Pradesh are there because the original forest was earlier destroyed for shifting cultivation.

4. Alpine Grassland: These types of forest occur where the altitude varies between 4000 m to 5500 m. The area is covered by snow for major part of the year. One can see lush green grass coming in late spring. These forests contain varieties of juniper, rhododendron, shrubs and mosses.

Map 2.2 Types of Forest in Arunachal Pradesh.



In Arunachal Pradesh, there is about 70% of the total area under forest cover. But in recent time it has been reported that there has been a decline in the forest cover. According to the India State of the Forest Report (ISFR), 2019 the forest cover in the state has decreased by 276,22 sq.kms as compared to the previous reported in the ISFR 2017. The state has also recorded a decrease in bamboo bearing

areas from 15,125sqkms in 2017 to 14,981sqkms in 2019. The forest cover in Arunachal Pradesh is 66,687.78 sq.kms, which is 79.63 percent of the states geographical area. According to the report, Arunachal Pradesh has one of the highest forest cover in the country after Madhya Pradesh. The declining trend in the forest cover has been attributed to increasing population, developmental activities and jhum cultivation.

In terms of canopy density, Arunachal Pradesh has 21,095,43 sqkm under very dense forest, 30,556.50sqkms under moderately dense forests and 15,035.85sqkms under open forest as per the reports.

In the study region, there is about 70% of the total area is under forest coverage. The total forest cover in the region is 635sqkms according to Ministry of Micro, Small and Medium enterprises. The following types of forest are found to be available in the study region.

1. Tropical evergreen forest.
2. Semi evergreen forest.
3. Sub tropical broad leaved forest.
3. Sub tropical pine forest.
4. Temperate forest type.
5. Coniferous Forest.
6. Alpine grassland.
7. Open bamboo brakes.

In the absence of land tenure system in Arunachal Pradesh, for all practical purpose, the forest, other than the govt notified forest, are classified as Un-classed State Forest. These forests are burdened with traditional as well as customary rights and privileges of the local tribal communities living in the area and therefore these

forests are often termed as community forest. There exist the chieftain system amongst the ‘Wanchos’ who exercise ultimate control over the people, land, streams and forests. Traditionally, even today the forest area of the village is under his control and ownership and he has a major say in the way the forest and land is utilized by the village. Forest land consists of individual and community. People enjoy customary right over the collection of minor forest product for their domestic requirement. All the villages have their own forest land or clan land where they plant bamboo, toko leaves (species of palm) and other important plant for their requirement. Mass clearance is not permitted without the consent of the community head i.e. eldest member of the family. There is a restriction of collection of forest and forest products from the individually owned forest without the consent or prior permission from the individual concerned.

The region has witnessed a decline in its total forest cover in recent times owing to increasing population, developmental activities and practice like jhumming. The pressure on forest resources is consistently increasing, leading to the degradation and affecting regeneration.

Table 2.4 Number of Forest Division in Longding district				
District	Name of the Forest Circle covering the district	Name of the Forest Division	No. of Forest ranges	No. of Beat Houses
Longding	Southern circle Deomali	Kanubari	3	4
<i>Source: District Forest Officer, Longding</i>				

2.7 GEOLOGY, MINERAL AND MINING

The geographical description of the region is incomplete without giving due attention to its geological structures. Geological formation of any area determines the quality, quantity and kind of mineral deposit as well as formation of landforms. The study of geology explains the structures and compositions of the rocks. It helps in understanding the soil characteristics and availability of minerals.

Arunachal Pradesh is an extension of the great Himalaya. The entire Arunachal Himalaya is the product of the tectonic succession of the unconformities, folds, and fault thrust of the plate tectonic activities in particular and the formative process of the Himalayas in general. The main boundary thrust separates the great Himalaya and the sub Himalaya from the Brahmaputra valleys. The Mishmi thrust separates the eastern side.

The rocks of the study area are mostly of sandy material of tertiary origin. In the sandy beds seams of coal whose thickness varies from 0.4 to 2.0 have been reported. The deposits of coal, oil and gas have been reported in Kanubari circle but the deposits are yet to be estimated.

The geology of the study area falls under the Brail and Disang group.

Disang group –

The Disang group of Eocene age represents the oldest rocks of tertiary sequence. In Longding district, it is represented by the rocks of Disang group which comprises thick succession of unfossiliferous dark grey compact shales with frequent intercalations of hard massive grey and reddish sandstone. The Disang group of Eocene age represents the oldest in the tertiary sequence of Assam Arakan Basin.

The Disang group occupies a vast area in the Tirap and Tissa valley of the Naga Patkai Range occurring at the core of Nampong anticline due to folding and faulting.

There are number of brines/salt springs located in Disang group. These salt springs are known to the local inhabitants for centuries. These were the the only mineral resources which the local people exploited for salt manufacture in the area during ancient time. It is clearly not known whether the source of saline water is in the Disang or it is in the underlying rocks.

Barail Group-

The rocks of Barail group occur in two different sedimentological environments in the district. The one occurring to the south of Disang Thrust belong to the Geosynclinal facies, whereas the other found north of it belong to shelf or platform facies and is coal bearing. The coal seams are invariably associated with and occasionally ferruginous clay bands, sandy shale and yellow sandstone. The formation has been folded into an isoclinal anticline.

**SOCIAL AND CULTURAL DIMENSION OF LONGDING
DISTRICT**

3.1 HISTORY OF MIGRATION AND ORIGIN

There is no written record to say or any account to say how the term “Wancho” originated. So we have to rely on the oral literature, the mythologies regarding the origin of the word “Wancho.” Some of the mythologies related to the origin of the term “Wancho” are-

1. Wancho- According to this mythology, the word Wancho is derived from the local term Wang-cho meaning the hillmen of Wang or hillmen who lives under the rule of the king or chief. The word “Wang” stand for the king and the “cho” stands for the Hillman.

2. Waan-to- According to this mythology, the meaning of Wancho means Waan to (follower of law). It means those who live under the the law formulated by their forefathers.

3. Rang Wanto- According to this mythology, Wancho means the people who celebrate the festival by erecting “rangwan” or “jaangwaan.” Rangwaan or Jaangwaan is a long bamboo with leaves and branches which is erected during their annual festival “Oriah.”

But it is generally believed by Wancho means those who are under the chief Wangham.

In the pre independent period and during the time of the British Administration, the Wanchos were known as the Nagas of the east or the Banferia Nagas. There is no written record of the pre Ahom period to say anything about the Wanchos. The present name Wancho became popular only after the administration of the area was taken over by our own government after independence. The massacre of the Survey party led by Captain Badley and Lieutenant Holcomb, in the Wancho village of Nyinu, more than a century ago has brought the Wancho into prominence even though they were known as headhunters earlier. Close contact with the tribe was made only when various developmental programmes were taken up by the government.

There is no written record or any account to say when the Wanchos first lived in their present habitat or whether they are the autochthons of the area or when they have first migrated. About the history of migration also we have no other alternatives than to depend upon the various legend current among the people. These legends are handed down traditionally by word of mouth and no written document is available.

According to one legend, they came to there present location from a place called Nyannu Ofan known also as Ofannu situated somewhere toward the south west beyond the Patkai or in the Tuensang district. Their memory dosen't goes beyond Nyannu Offan. According to some, Nyannu and Ofan are two different places while other thinks it to be one. From Nyannu ofan they came to Tinao, a place near an unidentified river. From Tinao they split into groups each taking a different route via Tangnu and Shangnu, till both finally came to and settled in their present habitat. These two groups came to be known as Tangjan and Shangjan respectively.

Verrier Elwin (1960) narrates the mythology of Wancho and the story goes like that- two brothers jointly migrated from a place named "Ohannu" perhaps in

north China to Patkai mountain range. The reason behind their migration perhaps may be due to natural calamities like flood etc that compelled them to migrate to safer place. The elder one decided to settle in the area of Burma and the younger one came towards the present area of Longding district.

Another legend narrates that when a great flood occurred all living creatures were drowning except a man named “AJU” and a women “AJONG.” Flood couldnot reach them as they took shelter on the top of the hill. Therefore, Wanchos believe that all the Wancho are the descendent of “Aju and Ajong’.

According to another legend, Wancho came to their present habitat from a place called “Maiphan Mihjan.” Their memory doesnt go beyond “Maijan Mihjan” and Ophannu or Ophantinu. They regard them as their forefather. From there they migrated via Burma and part of Tuensang district of Nagaland, which is locally called “Langphoh Sangnu.”

From the various legend current among them it may be presumed that the Wancho originally belong to the same place Nyannu Ophan or Ophannu whatever they call and came to the present habitat in successive waves of migration. They migrated first to Tangnu and Shangnu and when they found out that these two places cannot hold a huge population they moved eastward in search of land or may be that they were pushed by later migrants. Ultimately, when they found the present land uninhabited or thinly habited they settled there. Migration in search of suitable land for subsistence due to population explosion is a phenomenon universal throughout the human history. The Wancho also are no exception to this universal phenomenon.

Whatever may be the story of migration, it is however a fact that the Wanchos migrated from a place situated somewhere in the west of their habitat. They came via the present Mon district of Nagaland, the similarities that exist in physical

feature and socio cultural life with the Konyak of Nagaland makes one to believe strongly such a course in their migration.

It is very difficult to say with an amount of authenticity as to whether the land which the Wancho now inhabit was lying vacant or some people were already inhabiting there whom the Wancho have driven out. The Wancho, however, says that there were some other people who were driven out. The people of Banfera village say that some people known as “Kan “and “Man” inhabited in the Banfera village. They fought with them and having defeated fled away towards the plain. The present Kanubari, they say is named after those Kan people. Srivastava writes before the Wancho came to their present habitat the land, as they say was occupied but a different people, who the Wancho asserts with pride, were not as developed as they. They lived in jungle and subsisted on the wild fruits and nuts. They had no “dao” and did not know the use of fire. The migrating Wancho drove away most of the people already living there. Those who remained were assimilated in the Wancho society. The two migrating branches of Tangjan and Shangjan continued to move toward the east and established themselves in the village occupied by them at present, at times occupying the unclaimed land, and at times ousting the original settlers.

3.2 THE SOCIAL PRACTICES OF THE WANCHOS

3.2.1. THE SOCIAL SYSTEM

The Wancho society is divided into two important social divisions, Wangham, the chief and Wangpan, the commoner. The division dates back to the days of the first creation of a Wancho village and there is no tradition or folklore to say the exact time of this division. As is customary and usual in a society with a

chief, a Wancho chief is entitled to marry several girls from the commoner class. The marriage of the Wangham with Wangpan girl has given birth to two intermediate social classes, Wangsa and Wangsu. A chief is sacred and so is his blood. So his son born out of a Wangpan wife can never be Wangham because there is Wangpan blood in him, nor can he be a Wangpan because Wangham blood is also in him. Thus, all the children of Wangham from his Wangpan wife or wives are assigned to an intermediate class of Wangsa, just a rank lower than the Wangham. Below Wangsa there is another class, the Wangsu i.e. son of Wangsa father and Wangpan mother. Four social classes have thus been established. On the highest rank of the social hierarchy is the Wangham with all his glory enjoying special facilities and honour in every sphere of life. Next to him is the Wangsa, Wangsu goes a step further down and does not give rise to any other class. On the last and the lowest in the social strata is the Wangpan with no royal blood in him. All these four social classes have various social responsibilities and obligations, rights and duties and interpersonal relationship.

Social distinction between the classes is is very scrupulously observed in every sphere of life. As for example, in the village festivals the Wangpans are not allowed to sit and take meal in the same row with the Wanghams. They are also not allowed to marry a Wangcha girl from Wangham's family although there is no restriction on the part of the Wangham to marry a Wangpan girl.

The Wangham is the head of the village as well as of the society. The head of the village has got to be Wangham and since the post of Wangham is hereditary, a Wangham has to produce a Wangham son. For this he has to marry the daughter of a Wangham born of a Wangcha wife. Such a daughter is known as "Wangcha." If a Wangham doesnot have son from any of the Wangcha wife, the office of the chief,

on his death goes to his nearest kin, his brother's son given the first preference. But if it so happens that his brother also donot have sons born out of their Wangcha wives he asks the Chief of his parent village to send to his village one of his younger son to succeed him. This arrangement is also followed when the Chief of the parent or the paramount villge has no son, or other eligible heir. He then asks the Chief of the village which branched off from it to send his eldest son, who then shifts to the parent village and inherits the office of the paramount chief on his death. But in no case, a Wangsa becomes a chief. Since the office of the chief is sacred, the holder has to be sacred and one can only be sacred if one is born of a Wangcha mother.

Wangsa is a status only for one generation given to the Chief's children by a Wangpan wife, known as *Wangnu*. So long such a child survives he remains a Wangsa, his children are downgraded to a still lower status of Wangsu. This helps in the reducing the number of Wangsa in the village. If the Wangsa were made into a permanent class it could create problems for the society by becoming a potential rival to the heirs of the chief. If Wangsa were allowed to increases their number, one day they would become very powerful in the village and could pose a threat to the chief's authority. Numerical strength has always been considered as main source of power in the Wancho villages, and villages with considerable population have always dominated smaller ones and subjected them to their authority by sheer threat of annihilation. A Wangsu is the descendent of Wangsa. This class is permanent and more stable.

A Wangsu is the descendent of the Wangsa; this class is permanent and more stable by virtue of having the chief's blood in them. They are considered a little superior to the Wangpan but are not entitled to much social prestige.

A Wangpan remains a Wangpan for all time. There is no change in their social status. His marriage relation with a higher class female does not enable him to rise in social scale. He can marry a daughter of a Wangham, other than a Wangcha that means the daughter of Wangpan wife. A Wangpan cannot marry a Wangcha but can marry Wangham's daughter who is born out of Wangpan mother. There is no restriction on the part of a Wangham to marry a Wangpan girl. The Wanghams, Wangsas and Wangsus practically controls the affairs of the village. As they have royal blood in their veins they are entitled to take important part in social function and important portfolios such as looking after the chief bachelor dormitory called "Paa."

3.2.2. FAMILY

Family consists of father, mother and their children. This group forms the household which transform to an extended family. Eldest son who by custom live in the parental house has the responsibility of looking after the family and aged parents. Other son(s) has to establish individual household after marriage. All the family members of the family take their meal from the common kitchen. But in case of Chief it is different. Chief marries a Wangpan girl from the same village especially to cook for him. She is called "sha chonnu." "Sha means food "chonnu" means one who serves. In other words, she can be called royal cook. Other wife cooks their food themselves. Other wives of Chief apart from Wanghcha doesn't enjoy special privileges, they cook their own food, goes to the field, work and raise crops like others. Each wife has a separate room called "noi."

3.2.3 STATUS OF WOMEN

Verrier Elwin remarks “tribal women is in herself exactly the same as other women with the same position, love and fears, the same devotions to the home to husband and children, the same fault and same virtues.” How far this statement is true is yet to be ascertained but it is true that Wancho society is a patriarchal society and women are not free from the influence of traditional customary laws. Women are not generally allowed to participate in politics, fighting and hunting and in some religion functions also.

But today with the advent of education and girls getting more education, the perception is changing. Women are becoming more self dependent. The conservative view is getting slackened gradually. Women are now becoming more self reliant and independent.

3.2.4 MARRIAGE SYSTEM

Clan exogamy is strictly prohibited in the society. It is the fundamental rule of the marriage. Intra clan marriage is looked upon as incest and never allowed. Violation of this rule ends in excommunication and even in capital punishment in extreme cases. In case of arranged marriage, marriage is formally negotiated and settled by the parents but the preferences of the young are always considered.

3.3 THE CULTURAL PRACTICES OF THE WANCHOS

3.3.1 FOOD HABITS

Paddy and millets are the staple food of the people substituted by arum, maize, sweet potato and few other cereals. Along with rice they take curry of vegetables like arum leaves, gourd and pulses.

All the members irrespective of sex and age take their meal together. There is not much formality observed while serving the meal to different members of the family.

While the morning and evening meals are taken at home, the midday meal is generally taken at paddy field or where the person works.

DIFFERENT FOOD ITEMS

Cereals: Rice, millet and other cereals.

Naiphu: The plants look somewhat like of maize plant. The husks of the grains are removed by pounding and it is cooked along with rice.

Millet: Millet is one of the staple crops of the Wanchos. It is a small grained cereal, the grains are dried, pounded and husks are removed before the cooking. It serves as a great substitute especially during famines when there is no any food grain left in the granary.

Maize: Tender maize are boiled and eaten. When the grain of the maize are ripened, it is dried and pound it into flour. This flour is boiled and taken as a food also.

Uncertainty and inadequacy of crops makes preservation of foods essential for the days of dearth. Meat and fish are first boiled thoroughly and then dried on the drying racks. When completely dry it is stored in containers for future use. Sometimes fishes are wrapped in leaves, smoked and kept on the drying rack and are preserved.

VEGETABLES:

Arum leaves: Arum leaves are tied in bunches and dried in the sun. After three to four days these leaves are hung in the post of the granary.

Arum tubers: Arum tubers are cut into small pieces and dried in the sun for a few days. When fully dried these are stored in bamboo baskets or earthen pots in the granary.

Gourd: Gourd and pumpkin are kept hanging in the cross bar of the roof preferably and thus are preserved

3.3.2 SONG AND DANCES

SONGS:

Songs are called *sai* in Wancho. There are numerous songs which are sung on all sorts of occasions such as while pounding rice, harvesting of crops, while cleaning jungle in the agricultural fields. Each song has its own name.

Lai lung: *Lailung* is a love song of the Wanchos. It has sweet and soft melody, rich in thoughts and beautiful ideas. The songs are characterized by their rich poetic imagination. Usually the boy first sing a song to the girl he fancy, expressing his love

and yearning for her and a girl who receives his attention, gives an appropriate reply through her melodious song. The Wancho love songs are marked by definite air of dignity as their singing is mostly confined to the bachelor dormitory. It is against the social norms to sing a love song publicly or in presence of the elders. It is also not sung between members of the same clan group.

DANCES:

Most of the dances of the Wanchos are performed in groups. The beauty of the dances is raised by the colourful costume. The folk dances of Wanchos are performed by men and women in a synchronized manner. Dances are generally performed in religious and festive occasions. The dances do not differ much in styles and manner. For festival dances, the dancers put on their traditional dress and ornaments. Flexing of knees at equal interval and the stepping in time with the beats of the drum provide the rhythm of the dance. Girls participate in the dances of festivals only, never in war and funeral dances. Men perform the war dances. This dance is a martial and athletic style. It involves a great deal of expertise as the performers go through dangerous war motion. Even a little bit of carelessness can prove highly fatal. The dancers wear colourful and graceful dresses which add more charm to the dances. The dresses of the dancer resemble the costume of the warrior.

There are dances of peaceful social occasions also such as marriage, building of house, death of chief etc. 'Ojii' is the only agricultural festival when they dance for two consecutive days. The first day is called *bonu* and second day is called *bosa*.

3.3.3 ARTS AND CRAFTS

Wanchos have their own distinct cultural and traditional identities and are displayed through various forms of art prevalent in the form of weaving, basketery, beadwork, wood carving etc. These forms of arts have a great potential in the international market because of its beautiful vibrant colour combination and sensibility and authenticity. The Wanchos are the expert craftsmen. Some of the art and craft of the Wanchos are-

WEAVING: Earlier weaving among the Wanchos was a traditional occupation of the chief's family only and they are expert in this art. Why the craft was confined to the women of the chief's family is difficult to say because of the restriction of art to the women of the chiefs family only weaving has not become a general occupation of all the Wancho women. But this perception is gradually changing with the coming of modern education. Many women are taking weaving as a means of earning livelihood irrespective of the clan.

The designed weaved is generally of arrangement of bands and lines sometimes making them into elaborate pattern of diamond. Introduction of weaving in the Government Craft Centre in Longding has brought many changes in the outlook toward this craft. Girls now other than the chief's families are also undergoing training in weaving in the centre.

BASKETRY: The Wanchos are very expert in basket making. All the household articles in the house are made of bamboo and cane. Their big cane and bamboo mats have fair market in the plains. Their basket is varied and of a wide range in shape, size and design. Water proof baskets are also made by the Wanchos. These baskets are used mainly for brewing beer and keeping beads while making bead ornaments.

Basketry is the occupations of men only. Generally, the old people who cannot go out for hard manual work keep themselves engaged in this craft.

SMITHERY: Blacksmithery is also found among the Wanchos. But very few of them know the knowledge of blacksmithery. So, the people who know this art are in great demand. They work on brass. They make beautiful brass bangles. Iron is procured from the plains of Assam.

Blacksmithery work is not a whole time profession of the tribe; anybody can do it whoever acquires the art of smithery. Generally people do it during their leisure hour according to their need based. That is the reason smithery is not developed on a commercial scale.

BEADWORK: Like weaving, beadwork is also confined to the women. Earlier it was confined among the chief's families only. Today it is not like that, every Wancho women knows how to do bead work. It is a glassbead locally called '*lik*' which is generally procured from the plains of Assam. Women make very attractive ornaments of coloured beads for personal decoration. One can easily identify the class whether one is from the chiefs family or from the family of commoner i.e. Wangpan by just looking at the ornament he or she wears. Some ornaments which are worn by the chief families are not entitled to be worn by the commoner. For example, if a girl wears a head gear studded with coins, it represent that she belongs to chiefs family.

Wancho women are very expert in the making of beads ornament. Bead making is a very tedious process. It needs days of needling small coloured beads into intricate design, combining various strands of the threads according to the breadth. They weave variety of designs like diamond, human figures etc. Of late, Wancho beads are gaining much popularity in the outside world, because of its beautiful

design and vibrancy. Its demand is globally increasing. In the late 70s, a Wancho woman received the national award from then Prime Minister late Indira Gandhi, for her outstanding work in the field of beads making.

The beads generally used for plaited work are glass beads and the colours chosen are mainly red, blue, green, yellow and white. Bead work is highly complicated and time consuming.

WOOD CARVING: Wood carving is a specialized craft of the Wanchos. There are experts in almost all the Wancho villages who can carve on wood. They carve different figures like tigers, snake, human figure etc.

Nowadays, however, this craft is assuming an almost commercial character. The objects of carving and conventional types and designs, wood carvings dolls are much in demand in the market. It is commercially viable and has been found to be more beneficial economically.

Decorated pillars of carvings in house of the chiefs house are invariably found in almost all the the Wancho villages. In the chiefs house one can find various pattern of wood decorated with carvings of the various human and animals figure.

The Wanchos do not have sophisticated tools and implements for wood carving. The wood generally used for carving is locally called *Pomo*. It is a kind of soft wood. This particular species of tree is locally available.

Although there is no special status for the wood carver yet they are respected by the people as their services are inevitable in the socio-cultural life of the people. There is no separate class of people for the art. Anybody having interest in the art can become a wood carver. He may learn the art by association with the expert. Woodcarving is however confined to menfolk only. It is not done by women.

POTTERY: Pottery generally is an occupation of the women. These pots are made up of clay. These earthen pots are of different sizes, which are used primarily for cooking, storing food grains, water etc. Earlier, it was used for keeping the skull of the dead. Earlier before coming up of the metalled utensil, these earthen pots were very much in use. Some of the villages were known for good quality earthen pots. For example, the villages of Longphong and Mintong under Longding circle were famous for their earthen pots. People use to do it in commercial scale and it was sold in the nearby villages.

3.3.4. BACHELOR DORMITORY OR PAA

The Wancho have well institutionalized bachelors' dormitory system which is called 'Paa'. But this institutionalized system is declining and almost become non-functional. In the good old days bachelor dormitory system was part of life. The bachelor dormitory was an important educational institution for the youth of the village. The custom and tradition have been transmitted from generation to generation through folk music and dance, folk tales and oral tradition, carving of figure on wood. It was also called as a guardhouse during times of war.

The bachelor dormitory is decorated with wood carvings and skull of buffaloes and other animals sacrificed on various occasion.

There is a qualification for admission to Paa. Generally children do not stay in the Morung as member though they may enter it. But females of any age are prohibited from entering it. Only on the day of construction of 'Paa' young girls and women may serve food in the feast given on that day.

Each Paa has a big long log drum called 'Kham'. Different rhythm produced by log drum beating indicates different meaning. These are known and people on hearing the rhythm or sound act according to the message conveyed.

Like the boys dormitory, the girls dormitory was also prevalent known as 'Noi' where the girls would stay in the dormitory after attaining puberty till they choose their life partner and settle in the family life. During her stay in the dormitory she would learn weaving, cooking etc. Apart from this, she would get lessons about manner, morality, and ethical code of conduct. But, unlike Paa the males are allowed to enter into the 'Noi'. But strict exogamy is maintained. The boys and girls of same clan cannot enter or stay in the dormitory of the same clan.

In dormitory, they not only learn cultural values and warfare techniques but also provided the structure for working principle of the village council. In short it is the fulcrum of democracy.

3.3.5 TATTOOING

Tattooing was a common feature among the Wanchos. Apart from being a most admired and cherished decoration tattoo with them is of important social significance. Tattoo marks indicate the stages in a women's life and the social status and achievement of a man. Tattoo is called 'Huhtu'.

The men used to tattoo the face, neck and chest. The women in the chest, arms, naval, calves and thighs. The women never tattoo their faces. The tattoo designs also differ in men and women.

The women get tattooed four times in her life. The first tattoo is done at the age of 7-10 years. The design is of two lines crossing at right angle at the naval. The second tattooing was done on the calf of the leg when the girl attains puberty. The

third tattoo is done on the thigh, above the knee when the girl goes to live with her husband. The fourth and last tattoo is done on the chest in the husband's house in the seventh month of pregnancy or after the birth of the first child.

