LEVEL OF RURAL DEVELOPMENT IN SIKKIM: A CASE STUDY OF YUKSAM DEVELOPMENT BLOCK

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DECLARATION

I declare that the thesis entitled 'LEVEL OF RURAL DEVELOPMENT IN SIKKIM: A CASE STUDY OF YUKSAM DEVELOPMENT BLOCK', has been prepared by me under the guidance of Dr. S. Rohatgi, Associate Professor of Department of Geography and Applied Geography, University of North Bengal. No part of this thesis has formed the basis of the award of any degree or fellowship previously.

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PREFACE

The rural areas of Sikkim have always held me with awe and fascination. Sikkim is imbued with history and mysticism, concealed by verdant valleys and holy peaks. The state itself is a mine of information on the rural-urban characteristics and their historical mould and economic status which is prevailing in and out during the times. In and all the rural areas of Sikkim breathes antiquity and individuality. With this spirit my present study relates to the Level of Rural Development in Sikkim: A case study of Yuksum Development Block was taken up.

Development of rural economy and the improvement of the village life are chief concerns of economists as well as other scholars of different disciplines and bureaucrats of the country. Development is a multi dimensional phenomenon. Real development upholds the supremacy of man as a member of human community which aims at promoting an individual's welfare. Development is not merely a question of how much is produced, but what is produced and how it is distributed. The process of development has to be seen in the context of distribution of resources, the level of technology and the distributive systems. Majority of the rural population is still living below the poverty line. The rural folk are mainly engaged in agriculture and allied sectors which are in a backward stage due to lack of adequate infrastructures e.g. water supply, agricultural equipments and socio-economic prerequisites.

Physical and social constraints have also affected the agricultural development to a larger extent. Mankind is facing a setback of growing disparities in socio-economic development both within and between different geographic scales such as settlements; regions and countries. These inequalities create tensions and conflicts in the society. Therefore ameliorative measures are taken in order to reduce the disparities at all levels to the maximum degree possible. The objective of the present study is to evaluate the existing conditions and limitations, infrastructures, potentialities of rural development and to prepare a strategy for integrated rural development, taking Yuksum Development block as a case study. In this context, different resources of the area like land, water, vegetation, livestock, population etc and various socio - cultural facilities have been evaluated.

The problems of education; health; drinking water; sanitation; transport and communication; electricity and agricultural support services have also been made. Development of an area may be assessed in several ways. To examine the level of rural development in Sikkim, whole rural Gram Panchayat Unit (GPUs) are chosen as the area of micro study. The data has been collected from the Census of India, DESME, SRHC, VDAP, Statistical handbook and official records. In order to assess the level of development among the GPUs 6 indicators are selected and it has been measured by transforming and combining data related with these indicators by using 'z' score. On the basis of composite score, the GPUs have been again categorized into three classes: high, moderate and low level of development.

This study aims to understand more precisely and scientifically the level of development of rural areas on the basis of certain selected indicators of demographic, social and economic aspects for the purposes of effective planning. It further attempts to understand and analyze the underlying relationship between the infrastructure and level of development. The quantitative and qualitative techniques are used for analyzing data and preparation of maps. The development plans have been prepared at GPU level, but the study has been made quite intensive at the ward level.

The present study has been divided into eleven chapters. The first chapters briefly traces the significance of rural development, present state of rural areas, needs and achievement of the scheme, problems of rural development programme, review of literature, objectives, hypothesis, data source, methodology, rationale for selection of the study area and brief organization of chapters. Chapter I presents: location of the study area, historical background, geographical setting deals with physiography, geology, drainage, climatic characteristics, temperature, rainfall, soil, natural vegetation and transport.

Chapter II deals with the rural development concepts and dimensions, discussing the historical perspective of rural development, post independence situation, briefly examine the various five year plans, plans and rural development programmes and women empowerment programmes. Chapter III evaluates the demographic aspects discussing the population growth and distribution, density of population, sex ratio, age structure, literacy, occupational structure and workforce, relationship between population size and level of development have been analysed.

Chapter IV highlights the socio-cultural aspects of development. Under this chapter culture and religion, population by religious group, social group-wise population distribution, the spatial distribution of population by various facilities like educational institution, medical and health services, sanitation facilities, communication and social amenities have been discussed. Chapter V focuses on economic indicators reflecting rural development. The study has been presented in following parts namely: agriculture, agricultural practices, cropping pattern, animal husbandry, sources of income, income and expenditure pattern, range of saving and loan, banking facilities and level of development based on economic score.