Male tattoo is related to war and only those who could establish their bravery by taking trophies of head and bring them to the village could aspire for it.

The instrument used for this purpose is made of thorns of cane. The ink is prepared from soot flake obtained by burning resin in a piece of earthen pot.

The practice of tattooing in both men and women has been abandoned due to the advent of Christianity. The practice of tattooing is no longer encouraged. It is also because of the abolition of the practice of headhunting that practice of tattooing has been stopped because generally among the men tattoo was the symbol of bravery and valour. Men used to get his tattoo only when he kills or head hunt the enemy.

3.3.6 BLACKENING OF TEETH

The practice of blackening teeth is not being practiced now adays. In earlier days, both men and women use to blacken their teeth. Today also, it can be seen among the elderly people. Nobody knows the exact reasons behind the blackening of teeth but blackening of teeth is considered an aspect of beauty by the Wanchos. There is some scientific reason behind the blackening of teeth also. It works as a protective cover to the outer teeth enamel which prevents the teeth from its decay.

The process of blackening teeth itself is quite interesting. A bamboo is burnt, some black liquid oozes out. It is collected or scrapped with dao and applied to the teeth.

3.3.7 INDIGENOUS KNOWLEDGE OF GUN MAKING

Wanchos are the martial tribe who at one point of time actively engaged in head hunting. However, the practice is now extinct since many years. The Wancho people have the indigenous knowledge for making gun, where gun making is a part of life. Guns are found in every household of the Wancho. Basically three important component charcoal, sulphur and potassium nitrate are being used to make gun powder. The Wancho have been passing down the art of gun making. Now the fact is that market for gun is losing ground and the present generation is moving on and adapting to modern time.

Making of gun powder is a tedious and skillful work, one need a certain level of expertise in the making gunpowder.

SPATIAL PATTERN OF ECONOMIC INEQUALITIES

4.0 INTRODUCTION

An attempt has been made in this chapter to analyse the circle wise changes of economic inequalities in Longding district. The term economic inequality is considered as changes occurred in the region over a period in the field of economy. India being an agricultural country, the economic development and prosperity of the country depends upon agricultural productivity and production. Longding district is no exception to it.

Economic development is a comprehensive term. Some economists have defined it as a growth accompanied by positive change in the economic, social and political structure. Viewed in this way, economic development implies a decline in agricultural share of the Gross National Product and a corresponding increase in the share of such sector as manufacturing, utilities, financial institution, construction and government administration (Zuvekas, 1979). It is also considered as a process whereby real per capita income increases accompanied by reduction in inequalities of income and satisfaction of the preferences of the masses as a whole. It is generally defined to include improvement in material welfare especially for persons with the lowest income, the eradication of the mass poverty with its correlate of illiteracy, diseases and early death, changes in the composition of input and output that generally include shift in underlying structure of production away from agricultural toward industrial activities, the organization of the economy in such a way that productive employment is general among the working age population rather than the situation of privileged minority and corresponding greater participation of broadly

based group in making decision about the direction, economic and otherwise, in which they should move to improve their welfare (Kindelberger and Herrie,1977).

On the basis of above definition, it is clear that economic development requires a gradual change of different sector of economy i.e. Primary, Secondary and Tertiary. There is a close relationship among these sectors. There should be a balance in the development of these sectors in order to ensure overall economic growth.

Agriculture is the mainstay of the people of Longding district and what is more important is that it cannot support the total population of the region. The agricultural landscape in the study region is very complex because of difference in soil fertility and other resource endowment such as irrigation facilities, relief and climatic condition. The great regional variation in agricultural resource base is primarily due to varying physic-ecological condition, level of socio-economic development, demographic and cultural pattern.

4.1 ECONOMIC ACTIVITIES

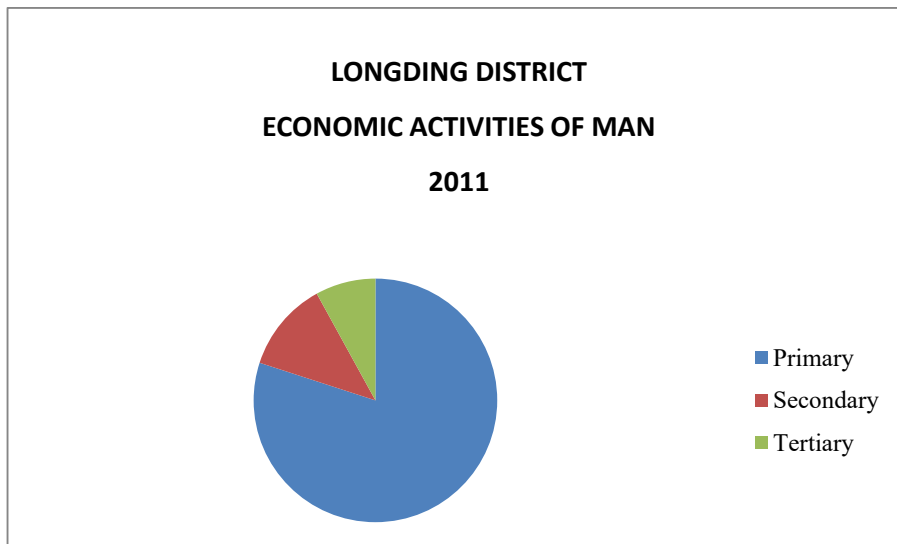
Economic activities are related to production, distribution, exchange and consumption of goods and services. The primary aim of economic activity is the production of goods and services with a view to make the available to consumers. In other words, economic activities are those efforts which are undertaken by men to earn income, money, wealth for his life and to secure maximum satisfaction of wants with limited and scarce means,

Human being has adopted various types of economic activities to support his life. The activities which the people choose depends upon the physical environment of the region they inhabit. The economic activities are grouped into Primary, Secondary and Tertiary Sectors.

Following table shows the detail of economic activities of the study area:

Types of Economic Activities	Percent
Primary	80
Secondary	12
Tertiary	8
Total	100.00
<i>Compiled by the researcher</i>	

Figure 4.1 *Economic activities of Longding district*



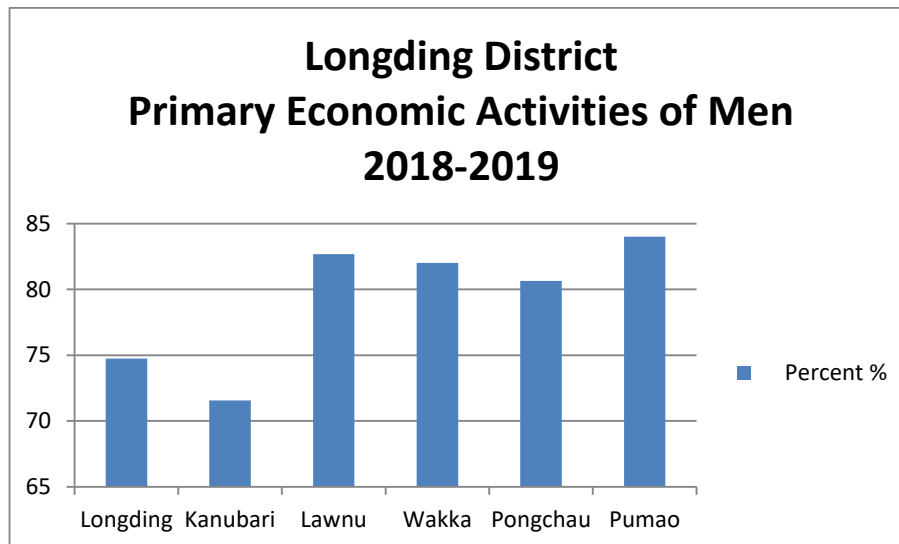
4.2 PRIMARY ACTIVITIES

Primary economic activities involve extracting natural resources from the land. Natural resources are those that occur naturally and are not man made. Agriculture, pastoral activities, livestock, fishing, forestry, mining and quarrying etc, all these activities comes under primary economic activities which are related to the natural resources (Singh S.2007).

The primary sector of the economy extracts or harvest product from the earth. The primary sector includes the production of raw material and basic foods activities associated with the primary sector include agriculture (both subsistence and commercial), mining, forestry, farming, grazing, hunting and gathering, fishing and quarrying. The packaging and processing of raw material associated with this sector is also considered to be part of this sector.

Sl. No.	Name of block	Percent
1	Longding	74.74
2	Kanubari	71.57
3	Lawnu	82.69
4	Wakka	82.03
5	Pongchau	80.65
6	Pumao	84.01

Source: Data collected by the researcher



Graph 4.1 Primary Economic Activities of Longding District

Table 4.2 shows that the maximum people doing primary activities are found in Pumao circle because from this circle there are less number of people who are engaged in secondary and tertiary services. Kanubari block recorded lowest percentage of people engaged in primary sector because people are now more into growing cash crop like plantation of tea. People are inclined more into tea cultivation rather than agriculture because it fetches them more money. Moreover, the climatic condition is more suitable for tea cultivation.

4.2.1 AGRICULTURE

Agriculture is the primary form of economic activity; include not only cultivation but livestock ranching, dairy, forestry, lumbering, irrigation and host of other activities. To define agriculture Prof Zimmerman said, "Agriculture covers those productive effort by which man settled on land, seek to make use of land, if possible, accelerate and improve upon the natural genetic or growth process of plant and animallife, to the end that these process will yield the vegetable and animal

products wanted by man.” So, agriculture is a human activity involving planned utilization of land or soil and water for the growth of plants and animals to meet the basic requirement of food and clothing.

In the underdeveloped countries, farmer primarily produces crops for themselves and for the member of their family. Under such subsistence level of economy, there is hardly any marketable surplus. But in contrast, the farmers in more advanced nation produce to sell their products in the market. It is important to note that the sum total of the cost of production of a crop doesnot only depend on the fertility status of soil, wage rates, interest rates etc but also upon the skill of the farmers, quality of management, application of science, the type of energy used etc. A country which is more advanced in regard to technology, knowledge and in the use of superior energy- inanimate energy- has greater proportion of cultivable land. Thus, the aspect of cultivability of land varies both with time and space.

Despite relative decline of economic importance in recent years, agriculture still holds the key of economic life in most of the developing nation. According to Human Development Report nearly 49% of the total labour force is directly engaged in agricultural activities.

Agriculture is the main economic activity which is a powerful engine of economic development. It plays an important role in the overall development of the region. It provides food surplus to the growing population thereby improving the standard of living. Agricultural production makes important contributions to the development of any region.

In the study region, agriculture is the main source of livelihood. Agriculture is the mainstay of economy. The economic life of the tribe is based mainly on agriculture. Their livelihood depends primarily on the field produce and so their

economy may be called subsistence economy. The ecology of the area has made them hardworking. They cannot remain idle, else their economy will suffer and livelihood will become a problem. Due to non availability of flat lands people generally follow the traditional method of shifting cultivation popularly known as “jhum cultivation” and only a minor section in the lower area is engaged in permanent cultivation. The cause of the problem of the continuance of primitive method lies in the poverty of the farmers on the one hand and lack of scientific knowledge on the other. However, the nature of terrain doesnot permits for a radical change from jhumming to permanent cultivation. The shifting method of cultivation in the hills has faced with increasing problems.with the increase of population the jhum plots can hardly accumulate enough natural manure. Frequent use of the hill slopes has evoked top soil erosion rendering the plot infertile.

The whole of the region may be said to be the virgin land for economic development. No proper survey to find out the economic potentiality has been taken up as yet in respect of this area. Of late, NERCORMP (North East Region Community Resource Management Project For Upland Areas) a joint developmental initiative of the North Eastern Council (NEC), Ministry of DoNER, Govt. of India and International Fund for Agricultural Development (IFAD) has been started. But how far the programme has been successful is yet to be ascertained.

It has been already said that agriculture is the primary occupation of the people. The main and infact the only method they follow in agriculture is Shifting Cultivation popularly known as ***Jhum Cultivation***. Terrace rice cultivation is practiced in the low lying areas. To define ***Jhum Cultivation***, it is also known as ***slash and burn agriculture*** is the process of growing crops by first clearing the land of trees and vegetation and burning them thereafter. The burnt soil contains Potash

which increases the nutrient content of the soil. Each village has at least 10-12 jhum patches. Each jhum field has got a name given either for the nature of the soil or for its location.

Jhum cycle varies according to the number of the fields. One field is cultivated for two consecutive years. Millets and other vegetables are grown in the first year and paddy in the second year. After cultivation of paddy in the second year the field is left fallow till its turn comes after nine or ten years according to the cycle.

The farmers remain busy in their agricultural work almost for the whole year except for the two months i.e. May and June. In these months, they generally undertake other pursuit like trading in the plains or other secondary work.

Yearly Routine of Agriculture Activities and the Season for the main crops

Agricultural Routine

Months	Major Activities
January:	Preparation of fields and sowing of millet and maize seed, planting of arum and tapioca.
February:	Preparation of field for paddy sowing. Sowing of millet and maize seed and planting arum and tapioca continues.
March:	Sowing of paddy seeds, starts planting of tapioca continues.
April:	Sowing of paddy seed continues.
May:	No agricultural activities for men.
June:	Same as in May.
July:	Harvesting of millet, maize and arum starts.
August:	Harvesting work continues.

September: Harvesting of paddy and tapioca starts.

October: Harvesting of tapioca and paddy continues. Preparation of field for millet, arum, tapioca and maize starts.

November: Harvesting of Tapioca continues.

December: Preparation of field for paddy starts.

Table 4.3 Major crops and the connected agricultural activities taken up in different months			
Name of the crops	Preparation of fields	Seed Sowing	Harvesting
Millet	October-February	March-April	September-October
Arum	Do	Do	Do
Tapioca	Do	February-March	September-November
Maize	Do	Mid January-mid February	July-August
<i>Source: Compiled by the researcher</i>			

2.1.1 LANDUSE AND OWNERSHIP PATTERN

There is no any land tenure system or any tenancy law in existence. Land is being used under customary laws and traditional system, either individually or collectively by the people.

There are four types of land of the Wanchos. There is village land, agricultural land, jungle land and reserved forest land. The village land locally called *Hamting* is meant for building houses and also for making kitchen garden. Important fruit trees are also grown here. Agricultural land is called *jang* and is used entirely for growing paddy, millet, maize and other crops. In the jungle land called *jan*, house building materials like bamboo, palm leaves (*tokopat*) trees are grown. The reserved forest land is called *nokling*. The village land *hamting* and agricultural land *jang* are mostly used by them.

The villages have well demarcated village boundaries and the land within the boundary of a village belongs to the village community as a whole. Within the overall ownership of the community, individual holdings are also there. Such individual holding relate mainly to village and cultivable land. Sometimes in respect of jungle land also individual holdings are also found. Individual holdings are demarcated by planting a kind of plant called *chinglang* and stone. *Chinglang* is a kind of shrub, roots of these shrubs goes deep into earth and is evergreen. Near the *chinglang* plant some stone of moderate size are kept. This indicates the boundary. If anyone tries to remove the plant with the idea to change or to enlarge the area of his holding without the knowledge of owner concerned he will be fined by the village council. The tribe has much regard for this tradition. Although the small shrub and the few stones demarcating the boundary are not difficult to remove yet they never go against the tradition. Settlement of disputes regarding the land holdings is proved by the existence of chinglang plant.

Table 4.4 Land use pattern of the Longding District		
Agricultural land use	Area (000 ha)	Cropping Intensity (%)
Net sown area	7.563	102.25
Area sown more than once	0.180	
Gross cropped area	7.743	
<i>Source: Deptt of Agriculture, Longding</i>		

Jhumming or shifting cultivation is a traditional method of cultivation in the study area. It is the main activity in the economy which sustain majority of people. In general term agriculture also includes livestock and fishery. In the study area raising of crops is by far the most important, while livestock and fishery tend to be marginal. This is quite evident from the above table.

2.1.2 WET RICE CULTIVATION

Wet rice cultivation has no near or wide prospect because suitable land is not available. However in some village wet rice cultivation are done in the river valley. The extension is negligible because of the less plain land created by the river valley.

2.1.3 TECHNOLOGY OF CULTIVATION

The technology involved in the method of cultivation by slash and burn is universal. The tribe follows the same technology. The arduous task of jungle cutting and burning is done by men, while clearing and preparation of the field are primarily a women's job. Seeds are sown when the fields are ready. Seed of millet and paddy are sown by broadcast method while for some other crops seed are put into the holes with the help of a digging stick.

In the newly prepared field, millet, arum, tubers, pulses, chillies, ginger etc are grown and in the old field i.e, previous year field paddy and other crops are grown. Seed of pulses are also planted along with millet.

2.1.4 HARVESTING AND THRESHING

The grains of paddy and millet are pulled out with the help of the hand. In some villages paddy are cut with the help of a knife or *dao*. Threshing is not required in hand pulling. In other cases threshing is done with foot, near the farm house, on a piece of ground cleared for the purpose. The grains after threshing are brought home in a conical bamboo basket and store in the granary.

4.2.2 FOOD CROPS AND HORTICULTURAL CROPS

Sl. No.	Major food crops	Area (000ha)
1	Cereal crops	6.9
2	Horticultural crops-Fruits	0.981
3	Horticultural crops-vegetables	0.215
4	Medicinal and aromatic crops	0.060
5	Plantation crops	0.521

Source: District Census Handbook, Tirap, 2011

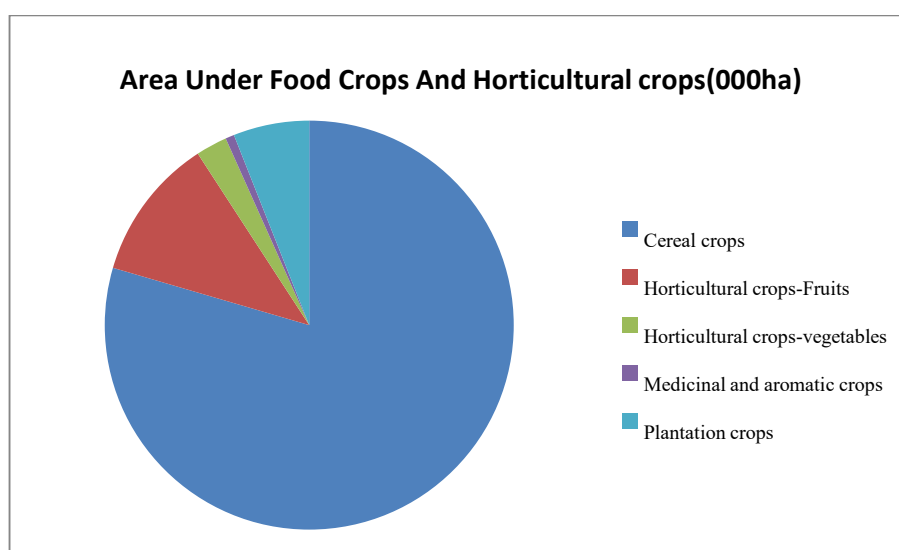


Figure 4.2 *Area under different crops in Longding District*

4.2.2.1 FOOD CROPS

Of all the food crops raised, cereal crops are by far the most important in the region.

The table above indicates the increasing trend towards the cereal crops to fruit crops. Overall tendency of rice and maize crop is high. Now use of modern technology in the field has changed the cropping pattern of the region. The cropping pattern means the proportion of the area under various crops in specific region largely depend upon input intensity, supply of water, availability of modern input, high yielding varieties, and chemical fertilizers.

Though the soil condition is suitable for growing many crops, the main crops grown in the district are rice, millet and maize and few local pulses and few vegetables. Gross cropped area, under cereal crops in the study area is 6.9 hectares.

Pulses like pigeon pea and soyabean are the two important important pulses cultivated in the study area. Highest area under pulses is observed in the Longding circle.

Vegetable include tomato, potato, cauliflower, cabbage are the important vegetable of the region. In the region, vegetables cover only 0.215 percent.

Name of the crops	Productivity (kg/ha)
Rice	1415.00
Maize	986.35
Potato	7800.22
Pulses	1200.12

Source: Department of Agriculture, Longding, Arunachal Pradesh, 2011

It is to mention that the Agriculture department has launched Watershed Development Project in Shifting cultivation Area and National Watershed Development Project in Rainfed Area to stop jhum cultivation and to increase food production in the district. Under these programmes cultivation of tea and cardamom has started. The Department of Agriculture has taken initiative to help the people of the district by providing govt. assistance to grow tea and rubber and also provide assistance for bench terracing.

Recently, people has started taking up tea cultivation, especially in Kanubari circle. Tea garden can be seen on both side of the road while entering the plains of Kanubari. The villagers earn their livelihood by selling tea leaves to factories in Assam. The people of Kanubari have almost abandoned the practice of shifting cultivation because they are getting handsome amount of money by selling tea leaves. The average money from selling the tea leaves was found Rs 300000 annually for the sample surveyed.

4.2.2.2 HORTICULTURE

The Longding district is topographically hilly throughout the district and agroclimatic condition of the district is suitable for growing of horticultural crops. Therefore, the jhum cultivation land in the entire villages of the district can be utilized for plantation of horticulture crops. People were not aware of income source from horticulture crops cultivation. But now, efforts are being made by the department for cultivation of horticultural garden in the district and slowly also gaining popularity among the progressive farmers. From time to time the department conducts demonstration of horticulture crops cultivation to the farmers and fruit garden schemes are being distributed to the farmers of the district like oranges, pineapples, litchis, kiwi, banana, guava, black pepper, large cardamom etc.

It is important to note that area under fruit crops especially banana and citrus fruit increased with faster rate during the period of investigation.

4.2.3 LIVESTOCK

Livestock is defined as the domesticated animals raised in an agricultural setting to produce labour and commodities such as meat, egg, and milk etc. This livestock also plays an important role in the development of any region.

Livestock rearing plays an important role in the socio-economic status of the people of the district as well as in Arunachal Pradesh as a whole. The rearing of livestock constitutes an integral part of the people. The vastness of an area and abundance of green pasture also make it ideal for the development of the livestock based industry. The abundant green ground coupled with suitable agro climatic situation provides a potential scope for Animal Husbandary Development.

The provision for adequate veterinary extension services to the livestock and poultry population toward almost all the villages of entire circle under Animal Husbandary network. But the saddest part is that such an important deparment runs at the mercy of few staffs only. During the survey it was found that there is no any veterinary officer and technical person in any of the circle. The department is in a very pathetic condition and runs with the help of few staffs only.

Table 4.7 Livestock and poultry in Longding District						
Circle	Cattle	Buffaloes	Goats	Mithun	Pig	Poultry
Longding	583	236	1182	418	2258	7674
Pongchau	1301	230	1390	2191	3193	11668
Wakka	483	--	2017	1611	1619	13416
Kanubari	2276	20	2265	-	2332	4340
Pumao	-	-	426	-	986	5197
Total	4643	486	7280	3027	10338	42295
<i>Source: District Veterinary Officer, Tirap, 2011</i>						

Table 4.7 shows that people rear goat and poultry in large number compared to other livestock. From the table, it can be seen that people don't rear buffalo in Wakka circle and rearing of mithun is nil in Kanubari circle. The reason may be because of the climate. Kanubari is the hottest place in the district which doesn't favour the rearing of mithun. In some of the villages of Pongchau and Wakka circles Mithuns (*Bos frontalis*) are reared and they are treated as a semi domesticated animals. Mithuns are very costly. The average cost of the mithun is 40000-80000 rupees. During survey it has been found that in some of the families of Wakka circle earns average of Rs. 100000 by selling these mithuns.

4.2.4 FOREST AND FORESTRY BASED INDUSTRY

Forest is the source of raw material to all the construction activities. Gathering of forest product is largely a subsistence activity which involves collection of food product such as wild fruits and nuts, leaves, tubers and firewood etc.

There is no forest based industry in the study area. Because all the forest based industries have been closed down due to the imposition of ban on large scale

falling of trees by the Hon'ble Supreme Court. There is only one veneer mill in the study area which is run by a private individual.

HUNTING

Hunting has always been allied economic activities of the tribal people which are supplementary to the agricultural crops. Meat and fish is the basic daily requirement with food. Hunting and fishing is always regulated by the certain tradition norms and rules. The forest and rivers have always been the place for hunting and fishing.

Hunting is an important part of their culture and hunters have a high social status. One can see among the tribe how hunters take pride and honour in decorating their houses with the skull of the hunted animals and birds. It signifies the sign of achievement. Hunting plays an important role in the social and cultural life of the Wanchos. People hunt animals not just for food and leisure but for a large socio cultural link adhered to their social life. Hornbill feathers represent the social status of the individual. The number of hornbill feathers used in the headgear, represent the symbol, position and status. The concept of hunting includes different types of trapping practices which include value embedded culture. There can be no other better way for hunter in welcoming their guest with the meat which they have hunted.

4.2.5 FISHERY

Fish is a popular item in the major meals of the people of the region. It provides all the nutrition that is needed in the body.

A place where fishes are reared for commercial purposes is known as fishery. Fishery is one of the primary economic activities which days. Like hunting, fishing is also done individually. Fishing is done throughout the year except when the river is in full spate. When there is community fishing the day is announced beforehand. Young men of the village go to the jungle looking for the right kind of poison.

Fishery plays a vital role in the socio economic development of the region. It is also a livelihood of the people of the district. Kanubari circle is endowed with immense potential for development of pisciculture. In Longding circle, some of the villages like Senua some of the villagers were seen doing fish farming though in less quantity and the production is also low. The Department of Fishery has also established one fish farm at Bonia village under Pongchau circle with a capacity of fish production of 84350kg/year.