Chapter VI presents an outlook of infrastructure facilities in the district and among the GPUs of Yuksam development block. Under this, the spatial distribution of various facilities like road network, means of transport, footpath and bridges, water supply, drinking water source and power supply have been included. Chapter VII examines composite pattern of rural development on the basis of selected indicators. In this chapter an attempt has also been made to discover level of rural development by analyzing various indicators.

Impact of rural development schemes on socio-economic condition of the people has been presented in Chapter VIII. The study covers number of social development schemes. Chapter IX highlights the problems and planning for future development related with various aspects such as education, health care, housing, transport and communication, agricultural support services, drinking water, sanitation facilities and electricity. In conclusion it is found that the study area suffers from area specific problem and unequal distribution of infrastructure facilities and services. The Yuksam development block requires special attention of the District Administration for integrated development of rural masses.

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ABBREVIATIONS

AAY - Antyodaya Anna Yojana

APL - Above Poverty Line

ARWSP - Accelerated Rural Water Supply Program

BAC - Block Administrative Centre

BPL - Below Poverty Line

BRO - Border Roads Organisation

BRGF - Backward Region Grant Fund

CAPART - Council for Advancement of People's Action and Rural Technology

CHC - Community Health Centres

CIC - Community Information Centre

CMRY - Chief Minister Rojgar Yojana

CRSP - Central Rural Sanitation Programme

DAC - District Administrative Centre

DAVP - Directorate of Advertising and Visual Publicity

DDO - District Development Officer

DESME - Department of Economics, Statistics, Monitoring and Evaluation

DIET - District Institute of Education and Training

DLCC - District Level Coordination Committee

DPO - District Planning Officer

DRDA - District Rural Development Agency

DTC - District Tuberculosis Centre

DWCRA - Development of Women and Children in Rural Areas

EAS - Employment Assurance Scheme

ETC - Extension Training Centre

GDP - Gross Domestic Product

GPU - Gram Panchayat Unit

GPW - Gram Panchayat

EAS - Employment Assurance Scheme

FSS - Food Security Schemes

GCI - Galvanised Corrugated Iron

GCS - Galvanized Corrugated Sheet

GSI - Geological Survey of India

HDR - Human Development Report

HRDD - Human Resource Development Department

HYV - High Yielding Variety

IAY - Indira Awaas Yojana

ICAR - Indian Council for Agricultural Research

ICDS - Integrated Child Development Service

IEC - Information Education and Communication

IGNDPS - Indira Gandhi National Disability Pension Scheme

IPR - Information and Public Relations

IRDP - Integrated Rural Development Programme

IRMA - Indian Institute of Rural Management Anand

ISPS - Indo-Swiss Project Sikkim

IWDP - Integrated Wastelands Development Programme

JFM - Joint Forest Management

JGSY - Jawahar Gram Samridhi Yojana

JRY - Jawahar Rozgar Yojana

LBS - Land Bank Schemes

LPG - Liquefied Petroleum Gas

MBC - Most backward caste

MDM - Mid-Day Meal Scheme

MLA - Member of Legislative Assembly

MNP - Minimum Needs Programme

MWS - Million Wells Scheme

MMAAY - Mukhya Mantri Antyodaya Anna Yojana

MMAY - Mukhya Mantri Awaas Yojana

MMKSY - Mukhya Mantri Khadya Suraksha Yojana

NABARD - National Bank for Agriculture and Rural Development

NBMMP - National Biogas & Manure Management Programme

NC - Not Covered

NFBS - National Family Benefit Scheme

NFFWP - National Food-for-Work Programme

NGO - Non-Government Organization

NIRD - National Institute of Rural Development

NLCPR - Non–lapsable Central Pool of Resources

NMBS - National Maternity Benefit Scheme

NOAPS - National Old Age Pension Scheme

NRDWP - National Rural Drinking Water Programme

NRHM - National Rural Health Mission

NREGA - National Rural Employment Guarantee Act

NREGS - National Rural Employment Guarantee Scheme

NSAP - National Social Assistance Programme

NSSO - National Sample Survey Organisation

OAP - Old Age Pension

OBC - Other Backward Classes

PC - Partially Covered

PDC - Public Distribution Centre

PDS - Public Distribution System

PHC - Primary Health Centre

PHSC - Primary Health Sub-Centre

PMGY - Prime Minister's Gramodaya Yojana

PMGSY - Pradhan Mantri Gram Sadak Yojana

PMRY - Prime Minister's Rozgar Yojana

PRIs - Panchayati Raj Institutions

RCC - Reinforced Cement Concrete

RDW - Rural Drinking Water

REDP - Rural Entrepreneurship Development Programme

RGRES - Rajiv Gandhi Rural Electrification Scheme

RHS - Rural Housing Scheme

RMDD - Rural Management and Development Department

RMSA - Rastriya Madyamik Shiksha Abhiyan

RPMC - Rural Produced Marketing Centre

SBS - State Bank of Sikkim

SC - Scheduled caste

SGSY - Swarnajayanti Gram Swarozgar Yojana

SHG - Self Help Groups

SIDICO - Sikkim Industrial Development and Investment Corporation Limited

SIE - State Institute of Education

SIRD - State Institute of Rural Development

SIMFED - Sikkim Marketing Federation

SPWD - Sikkim Public Works Department

SRBH - State Rural Business Hub

SRHC - State Rural Household Census

SREDA - Sikkim Renewable Energy Development Agency

SSA - Sarva Shiksha Abhiyan

ST - Scheduled tribes

STNM - Sir Tashi Namgyal Memorial

THR - Take Home Ration

TRYSEM - Training for Rural Youth for Self Employment

TSC - Total Sanitation Campaign

VDAP - Village Development Action Plan

VLO - Village Level Office

VLW - Village Level Workers

WEGS - Wage Employment Generating Schemes

INTRODUCTION

Historically the term ‘rural development’ was known as community development which emerged as a technique for the development of underdeveloped agrarian economy. Universally, there are no accepted approaches for the study of rural development. It changes with time, space and culture. The term ‘rural development’ connotes the overall development of rural areas with a firm view of developing and improving the quality of life of the rural masses. In this sense, it is a comprehensive and multidimensional idea which includes the development of agriculture and other associated activities such as village and cottage industries and crafts, socio economic infrastructure, community services and most significantly human resources in rural areas. In fact rural development is based on result of interactions, physical, technological, economic, social, cultural and institutional factors. Furthermore it is designed to improve the economic and social well being of a specific group of population particularly the rural poor.

At the time of independence around 83 per cent population of the country were residing in rural areas. About 60.4 per cent of total workforce living in these areas earn their livelihood from agriculture and allied sectors. Accordingly, rural development began with particular emphasis on agricultural production to promote productive employment opportunities for rural masses, especially the poor, by integrating production, infrastructure, human resources and institutional development. In the Indian context rural development assumes a greater significance as about 69 per cent of its population still lives in rural areas (Census, 2011). Nearly 33.8 per cent of rural population in India and 13.1 per cent of the rural population in Sikkim were living below poverty line during 2009-2010 (Planning Commission of India, 2012).

Rural development is an integral part of the total social and economic development of a country and it cannot be treated in isolation. In other words it is influenced by economic resources of the country as well as by the political commitment of the national leadership. These two aspects are influenced by unilateral and bilateral aid received from the developed nations and international organizations. The other important ingredient of rural development is ‘self-reliance’ which needs to be brought through local initiative, people’s participation and mobilization of existing resources.

Lastly, the part of rural development should focus on the justice for the enlistment of the poor section of the rural population.

IMPORTANCE OF RURAL DEVELOPMENT

Rural Development emphasizes on sustainable development of achieving the goal of improving quality of life of rural masses. It is therefore planned for development of new programmes for poverty eradication and reforming the existing programmes. Much of the emphasis is laid on empowerment of rural communities, decentralized governance, participatory and beneficiaries driven approaches designed to improve delivery of resources and basic amenities. These areas are sufficiently backed up by fiscal and administrative decentralization which will help in bridging the rural-urban gap in per capita income and human development.

The social and economic condition such as life expectancy, income, physical infrastructure, social service and literacy consistently show that rural areas are comparatively unfavourable than the urban areas. The two-thirds of the total population of the developing countries live in rural areas and there is extensively higher proportion of rural dwellers in the underdeveloped countries. Uncontrolled population growth has led to wide variety of socio-economic problems. Most importantly there has been an unexpected increase in unemployment and under employment. In spite of valuable and an alarming increase in the growth of agriculture and food output, the condition of landless labourers and farmers has not been improved significantly. Recent development in attitudes of the aid agencies and the policy makers thus engulfs in writing regarding the condition of landless labourers and farmers who did not get their share in the recent output.