One Nokkai Wangjen of Dasathong village in Kanubari circle of Longding district earns about rupees two lakhs annually from fish farming. He received logistic support like training in rearing of fish seed from the District Department of Fishery. His effort has been recognized by the Director of Cold water Fisheries Research, ICAR Bhillal and was presented with an award of progressive farmer in 6th June, 2001. This is an example set by this gentlemen how fishery can create form full time income generation.

Fish plays an important role in traditional, social and religious aspect from the time immemorial. The fishery sector in the district is rapidly changing with the

initiation of various fisheries development programmes in the recent years. In some of the circles, fishery scheme has been initiated by the Fishery Development Officer (FDO), Extension Officer. A provision is there where a farmer can get financial assistance for the development of fishery. Apart from that time to time fish seedlings are also supplied to the farmers.

Table 4.8 Total fish production of the Fisheries department			
Culture	Water spread area (ha)	Yield (t/ha)	Production (000tons)
Brackish water (fishery deptt)	40 ha	0.06 t/ha per year	24/year
<i>Source: Department of fisheries, Longding district</i>			

There should be an increasing awareness with regard to the role of economic factor in raising the status of inland fisheries industry from a level of subsistence activity to commercially viable enterprise. The economy of fish culture varies considerably depending largely on the efficiency of operation and market condition. A survey conducted on this aspect in the recent years showed that well planned and properly operated programme is economically viable one.

The main thrust of the Fishery Development Programme is for the construction of the socio-economic condition of the poor people. District is trying to achieve success in culturing variety of species and trying its utmost effort to utilize the available natural resources for further development of Inland Fishery Industries despite of many constraints faced by the department such as lack of proper infrastructural development, shortage of technical manpower, lack of financial support from higher authority and sensitiveness of the area.

4.3 SECONDARY ECONOMIC ACTIVITIES

The secondary sector of the economy includes those economic sectors that produce a finished, usable product, production and construction. The sector generally takes the output of the primary sector and manufactures finished goods or where they are suitable for use by other businesses, for export or sale to domestic consumers. This sector is often divided into light industry and heavy industries. These industries convert raw material into finished product.

Manufacturing is an important activity to promote economic growth and development. Nation that export manufactured product tend to generate higher marginal GDP growth which support higher incomes and marginal tax revenue needed to fund the quality of life initiatives such as health care and infrastructure in the economy. This field is an important source of engineering job opportunities. Among developed countries, it is an important source of well paying jobs for the middle class to facilitate greater social mobility and successive generation on the economy.

The percentage of working population in the secondary sector of the study area is not large because the economic activities of the maximum circles largely depend upon the primary sector.

In Longding district, secondary sector is dominated by handicraft industries. Weaving is one of the important industries. The industry is essentially run by the women folk working along with their domestic chores. Women of the study area are famous for their weaving and beadwork. Weaving is taken as a off time job of the housewives and young girls in the rural areas.

Table 4.9 Longding District: Circle Wise Secondary Economic Activities 2018-2019	
Name of the Circles	Percent
Longding	38.57
Kanubari	20.42
Pongchau	14.09
Lawnu	10.89
Wakka	9.51
Pumao	8.01
<i>Source: Compiled by the Researcher</i>	

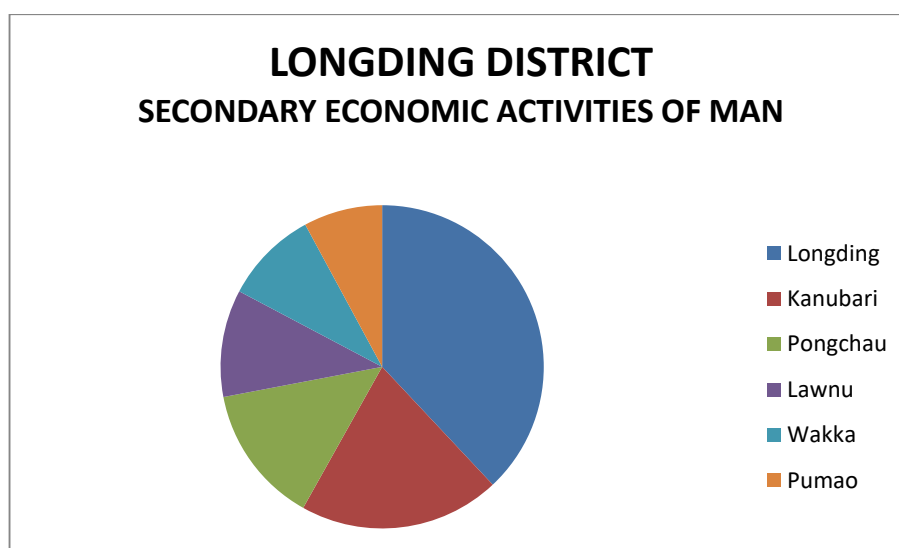


Figure 4.3 Secondary Economic Activities in different circles of Longding District

4.3.1 TEXTILE AND HANDICRAFTS

The Textile and Handicraft department was bifurcated from the department of Industries in the year 2000 with the vision to promote Handloom and Handicraft sector in the district. Since then, the department is functioning independently under the Assistant Director, Textile and Handicraft.

Industry plays an important role in the economic development of a place. The development of industry largely depends upon the infrastructural development, sound finance, and entrepreneurship of the people in the area. The quick development of industry can only mitigate the growing demand of employment in the country. Hence, the government has setup District Industries Centre at Longding. There are no large scale industries in the district. The wood based industries- saw mills, veneer mills and plywood mills were large industries in the district but all the industries have been closed down due to imposition of ban in large scale felling of trees by the Hon'ble Supreme Court.

The people are expert in cane and bamboo work. One can find self made traditional bamboo and cane furnitures of various design and utility in every household. But due to lack of entrepreneurship, financial constraint and prevalence of insurgency nobody is taking initiative in investing money in establishing industry of its kind. Otherwise this would have been an additional source of income for the village people and would also promote in the further development.

The Industry Department has set up craft and weaving centres in various localities in the district in order to provide training facilities for encouragement of craftsmanship among the local men and women.

The craft centres and weaving centres established at different places in the district impart training to the local youths and artisans in different trades like tailoring, weaving, wood carving, bead making, carpentry, bamboo furniture making etc.

Table 4.10 No. of weaving and craft centre in the district 2013-14			
Name of the circle	Name of craft and weaving centre location	Type of trades	Value of Annual out turn in craft centres (Rs in lakhs)
Longding	Craft centre Longding	Weaving, knitting, wood carving and tailoring	27,444.00
Kanubari	Craft centre Kanubari	Weaving and tailoring	6015.00
	Weaving centre Ozakho	Weaving	Nil due to non posting of craftsmen
Pongchau	Craft centre Pongchau	Weaving, carpentry and black smithery	Nil
	W/centre Khasa	Weaving	2123.00
	W/centre K/Noksa	Weaving	2300.00
Wakka	Weaving centre Wakka	Weaving	Nil due to non posting of master craftsmen
Lawnu	-	-	-
Total			37,882
<i>Source: Asstt. Director, Textiles and Handicraft, Khonsa</i>			

4.4 TERTIARY ECONOMIC ACTIVITIES

This sector is also called service industry. This sector provides services to the general population and to businesses. The industries of this sector include banking, finance, transportation, information and communication services, education, health, social welfare etc. The people engaged in these services are known as pink colour jobs.

The tertiary sector of the economy is one of the economic sector that comprise the service based jobs in the economy. The service sector consists of the 'soft part' of the economy, i.e. activities where people offer their knowledge and time to improve productivity, performance, potential and sustainability. The basic characteristic of this sector is the production of services instead of end product. The tertiary sector of industry involves the provision of services to other businesses as well as final consumer. Services may involve the transport, distribution and sale of goods from producer to consumer, provision of a services. However, the focus is on people interacting with people and serving the customer rather than transforming physical goods.

The tertiary sector is now the largest sector of the economy in the western world and is also the fastest growing sector. Some of the tertiary economic activities are:

Entertainment.

Government jobs

Telecommunication

Hospitality industry/ Tourism.

Health care.

Public health.

Banking.

Insurance.

Accounting.

Professional services.

Education.

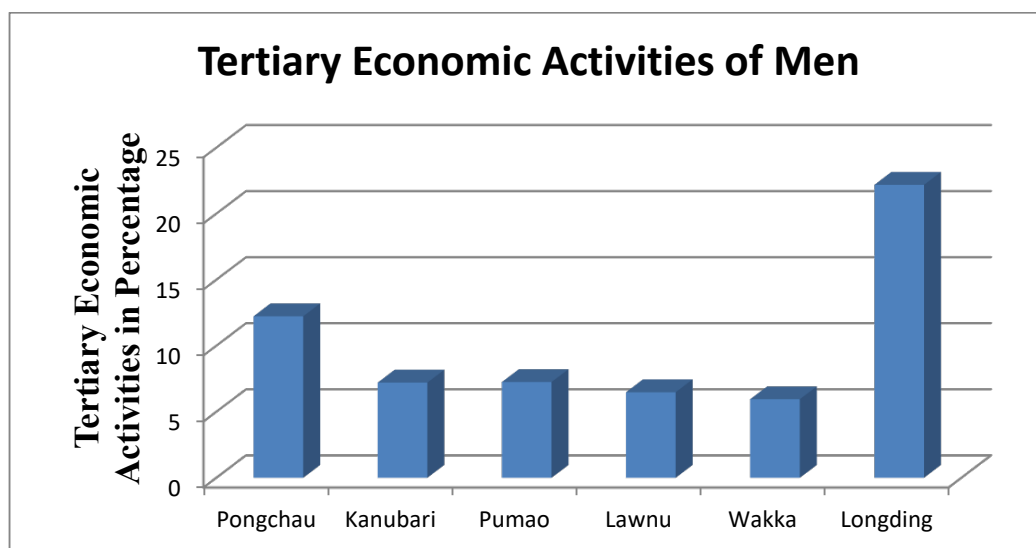
The primary and secondary sectors are increasingly dominated by automation and demand for workforce numbers falls in these sectors. It is replaced by the growing demands of the tertiary sector. The situation now corresponds to modern day industrial societies and the societies of the future. Today, the tertiary sector has grown to such an enormous size that it is sometimes further divided into an information based quaternary sector and even a quinary sector based on human services.

The contribution of the tertiary sector in the economy of the study region is very less. It is only 10 percent. The tertiary activities of man play an important role in the socio economic development of the region. Higher the number of person engaged in economic activities lower the disparity in the economic development of the region.

The economy of the Longding district is mainly based on primary activities in which agriculture is the important one. The primary sector contributed 74 percent of the total working population whereas tertiary sector contributes only 10 percent in the study region in the year 2018. Tertiary activities are one of the knowledged based economic activities where the people need some amount of skill in any kind of work. It has been found out during survey that due to poor literacy rate in the district accompanied by insurgency the population engaged in tertiary activity is low.

Table 4.11 Longding District-Circle wise Tertiary Activities 2018-2019	
Name of the circles	Percent
Pongchau	12.23
Kanubari	7.21
Pumao	7.25
Lawnu	6.48
Wakka	5.95
Longding	22.18

Source: Compiled by the researcher



Graph 4.2 Tertiary Economic Activities of Different circles of Longding District

Tertiary activities of man play a major role in the socio-economic development of any study area. During the investigation period, it has been noticed that the percentage of working population in the tertiary sector is increasing, though at a slower rate.

The table clearly shows that circle wise percentage of tertiary activities of man in Longding dist. The Longding circle was observed highest percentage of men who are engaged in tertiary sector.

4.4.1 TRADE AND COMMERCE

The present condition of trade and commerce in the study region is not developed as there are no wholesale shops of building materials, automobiles or other consumer goods as because the trade of such kind is limited. The businessmen are to export essential commodities for trading purposes from the nearby market of Assam. No major industry or factory is established in the district inspite of having surface road communication in comparison to other districts of the state.

The future of the trade and commerce in the district mainly depends on better road condition and setting up of infrastructure in the district.

4.5 OCCUPATIONAL STRUCTURE

Occupational structure of a country refers to the division of its workforce engaged in different economic activities. Studying the structural change in any economy, it is important to be familiar with occupational structure of the economy. Colin Clarks in his book "condition of economic progress" is of the view that there is a close relationship between economic development and occupational structure of a country. According to him, a higher per capita income is always associated with a higher proportion of the working population employed in tertiary industries while a low per capita income is always associated with a low proportion of working force employed in tertiary sector. If the per capita income of a country is low, the

proportion of working population engaged in agriculture is high. Economic condition of population unfolds the diverse economic and cultural attributes of an area. The classification of population into workers and non workers ultimately brings out the real economic profile of an area.

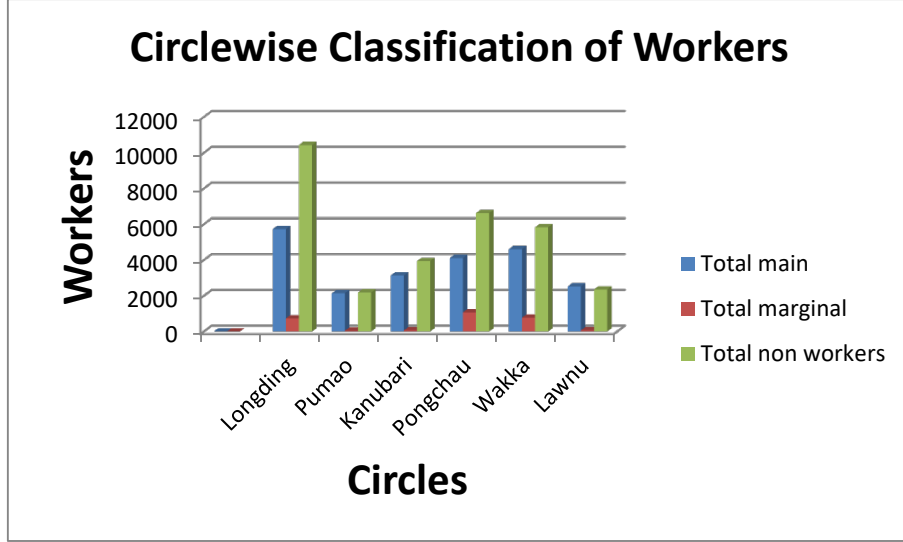
The composition of working force in an area varies by sex, residence, and age. Mehta (1967) has rightly observed that in most of the societies of the world, the earning of bread is primarily a male responsibility. No wonder the male participation rates are ubiquitously more than the female participation rate in almost all the countries of the world. The percentage of female is generally much lower than that of the male members. Since majority of population are engaged in agriculture the role of women worker doesn't attach any importance in the study area. In India, a distinction is made between working and non working population. Instead of dividing the population into two categories of economically active and economically non active population, the Indian Census divides the entire population into two categories of workers and non workers. If a person worked on any one of the days as a worker provided his/her main activity was economically productive work. Thus, persons primarily in household duties getting education, those receiving income without participating in any productive activities were classified as non workers.

In the Census 2011, the workforce was classified under three categories i.e. (1) Main Workers, (ii) Marginal Workers, and (iii) Non workers.

- I) Main Worker: A person who has worked for major part of the reference period i.e. six months or more during the last one year preceeding the date of enumeration in any economically productive activity is termed as main worker.

- II) Marginal Worker: A person who worked for 3 months or less but less than six months of the reference period (i.e. in the last one year preceeding the date of enumeration) in any economic activity is termed as “marginal worker.”
- III) Non Worker: A person who has not worked at all in any economically productive activity during the reference period (i.e. last one year preceeding the date of enumeration) is termed as Non Worker.

Table 4.12 Circle wise classification of workers 2011				
Sl. No.	Name of Circle	Total main Workers	Total marginal Workers	Total non workers
1	Longding	5728	737	10432
2	Pumao	2141	48	2189
3	Kanubari	3140	68	3944
4	Pongchau	4113	1071	6624
5	Wakka	4610	776	5830
6	Lawnu	2528	67	2351
Total		16532	2767	31370
<i>Source: District Census Handbook, Tirap</i>				



Graph 4.3 Circle wise classification of workers of Longding District

The above table 4.13 shows that in absolute term there were 16532 main workers, 2767 marginal workers and 31370 nonworkers in the district. The tables further revealed that majority of the workforce are engaged in agriculture, as agriculture is the only mainstay and source of livelihood.

Table 4.13 Percentage of main, marginal and non workers by sex, 2011					
Name of circle	Persons/ Males/females	% of Main workers	% of Marginal workers	% of total workers (main and marginal)	% of non workers
Longding	Males- 8460	35.85	4.46	40.31	59.69
	Females- 8437	31.94	4.27	36.21	63.79
Kanubari	Males- 3610	46.20	0.91	47.12	52.88
	Females- 3542	41.56	0.99	42.55	57.45
Lawnu	Males- 2480	52.90	0.93	53.83	46.17
	Females- 2166	49.31	1.78	51.09	48.91
Pumao	Males- 2454	41.08	0.81	41.89	58.11
	Females- 2480	45.69	1.13	46.81	53.19
Pongchau	Males- 5928	35.78	9.35	45.12	54.88
	Females- 5880	33.88	8.79	42.67	57.33
Wakka	Males- 5778	42.30	4.97	47.27	52.73
	Females- 5438	39.83	8.99	48.82	51.18
<i>Source: District Census Handbook 2011</i>					

From the above table, it is seen that the work participation rate of the district is 41.5 percent, of which 44.8 percent are males and 53.6 percent are females, 39.3 percent main workers and 4.9 percent are marginal workers. The gender gap work participation rate works out to 8.8 percent. Lawnu circle has registered the highest work participation and rate of 52.5 percent and the lowest work participation rate is found in Longding circle with only 38.26 percent.

SPATIAL PATTERN OF SOCIAL INEQUALITIES

5.0 INTRODUCTION

The fifth chapter deals with the spatial pattern of social inequalities in the region. For the study, demography, literacy, health, transport and communication, banking and housing types are assessed. These factors play an important role in determining the status of social change and transformation of any given region. Social change is a dynamic process; social change in a way is dependent on human interaction and relationship transforming cultural and social institution over time, having a profound impact on the society.

Geography is a spatial science and belongs to that border line of geography which opens on demography and involves not only the magnitude but also multifaceted characteristics. Population studies have for long been the subject of concern for social scientist including geographers. In geography, the study of population distribution has been the focus of traditional human geographers since long. With the increasing acceptance of the notion that geography was one of the social sciences, the publication by geographers pertaining to population and associated problems have been multiplying, though the focus of geographers from the study of environment to that of man has been gradual.

Population serves as a point of reference from which other geographic elements are observed. G.T Trewartha (1953) pointed out that population geography stimulated geographer to the study of man as area characterization and area differentiating element. He offered a tentative scheme of content and organization of materials in population geography. He confined it to geography of population in the

past, population number (including distribution, density, migration, growth etc.) and qualities of population and their regional pattern of distribution including physical as well as socio economic qualities.

There are some social aspects which determine the inequalities in the region. In the social indices, demography and infrastructural facilities are the basic needs for the development of any region. In the study region, following are the social factors which are responsible for socio-economic inequalities.

5.1 DEMOGRAPHY

According to Philip, Hauser and Otis Dudley Duncan (1959), demography is derived from the Latin word *demos* meaning people. Demographic analysis is confined to a study of the components of population variation and change- the components being births, deaths and migration- which determine the size, growth, structure and distribution of any population.

Demography today can neither be ignored by the planners nor policy makers, nor administrators nor by academicians. It provides them all the basic information for their work. Population studies are being increasingly made from different view point and with different objectives in view and this have today become an integral part of our socio economic and political system on one hand and planned economic development on the other. In a broader sense, demography includes both demographic analysis and population studies.

The changing number and characteristics of population through time are vital to the process of socio-economic development. Population is an integral part of the resource base of the region for development. Development can never be thought to be independent of man i.e. his capabilities and aspirations. Growth of population is

vital element in any assessment of population-resource nexus. But the moot point will be of high growth or the deficiency of resources that is responsible for the imbalance. Although, there may be areas that are deficient in resource or are having high rate of population increase and are facing imbalance between population and resource, yet it is not always the deficiency of resources alone or high growth of population that give rise to a population resource imbalance. The nature of social structure, the state of technological advancement, the characteristics of the distribution system and public policies are other elements of the system that govern the balance between the people and the resources of any area. Thus, the notion that given piece of land can support doesn't merely depend upon its territorial resource but upon hosts of socio cultural and political conditions.

For any study of balance between the population and the resources, the term population doesn't merely include numbers, and the term resource doesn't mean only physical resources. In order to have comprehensive understanding of the relationship between the people and the resource in any area, it is imperative to conceptualize.

According to Zimmerman, a resource doesn't refer to a thing nor to a substance but to the function, which a thing may perform in order to attain given end (Hunker 1964, p.28). If the function that a substance may perform results from interaction between man and nature, the pertinent question would be how to disintegrate man from the resource because man's knowledge is considered the mother source that has the potential for creating resource (Zelinsky 1966, p. 103). As the technology advances man's ability to expand as well as create new resources also grows.

Population characteristics are the mother resource that has potential for creating resource, thereby the socio economic development of the area. Several studies have been conducted by eminent scholars pertaining to the socio-economic

development. Different scholars have taken different demographic indicators to study the socio-economic development of the region. Keeping in view the importance of various demographic indicators in the study area, for socio economic development of the region, four indicators pertaining to demographic data has been selected on the basis of availability and suitability of the data.

Demographic characteristics of a region play an important role in the socio economic development of any region and the inference could be drawn whether the area is developed or backward.

The number of characteristics of population can be studied to determine and evaluate the level of economic backwardness of a region. The factors which influence the pattern of development of an area are being taken in this chapter.

5.2 POPULATION DISTRIBUTION

Population distribution refers to location aspect, where and why people have occupied their habitat and the kind of degree of human concentration over the earth. The analysis of population distribution and density holds immense significance for population geographers as its successful understanding holds the key to the analysis of entire demographic character.

From time immemorial, there has been uneven distribution of world population. Distribution of population has all along been affected by the availability of natural resources, favourable climate and similar other factors. Transport and communication also decides the density of population. The uneven distribution of population is so varied that half the world population resides hardly on 5 percent of the land available for human living. Some parts of the world are more thickly

populated whereas the density of population of some other parts of the world is very low. The reason for this can be historical, social, economic or geographical etc.

It has been observed in the study area that people inhabit in the hilly terrain and settlements are of generally compact type. As per 2011 census, the total population of the district is 56953 out of which 28710 are male and 28243 are female according to 2011 census.

Table 5.1 Circle wise Population distribution of Longding District		
Name of Circles	Population	Percent
Longding	16897	30
Kanubari	7152	12.5
Lawnu	4946	8.6
Pumao	4934	8.6
Pongchau	11808	20.7
Wakka	11216	19.6
Total	56953	100
<i>Source: Census of India, 2011</i>		

Longding district comprises of six circles. Pumao and Lawnu circles are having the lowest number of population. Pumao circle has only five villages. This may be the reason of low population in Pumao circle. Longding and Pongchau circles are endowed with suitable climate and easy access to the the district headquarter and shares the highest number of population because it provide better facilities for job, medical, market, education etc.

5.3 POPULATION GROWTH

Population growth refers to the change in the number of inhabitants of a territory during a specific time period. The change in the number of people is expressed either in terms of absolute number or in percentage. Calculation of population growth may be done for any period but generally it is calculated either in terms of per decade or per annum which is called as decadal growth of population and annual population growth. Of the entire demographic feature, population growth has been considered as most important. It is a vital index of regions economic development. Population growth is not only pivotal to the demographic dynamism but also intimately related as well as significantly influences all other characteristics of population. Population growth analysis is the key to understand the entire demographic structure of the region. Population growth has been a much discussed topic in the recent decade not only in the less developed realm of the world where the explosive population growth trend imposing threatening pressure over resources and environment but also in the developed world.

The consequences of population growth on economic development have attracted the attention of economist ever since Adam Smith wrote his *Wealth of Nations*. It was Malthus and Ricardo who created an alarm about the effects of population growth on the economy.

Population growth adversely affects their economic development. Economic development depends upon investment. In the developing countries, the resources available for investment are limited. Rapid population growth tends to overuse the country's natural resources. This is particularly the case where the majority of people are dependent on agriculture for their livelihood. Infact, rapid population growth leads to the overuse of the land jeopardizing the welfare of future generations.

Rapidly increasing population makes it difficult to invest in roads, public services, drainage and other infrastructures needed to tap the resources. In a rapidly growing population, it becomes difficult to manage the adjustments that accompany economic and social change.

A rapid population growth leads to environmental damage. Scarcity of land due to rapidly increasing population pushes large number of people to ecologically sensitive areas such as hillsides and tropical forests. It leads to overgrazing and cutting of forest for cultivation leading to severe environmental damage. Moreover, the pressures of rapid growth of population force people to obtain more food for them. Rapid population growth leads to the migration of large number to urban areas. This results in severe air, water and noise pollution in cities and towns.

Population explosion is one of the serious problems in India. India had a very chequered demographic history, more so during the 20th century. The population of India has increased three folds since the beginning of the 20th century. The trend of population should not be viewed in isolation from other aspects of development. The demographic variables and the socio economic variables interact upon each other. The determinants of fertility, mortality and migration are inter woven in the social system and are influenced by the people's perception and public policies. The social and economic conditions affect mortality, fertility and propensity to move. The population growth on the other hand, modifies the social fabric and the natural environment. A direct relationship exists between size and growth of population and the size and growth of various indicators of development.