PRESENT STATE OF RURAL AREAS

Rural development is a concept which aimed to provide multifaceted developmental potentialities in rural areas which may increase their standard of living. It is an elastic concept and all interprets in own way. About a century back Gandhiji said ‘Indian lives in villages’ which is true till today. A large number of people in the rural areas live below the poverty line of which includes the landless labourers, small farmers, artisans and other weaker sections of society. They all have been subjected to economic exploitation, discrimination and vast oppression of various kinds. This deprivation and sub-human living conditions stand miserably for the demand of a new framework and

policy for the betterment of the rural population. Improving the standards and quality of life of the rural people became the subject matter of national and international debate. Soon after the independence the Government of India began with the planned growth of rural areas. The main objectives were to completely eradicate poverty, and bring equality between the rural and the urban sector and also within each sector itself.

In the present scenario rural development is much broader in its aspects and scope. It means development of essential infrastructure like roads, transport, industries, rural poverty, unemployment, encouraging traditional craft and industries and providing education to all, health facilities and providing low cost houses with essential amenities for the poor and the deprived is the foremost priorities of the Government. It has been observed that Integrated Rural Development programmes have rendered a great amount of help to a large number of households to move above the poverty line. Significantly there has been a considerable decline in the growth of population living below the poverty line. Though these programmes could not cover the whole country, however a large number of development blocks had more than one of these programmes operating at the same area and for the benefit of the same target.

NEEDS AND ACHIEVEMENT OF THE SCHEME

The ultimate need of rural development Scheme is to improve the quality of rural poor. The strategy is based on over all benefits to the poor's. With the objective of initiating the development process the policy makers have devoted more time to 'Rural Development' in their documents for national planning policies. It is therefore being planned for development of new pro-poor programmes and also pays attention on restructuring the existing programmes. The basic focus behind all rural development programmes is to provide opportunities for their livelihood and essential amenities. It helps to uplift of the rural masses and has indeed left a major change in the development of the rural sector. Thus these programmes run effectively and continuously for the upliftment of rural poor.

PROBLEMS OF RURAL DEVELOPMENT PROGRAMME

After the independence, India brought about massive programmes of planned socio economic development in establishing and believing in social order and economic justice to all the cross-section of the community. Developmental strategy was formulated

to uplift the teeming millions from poverty, malnutrition, unemployment, illiteracy and other difficulties of mankind. But the fact is that because of India's heritage, an underdeveloped economy which is lacking in infrastructure for the economic growth, inequality in the socio-economic strata, increasing population further leading to poverty and unemployment alongside illiteracy and ignorance thus does not contribute to any needs and challenges of development. The condition in India is more acute as India's economy is predominantly rural. There are over 6, 40,867 villages (Census, 2011).

Most of the people living in rural areas depend on agriculture for their living. Though India ranks among the ten highly industrialised countries in the world, the development of rural sector always assumes a high priority. During the last few decades India adopted a number of programmes for the growth and uplift of the rural development, these programmes were put into practice for a short period of time. Thus the current study in India regarding the problems of the rural development seeks to identify its obstacles in the rural development programmes. Since the independence, there were a large number of reforms being adopted to keep a strict view on the aims and objectives and also to check out the negative imbalances in those measures which were causing a hindrance to the rapid growth and development.

To study and examine the impact Yuksum development block has been selected as study area. The study area falls in the interiors on account of which there is least accessibility to various welfare schemes. Owing to this an attempt has been made to gauge the impact of various Government schemes launched for the rural development.

LITERATURE SURVEY

A number of studies on concept, approaches and methods of rural development have been made in India and abroad. Many of the researchers concentrate on problem related with socio-economic condition of rural population, schemes of rural development, impact and improvement. Rural development brings out the total change of development in the rural areas through the concept of different parameters contributed by eminent scholars. The hypothetical aspects given by various scholars have proved efficient in bringing out the positive side of it.

Verma and Pal (1984) in their study they have attempted to identify the small service centre for accelerating the process of development in Bilgram Tahsil of Hardoi

District. In the same year Rao has study and investigated the problems of housing, employment and essential amenities of villagers and suggested steps to solve these problem. Katiyar (1984) has given new approaches and concept for studying rural development process. Chib (1984) in his article 'Some thoughts on Rural Development in India' concluded that rural development means to import quantitative as well as qualitative changes in the entire gamut of the multi-faced socio-economic mosaic of the countryside, based on the optimum exploitation of the resources aided by local initiative and drive. In a pioneer study by Mahadev (1984) on 'Dilemma in Rural Development' has brought some new concepts of rural development. He has also advised to take necessary precautions to use scheme for higher output.