Table 5.2 Growth Rate of Population, Longding District				
Name of circles	Population 2001	Percentage 2001	Population 2011	Percentage 2011
Longding	15703	30.7	16897	30
Kanubari	7400	14.5	7152	12.5
Lawnu	3940	7.7	4946	8.6
Pumao	4312	8.4	4934	8.6
Pongchao	10421	20.4	11808	20.7
Wakka	9246	18.1	11216	19.6
Total	51022	100	56953	100
<i>Source: District Census Handbook, 2011</i>				

The above table shows the growth rate of population in Longding district in absolute numbers and percentage. The general population growth rate of Kanubari circle declined by 2 percent in 2011. The reason may be the gradual decrease in birth rate or the migration to some other areas for earning livelihood.

Table 5.3 Population distribution village wise of Longding District		
No. of Persons	No. of villages	Percent
< 200	16	21
200-400	9	12
400-600	10	13
600-800	11	14
>800	31	40
<i>Source: Census of India 2011</i>		

The table 5.3 shows that, out of 77 villages there are 16 villages which are sparsely populated. Topographical barrier accompanied by barren soil unfit for any crops to grow are the reason behind this sparse population. However, there are 31 villages in Longding, Wakka and Pongchao circle whose population are more than 800 persons per village.

5.4 DISTRIBUTION OF SCHEDULE TRIBE AND SCHEDULE CASTE

Caste and tribe often affect on economy and settlement of a region. The term scheduled tribe first appeared in the Government of India Act, 1935 and the Govt of India Scheduled Caste order 1936. Tribes of India are varied in terms of their socio-economic and political development. Some tribals are in the transition phase, while others are adhering to their old life styles. This shows an uneven process of change and development among the tribal people in India. In general, tribals are economically, educationally and politically backward compared to non tribal people. These are very small tribe as well as very large ones. Variations are also quite prominent among tribes in regard to their economic pursuits.

The Constitution of India, under article 342, states that the President of India, may by public notification specify the tribes or tribal communities or parts or group within tribes or tribal communities which shall purpose of this constitution be deemed to be Scheduled Tribe.

Census provides necessary data about the SC and ST for evolving suitable plans for the socio-economic upliftment and both the planners and the administrators heavily depend on the data.

Table 5.4 Distribution of Scheduled Tribe and Scheduled Caste population of Longding District					
Name of Circles	Total population	Total scheduled caste population	Total scheduled tribe population	Percentage of SC population to total population	Percentage of ST population to total population
Longding	16897	0	15843	0	93.76
Kanubari	7152	0	6100	0	85.29
Lawnu	4946	0	4699	0	95.01
Pumao	4934	0	4926	0	99.84
Pongchau	11808	0	11712	0	99.19
Wakka	11216	0	11108	0	99.04
Total	56953	0	54388	0	95.49
<i>Source: District Handbook Tirap, 2011</i>					

The table shows the circle wise number and percentage of Scheduled Castes and Scheduled Tribes population recorded in Census 2011 by residence. It can be seen from the table that that there is no Scheduled Castes population in the district. The Govt. of Arunachal Pradesh has denotified all the scheduled castes of 2001 census in the state. The Scheduled Tribe population in the district constitutes 95.49 percent of the district population. Among the circles, Pumao circle has the highest population of scheduled tribe population with 99.8 percent closely followed by Pongchau circle with 99.2 percent. The table reveals that almost all the circles have Scheduled Tribe population above 90 percent except Kanubari circle which have 85.29 percent.

5.5 SEX COMPOSITION

Among the various element of population composition, sex composition hold a prime place for population geographers. The separate data for males and females are important for various types of planning and for analysis of other demographic characteristics such as natality, mortality, migration, marital status, economic characteristics etc. The balance between the two sexes affects the social and

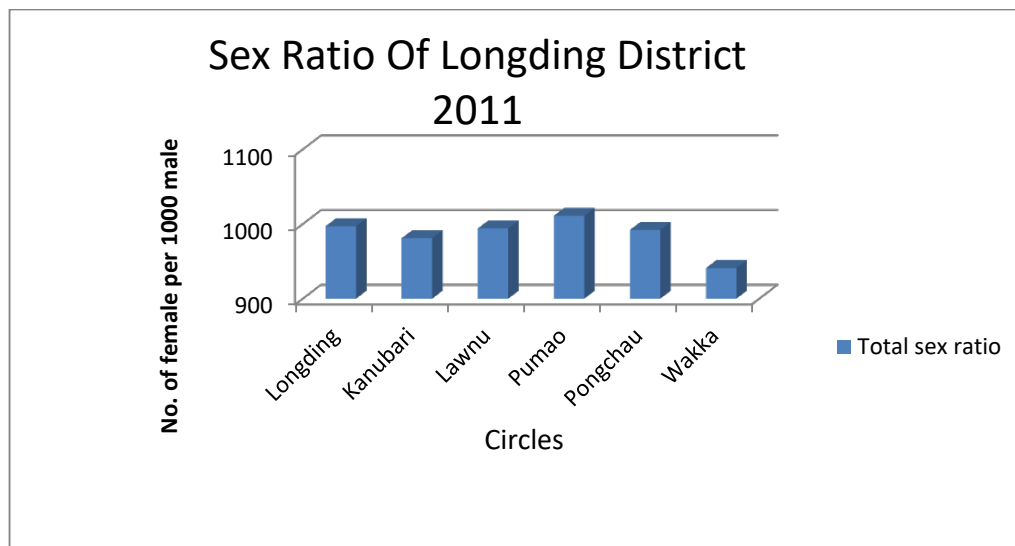
economic relationship within a community. Since the two sexes play partly contrasting and partly complementary roles in the economy and society the study of sex composition assumes aided significance for a population geographer.

Franklin (1956) rightly observes that sex ratio is an index of economy prevailing in an area and was useful tool for regional analysis. The profound effect of the proportion of the two sexes upon the other demographic element like population growth, marriage rates and occupational structures has also been well recognized. Thus, the knowledge of sex ratio is essential for understanding the employment and consumption patterns and social needs etc of a community. Trewartha(1953) rightly remarked that the proportion of the two sexes is fundamental to the geographic analysis of an area because it is not only an important feature of the landscape but it also influences the other demographic elements significantly and as such provides an additional means for analysing the regional landscape. It is an important indicator to measure the extent of prevailing equality between males and females in a society at a given point of time.

The numerical measurement of sex composition of a population is often expressed in terms of sex ratio. The ratio is calculated differently in different countries. The study region has a sex ratio of 986 females per thousand males against the state average of 938 (2011 census).

Table 5.5 Sex Ratio by circle of Longding District, 2011	
Name of circles	Total sex ratio
Longding	997
Kanubari	981
Lawnu	994
Pumao	1011
Pongchau	992
Wakka	941
<i>Source: Census of India, 2011</i>	

Graph 5.1 Sex Ratio of Different Circles of Longding District



The table shows the sex ratio by different Circles as per 2011 census. All the circles have better sex ratio than the state level of 938 female per 1000 males as per 2011 census. Pumao Circle has the highest Sex Ratio with 1011. The highest sex ratio may be the product of their relatively low female mortality rate.

5.6 LITERACY

Literacy is essential for eradicating poverty and mental isolation, for cultivating peaceful and friendly international relation and for permitting the free play of demographic processes (Chandana, 1980). literacy influences other attributes of population like fertility, mobility, mortality, occupations etc. The trends in literacy are considered as an index of the pace at which the socio-economic transformation of a society is taking place. Thus, the analysis of literacy pattern and trends is of immense significance for a population geographer.

The concept of literacy, that varies from country to country, generally refers to the minimum level of literacy skills. The minimum level of skills varies from ability to communicate orally, to make a check of a variety of difficult arithmetical computations. However, the length of schooling has often been considered as a basis of distinguishing between a literate and illiterate.

The Population Commission of United Nations considers the ability to both read and write a simple message with understanding in any language a sufficient basis for classifying a person as literate. The Indian Census has adopted this definition. Gradually many countries are shifting to this definition. If literacy is defined in terms of a person's ability to both read and write a simple message with understanding, the collection of accurate information by the census enumerators may not pose any serious problems. However, a distinction can be made between the literates and the educated, as has been done in India. All those persons who are classified as literates on the basis of their ability to both read and write are further subdivided into number of categories on the basis of their length of schooling.

Various nation of the world can be classified into three distinct categories. First are those who have completed the transition. Second those who are in the midst of the transition. Third are those where the transition has just begun. The old industrial nations, which were first to experience the literacy transition, were able to eliminate illiteracy largely from their hands by the beginning of the 20th century. The other advanced countries which later joined these old industrial nations in the process of literacy transformation, were able to register a sharp decline in their illiterate population by middle of 20th century. The group of countries which may be considered as having completed their literacy transition may include countries of North America, Europe, Japan, Australia, New Zealand and Argentina.

The countries that are in the midst of the literacy transition are those where the literacy transition is of recent origin. Since most of these countries are large sized countries and primarily agricultural, the progress of the literacy in these countries has been slow. Since most of these nations are primarily agricultural economies and are from amongst the less developed countries, the strain on their resources is already acute. In the process, the literacy transition suffers a setback. That is why the transition in these countries are not as rapid as it has been the the case with industrial nations. Some major countries of this group are India, Pakistan, China, Bangladesh, Indonesia, Brazil, Iran etc.

The third group of countries consists of those areas where the the literacy transition is still in its infancy stage. These are mostly the African nations where the propogation of literacy and education is yet to gain momentum. The Islamic countries of West Asia may also fall in this category.

While on the basis of the stage of literacy transition the various nations could be classified into three types of areas having almost universal literacy, rates between males and females, between rural and urban areas.

In some of the countries, especially where the literacy transition has just begun, the female literacy rates are so low that general literacy is almost synonymous with male literacy. The striking low literacy rates among the females in the less developed countries of the world are the product of a variety of historical, social and economic factors. Historically speaking, most of these countries have either been colonies of the West or have had a long spell of feudal rule or have suffered both. Socially, the prejudices against the female education, prejudices against female mobility and the low status granted to the females, lack of education institutions for the females, prevalence of early marriage and movement of girls from their parents

place of residence to their spouse at the time of marriage are the factors responsible for low literacy in these countries.

The prevalence of prejudices against female education in the less developed countries in general and in Islamic world in particular has long been recognized. For instance, in India the females in general are not allowed much mobility. They remain confined to four walls of the house only. Also, it is very rare that a girl is sent to a school in the adjacent village, if there is no school in the home village.

The women in general are granted relatively low status in comparison to men. Female literacy has a positive correlation with the status of women in the society. Another factor is that there is still the system of early marriage prevalent in most of the societies. Thus, even those female children who join school at an early age have a tendency to drop out in the event of their marriage. In India, education of girls is becoming a matrimonial necessity, at least in urban areas.

Economically, the appalling poverty and low degree of occupational participation among females are the factors responsible for wide disparity in the male female literacy rates. The widespread poverty prevailing among the masses in the less developed countries has been the major stumbling block in the propagation of literacy among females. The education of males gets a priority over education of female children under such conditions of poverty. Similarly, the degree of participation in economically gainful activities among the females is also low. The females are more required to participate in the domestic chores. Since literacy has little functional utility for the females under such socio-economic circumstances, therefore, it suffers a setback.

In recent times, of course, improvements have been witnessed in terms of male and female literacy rate in the traditional societies. There has been a visible

decline in the the gap between male and female literacy rates as the female literacy rates have increased more rapidly than the male literacy rates in some of the states of India. The relatively higher rate of increase of female literacy may be attributed to the opening up of a large number of educational institutions in the villages and towns. Above all, the most important factor is the increasing social awakening and increasing male literacy have stimulated female literacy.

The literacy rate in any area is determined largely by varieties of social, political and historical factors.

There is a positive correlation between literacy and stage of technological development of a country. The technologically developed countries shows high literacy rates in comparision to the low literacy rates of the countries where the technological development is in a infant stages.

In recent times, it has been noticed that transport and communication plays an important role in the process of propogation of literacy and education. There is a positive correlation between the literacy rate and the degree of development of means of transport and communication.

The attitude of the people towards education is controlled largely by the value system of a society. Higher the socio-economic awakening, more favourable is the attitude of the people toward education.

Female literacy plays an important role in the socio-economic development of an area. Women constitute half the total population of any society, therefore any discrimination against them in the form of status or prejudices also tells upon the literacy rate of such societies. The societies where the females are not allowed mobility or which suffer from prejudices against female education also display low

female literacy and hence low general literacy. That is the reason, the Muslim world is characterized by the region having low literacy rate among the females.

The general value system adhered to by the people, in general is also an equally important factor. The desire on the part of people for getting education may be determined by the general social values in a society. The attitude of the people toward education is governed largely by the value system of a society. Higher the socio economic awakening more favourable is the attitude of the people towards education.

There exists a positive correlation between the literacy rate and the degree of availability of educational institutions. The availability of educational facilities within an easy access and within the reach of ones pocket works as a positive factor in propogation of literacy and education.

The study observes there is a relationship between literacy rate and socio-economic development. Whenever the literacy is low socioeconomic inequalities is high. Education is the key factor for the rapid development and upliftment of society. Education plays a crucial role in the social and economic growth of a nation. It is an important indicator of socio-cultural development and political consciousness. Among the various indicators of population quality, achievement in the sphere of literacy is the most important in the context of developing areas. It has been seen that a literate person makes a more progressive and productive resources keen to use new innovation and technology in every field. Literate person can become a enlightened trader and a good entrepreneur.

The progress in literacy and economic development are generally though not always interrelated. Literacy percentage is one of the indicators that have been studied to determine the level of development.

According to Census of India 2011, India has recorded female literacy rate of 65.46 percent with the rural areas reporting female literacy rate of 58.75 percent and the urban areas registering 79.92 percent female literacy rate resulting in an absolute difference of nearly 21.17 percent.

Name of the Circles	Percent	Percent (Male)	Percent (Female)
Longding	43.55	55.18	32.00
Kanubari	59.19	66.07	52.19
Pongchau	35.53	44.38	26.62
Wakka	32.46	41.03	23.28
Lawnu	58.73	68.25	49.55
Pumao	14.79	20.30	9.55

Source: District Census Handbook, Tirap 2011

The literacy rate of Longding district is 43.55 percent against the overall state literacy rate of 66.95 percent. The male literacy rate is 43.97 percent and the female literacy rate is 25.74 percent.

The data in the table 5.6 revealed marked disparity in the literacy of male and female population. Amongst the circles, Kanubari circle has registered the highest percentage of literacy 59.19 percent followed closely by Lawnu with 58.73 percent. The lowest literacy rate is that of Pumao (14.79) which is extremely below the district average as well. Low literacy rate is noted in rest of the circles, Pongchau and Wakka 35.53 and 32.46 percentages respectively. Between the two sexes Lawnu circle is at the top of the ladder.

LITERACY DIFFERENTIALS

In every state the urban literacy tends to be higher than the rural. In the country as a whole literacy in urban areas is twice that in rural areas. Differentials among the females are even larger.

The strikingly low literacy rates among the females in the less developed countries of the world are the product of variety of historical, social, and economic factors. Socially, the prejudices against the female education, mobility, prevalence of early marriage etc are the factors responsible for low female literacy.

The position of women literacy is highly miserable because of the conservative and prejudice against their mobility, lack of opportunities for females in participating in the economic struggles, aided by general poverty are the reason for low literacy rate among the females.

In recent years, it has been witnessed in a change in the context of male female differentials in literacy in the study area.

Name of the circles	Male (percent)	Female (percent)	Gap in male female literacy rate
Kanubari	66.08	52.2	13.88
Lawnu	68.25	49.55	18.7
Longding	55.18	32	23.18
Pumao	20.31	9.55	10.76
Pongchau	44.39	26.63	17.76
Wakka	41.04	23.29	17.75
Total	43.97	25.74	18.23

Source: District Census Handbook, Tirap 2011

The literacy rate of the district is 43.55 of which 43.97 and 25.74 are males and females respectively. The literacy scenario in the district has improved from all

aspect from that of 2001 Census. The literacy gap works out to 18.23 percentage point which is less than 2001(24.5).

Among the circles, the highest literacy is found in Kanubari with 52.19 percent and the lowest in Pumao with 14.8 percent. The literacy gap is lowest in Pumao (10.7) percent and highest in Longding (23.18).

There are variations in literacy rate in Longding district. There are two circles in the district whose literary percentage is more then the average percent of the district while remaining other circles represent low percentage of literacy, below the average literacy rate. Kanubari circle recorded the highest percentage of literacy rate while Pumao circle recorded the lowest. Kanubari and Lawnu circles with 59.19 and 58.73 percent respectively stand the highest literacy percent in the whole of the district. The reason for the high literacy is accessibility, social awareness regarding the value of education among people.

Table 5.8 Circle wise Literacy Percentage of Longding District		
Category	Scale of index	Name of Circles
High percentage of literacy	>50	Kanubari, Lawnu
Moderate percentage of literacy	30-50	Pongchau, Wakka, Longding
Low percentage of literacy	<30	Pumao
<i>Compiled and computed by the researcher</i>		

5.7 LEVEL OF EDUCATION

Literacy and level of education are basic indicators of the development achieved by a society. Spread of literacy is generally associated with important trait of modern civilization, industrialization, communication, and commerce. Literacy forms an important input in overall development of individual enabling them to comprehend their social political and cultural environment better.

Education is the process of facilitating learning or the acquisition of knowledge, skill, values, belief and habits. According to Pant (1979), "nothing helps development more than the confidence that comes from the knowledge that is possible." This confidence can come only through a process of education.

Education is important in life because it gives people the skill and tools they need to navigate the world.

Education plays an important role in the socio economic development of any region. It is a base of all human resource development. Human resource is the set of individual who make up the workforce of an organization. Presence of abundant natural resource is not a sufficient condition for the socio economic growth of any region. Physical features are to be combined with human resource of a country for economic development. The quality of population is measured by health standard, education level and technology which is vitally important in influencing a nation's cultural and economic progress. A country which has developed the skill and knowledge of its people can exploit natural resources, build social economic and political organization and carry forward national development. Education is a great tool for the development of a society as Nelson Mandela said, "education is the most powerful weapon which you can use to change the world."

While 83rd Constitutional Amendment considers education as a fundamental right of the Indian citizen, inequalities continue to be pronounced among the different social groups especially scheduled castes and scheduled tribes. Education has not yet been the priority of the tribal communities, not yet been an integral part of the tribal culture. This has been a harsh reality despite 58 years of planned development in India. The tribal perception of life education has failed to emerge as a part of their survival strategy. The lack of education atmosphere and infrastructure at home as well as their dependence on subsistence economy force tribal children out of school at the primary and early secondary stages. That time the boys are ready for odd jobs and girls for household chores for helping their mothers.

5.8 HEALTH CARE FACILITIES

Health care services means any medical or remedial care services including supplies delivered in connection with the care services, that is recognized under state law. Health care facility in general is any location where health care is provided. Health care ranges from small clinics and doctors' office to urgent care centres. The number and quality of health care facilities in a country or region is one common measure of that area prosperity and quality of life.

Health is defined as not just absence of disease but a state of overall well being. In 1948 the World Health Organization (WHO) defined health with a phrase that is still used today. According to it, health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity.

As per social concern health and nutrition are essential factors which are basic need for social well being because sound body and mind only can make a society function.

Health is influenced by innumerable factor such as health care facilities, nutrition, sanitation, drinking water etc.

The National Rural Health Mission (NRHM) plays a great role in strengthening the management structures and function at the state and district level resoectively.

NRHM is a national effort at ensuring effective health care through a range of intervention at individual, household, community and most critically the health system level. Despite considerable gains in health status over the past few decades in terms of increased life expectancy, reduction in mortality and morbidity, serious challenges still remains. These challenges vary significantly from state to state and even within states. There has been a progressive decline in the budgetary allocation for Public Health in the country from 1.3 percent of GDP in 1990 to 0.9 percent in 1999. Rising inequalities are another area of concern.

Studies demonstrate that curative services favour the rich over the poor. Only one tenth of the population is covered by any form of health insurance thereby imposing the large majority to the risk of indebtedness in the event of a major illness in a family. Operational integration in policy and programmes between various vertical programmes within the health sector and between health and other related sectors such as drinking water, sanitation and nutrition has been limited, resulting into a lack of holistic approach to health. A number of states, particularly in north eastern part of the country have stagnant health indicator and continue to grapple with significant morbidity and mortality. The causes for this basically lie in socio economic factor, under performing health system and health system and weak institutional framework.

The National Common Minimum Programme spell out the commitment of the government to enhance budgetary outlay for public health and improve the capacity of the health system to absorb the increased outlay so as to bring all round development in public health services. This mission seeks to provide effective health care to the rural population, especially the disadvantaged group including women and children by growing access, enabling community ownership and demand for services strengthening public health system for efficient service delivery, enhancing equity and accountability and promoting decentralization.

SPATIAL PATTERN OF INFRASTRUCTURAL INEQUALITIES

6.0 INTRODUCTION

Infrastructure, in general, is defined as a set of facilities through which goods and services are provided to the public. Their installations do not produce goods and services directly but provide inputs for all other socio-economic activities. Infrastructure is the stock of basic facilities and capital equipment needed for the functioning of a country or area. The term refers collectively to the roads, bridges, rail lines and similar public works that are required for an industrial economy, or a portion of it, to function. The term originated during the World War II as a military term to mean, "underlying" structures in the early days of marshal plan, as preferable to social overhead capital, to avoid confusion with hospital, schools and similar welfare type facilities. Since then the term has been widely used by the economist but doesn't have precise definition till now.

Infrastructure and development is a continuous process. A sound infrastructural foundation is the key to the overall socio-development of the region. The infrastructure sector is highly responsible, infact act as a catalyst for the overall development of the region. These facilities include educational institution, transport and commerce, banking and finance, Health care facilities. The infrastructural facilities indicate the level of social development of an area.

In Geography, the concept of social development emerged from the radical Geographers who raised the question of who gets what, where and how in the wake of economic development.

Social development embraces all things contributing to the quality of human existence (Smith 1977). It concern what, who gets it and from where. Social well being is at the more concrete or specific end of a continuum of abstraction that descend from human quality of life (Smith 1973).

According to UNESCO (1977), quality of life is an inclusive concept which covers all aspect of living including material satisfaction of vital needs as more transcendental aspect of life, such as personal development, self realization and a healthy ecosystem. All of this can be consequence of development process, being the cumulative product of commodity surface in economics, welfare surface in Sociology, democratic surface, political science and conservation surface in ecology (Dubey 1981).

Social development refers to the process of institutional change to bring about a better condition between human needs, social policies and programmes.

According to Myrdal (1968) the social service components of development is not just infrastructure but an integral and vital part of development.”

While assessing the level of development of an area, an important factor to be taken into consideration would be the infrastructural facilities and social service. Many Scholars have selected various indicators to measure the infrastructural developments.

Gosal and Krishan (1984) analysed 24 indicators of infrastructural facilities to obtain the level of social development in Punjab.

Singh Nina used ten indicators to identify regional disparities in infrastructural facilities in Haryana. Bhaskar and Bhargava 2003 worked out a composite index to find out inter district disparities in infrastructural facilities in Rajasthan and West Bengal respectively.

Varieties of criteria were employed like banking, health, transport, water supply and electrification etc to measure the social and infrastructural development.

6.1 EDUCATIONAL INSTITUTES

Educational institution deserves top priority among all the infrastructural facilities for social development. In the present study Primary, Middle, Secondary and Higher Secondary have been examined from the aspect of number of schools per circle.

All the schools of the district come under the umbrella of Education Department. The education department is headed by Deputy Director of School Education who is also the District Project officer to further national flagship and vertical programmes like RMSA, SSA etc. There are four educational block namely Longding, Kanubari, Pongchau and Wakka under the District Deputy Director of School Education cum Project Officer, which are managed by Block Education Officer/Block Co-ordinator as field officer for each block.

Table 6.1 Education Institutes in Longding district	
Educational institutes	Total
Pre-primary schools	71
Primary schools	66
Middle schools	14
Secondary schools	6
Higher secondary schools	4
colleges	Nil
<i>Source: Data collected from DDSE Longding</i>	

In Longding district, there has been progress in education compared to last several years. Government is determined to increase the level of education to eradicate the poverty. Therefore, many schools especially primary schools have been set up recently in every nook and corner of the the district. There are 71 pre primary schools, 66 primary schools, and 17 middle schools. But the proportion of secondary and higher secondary school is almost four times lesser than primary schools. The district is lagging behind in terms of higher education as there is no any college in the district to pursue higher education. Student has to go to other district or state to pursue higher education. Moreover, there is no any technical college or vocational course imparting institute in the district. If such institute be developed in the district then it would be beneficial for the local youth to generate employment thereby increasing the local economy of the district.

Name of the circles	No. of primary schools	No. of middle schools	No. of secondary schools	No. of higher secondary schools
Kanubari	13	7	1	1
Longding	17	3	2	1
Pongchau	13	2	1	1
Lawnu	14	3	-	-
Pumao	5	1	-	-
Wakka	18	4	2	1

Source: Data collected by the researcher

Table 6.1 gives the detail information of the different schools in the Longding district. The purpose of primary education is to assist a child on many levels. Primary school education is the basic and foremost right of every child. Primary education brings awareness among the mass avenues for opportunities as self advancement and reduces chronic and intergenerational poverty.

Table 6.2 gives the detail about the spatial pattern of primary and middle schools facilities in the study area. There are 71 primary schools and 17 middle schools in the district. The highest number of primary and middle school were observed in the Longding circle and lowest primary schoolis observed in the Pumao circle.

SECONDARY AND HIGHER SECONDARY SCHOOLS

The proportion of secondary and higher secondary school in the district is almost four times lesser than primary school of the district. There are 17 middle schools in the whole of the district which caters to the need of education in the district. Due to the pressure of student which the limited number of middle schools in the district could not accommodate the large number of students. Recently, the middle school of Niausa which is 12 kms away from the District Headquarter has been upgraded into a secondary school.

There are four Higher Secondary schools in the district. Because of the less number of higher secondary schools in the district, the condition and the result output are not encouraging. The classroom are congested and over crowded apart from that student teacher ratio is not maintained because of the lack of teachers in the subjects concerned.

6.2 HEALTHCARE CENTRES

Name of circles	No. of Community Health Centres	No. of Pimary Health Centres	No. of Sub-centres
Longding	1	-	6
Kanubari	1	-	5
Lawnu	-	-	1
Pumao	-	-	1
Wakka	-	1	3
Pongchao	1	-	3

Source: District Census Handbook, Tirap, 2011

Table 6.3 revealed the spatial distribution of the health services. All the circles in the district observed the poor health care facilities. There are only three Community Health Centres, 1 Primary Health Centre and 19 Subcentres in the study area. The table reveals the poor health care system of the district. It has also been observed that in all the circles there is a paucity of doctors. Hospitals are lacking in man power, equipments, medicine also.

In some blocks or circles there is no any health centres. People have to go to various Subcentres for availing the health care facilities. Hospitals don't have modern equipment of health care system. In some case people have to walk several kms to reach the hospital. Sometimes they are compelled to go to Assam spending huge sums of money. Poor patient couldnot afford to go to district hospital for getting treatment to their health problems.

Condition of the interior villages are worst than the villages located near the headquarters due to the lack of health centres nearby, accompanied by the problems and unavailability of the transport facilities to lift the patient tp the district hospital. So, they ultimately resort to local treatment for various ailments which are not

always successful. Proper health care system is a distant dream for the people living in the study area.

Recently, in Wakka Circle, the PHC (Primary Health Centre) run by the government was taken up by the NGO named Karuna Trust and is functioning excellently. Thus, from this example it can be concluded that mere establishment of medical infrastructure wouldnot be of any help to the people unless there are dedicated workers and medical equipment.

Table 6.4 Number of medical officers in the Community Health Centres and Primary Health Centres of Longding District			
Name of circles	No. of Community Health Centres	No. of Primary Health Centre	No. of Doctors
Longding	1	-	5
Pongchao	1	-	2
Wakka	-	1	2
Kanubari	1	-	4

Source: Data collected by the Researcher

Table 6.4 clearly reveals the pathetic health care system of the district. The rest two circles i.e. Pumao and Lawnu don't have a health centre. Only subcentres are catering to the health care need of the people. The table also reflects that in some circles the ratio is 1 doctor per 6000 population, which shows the deteriorating health status of the circle.

There is an urgent need to develop the health care facilities of the district because health care forms a vital aspect of a countrys health system, while immensely assisting in the socio economic development of the community.

6.3 TRANSPORT AND COMMUNICATION

Transport and communication is an important element of infrastructure based on which the progress of a region may take place. Transportation means movement of goods and passenger from one place to another; from producer the goods are made available to consumer for consumption by means of transport. Production is facilitated as raw materials and coal are brought to the factory site by quick transport. Transportation plays a vital role in production and distribution. It is the life blood of commerce. The impact of transport on world productive activities is great. The development of a country socially, politically, and economically- is dependent on quick and smooth transport of goods. The development of transport and communication system has direct linkages with the pattern of economic as well as social growth. Transport routes are the basic economic arteries of the country.

Transport system is regarded as the sinews of the national economy and provides a very important link between production and consumption. In modern age even ideas and skills move from one place to another with the help of transport system. Roads make crucial contribution to the economic development and growth. They are of vital importance in order to make a region develop. Apart from that, it provides access to employment, social health for a country like India. Road transport plays a great role because more than 65 percent of the people in India reside in rural area. Transport contributes a lot to the farmer. Perishable goods can be transported to the various consumer centres. Transportation bridges the gap between production and consumption centres. Road connects the vast rural areas of India to form the national market. Road is the most important determinant for the well being and quality of life of people in any area.

6.4 TYPES OF ROAD

Roadways are more important because they reach even isolated villages over the hills. However, because of the economic backwardness of the region, roads were not developed adequately. There are few geographical reasons for backwardness of the region in respect of road transport. Roads, as a means of communication, assume key importance in the entire process of growth. In any country which is being opened up for economic growth, a good road network becomes an indispensable precondition for the growing movement of goods and services and for raising the overall level of consumption and distribution. Road by changing the character and intensity of land use, can exert a profound influence on locational decision and in consequences can accelerate the rate of economic development in direction of industrialization. A good network with speed, cheapness and flexibility of operations can be instrumental in efficiently transporting commodities from where they are produced, to where they are porting commodities from where they are consumed. Thus, it will revolutionize the economic face of rural India with increasingly widespread industrial diffusion and with increased gainful employment opportunities. Thus, the provision of adequate, cheap and efficient transport facilities is the “sine quanon” of India’s economic development.

The inadequacy of the good road is a great impediment in the process of economic development particularly the Pongchau and the Wakka blocks of the study area. Some of the villages in these twin circles are still lagging behind in terms of socio- economic development because of the absence of road which led them to extreme remoteness as road play a vital role in reducing inequalities in terms of socio-economic development.

In the study area, the average road length is 122.46 per thousand of population. Out of 77 villages, 30 villages are connected to major district road (MDR) and 32 villages are having pucca roads. Those villages which are located in the remote areas do not have road connectivity and for them narrow foot tracks are the only means of communication.

Table 6.5 The Status of Roads of Longding District			
Names of circles	Villages connected to major district roads (MDR)	Villages connected to other district roads	Villages connected with pucca roads
Kanubari	8	8	6
Lawnu	7	14	5
Longding	10	3	5
Pumao	1	1	-
Wakka	6	5	8
Pongchao	5	5	8

Source: District Census Handbook, 2011

Table 6.1 reveals that Kanubari and Lawnu block are better in transport service to the village of the circle as compared to the rest of the circle and villages. In Lawnu out of 17 villages, 14 villages are connected to other district roads and in Kanubari circle out of 15 villages 8 villages are connected to other district roads. Very soon almost all the villages of Kanubari and Lawnu will get connected as the construction of Trans Arunachal Highway road is under construction from Kanubari to Longding. Construction process is still going on and will get completed very soon. Pumao circle is having the worst transport service. From Longding to Pongchao the road condition is better because it is being maintained by the GREF. It has been witnessed that in Kanubari and Lawnu blocks the road condition is good. Almost all the villages of these twin circles are having motorable road though not metalled; almost all the villages have road that are connected to the circle headquarter. The

road condition beyond Wakka and Pongchau headquarter, the road condition is not good. Roads are in a dilapidated condition and seemed no repairing work have been done since long. It becomes very difficult to travel especially during rainy season.

The inequalities that persisted for decades in terms of infrastructures are now being taken care of and every village is being connected with road link. The Pradhan Mantri Gram Sadak Yojana (PMGSY) Scheme has enabled the people to have the roads in inaccessible villages also.

6.3 COMMUNICATION

Communication means imparting or exchange of information and ideas by using some other medium. This medium may be emails, phones, internet, radio, television etc. Internet and television plays an important role in the conveyance of information or messages. The two main means of communication in the district are-

6.3.1 TELEPHONES

Few years before the coming of the television or mobile network, post offices used to be the greatest and most important source of communication. Telephone was one of the essential medium of communication after post offices. In 2012-2013, there were 2 telephone centres in the district. With the installation of mobile towers of various mobile companies, the consumer of mobile telephony increased. As per the recent report of 2013-2014, there are 5270 mobile consumers in the district. Highest percentage of mobile phones is observed in Longding Circle where as the least percentage in Wakka circle.

6.3.2 POST OFFICE

Post office plays an important role in the life of the rural people. The role of post offices is to establish a network of communication between the villages and the rest of the world. Post office plays crucial role in the life of the villagers. The villagers can collect money sent to them through money order and they can also deposit their savings in the post offices.

It appears that these aspects of the post office have been neglected in all the circles seeing the spatial pattern of the distribution of the post offices in the district. There are only 2 subpost offices in the district. One is in the district headquarter Longding and other is at Kanubari. From these two sub post offices letters are distributed to the different villages and circles through various branch post offices located in the specific region. It is very pathetic to witness that there are no sub post offices in the remaining three circles i.e. Wakka, Pongchau and Pumao.

6.4 WATER

Water is the basic necessity for the survival of all life forms on earth. It is probably one of the reasons why earth is the only planet that supports life. A lot of our day to day activities such as bathing, cooking, cleaning etc are dependent on the use of water. The society needs water for various activities beginning with the production of food. All basic necessities and every product involve the use of water in some parts of its manufacture.

There are various sources from which we get water like river, spring, canal, handpump etc. Census of India categorized the household who use drinking water from taps, handpumps and tubewell under improved drinking water facility and those using water from well, river, ponds, spring etc under non improved drinking water.

Table 6.6 Percentage of Household with Tap water facility of Longding District			
Name of circles	Total no. of villages	Villages with tap water facility	Percentage
Longding	14	14	100
Pongchao	13	11	84.61
Kanubari	15	11	73.33
Wakka	13	12	92.3
Pumao	5	5	100
Lawnu	17	7	41
<i>Source: Census of India 2011</i>			

It is clear from the above table that that out of 77 villages in the district 60 villages have the facility of improved drinking water.

When the researcher visited the study area the scene is totally different from what the official paper of the census revealed. There are many villages in the Longding district which doesn't have the access to improved drinking water. They have to go far to the stream to collect water for their daily uses. They use to carry water in a long tubes made of bamboo. Niausa and Niaunu are the two villages which are facing shortage of water because of the absence of water source nearby.

Longding the district head quarter is also suffering from the scarcity of water. Dwellers of the town have to depend on streams and tankers of the PHE Department which use to supply water door to door because there is regularly irregular water supply in the pipeline. The water project which was sanctioned years back to cater to the needs of water for the whole town is still to be completed. It has been witnessed by the researcher that there is a probability of outbreak of water borne disease because of the sheer scarcity of water and the contamination of all the water sources. All the people flock around the available stream and rivulets for washing and cleaning.

There is an urgent need for the installation of water project for the Longding district to cater to the growing needs of the growing population.

6.5 ELECTRICITY AND POWER

Electricity plays a dominant role in the progress and prosperity of society. Consumption of electricity is a barometer of a nation's economic well being and standard of living of its people. Availability of abundant electricity means unrestricted growth of industries, transport, and agriculture which means freedom from hunger and poverty and the resultant economic prosperity of the masses.

Due to certain geographical factors there is no any hydroelectric power station in the study area. The electricity has to be procured from the nearest neighbor Assam. The rivers in the districts are extremely erratic because they are fed by monsoon rains which are highly seasonal and whimsical. More over these rivers do not have natural waterfall. That is the main reason dams are not constructed to generate current in the district.

With the development of modern technology along with increased population and their economic activity over the years, there has been more demand of electricity and power supply in the district. Since the district doesn't have any such power stations and in order to meet the deficiency power has to be imported from Namrup Thermal Plant every year.

As per the census report, the district enjoys a relatively better percentage of electrified villages. According to 2011 census, out of 77 villages 72 villages are electrified as per the Census of India report. Other than electricity fire wood is the main source of power.

Table 6.7 Percentage of Electrified villages of Longding District			
Name of circles	No. of villages	No. of villages electrified	Percent
Longding	14	14	100
Kanubari	15	15	100
Pongchao	13	12	92.3
Wakka	13	13	100
Pumao	5	5	100
Lawnu	17	12	70.5
Source: Census of India, 2011			

It has been revealed from the table above that, all the villages of the four circles i.e. Longding, Pumao, Kanubari and Wakka are electrified. In Pongchao circle only one village i.e. Kamhua Noksa is not electrified. In Lawnu circle out of the 17 villages, 5 villages are not electrified till now as per the Census of India report. The reason for maximum village getting electrification is also because of the scheme launched by centre called Deen Dayal Upadhaya Gram JyotiYojana. It is a scheme of Government of India designed to supply power to rural India. This scheme enabled the villagers to get electrified their home more.

During the field survey, it has been observed that though all the houses are electrified in the village, there is a frequent breakdown of electricity especially during rainy season due to falling of trees over the electric wire which at times takes a week or month long to restore it back. Most of the times they have to live in complete darkness. Apart from this natural problem, the other problem which the Power department is facing is that, the power consumption bill not being paid in time. It is the most chronic problem in the various villages of the district which hampers a lot in the regular supply of power to the every household.

6.6 BANKING FACILITIES

Bank has always played an important role in the country's economy. It plays a decisive role in the development of the industry and trade. They are acting not only as the custodian of the wealth of the country but also as resource of the country which are necessary for the economic development of a nation.

Banks provide valuable resources to a country. To attain development there should be a developed financial system to support not only the economy but also the society. Banking plays a vital role in the socio-economic development of a country.

In the study area, the banking facility is worst and inadequate. Banks of the district are unable to cater the demand of the population. There is one SBI branch each in Longding and Kanubari. Recently SBI Branch has been opened in Wakka town, the circle headquarter of Wakka circle. But there is no transaction process in the bank, one can deposit but cannot withdraw.

It has been observed in Longding that there is always crunch of money in the bank. People have to stand in a long queue. Most of the time they have to return empty handed. A single bank couldnot cater the population of large 16897 population of the whole Longding circle. There is no any bank and banking facilities in Pongchau, Wakka, and Lawnu circles. Villagers have to cover long distance just to encash mere thousand rupees. There is serious need of opening more private and public sector banks in the different circles of the district.

There is one ATM (Automatic Teller Machine) installed outside the bank premise of SBI Longding, but it has been observed that most of the time it is lying unopened. If opened then also don't have a cash.

Banking problem is one of the greatest issues in the district which seriously need to be addressed.

6.7 INDUSTRY

Industrialization is the process of manufacturing consumer goods and capital goods and creating social overhead capital in order to provide goods and services to both individuals and businesses. As such industrialization plays a major role in the economic development of a region.

Industrialization is a pre-requisite for economic development. Industrialization is also necessary to provide employment to the underemployed and unemployed in the agricultural sector. Thus, industrialization tends to raise the living standard and promotes social welfare. Industrialisation brings social transformation, social equality, more equitable distribution of income and balanced development in the process of economic development.

Industry plays an important role in the economic development of a place. There are three types of industry i.e. large scale industry, medium scale industry and small scale industry. The development of industry largely depends upon the infrastructural development, sound finance, and entrepreneurship of the people in an area. The quick development of industry can only mitigate the growing demand of unemployment in the country. Therefore, the Government of Arunachal Pradesh has given greater emphasis on the development of cottage and small scale industries. There is no large scale industry in the district. The wood based industries were large scale industries in the district but all these industries have been closed down due to imposition of ban on large scale felling of trees by the Hon'ble Supreme Court.

The Industries department has set up craft and weaving centres in various localities in the district in order to provide training facilities for the encouragement of craftsmanship among the local men and women. However in 2000, the Department

of Textile and Handicrafts has been bifurcated from the Department of Industries.

The main activities of the DIC are-

1. Selection test for admission to various industrial training institutes.
2. Implementation of PMEGP (Prime Minister's Employment Generation Programme).
3. Organizing awareness campaign/training of PMEGP, Food Processing etc.
4. Organizing entrepreneurship developmental programme for women candidates and Skill development incentive schemes.

The study region is industrially backward, practically no manufacturing industry worth the name. The reason for industrial backwardness of the region are-

1. Poor development of transport and communication. Roads are poorly developed, the topography of the region is very uneven except in the limited plain areas.
2. Proper exploration and assessment of the natural resources are yet to be done and assessed. In the absence of proper assessment of resources and raw materials available locally, no financier ventures to start an industry.
3. There is lack of required capital locally for starting any industry. Capital formation, among the local people who are generally poor, is at low level. Capitalist from outside the region do not venture to invest large amount to start industries, because of various reason especially the prevailing insurgency. This has obviously affected the industrial development of the region.
4. Apart from lack of adequate power and capital, the region also lacks entrepreneurship because of the lack of skilled labour because in order to start any industry people with requisite technical knowhow has to be brought in from other outside the region which is often difficult. This has also hindered the growth of industries in the region.

5. Absence of large local market is another reason for poor development of industry in the region. Most of the people, especially in rural areas are subsistence farmers. They have a low standard of living. Therefore the industrial goods are not in high demand among them. Even their farming technique are so primitive that they neither use fertilizer nor feel the need of it. In case of other industrial goods also, the demand is low compared to its population. This has also hindered the growth of industry in the region.

Table 6.8 Major cottage industries activities in Longding District	
Cane and bamboo	Cap, headgear, spear, mat, chair etc.
Wooden Handicraft	Carving of wood, Dao handle various decoration piece
Wood based	Furniture, door and window frames etc.
Bead making	Plaiting of assorted colour bead in various size and design.
Weaving	Weaving of local wrapper, coat, jacket, tie etc
<i>Source: Compiled by researcher</i>	

The marketing of these products are done through local shops, markets and emporium and in other district headquarters and other prominent places of North East.

**ANALYSIS OF INDICATORS FOR DEVELOPMENT AND
INEQUALITIES AT CIRCLE LEVEL**

7.0 INTRODUCTION

The inequalities in the level of socio-economic development have been analysed in the sphere of economic activities, in social and infrastructural sector in terms of variety of indicators pertaining to various dimensions of development.

In order to accomplish the task, the data related to socio economic entities were collected from all the circles through questionnaire. For the collection of households data about 30 percent of the selected village been taken randomly from each of the circles. From the selected villages, a sample of 5 to 10 households representing different sectors of the economy has been drawn by employing the method of stratified random sampling. The head of the family or other senior member of the household has been given questionnaire on those items, which was not available through secondary sources. The availability of different facilities and services was also been examined through questionnaire.

The main objectives of this paper are to analyze the role of social and economic factors in the transformation of Longding district at the circle level. The economic activities of the people play an important role in shaping the socio-economic condition of the area. Existence of socio economic inequalities in the developing country like India is a very common phenomenon. The extent and degree of inequality may vary from time to time and from place to place. In India, regional planning involves the main aim of reducing the inequality. Regional planning has

also the objectives of accelerating the process of social advancement of the community through the technique of economic and social planning.

Socio economic inequalities exists in all the developed and under developed countries. The task of regional planning is to ensure the rate of development of the backward region. The concept of planning in India started well before the independence. After independence, the Planning Commission was setup in 1950 to guide the economic feature of the country. If we make an assessment of all the completed Five Year Plans, then we find that though we have completed about five decades of planning, all the plans have been oriented toward something, sometime on employment, sometimes industrial growth or for self reliance in agriculture and so on. But poverty and unemployment have also increased over the plan period, because of extreme regional difference in the size of population, variation in climate and vegetation, varied linguistic group and cultural aspect and so on.

If we analyse the population structure of the developing country like India, we are left in complete perplex. It is often said that India's economic progress has been slowed down because of the uncontrolled increase in population which hampers the growth of economic development. Growth of population becomes a vital element in any assessment of population resource nexus. There is no nation in the world which doesnot wish to economically grow and rise. Population growth and economic development are closely linked with each other. Population of an area definitely affects the economic growth. Growth of population is a hindrance on the path of capital formation, without capital formation there is no economic development. It is also believed that in a developing country increase in population is bound to result in unemployment. Whatever is earned by the the people is consumed by them. We must also take into account the fact that high dependency ratio characteristics of a rapidly

rising population tend to reduce the extent of skill formation and upgrading of skills needed for economic development in general and industrial development in particular. Due to increase in population many problem arise that even normal development is hindered. It also adversely affects annual growth rate. In India, the author of the the second five year plan pointed out that “large part of increase in output is absorbed by the growth of population.”

The planning process was initiated in India in April 1951 with the launching of the First Five Year Plan. The First Five Year Plan had two basic objectives -(1) correction of disequilibrium in the economy caused by the war and the partition of the country; and (2) initiation of process of all round balanced development which would ensure a national income and steady improvement in living standard over time. This plan aimed at achieving in all round balanced development. It accorded top priority to agriculture and irrigation. This was to reduce the country’s dependency on agricultural import and save foreign exchange, but the performance of the plan was quite disheartening. It was not instrumental in the developmental processes.

The decentralized multilevel planning started in India in the year 1992, the first level is constituted by the Central Government with the President as the head who act under the the advice of the council of ministers. The second level is constituted by the states with Governor as the executive head. The power conferred to the Governor is exercised by council of ministers. The main function is to coordinate and formulate policies and programmes. There are generally three levels below the state level- district, block and village. These levels are basically level of implementation. Hence, in the present chapter inequalities in the level of overall development in the study region have studied.

Socio-economic development is the process of social and economic development in a society. Development is a process of social and economic development in a society. Development is a process in the progress in lifestyle. It is multidimensional phenomena which include economic growth, level of health and educational services, status of women, communication, distribution of goods and services etc.

In the previous chapter, the analysis of development in the economic, social demographic and infrastructural development in Longding district has been undertaken. These dimensions of development were examined in terms of a variety of indicators. Economic development were examined through three indicators, whereas social and demographic development was assessed with the help of variety of indicators such as literacy, demography, health care facilities, transport and communication, banking facilities etc.

The development of any area depends upon lot of physical and sociocultural factors which include technology also. They are interrelated with each other. One single factor cannot determine the development of any area. Development is an integrated process in which all the sections of the society are expected to actively participate and cooperate. In fact, development is concerned with both economic and non economic factors like scientific advancement, capacity to harness and utilize resources etc.

It is accepted that development is both an economic and social process and in it are involved variety of inter related factors leading to change. These factors can operate singly or collectively and the process of development on the whole brings about several changes, like rise in the living standard, changes in attitudes, social institutions, means of transportation and communication, health care, environment

etc. When the process of development is deliberately started then it aims at total and not specific development because lack of ignoring any specific factor is bound to adversely affect developmental process as a whole. It is therefore not a simple but a very complex affair.

For the analysis of the inequalities in socio-economic development that exists in the various circles, suitable indicators have been taken. These sectors include economic and social indicators.

Social indicators are defined as statistical measures that describe social trends and conditions impacting on human well being. Generally, social indicators perform one or more of these functions i.e., providing information for decision making, monitoring and evaluating policies and deciding how to reach. Examples of social indicators cover the full range of issues that matter for individual, community and societal well being. Examples include health expenditure, education attainment, inequality rates, poverty etc. These indicators are used to assess the socioeconomic status of the region.

In India, the Census of India continues to be the most important single source of base datas for the researcher, which provides information in relation to various socio-economic aspects. The other agencies which provide information to various socio-economic aspects are National Sample Survey, the Planning Commission, and Central Statistical Organization. These agencies collect and produce data covering a wide range of Socio-economic data of the India's population.

The economic indicators include the economic activities of the people of the study area.

7.1 LEVEL OF SOCIO-ECONOMIC DEVELOPMENT AT THE CIRCLE LEVEL

Development is an act, process of growing and causing something to grow .It is a process of creating something over a period of time. According to Shumpeter, development is a discontinuous and spontaneous change in the stationary state which forever alters and displaces the equilibrium state previously existing.

Development embraces both growth and decline. An economy can grow but it may not develop because poverty, unemployment, and inequalities may continue to persist due to absence of technological and structural changes. According to Nurkse, "Development has much to do with human endowment, social attitudes, political conditions and historical accidents. Capital is necessary but not a sufficient condition of progress."

Development is a multidimensional phenomenon. Some of the major dimensions include distribution of goods and services, level of education, level of health services, status of women, level of economic growth, access to transportation and communication etc. Unfortunately, the process of socio-economic development in India is not uniform. The economy suffers from large and incessant inequalities. These inequalities create havoc and tension in the society. Geography contributes and influences in the process of socio-economic development of any area because Geography studies the spatial inequalities or the disparities in the sphere of socio-economic inequalities. Resources are not equally distributed the world over. Some places are having abundant resources whereas some region are lacking in even the basic resources. Resources are the base or means for the development of any region.

Longding district, the study area is lacking in almost all the natural resources and that is the reason district is striving hard to come in pace in regard to socio-economic development like other districts of the state.

For the purpose of studying socio-economic development of the study area firstly economic activities will be analysed, because economic activities plays an important role in the development of the region.

7.2 ECONOMIC ACTIVITIES

Economic activities are related to production, distribution, exchange and consumption of goods and services. The primary aim of economic activity is the production of goods and services with a view to make it available to consumers. In other words, economic activities are those efforts which are undertaken by men to earn income, money, wealth for his life and to secure maximum satisfaction of wants with limited and scarce means,

Human being has adopted various types of economic activities to support his life. The activities which people choose depends upon the physical environment of the region they inhabit. The economic activities are grouped into Primary, Secondary and Tertiary Sectors. The classification of economic activities was developed by Fisher in 1933. As suggested by Kon (2003), it is possible to construct some classification of economic activities encompassing functions and other common features.

In order to measure the level of inequalities, the statistical Z-score test and composite score for each economic activities has been used. Z –score has been used to develop a composite score for each economic activity and found out the inequalities for the Longding District.

To determine the economic activities of the study region, all the variables have been transformed into indices using Z-Score. For observation “I” on any variable, the Z-score is given by

$$Z_i = \frac{X_i - \text{Mean}}{SD}$$

Where,

Z_i is the standard score of the i th variable,

X_i is the individual observation,

\bar{X} is the mean of the variable.

SD is the standard deviation.

To determine the level of inequalities, three economic activities are selected.

7.2.1 Primary Economic Activities

Primary economic activities involve extracting natural resources from the land. Natural resources are those that occur naturally and are not manmade. Due to outdoor nature of their work, people engaged in these activities are called red collar worker. Agriculture, hunting and gathering, pastoral activities, livestock, fishing, forestry, minning and quarrying etc, all these activities comes under primary economic activities which are related to the natural resources(Singh S.2007). The following table indicates the Z-score value of primary activities in Longding District.

Table 7.1 Longding District-Primary Economic Activities 2018-2019	
Name of the District	Z-Score Value
Kanubari	-1.55
Wakka	0.55
Pongchau	0.27
Longding	-0.91
Pumao	0.95
Lawnu	0.68
<i>Source: Compiled by the Researcher</i>	

The analysis of the data using Z-Score reveals that there is a marked inequality in terms of primary economic activities in Longding district. It is clear from the table that primary economic activities is high in Pumao, Lawnu and Wakka circles and lowest in Longding and Kanubari circles have been identified.

7.2.2 Secondary Economic Activities

The secondary sector of the economy includes those economic sectors that produce a finished, usable product and involves production and construction. This sector generally takes the output of the primary sector and manufactures finished goods or where they are suitable for use by other businesses, for export or sale to domestic consumers. This sector is often divided into light industry and heavy industries. This industry converts raw material into a finished product.

Manufacturing is an important activity to promote economic growth and development. Nation that export manufactured products tend to generate higher marginal GDP growth which support higher incomes and marginal tax revenue needed to fund the quality of life initiatives such as health care and infrastructure in the economy. The field is an important source of engineering job opportunities.

Among developed countries, it is an important source of well paying jobs for the middle class to facilitate greater social mobility and successive generation on the economy.

The percentage of working population in the secondary sector is not large because the economic development of the maximum circles largely depends upon the primary sector.

In Longding district, secondary sector is dominated by handicraft industries.

Industry plays an important role in the economic development of a place. The development of industry largely depends upon the infrastructural development, sound finance and entrepreneurship of the people in the area. The quick development of industry can only mitigate the growing demand of unemployment in the country. Hence, government has setup District Industries Centres at Longding. There are no large scale industries in the district. The wood based industries-saw mills, veneer mills and plywood mills were large industries in the district. But all the industries have been closed down due to imposition of ban in large scale felling of trees by the Hon'ble Supreme Court of India.

The people are expert in cane and bamboo work. One can find self made traditional bamboo and cane furnitures of various design and utility in every household. But due to lack of entrepreneurship, financial constraints, and prevalence of insurgency nobody is taking initiative in investing money in establishing industry of its kind. Otherwise, this would have been an additional source of income for the village people and would also promote in the further development.

The Industries Department has set up Craft and Weaving Centres in various localities of the district in order to provide training facilities for encouragement of

craftsmanship among the local men and women. These centres impart training to the local youths and artisans in different trades like tailoring, weaving, wood carving, bead making, carpentry, bamboo furniture making etc.

Name of the Circles	Z- Score Value
Wakka	0.45
Pongchau	0.55
Lawnu	0.48
Pumao	-91
Longding	0.95
Kanubari	0.68
<i>Source: Compiled by the Researcher</i>	

Longding and Kanubari circles recorded high development of secondary economic activities according to 2018-2019. While circles Lawnu and Pongchau are found at the moderate level of secondary economic activities. The remaining two circles having low level of secondary economic activities for the year 2018-19 are Wakka and Pumao.

7.2.3 Tertiary Economic Activities

This sector is also called service industry, includes industries that, while producing no tangible goods, provide services or intangible gains or generate wealth. The industries of this sector include banking, finance, transportation, information and communication services, education, health, social welfare etc. The people engaged in

these services are known as pink colour jobs. The contribution of the tertiary sector in the economy of the study region is very less. It is only 10 percent.

The tertiary activities of man play important role in the socio economic development of the region. Higher the number of person engaged in economic activities lower the disparity in the economic development of the region.

The economy of the Longding district is mainly based on primary activities in which agriculture is important one. The primary sector contributed 74 percent of the total working population whereas tertiary sector contributes only 10 percent in the study region in the year 2018. Tertiary activities are one of the knowledged based economic activities where the people need some amount of skill in any kind of work. It has been found out while survey that due to poor literacy rate in the district accompanied by insurgency the population engaged in tertiary activity is low.

Table 7.3 Tertiary Economic Activities of Longding District	
Name of the circles	Z-Score Value
Pongchau	12.23
Kanubari	7.21
Pumao	7.25
Lawnu	6.48
Wakka	5.95
Longding	22.18
<i>Source: Compiled by the researcher</i>	

There is marked inequalities among the circles of Longding district. Longding circle has the highest development in terms of tertiary economic activities. The circles having medium developments in secondary economic activities are Pongchau, Kanubari and Pumao.

7.3 COMPOSITE SCORES OF SOCIAL AND INFRASTRUCTURAL DEVELOPMENT

In order to measure the level of development the major social and infrastructural indicators and their related variables are taken. The factors are analysed with the help of statistical techniques of “Z Score.” In the first step, Z Score of each suitable indicators is calculated with the help of following formula-

$$Z_i = \frac{X_i - \text{Mean}}{SD}$$

Where,

Z_i is the standard score of the i th variable,

X_i is the individual observation,

\bar{X} is the mean of the variable.

SD is the standard deviation.

Further, the result of the standard score obtained for different indicator was aggregated by the composite score (CS), so that the inequalities in the level of social and infrastructure development of the district can be obtained. This is expressed as-

$$\text{Composite Score} = \frac{\sum Z_i}{N}$$

7.3.1 INFRASTRUCTURAL AND SOCIAL DEVELOPMENT

Infrastructure refers to the basic system and services that a country or organization uses in order to work effectively. Quality of life of man depends on the infrastructural facilities and services, including education, health, transport etc. It can be said that infrastructure refers to those basic facilities without which primary,

secondary, and tertiary productive activities cannot function. In the infrastructural facilities, the researcher selected transport and communication- types of road, communication, telephone, post offices, water, electricity, banking facilities and industry as the indicator for measuring the inequalities in infrastructural sector. This will give an idea of the level of development in the study region.

Table 7.4 The Status of Road of Longding District				
Name Of The Circle	X1	X2	X3	Z-SCORE
Kanubari	.59	.43	.19	1.10
Lawnu	.27	1.75	-.19	1.96
Longding	1.25	-.65	-0.19	.53
Pumao	-1.68	-1.1	-1.7	.31
Wakka	.054	-.21	.96	.05
Pongchau	-.38	-21	.96	.48
<i>Source: Compiled by the Researcher</i>				

For the purpose of the study, the following indicators were selected which indicates the status of road of the study area. The variables are-

X1=Villages Connected to Major District Road.

X2=Villages connected to other district road.

X3= Villages connected to Pucca Road.

The table 7.4 gives the detail information about the road status in the Longding District. Kanubari and Lawnu circles recorded the highest number of villages connected to major district road whereas Pumao and Wakka circles exhibited very poor road status; both in terms of village road connecting to major district road and other district road and also in terms of villages connecting to pucca road.

Table 7.5 Composite score of Households with Tap Water Facility and Electrified Village (2017-2018) of Longding Disrict			
Name of the circles	Villages with Tap water facility	No of village electrified	Z-Score
Longding	1.19	.61	1.50
Pongchau	.29	.04	.32
Kanubari	.29	.89	.75
Wakka	.59	.32	.76
Pumao	1.4	1.9	2.46
Lawnu	.89	.04	.87
<i>Source: Compiled by the researcher</i>			

It has been revealed from the table above that all the villages of the four circles i.e. Longding, Pumao, Kanubari and Wakka are electrified. In Pongchau circle, only one village i.e. Kamhua Noksa is not electrified. In Lawnu circle, out of the 17 villages 5 villages are not electrified till now.

During the field survey, it has been observed that though all the houses are electrified in the village, there is a frequent breakdown of electricity especially during rainy season due to falling of trees over the electric wire which at times takes a week or month long to restore it back. Most of the times they have to live in complete darkness. Apart from this natural problem, the other problem which the power deparment is facing is that power consumption bill is not paid on time. It is the most chronic problem in the various villages of the district which hampers a lot in the regular supply of power to the every household.

7.3.2 Educational Development

Education is the process of facilitating learning or the acquisition of knowledge, skill, values, belief and habits. According to Pant (1979),”nothing helps

development more than the confidence that comes from the knowledge that is possible.” This confidence can come only through a process of education.

Education is important in life because it gives people the skill and tools they need to navigate the world. Education plays an important role in the socio economic development of any region. It is a base of all human resource development. Human resource is the set of individual who makes up the workforce of an organization. Presence of abundant natural resource is not a sufficient condition for the socio economic growth of any region. According to Galbraith, the role of education is paramount in the social and economic development of a country. It is a means to increase production also.

For the purpose of the study, following limited indicators were selected which will give the idea about the level of educational development in the study area.

Table 7.6 Literacy pattern of Longding District (Circle Wise) 2011			
Name of the Circles	Percent	Percent Male	Percent Female
Longding	43.55	55.18	32.00
Kanubari	59.19	66.07	52.19
Pongchau	35.53	44.38	26.62
Wakka	32.46	41.03	23.28
Lawnu	58.73	68.25	49.55
Pumao	14.79	20.30	9.55
<i>Source: District Census Handbook, 2011</i>			

According to Census of India 2011, India has recorded female literacy rate of 65.46 percent with the rural areas reporting female literacy rate of 58.75 percent and the urban areas registering 79.92 percent female literacy rate resulting in an absolute difference of nearly 21.17 percent

The data in the table 7.6 revealed marked disparity in the literacy of male and female population. Amongst the circles, Kanubari circle has registered the higher percentage of literacy of 59.19 followed closely by Lawnu with 58.73 percent respectively. The lowest literacy rate is that of Pumao 14.79 which is extremely below the district average. Low literacy rate is also noted in rest of the circles i.e. Pongchau and Wakka i.e. 35.53 and 32.46 respectively. Between the two sexes Lawnu circle is at the top of the ladder.

The position of women literacy is highly miserable because of the conservative mindset and prejudice against their mobility, lack of opportunities for females in participating in the economic struggles, aided by general poverty are the reason for low literacy rate among the females. Kanubari and Lawnu are comparatively far better than even the Longding circle in terms of male literacy.

Table 7.7 Educational Indicators of Longding District				
Name of the circles	X1	X2	X3	X4
Kanubari	.07	1.77	-.86	-.86
Longding	.79	-.61	.86	.86
Pongchau	-.07	-.64	-.86	-.86
Lawnu	.14	-.16	NA	NA
Pumao	-1.8	-1.12	NA	NA
Wakka	1.01	.32	.86	-.86

Source: Compiled by the Researcher

NA represents not availability of the institutions.

X1=No. of primary schools.

X2=No. of Middle Schools.

X3=No. of Secondary schools.

X4=No. of higher secondary schools.

The table 7.7 gives an idea about the inequalities in the study region. In these indicators, primary school, middle school, secondary school and higher secondary school are selected for the purpose. Longding circle observed the highest number of primary schools. In Lawnu and Pumao circles, there is no secondary school so no higher secondary school also.

7.3.3 HEALTH DEVELOPMENT: HEALTH CARE FACILITIES

Health care services means any medical or remedial care services including supplies delivered in connection with the care services, that is recognized under state law. Health care facility is, in general, any location where health care is provided. Health care ranges from small clinics and doctors' office to urgent care centres. The number and quality of health care facilities in a country or region is one common measure of that area prosperity and quality of life.

Health is not just absence of disease but a state of overall well being. In 1948 the World Health Organization (WHO) defined health with a phrase that is still used today. Health is a state of complete physical, mental and social well being and not merely the absence of disease or infirmity.

As per social concern health and nutrition are essential factors which are basic needs for social well being because sound body and mind only can make a society function.

Health is influenced by number of factors such as health care facilities, nutrition, sanitation, drinking water etc.

Table 7.8 Circle wise number of Health Institutions in Longding District			
Name of circle	No. of Community Health Centre	No. of Primary Health Centre	No. of Sub-centre
Longding	1	-	6
Kanubari	1	-	5
Lawnu	-	-	1
Pumao	-	-	1
Wakka	-	1	3
Pongchao	1	-	3

Source: District census handbook, Tirap, 2011

Table 7.8 revealed the spatial distribution of the health services in all the circles in the district observed the poor health care facilities. There are only three Community Health Centres, 1 Primary Health Centre and 19 subcentres in the study area. The table reveals the poor health care system of the district. It has also been observed that in all the circles there is a paucity of doctors. Hospitals are lacking in man power, equipments, medicine also. In many blocks or circles there is no any health centres. People have to go to various subcentres for availing the health care facilities. Hospitals don't have modern equipment of health care. In some case people have to walk several kms to reach the hospital. Sometimes they are compelled to go to Assam spending huge sums of money. Poor patient couldnot afford to go to district hospital for getting treatment to their ailing problems.

Condition of the interior village are worst than the villages located near headquarter, due to the lack of health centres accompanied by the problems and unavailability of the transport facilities to lift the patient to the district hospital.

Table 7.9 No. of Medical Officers in the Community Health Centres and Primary Health Centres of Longding District			
Names of Circle	No. of Community Health Centre	No. of Primary Health Centre	No. of Doctors
Longding	1	-	5
Pongchao	1	-	2
Wakka	-	1	2
Kanubari	1	-	4
<i>Source: Data collected by the Researcher</i>			

Table 7.9 clearly reveals the poor health care system of the district. The rest two circles i.e. Pumao and Lawnu don't have a health centre. Only Subcentres are catering to the health need of the people. The table also reflects that in some circles the ratio is 1 doctor per 6000 population, which shows the deteriorating health status of the circle.

There is an urgent need to develop the health care facilities of the district because health care forms the vital aspect of a country's health system while immensely assisting the socio economic development of the community. The health care system of the district presents a very grim picture of the health department. This is the the reason no proper indicator could be taken to study and analyse the indicator to understand the level of inequalities in the health sector.

7.4 COMPOSITE SCORE OF SOCIO-ECONOMIC DEVELOPMENT

In order to find out the overall socio-economic development of the district, a composite socio-economic index has been constructed incorporating all the indicators.composite Index of development have been obtained by using the following formula.

$$C.I.D. = \frac{\Sigma CDI}{N}$$

Where C.I.D = Composite Index of Development.

Σ CDI=summation of the coefficient of development for variables.

N=Number of variables.

Name of Circle	CID	Rank
Longding	88.41	2
Kanubari	89.85	1
Lawnu	67.45	6
Pumao	68.25	5
Wakka	78.20	4
Pongchau	79.14	3
<i>Source: Data Compiled by the Researcher</i>		

The composite Score of all the Circles in the study area have been arranged in descending order according to the score of the circles. All the circles have been grouped into three level of socio-economic development.

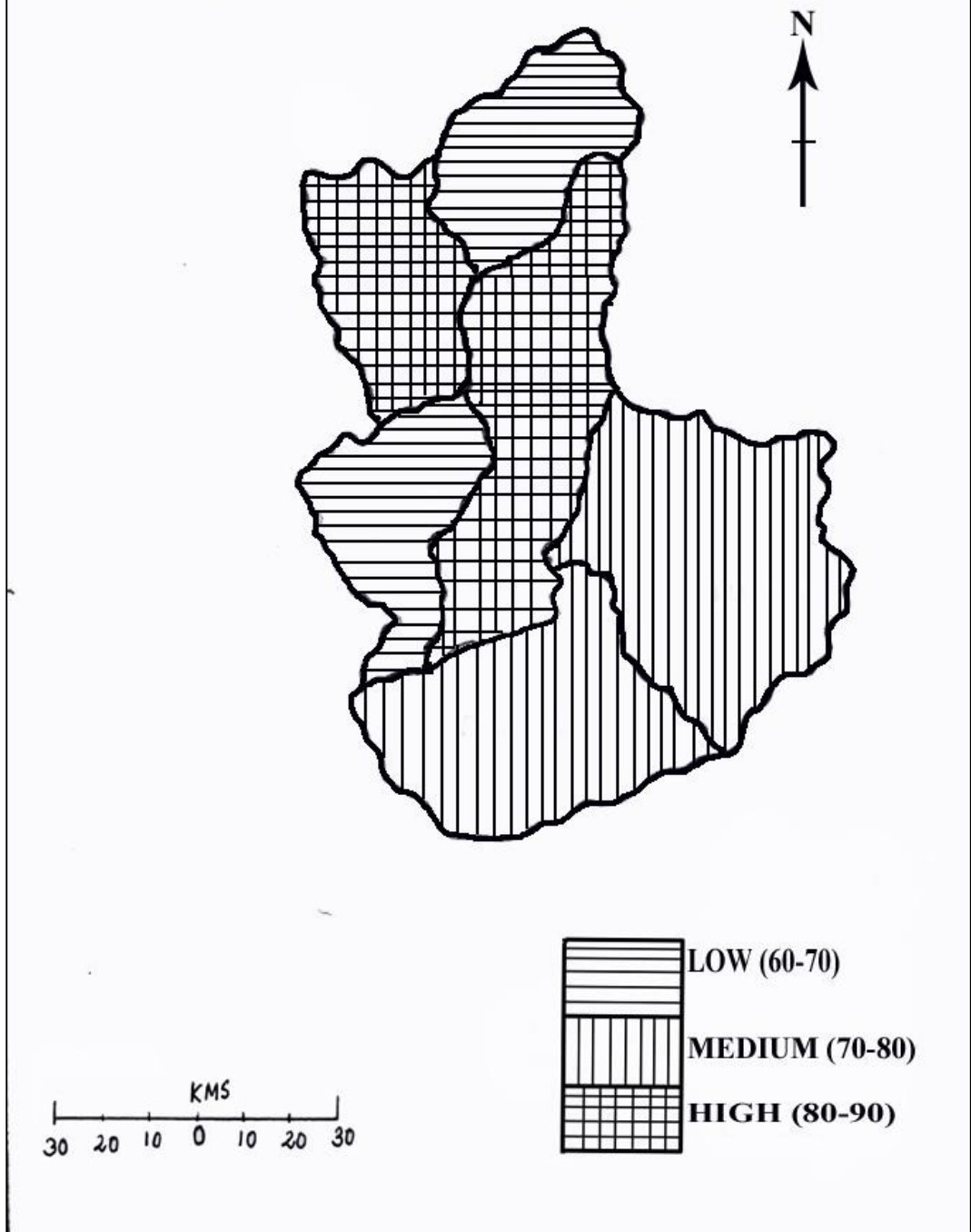
1. High Development (80-90).
2. Medium Development (70-80)
3. Low Development (60-70).

Kanubari and Longding Circles remain on the top with score above 80 and Pumao and Lawnu circles stand at the bottom with Composite Score of less than 70.

1. Area of High Development. (80-90)
2. Area of Medium Development (70-80).
3. Low Development (60-70)

The Composite Score (CID) of all the indicators have been arranged in descending order in order to determine the level of socio-economic development of the various circles.

LEVEL OF SOCIO-ECONOMIC DEVELOPMENT



Map 7.1 Level of Socio Economic Development

7.4.1 Area of High Development

The above table shows that, Kanubari and Longding Circles are placed under area of High Development. Kanubari and Longding circles have shown significant growth in economic activities, education and health. In these circle, the percentage of tertiary rate and number of educational facilities are dominant. Almost all the social and infrastructural facilities are available in these two circles. Therefore, maximum people try to live in the town to fulfill their basic needs. Kanubari circle is blessed in terms of good road. The Trans Arunachal highway runs through Kanubari. History has been witness that area is developed where there is good road communication. People of the circle are gradually leaving the age old culture of shifting cultivation realizing the importance of cash crops. Today they are more inclined towards tea cultivation which fetch them good amount for their harvest.

7.4.2 Area of Medium Development

Pongchau and Wakka circles are placed under the area of medium development. In both the circles, low percentage of cultivated area is observed as compared to other circles because most of the areas of the region are the hilly and rocky, which is unsuitable for the food crops to grow. Therefore, in Wakka circle people rear ‘ Mithun ’ (Bos Frontalis) in large number. People fetch a good amount of money by selling mithun and its meat. Meat of these animals is in high demand because in other circles mithun is not reared, even if they do but are in small numbers.

In these circles, none of the indicators of social and economic indicator are dominant. Therefore, they have medium range of development in the study region except in number of educational institute and health centres there is no development

in social and economic sectors. This is the reason the socio-economic development of these circles are moderately developed.

7.4.3 Area of Low Development

Based on the composite score, Pumao and Lawnu circles are placed as area of low development. In Pumao circle, number of educational institute is poor. Except one middle school there is no secondary and higher secondary school. There is no health centre in the circle except one sub centre in the circle headquarter. Production of food crops is also not sufficient. Whatever is produced is only for self consumption. Poor road connection and connectivity in the circle led to low level of socio-economic development of the region.

On the other hand Lawnu circle, though good in road connectivity and high production of paddy among the other circles of the district remained in the less developed area. In this circle, none of the indicators of social and economic are dominant. Circle is lacking in education and medical care. Except primary school there is no middle and secondary school in the circle. Students have to move here and there in search of school after passing the primary schools.

ANALYSIS OF THE SURVEY WORK: FIELD EXPERIENCES

8.1 INTRODUCTION

Geography enjoys a high position among field sciences. For the proper understanding of the subject, observation of geographical facts in the field is absolutely necessary. First hand information is obtained only by visiting the spot. In geography, therefore, field work is very important. It involves the minute observation of landscape both natural and cultural-in the field.

Field work is the process of observing and collecting data about people, culture and natural environment. In the previous chapter, the level of socio-economic inequalities has been examined on the basis of secondary data available at the block level which do have their own limitations in many respects.

In this chapter, an effort has been made to examine the inequalities in the socio-economic development on the basis of primary data collected at the village and household level. The survey work is an attempt to observe personally the situation at ground level regarding the socio-economic inequalities and development in the various circles of the district.

For the study, systematic random sampling was used. From each circle, about 30 percent of the inhabited villages have randomly been selected for carrying out the primary investigations with people representatives like village headman, other knowledgeable person of the selected village through structured questionnaire.

The data from the sample villages, regarding socio-economic aspects and household information like population structure, cropping pattern, livestock etc were collected through the questionnaire.

8.2 OBJECTIVES

The main objectives of the study are:

1. To observe personally the socio-economic development of the sample village
2. To determine the secondary data with that of primary data to strengthen the results arrived in VI Chapter.

8.3 METHODOLOGY

The methodology adopted for this study is based on the random sampling. Based on the result of composite score, the circles are categorized into high development, medium development and low development. Sample villages are selected from each of these categories. Twenty villages are selected from these categories through systematic random sampling. From each villages, ten household are selected for survey work representing different economic pursuit, special emphasis in the household data has been laid on the things which was not available in the secondary sources. The data collected was tabulated and analysed

Table 8.1 Village selected for survey work		
Name of the circles	Number of villages	Name of the Village selected for survey work
Longding	5	Zedua, Niaunu, Niausa, Senua, Mingtong
Lawnu	4	Chopnu, Hasse Russa, Lawnu, Naitong
Kanubari	4	Dasatong, Kanubari, Dasathong, Mopakhat
Pumao	1	Pumao
Pongchau	3	Pongchau, Bonia, Jagan
Wakka	3	Wakka, Nginu, Ngissa
<i>Compiled by the Researcher</i>		

8.4 ANALYSIS OF THE SURVEY WORK

Data regarding the socio-economic aspect, collected from the village level during the survey work is analysed by taking indicators like education, industry, health and infrastructural indicators. Finally the indicators were categorized on economic and social indicators as follows-

Economic Indicators:

1. Percentage of workers engaged in primary economic activities.
2. Percentage of workers engaged in secondary activities.
3. Percentage of workers engaged in tertiary economic activities.
4. Percentage of agricultural workers to total population.
5. Percentage of male workers to male population.
6. Percentage of female workers to female population.

Social Indicators:

1. Percentage of male literacy.
2. Percentage of female literacy.
3. Number of pupils per pre-primary schools.
4. Teacher student ratio.
5. Per capita consumption of electricity.
6. Number of Primary Health Centres/Sub centres.

All these above indicators has been selected for the study at village level by using statistical tools such as composite index of development. Interrelationships of the social and economic development have been explained. The indicators have been calculated by using following formula for the Co-efficient of Development.

$$\text{C.D.I.} = \frac{PI}{MI}$$

Where,

C.D.I. =Coefficient of development of variable **I**

PI =Percentage of Variable **I** in the unit.

MI=Mean Percentage of variable **I**

Based on the above formula, the coefficient of development for variable **I** in each village have been comuted and composite index of development have been obtained for all the selected sample villages on the basis of following formula.

$$\text{C.I.D.} = \frac{\Sigma \text{CDI}}{N}$$

Where C.I.D = Composite Index of Development.

Σ CDI=summation of the coefficient of development for variables.

N=Number of variables.

Table 8.2 Level of socio-economic development (Village level) of Longding District			
Sl. No.	Name of circles	Village selected for survey	Composite score of socio-economic development
1	Longding	Zedua	84.02
		Niausa	86.14
		Senua	82.10
		Niaunu	80.42
		Mingtong	62.40
2	Lawnu	Chopnu	64.02
		Hasse Russa	62.11
		Lawnu	65.5
		Naitong	65.12
3	Kanubari	Dasathong	85.42
		Kanubari	88.12
		Ngamding	78.54
		Mopakhat	82.14
4	Pumao	Pumao	64.42
5	Pongchao	Lower Pongchao	70.41
		Bonia	76.14
		Jagan	50.12
6	Wakka	Wakka	74.15
		Nginu	72.12
		Ngissa	71.15
<i>Compiled by the Researcher</i>			

Table No. 8.2 reveals the range of composite score value of the various village selected for survey. It indicates that there are wide inequalities in the level of socio-economic development in Longding district.

The average composite score of the sample villages selected from each circle clearly indicates that the level of socio-economic development determined in the chapter VI and the result arrived from analysis of the survey work matches with each other.

8.5 ANALYSIS OF THE HOUSEHOLD INFORMATION

380 households were selected from the 20 sample villages. The information of the farmers in the selected villages were taken through interviews and schedules and after that, analysis of data were made based on the inputs collected from the questionnaire. Data was collected on the population structure, occupational structure, educational structure, social attitudes and standard of living etc.

Table 8.3 Total No. of villages and household in surveyed villages			
Name of Circle	Village selected for survey work	No. of Households	No. of persons
Longding	Niausa	272	1924
	Mintong	201	1505
	Senua	246	1477
	Niaunu	227	1340
	Zedua	137	965
Lawnu	Chopnu	110	723
	Hasse Russa	136	670
	Lawnu	46	220
	Naitong	64	321
Kanubari	Kanubari	226	1001
	Dasathong	80	452
	Ngamding	15	81
	Mopakhat	135	753
Pumao	Pumao	139	966
Wakka	Wakka	314	2026
	Nginu	151	967
	Ngissa	134	936
<i>Compiled by the Researcher</i>			

8.5.1 Population Structure

Study of population structure means study of composition of population. It includes such aspects of population as its social and economic characteristics. With the help of study of population structure, it is easy to find out the major changes which came in population characteristics with the passing of time. Data collected on

the distribution of population attributes in this study can prove quite useful for the study of social and economic structure of the society.

The following table shows the population structure of the selected household in the sampled villages.

Status	No. of household	No. of persons	Percentage	No. of persons per family
High	70	350	10.20	5
Medium	130	1150	34.80	8.8
Low	195	1865	56.00	9.5
Total	380	3300	100.00	7.7
<i>Compiled by the Researcher</i>				

It has been revealed that, the total population of the sampled families is 3300 people. The families were selected on the basis of economic status as high, medium and low on the basis of economic activities. It is observed from the table 8.4, that maximum percent of population are in lower class income which is 56.00 percent, 34.80 percent belong to medium class families and only 10.20 percent belong to high income families. Thus, it is evident from the table that there exist wider inequalities in the level of socio-economic development in the study region.

It has been also observed in the surveyed village that the average family size of the household is 7.7 members per family. It shows that there is lack of awareness regarding the family planning programmes among the villagers.

8.5.2 Educational infrastructures

The data collected from the sample village regarding the education were structured and analysed. The data clearly states the attitude of people toward education.

Table 8.5 Educational Structure of sampled villages of Longding District					
Name of Circle	Total population of surveyed villages	Literate Persons	Percentage	Illiterate Persons	Percentage
Longding	6246	2123	22.91	4123	27.02
Lawnu	1934	900	9.71	1034	6.77
Kanubari	9065	4033	43.52	5032	32.98
Pumao	420	110	1.18	310	2.03
Wakka	3929	1365	14.73	2564	16.80
Pongchau	2926	734	7.92	2192	14.36
Total	24520	9265	100.00	15255	100.00
<i>Compiled by the Researcher</i>					

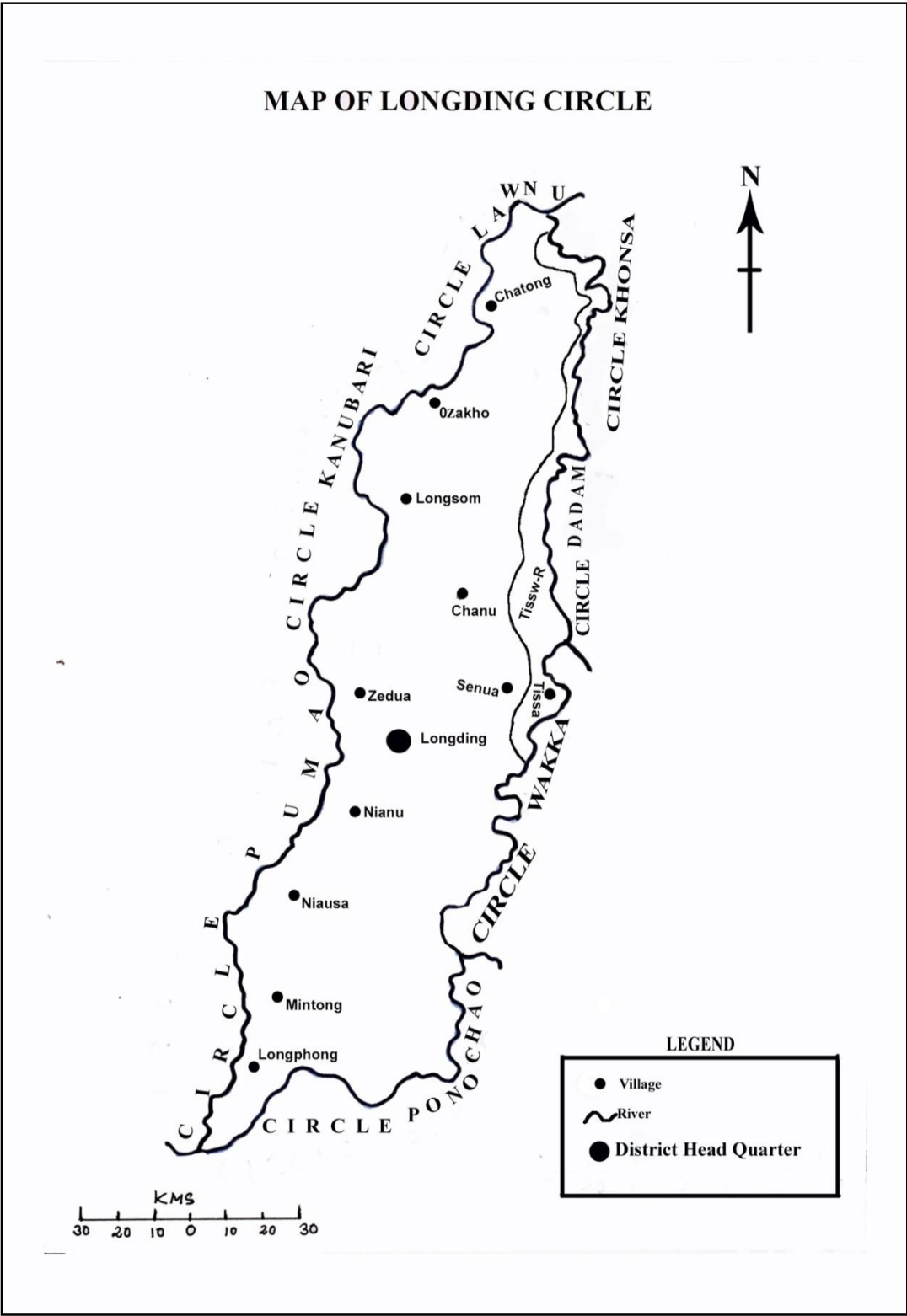
The data reveals that out of the total sampled villages, 15255 people are illiterate and 9265 population are literate. The trend of the graph of literacy rates shows that gradually people have started realizing the importance to the education. Where there is lack of school and infrastructures in the sampled villages even then the populations are sending their wards to different places to get the schooling of their children irrespective of gender. But, it has been observed in the interior villages of the surveyed villages that people failed to send their children to school. They are engaged in the household chores and in the fields. This is due to the extreme poverty accompanied by ignorance.

8.5.3 Occupational structure

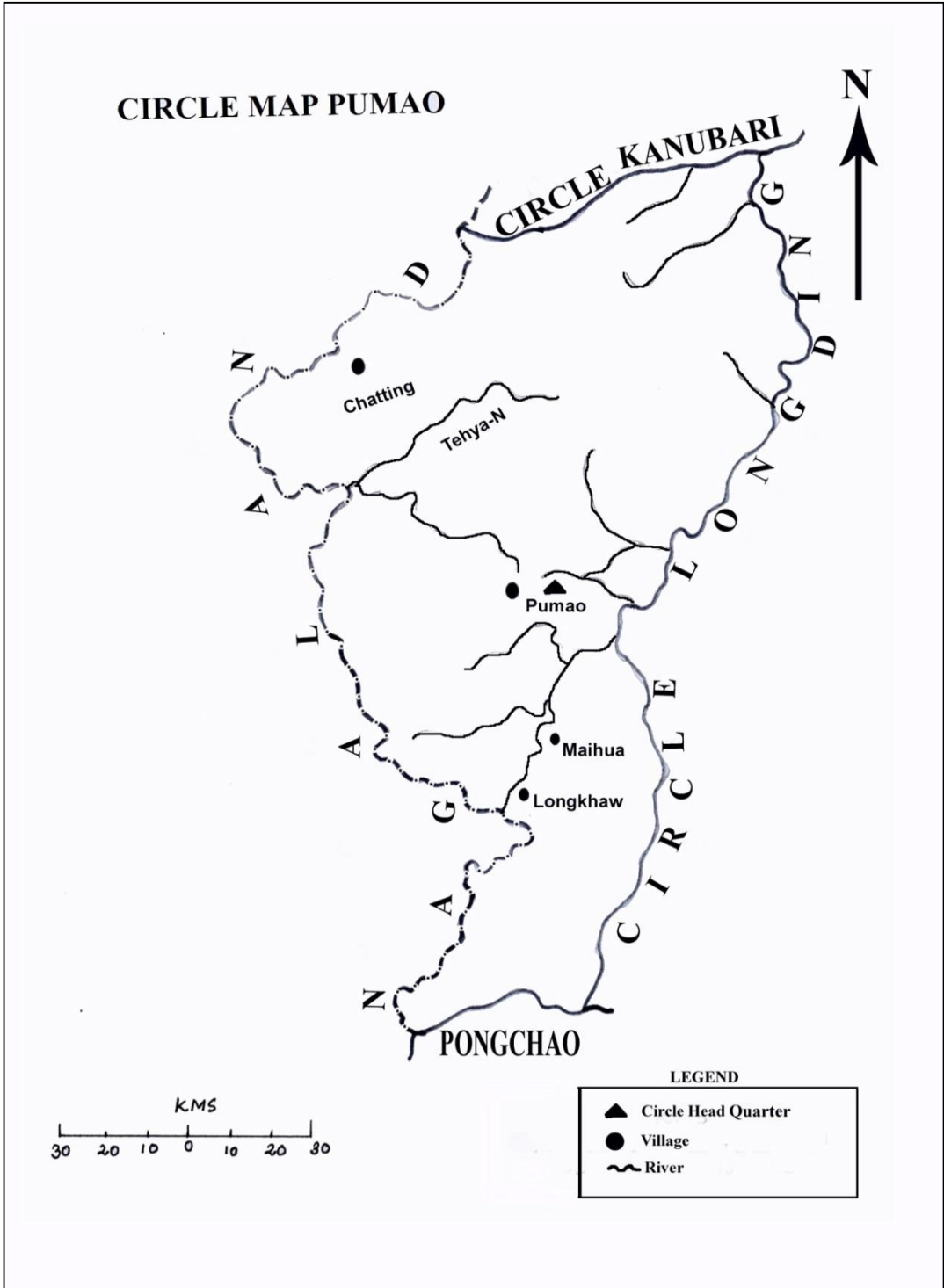
The analysis of the occupation structure reflects the idea about economic activities of man. Out of the total population of the sample villages, about 70 percent of the populations are engaged in primary activities, 20 percent in secondary activities and 10 percent in tertiary activities.

Table 8.6 Total population engaged in Primary, Secondary and Tertiary economic activities				
Name of the Circles	Total population of the surveyed villages	Percentage of population engaged in Primary activities	Percentage of population engaged in secondary activities	Percentage of population engaged in Tertiary activities
Longding	6246	24.20	27.22	36.31
Lawnu	1934	7.91	8.95	4.18
Pumao	420	2.21	0.26	1.39
Pongchau	2926	16.48	8.96	1.04
Wakka	3929	18.15	13.05	3.49
Kanubari	9065	31.88	49.54	53.56
<i>Compiled by the Researcher</i>				

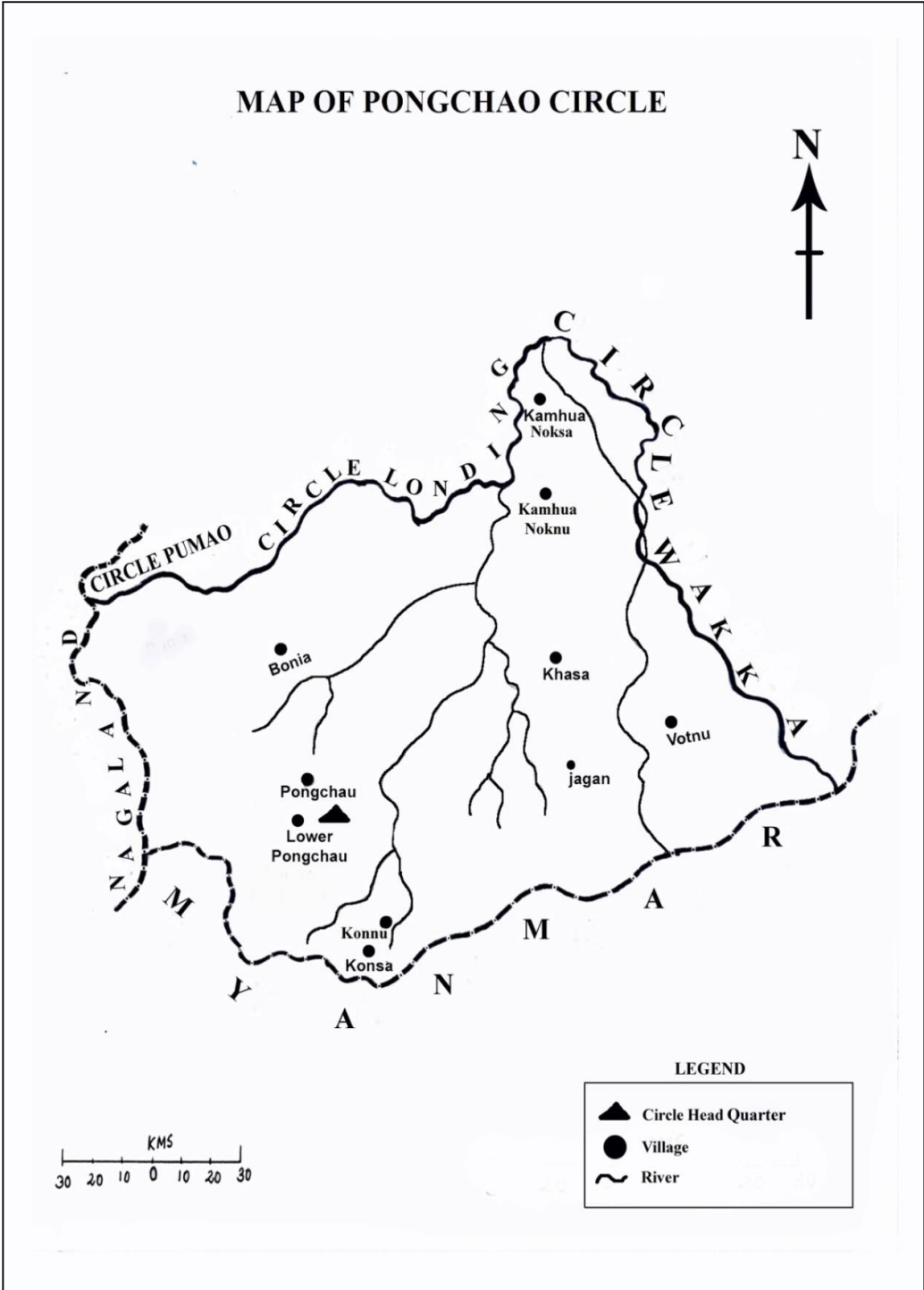
It is clear from the above table that primary activities in the sampled village are higher than the secondary and tertiary. It is also clear from the table that agriculture is the main stay of the people.



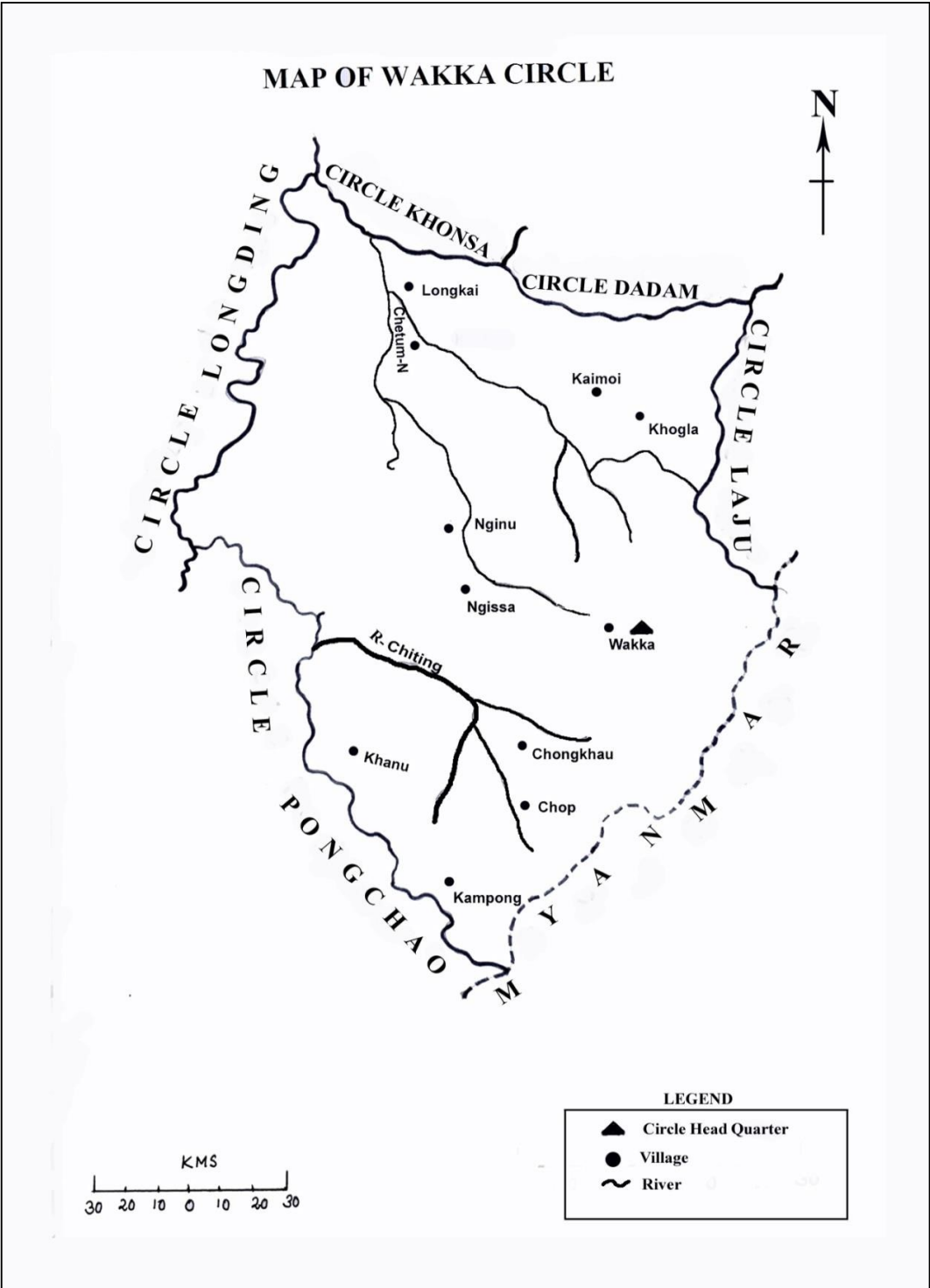
Map 8.1 Map of Longding Circle



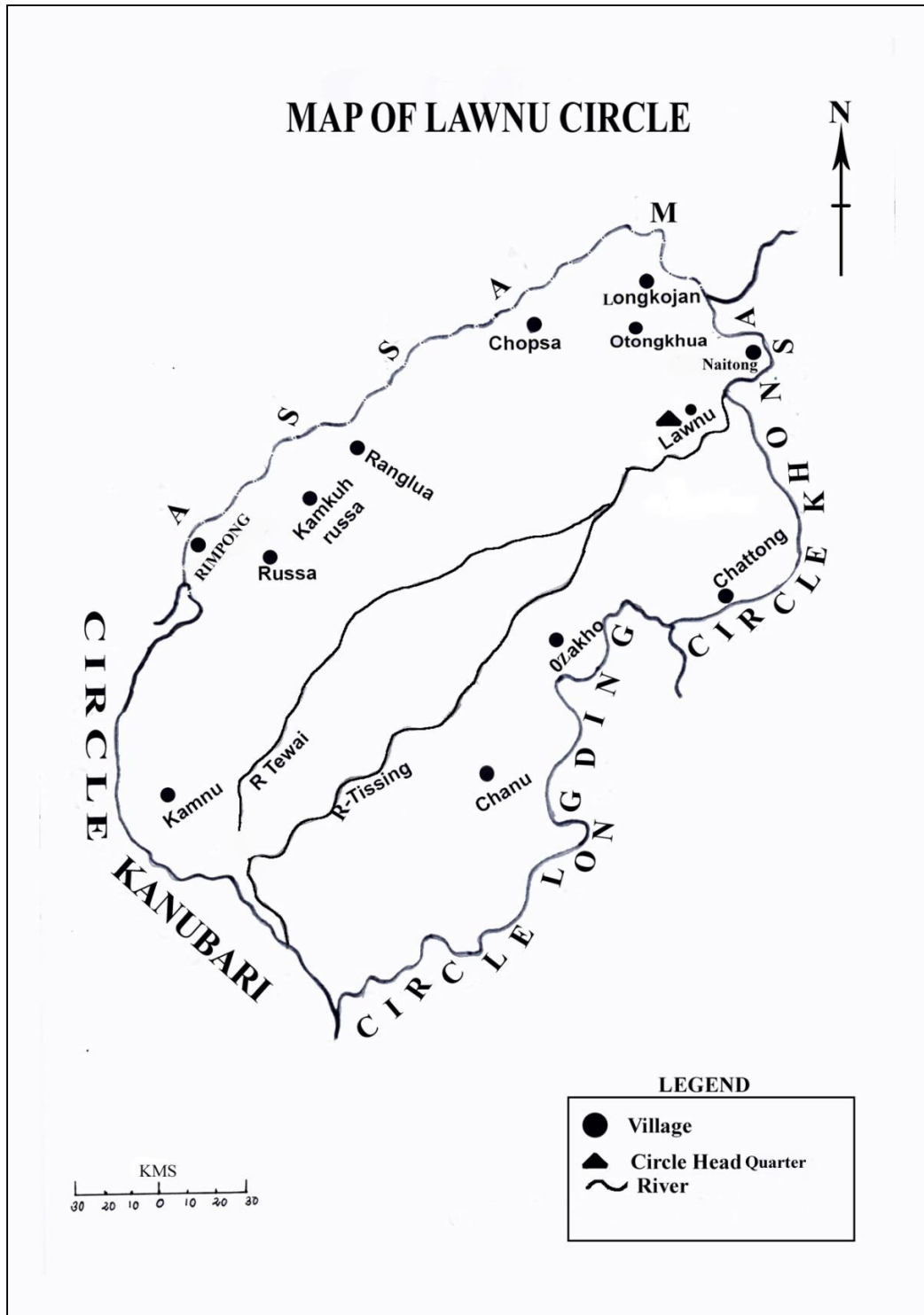
Map 8.2 Map of Puma Circle



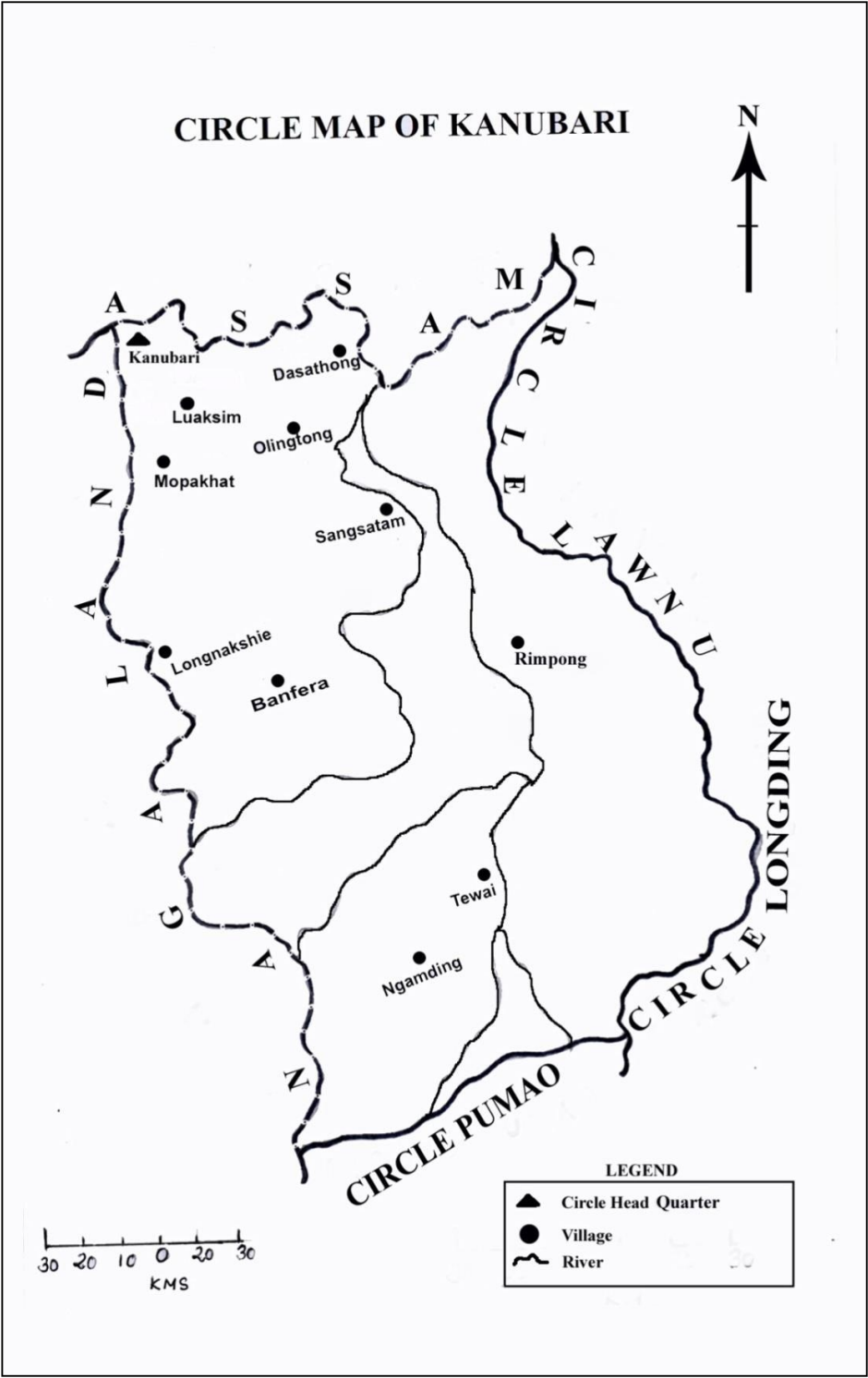
Map 8.3 Map of Pongchao Circle



Map 8.4 Map of Wakka Circle



Map 8.5 Map of Lawnu Circle



Map 8.6 Map of Kanubari Circle

CONCLUSIONS AND SUGGESTIONS

9.1 CONCLUSIONS

The present research work is an attempt to study the level of socio-economic inequalities in Longding district. The present chapter gives a summary and conclusion of the study, emerging from the theoretical and empirical analysis of the problem under investigation in the foregoing chapters. The basic finding of the study shows that there are wide inter-circle inequalities in the level of socio-economic development in the Longding district. The result emerged from the analyses of data in the preceeding chapters.

The overall analysis of the study reveals the fact that there are marked inequalities in the level of socio-economic development in Longding district. In the analysis of agricultural development the researcher found that there is marked spatial inequalities across the various circles of the study area. There are only few villages in the Lawnu circle which comes under high level of agricultural productivity whereas most of the circles of the district come under low level of agricultural development.

Agriculture plays an important role in the overall development of any area because it supplies food to the growing population, providing raw material to agro based industries and employment to rural population thereby improving the standard of living. In the present study, the agricultural development is so low that it doesnot contribute much in the socio-economic development of the study region. The reason is that the level of agricultural development is mostly affected by the physical factors – most of the area is hilly and the size of land holding is also very small, which lead to uneconomical farming. It is very difficult to carryout agricultural operation in the

hilly tracts. However, the role of physical factor can be reduced with application of modern agricultural technology, but one cannot ignore the aspect of investment involved in such exercise. This aspect has deterred the agricultural development in the area. The study has revealed that geographical phenomenon and lack of modern agricultural technology are responsible for the widespread inequalities. Insufficient distribution of high yield variety seeds and agricultural equipment and ignorance of farmers are also responsible for the widespread inequalities.

The productivity of cereals (yield per hectare) like rice (2.900), maize (1.500), and other cereals (2.500) has decreased in the Kanubari circle. This decreasing trend of cereal crops shows the farmers tendency towards food crops have decreased nowadays and they are emphasizing on growing cash crops.

The horticultural crops ie both horticultural fruits and vegetables have increased during the investigation period. The total area under cereal crops is 6.9(yield per hectare), horticultural crops (fruits) is 0.981(000 ha), vegetables is 0.215(000 ha) and plantation crops under 0.521(000 ha).

The people of Kanubari circle are gradually abandoning their age old practice of farming i.e. Jhum cultivation and are shifting more towards tea cultivation because the climatic condition is suitable and more viable in terms of economic returns.

In the the study region, banana, papaya, guava, mango, lemon, pears are important horticultural fruit crops, though the percentage of these crops are very low. Of late, people have started rearing livestock. Livestock occupies important place in the agro-based economy. The vastness of the area and abundance of green pasture also make it ideal for the development of livestock. Some people are exclusively earning from the dairy farming also. It has been revealed through the survey that the

people rear goat and poultry compared to other livestock. Some of the villages of Pongchao and Wakka circles, Mithun (*Bos Frontalis*) are reared and are treated as semi-domesticated animals and are very costly. It has been found during the survey that some families earn an average of 1,00,000 rupees by selling these mithuns.

Fishery plays an important role in the socio-economic development of the region. It is also livelihood of the people of the district. Kanubari circle is endowed with immense potential for development of pisciculture. In Longding circle, some village like Senua was seen doing fish farming. There is one farm in Bonia village of Pongchao circle with a capacity of fish production of 84350 kg/year.

It has been revealed in the study that, the highest percentages of workers are engaged in primary sector of economy in the study region. Out of all the activities in primary sector agriculture plays an important role in the overall development of the region. More than 70 percent of the people are engaged in agriculture but due to certain physical and cultural factor the production is not overwhelming. Except few villages which are lying in the river valley all the villages are situated on the hilltops where it is very difficult to carryout agricultural activities. Hence, production is low. Whatever is produced is only for self consumption. There is no surplus production. These are the main reason the area of the study circle are not developed economically.

Of late, the government has started economic reforms in terms of increasing productivity and improved agricultural method by bringing various schemes and encouraging the farmers to adopt it. But the results are yet to come out. The villages located in the Myanmar borders and interior parts of the district are deprived of many social amenities and developmental schemes due to inaccessibility and strategic position.

The percentage of working population in the secondary sector of the study area is not large because of the economic activities of maximum circle largely depends upon the primary sector.

In Longding district, secondary sector is dominated by handicraft industries. 10 percent of the working population is engaged in secondary economic activities. The handicraft industry plays a vital role in socio-economic development of the region. People are expert in cane and bamboo works. Govt. has established many Craft Centres in different part of the Circle Headquarters and in villages so that it can mitigate the growing demand of unemployment in the study area.

The percentage of working population in the tertiary sector is only 10 percent. The gradual increase in the percentage of working population in Longding district shows that the role of tertiary activities will uplift the economic development in the days to come.

Demography is one of the essential factors which largely affect the socio-economic development of the study area. Total population of the study area was 56953 in the year 2011. Since then there has been a constant increase in the number of population. The uncontrolled increase in the population needs to be controlled in order to check and balance the limited resource of the study area.

Banking facilities are essential for granting loan in agriculture in the rural areas and provide educational loans to the needy. Due to the limited number of bank and its transactions there always prevails acute shortage of fund. For these purpose the people cannot avail the oppurtunities of getting loan for their agriculture and education. This also hampers the socio-economic development of this region.

Health sector is one of the most neglected aspects of the district. For more than 55 thousand population only 2 CHC exists. With increase of the number of population, the existing health centres will fail to cater to the need of the growing population. Moreover, there is no such advance medical equipments in the hospital. So, the patients have to go to nearby towns of Assam in order to get their medical treatment done. Many health centres runs without laboratory facilities. The doctor patient ratio is very poor. With more investments in health sector more number of health centres should be set up with laboratory facilities and adequate manpower. The health care facilities of the district indicate negative transformation.

The tertiary level also influences the socio-economic development of a region to some significant extent, because it influences the economic composition of this region. The literacy rate of the study area is 43.55 percent according to the 2011 census. The male literacy rate is 43.97 percent and the female literacy rate is 25.74 percent. The highest literacy rate was observed in Kanubari circle followed by Lawnu circle. The number of primary schools was increased and the existing secondary schools have also been upgraded into higher secondary schools during the investigation period. It indicates the positive transformation in the education sector during the investigation period

The sex ratio of the study region was 986 females per thousand males in the year 2011. The highest sex ratio was observed in Pumao circle i.e. 1011, higher than the state average of 938 (2011 census).

There exists an inequality in the level of socio-economic development in the study area from circle to circle. As per the composite Score of socio-economic indicators of the study area Kanubari circle is considerably developed circle whereas Pumao and Lawnu circle are less developed. So, ssit requires immediate attention of

the planners, administration and politician to provide facilities for socio-economic development.

9.2 SUGGESTIONS

Almost all the towns and villages of the Longding district are located on the hilltop. So, there is water scarcity problem which has been more aggravated by the practice of massive jhum cultivation. Therefore, it is the need of the hour to water shade programmes on a large scale.

The highest cropped areas consist of cereal crops like paddy, maize and millet which lead to mono culture type of agricultural practices. These practices lead to low production of the food crops accompanied by the loss of fertility of the soil. Therefore, it is suggested that farmer should diversify the cropping pattern.

The productivity of crops is low in the study area due to the geo-environmental condition of the area accompanied by the lack of technical knowhow of the farmer in the agricultural field. There is a need to impart training to the farmer to introduce them to the appropriate and latest technology. The farmers must shift the cultivation pattern from the traditional cropping pattern to commercial cropping pattern so that they can earn more income. Soil list should be made compulsorily before sowing any kind of seed, so that soil type zone can be mapped and accordingly, the crop whichever is suitable for the particular soil type can be grown. Government must motivate the farmer to cultivate the plants which give more income return throughout the year.

The livestock population should be increased. Government should create awareness and encourage the farmer to increase the livestock population because

livestock farmer are lagging behind, which deserve special attention. This will provide job oppurtunities to the rural masses.

To increase the individual development, effort should be made in the direction of development of agro based industries in the study area. Government should provide necessary assistance in terms of interest free loans and subsidy etc. Centralized market needs to be established so that the farmer can sell their product directly to the market. This will overcome the menace of middlemen.

People practice jhum cultivation in a large scale as a result of which large number of trees are cut down, which in turn leads to soil erosion. Efforts should be made to check soil erosion by adopting soil conservation practices. Afforestation needs to be encouraged. If it is not controlled today it will turn to grassland very soon.

To minimize the inequalities in social and human development, effort should be made in the direction of better education facilities and health care facilities. Due to the lack of educational facilities the people working in tertiary sector is very low. In order to overcome this issue, it is recommended that new schools should be started in various areas of the circles and should provide infrastructure like laboratories etc and the utmost importance is posting of subject teachers in the various schools of the district.

Socio-economic development of the study region is not developed evenly. So it is necessary to develop the basic facilities i.e. physical and infrastructural facilities at the village level of the study region. More banks, educational institutes and industries should be opned and the government can play a vital role in this regard. Roads are the life line of the people anywhere. Effort should be made in the field of

transportation and communication, so that the low developed area may come up at par with relatively developed circles.

The above recommendations are made based on ground realities. If these recommendations are adopted by the individual, government, and all the stakeholders, surely it will lead to balanced and sustainable growth of the region, leading socio-economic development of the region.

GLOSSARY

Chinglang	It is a kind of shrub planted for demarcating boundaries.
Hutu	Tattoo.
Kham	Traditional log drum.
Lailung	A love song.
Mithun	A kind of animal (Bos Frontalis).
Noi	Girls dormitory.
Paa	Bachelor dormitory of males.
Pomo	Soft wood used for carving.
Sai	Song which are sung on different location.
Shachonnu	Wife of a Chief from a commoner class.

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SOCIO-ECONOMIC SURVEY QUESTIONNAIRE

Household No.....

Date.....

Town.....

Name of Respondent.....

Age of Respondent.....

Gender.....

SECTION 1: HOUSEHOLD CHARACTERISTICS

(I). No. of family members

Sl. No.	Name	Gender	Age	Relationship to the head of household

(II) TYPES OF ECONOMIC ACTIVITIES:

Source of livelihood	What is/are the household members occupation?
1. Primary activity	
2. Secondary activity	
3. Tertiary activity	

2. LANDUSE AND AGRICULTURE

(a). Do you or a member of your household have any agricultural land?

1. Yes

2. No

(b).

Sl. No.	Ownership status	What do you cultivate on this land?	How do you use the product?
1	I own and cultivate this land		For subsistence
2	I own but don't cultivate this land		Selling at internal market
3	I rent this land for someone else		Others (specify)

(c) Types of crops grown in agricultural field.

.....

(d). Total production.....

(e). Amount earned

(f). Whether received any financial and technical assistance from the government.....

(g). Types of livestock reared

.....

SECTION 2 :- EDUCATION

Household member education

Sl. No.	Name	Relationship with head of family	Current education status	Reason for never attending school

SECTION 3. HOUSING AND INFRASTRUCTURE

(a). Housing conditions

Type of housing unit 1. 2. 3.	Occupancy tenure of dwelling unit 1. owner occupied 2. free public 3. rented	Roof – Types of material used for construction of the roof 1. concrete 2. tins 3. Toko leaves 4. others(specify)
Wall- (Types of materials used for construction of the wall) 1. concrete 2. wood 3. bamboo 4. others(specify)	Floor-(Types of material used for construction of the floor) 1. bamboo 2. cement screed 3. rammed earth 4. wood 5. others(specify)	

3 (b). Household conditions

Fuel/Power		Drinking water	Distance in Kms
What fuel does this household mainly use for lighting?	What fuel does this household mainly use for cooking?	What is the households main source of water for DRINKING?	Drinking water source
-electricity -gas -paraffin Lantern -firewood -others(specify)	-electricity -gas -Kerosene stove -firewood -others(specify)	-tap/piped water -protected well -open water source -water vendor -others(specify)	

3(c). Household facilities

Toilet	Solid waste	Transportation	Information
-covered pit latrine -uncovered “ -flush toilet -bush -Others(specify)	Pit Bin Heap Garden Burning Others(specify)	1. Motor vehicle 2. Motorcycle 3. Bicycle	Electronic media Print media Word of mouth Others(specify)

SECTION 4: HEALTH

1. Do any household member have a permanent/chronic disease/ health problem?
 - a). Yes (explain by giving member code
 - b). No.
2. Did any of the household member suffer from any water borne disease within the last 12 months?
 - a). Yes
 - b). No.
3. When you experience a health problem which health facility do you go?
4. Are you satisfied with the health facilities of the region? Do you experience any problem? Please explain?

PERCEPTIONS AND EXPECTATIONS

A. In your opinion, what are the most important four problems (development) issues in your village?

- 1.
- 2.
- 3.
- 4.

B. How is your income status, standard of living compared to 5 years ago?

1. Better
2. The same
3. Worse

C. What are the reasons for this?

VILLAGE LEVEL QUESTIONNAIRE

Name of the village.....

Location code.....

Name of the circle.....

Total Population.....

1. SOCIAL AND INFRASTRUCTURAL FACILITIES.

a). What agricultural and veterinary facilities are available in your village?

	Facilities available	If No
1.	Is there any centres which supply seed and other agricultural implements?	Than where do you go to avail these facilities?
2.	Any veterinary Hospitals or dispensary available?	Than where do you go to avail these facilities?

2. Education institute available in your village.

- (a).Primary school.
- (b.) Middle School.
- (c.) Secondary school.
- (d).Any other.

3. Health facilities available in your village.

- (a) Sub centre.
- (b) PHC.
- (c) Any other.

4. MEANS AND COMMUNICATION.

(a).What means of communication are available in your village?

.....

(b). What means of transportation are available in your village?

.....

(c). Is the village nearby road? If yes, what is the condition of road? If no, how far is your village from main road?

.....

5. Any developmental activities which took place in the last five years?

.....

6. Any problem or suggestion you want to make?

.....

PLATE -1



3.1 Slash and Burn Cultivation



3.2 Field at Wakka Village



3.3 Traditional Granary



3.4 Millets in Granary

PLATE -2



3.5 Traditional Clay Pots



3.6 Traditional Mortar



3.7 Log Drum in Paa



3.8 Indigenous Gun

PLATE -3



3.9 V.K.V Longding – A Girls School



3.10 Wodcarving



3.11 Traditional Beadworks



3.12 Men in Traditional Attire during Oriah Festival

AN ANALYSIS OF THE LEVEL OF SOCIO-ECONOMIC DEVELOPMENT IN LONGDING DISTRICT, ARUNACHAL PRADESH

*Thesis Submitted to Department of Geography, Rajiv Gandhi University for the Degree of
Doctor of Philosophy in Geography*

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2020

CONCLUSIONS AND SUGGESTIONS

9.1 CONCLUSIONS

The present research work is an attempt to study the level of socio-economic inequalities in Longding district. The present chapter gives a summary and conclusion of the study, emerging from the theoretical and empirical analysis of the problem under investigation in the foregoing chapters. The basic finding of the study shows that there are wide inter-circle inequalities in the level of socio-economic development in the Longding district. The result emerged from the analyses of data in the preceeding chapters.

The overall analysis of the study reveals the fact that there are marked inequalities in the level of socio-economic development in Longding district. In the analysis of agricultural development the researcher found that there is marked spatial inequalities across the various circles of the study area. There are only few villages in the Lawnu circle which comes under high level of agricultural productivity whereas most of the circles of the district come under low level of agricultural development.

Agriculture plays an important role in the overall development of any area because it supplies food to the growing population, providing raw material to agro based industries and employment to rural population thereby improving the standard of living. In the present study, the agricultural development is so low that it doesnot contribute much in the socio-economic development of the study region. The reason is that the level of agricultural development is mostly affected by the physical factors – most of the area is hilly and the size of land holding is also very small, which lead to uneconomical farming. It is very difficult to carryout agricultural operation in the

hilly tracts. However, the role of physical factor can be reduced with application of modern agricultural technology, but one cannot ignore the aspect of investment involved in such exercise. This aspect has deterred the agricultural development in the area. The study has revealed that geographical phenomenon and lack of modern agricultural technology are responsible for the widespread inequalities. Insufficient distribution of high yield variety seeds and agricultural equipment and ignorance of farmers are also responsible for the widespread inequalities.

The productivity of cereals (yield per hectare) like rice (2.900), maize (1.500), and other cereals (2.500) has decreased in the Kanubari circle. This decreasing trend of cereal crops shows the farmers tendency towards food crops have decreased nowadays and they are emphasizing on growing cash crops.

The horticultural crops ie both horticultural fruits and vegetables have increased during the investigation period. The total area under cereal crops is 6.9(yield per hectare), horticultural crops (fruits) is 0.981(000 ha), vegetables is 0.215(000 ha) and plantation crops under 0.521(000 ha).

The people of Kanubari circle are gradually abandoning their age old practice of farming i.e. Jhum cultivation and are shifting more towards tea cultivation because the climatic condition is suitable and more viable in terms of economic returns.

In the the study region, banana, papaya, guava, mango, lemon, pears are important horticultural fruit crops, though the percentage of these crops are very low. Of late, people have started rearing livestock. Livestock occupies important place in the agro-based economy. The vastness of the area and abundance of green pasture also make it ideal for the development of livestock. Some people are exclusively earning from the dairy farming also. It has been revealed through the survey that the

people rear goat and poultry compared to other livestock. Some of the villages of Pongchao and Wakka circles, Mithun (*Bos Frontalis*) are reared and are treated as semi-domesticated animals and are very costly. It has been found during the survey that some families earn an average of 1,00,000 rupees by selling these mithuns.

Fishery plays an important role in the socio-economic development of the region. It is also livelihood of the people of the district. Kanubari circle is endowed with immense potential for development of pisciculture. In Longding circle, some village like Senua was seen doing fish farming. There is one farm in Bonia village of Pongchao circle with a capacity of fish production of 84350 kg/year.

It has been revealed in the study that, the highest percentages of workers are engaged in primary sector of economy in the study region. Out of all the activities in primary sector agriculture plays an important role in the overall development of the region. More than 70 percent of the people are engaged in agriculture but due to certain physical and cultural factor the production is not overwhelming. Except few villages which are lying in the river valley all the villages are situated on the hilltops where it is very difficult to carryout agricultural activities. Hence, production is low. Whatever is produced is only for self consumption. There is no surplus production. These are the main reason the area of the study circle are not developed economically.

Of late, the government has started economic reforms in terms of increasing productivity and improved agricultural method by bringing various schemes and encouraging the farmers to adopt it. But the results are yet to come out. The villages located in the Myanmar borders and interior parts of the district are deprived of many social amenities and developmental schemes due to inaccessibility and strategic position.

The percentage of working population in the secondary sector of the study area is not large because of the economic activities of maximum circle largely depends upon the primary sector.

In Longding district, secondary sector is dominated by handicraft industries. 10 percent of the working population is engaged in secondary economic activities. The handicraft industry plays a vital role in socio-economic development of the region. People are expert in cane and bamboo works. Govt. has established many Craft Centres in different part of the Circle Headquarters and in villages so that it can mitigate the growing demand of unemployment in the study area.

The percentage of working population in the tertiary sector is only 10 percent. The gradual increase in the percentage of working population in Longding district shows that the role of tertiary activities will uplift the economic development in the days to come.

Demography is one of the essential factors which largely affect the socio-economic development of the study area. Total population of the study area was 56953 in the year 2011. Since then there has been a constant increase in the number of population. The uncontrolled increase in the population needs to be controlled in order to check and balance the limited resource of the study area.

Banking facilities are essential for granting loan in agriculture in the rural areas and provide educational loans to the needy. Due to the limited number of bank and its transactions there always prevails acute shortage of fund. For these purpose the people cannot avail the oppurtunities of getting loan for their agriculture and education. This also hampers the socio-economic development of this region.

Health sector is one of the most neglected aspects of the district. For more than 55 thousand population only 2 CHC exists. With increase of the number of population, the existing health centres will fail to cater to the need of the growing population. Moreover, there is no such advance medical equipments in the hospital. So, the patients have to go to nearby towns of Assam in order to get their medical treatment done. Many health centres runs without laboratory facilities. The doctor patient ratio is very poor. With more investments in health sector more number of health centres should be set up with laboratory facilities and adequate manpower. The health care facilities of the district indicate negative transformation.

The tertiary level also influences the socio-economic development of a region to some significant extent, because it influences the economic composition of this region. The literacy rate of the study area is 43.55 percent according to the 2011 census. The male literacy rate is 43.97 percent and the female literacy rate is 25.74 percent. The highest literacy rate was observed in Kanubari circle followed by Lawnu circle. The number of primary schools was increased and the existing secondary schools have also been upgraded into higher secondary schools during the investigation period. It indicates the positive transformation in the education sector during the investigation period

The sex ratio of the study region was 986 females per thousand males in the year 2011. The highest sex ratio was observed in Pumao circle i.e. 1011, higher than the state average of 938 (2011 census).

There exists an inequality in the level of socio-economic development in the study area from circle to circle. As per the composite Score of socio-economic indicators of the study area Kanubari circle is considerably developed circle whereas Pumao and Lawnu circle are less developed. So, ssit requires immediate attention of

the planners, administration and politician to provide facilities for socio-economic development.

9.2 SUGGESTIONS

Almost all the towns and villages of the Longding district are located on the hilltop. So, there is water scarcity problem which has been more aggravated by the practice of massive jhum cultivation. Therefore, it is the need of the hour to water shade programmes on a large scale.

The highest cropped areas consist of cereal crops like paddy, maize and millet which lead to mono culture type of agricultural practices. These practices lead to low production of the food crops accompanied by the loss of fertility of the soil. Therefore, it is suggested that farmer should diversify the cropping pattern.

The productivity of crops is low in the study area due to the geo-environmental condition of the area accompanied by the lack of technical knowhow of the farmer in the agricultural field. There is a need to impart training to the farmer to introduce them to the appropriate and latest technology. The farmers must shift the cultivation pattern from the traditional cropping pattern to commercial cropping pattern so that they can earn more income. Soil list should be made compulsorily before sowing any kind of seed, so that soil type zone can be mapped and accordingly, the crop whichever is suitable for the particular soil type can be grown. Government must motivate the farmer to cultivate the plants which give more income return throughout the year.

The livestock population should be increased. Government should create awareness and encourage the farmer to increase the livestock population because

livestock farmer are lagging behind, which deserve special attention. This will provide job oppurtunities to the rural masses.

To increase the individual development, effort should be made in the direction of development of agro based industries in the study area. Government should provide necessary assistance in terms of interest free loans and subsidy etc. Centralized market needs to be established so that the farmer can sell their product directly to the market. This will overcome the menace of middlemen.

People practice jhum cultivation in a large scale as a result of which large number of trees are cut down, which in turn leads to soil erosion. Efforts should be made to check soil erosion by adopting soil conservation practices. Afforestation needs to be encouraged. If it is not controlled today it will turn to grassland very soon.

To minimize the inequalities in social and human development, effort should be made in the direction of better education facilities and health care facilities. Due to the lack of educational facilities the people working in tertiary sector is very low. In order to overcome this issue, it is recommended that new schools should be started in various areas of the circles and should provide infrastructure like laboratories etc and the utmost importance is posting of subject teachers in the various schools of the district.

Socio-economic development of the study region is not developed evenly. So it is necessary to develop the basic facilities i.e. physical and infrastructural facilities at the village level of the study region. More banks, educational institutes and industries should be opned and the government can play a vital role in this regard. Roads are the life line of the people anywhere. Effort should be made in the field of

transportation and communication, so that the low developed area may come up at par with relatively developed circles.

The above recommendations are made based on ground realities. If these recommendations are adopted by the individual, government, and all the stakeholders, surely it will lead to balanced and sustainable growth of the region, leading socio-economic development of the region.