Mishra (1985) in his study on Kerakat Tahsil of Jaunpur District in Uttar Pradesh used qualitative and quantitative techniques to evaluate impact of rural development schemes on socio-economic conditions of villagers. Rondinelli's (1986) has designed to illustrate the processes of integrated urban and rural development in Nepal and Brazil, which are at the opposite ends of the spectrum of developing nations. The aim of Funnel's paper (1988) is to pinpoint important themes relating to urban-rural linkage with the intention to provide directions for future research as this subject has a long pedigree in Geography. Bhattacharya (1989) has investigated on how the gap between rural urban inequalities is widened with the introduction of five year plan and how the inequalities get reflected on socio-economic character of the rural centre.

In same year Chand has collected household level data randomly from 10 selected villages and information related with various socio-economic aspects such as caste, education, occupation, income, livestock etc of Kumaun Himalaya. Factor analysis has been performed to analyse the factors involved in the process of rural transformation. Sivaramakrishnan (1989) has attempts to study the impact of Integrated Rural Development Programme in a village of Tamil Nadu. He also tries to study the effect of programme, to see how far the resident of village have benefited by IRDP and what are the major factors which contributes failure or success in bringing the changes in the rural environment. Mehar (1991) in a promising study on development strategies in a backward region at district level analysis has concluded that rural development schemes could not be accessible to pass on account of awareness about benefits of schemes.

Boraian (1992) focussed on the efficient management of development project and what role it played in rural development in developing countries. Raychaudhuri and Biswas (1996) according to them IRDP is a strategic weapon of government to uplift rural poor above poverty line and to create balance and production in both primary and non primary activities. In this paper they take up the case of W.B and compare it with other states of India.

In same year Bhatnagar (1996) attempted to study the two main rural wage employment programmes. i. Jawahar Rozgar Yojana and ii. Employment Assurance Scheme, both of these programmes have similar objectives - (a) Employment generation (b) Creation of rural economic infrastructure and social community assets. During last few years they experienced to increase their outlays. He also examined the trends in sectoral expenditure in rural employment programmes from 1989-90 to 1994-95 and shows that less than one-third (31.43 per cent) of JRY funds have been used for economically productive assets and over two-third (68.57 per cent) used for unproductive rural assets. He further argues that the most backward block in the country are those who have single agricultural cropping season due to geo-climatic reasons. By adopting modern agricultural technique they may change single cropping to double cropping, which can also generate more employment opportunity in agriculture and allied sectors and also increase productivity.

Rajan (1998) in his study he concluded that still there are several unsolved problems in meeting the basic needs and in providing growth opportunities for all. Through this article he attempts to point out the few such opportunities in the specific Indian context. These are related with food and agriculture, agro-food processing, infrastructure, communication, education, health care, biotechnology and natural product. These initiatives are based on sound economic principles which are sustainable and it has growth possibilities. In same year Radhakrishnan has given an overview of Integrated Mission for Sustainable Development (IMSD) covering 175 districts in all 25 states of the country for database creation on natural resources and action plan generation towards integrated land and water resources management on basis of watershed. Rao and Hermon (1998) they focussed their study on importance of Geographical Information System for effective development and planning of different region of a rural area.

In same year Narain has focussed on the scientific approach to grass root planning and to provide an improved quality of life of the people. Navalgund and Tamilarasan (1998) in their study they focussed on physical basis of remote sensing, its evolution in India, its application to the projects relevant to rural development and few case studies where remote sensing had made positive effect. Indiresan (1998) discusses the Maslow hypothesis of hierarchy of needs. For systematic economic progress the first concentration should be given on alleviating hunger, housing and followed by connectivity. He also discusses the aims and objectives of Programmed up gradation of rural areas (PURA) and its implementation.

Sundar and Sundaramurthy (2000) have attempted to analyse the various problem and challenges of sustainable development in India. Kumar (2002) focused on beginning of centrally sponsored scheme of computerisation of land records in Burdwan. He also concentrated on what type of problem they faced in initial stage and how the progress becomes more rapid. He also gives details related with computer hardware, software and management of project under computerisation of land records. Binu R and Sasikumar (2004) in their study they focussed on component of ecotourism, how it benefited to local people and why it considers being the best alternatives for rural development. Rao (2005) has advice to give attention on what India should learn from China in matter of decentralisation to local level institution. It includes decision making, implementation process and direct investment in rural enterprises.

In same year Singh tries to investigate the effect of effort made by Non Governmental Organisation for sustainable development of rural areas. Hirway (2005) has focussed on the success of the Rural Non-Farm Sector (RNFS) of China and East-Asian countries. Dogra (2005) discusses the quantitative assessment of the impact of various rural wage employment schemes during last five years plans and recent one shows the result in terms of employment generated which have decreased. Schemes restructuring have not helped and even central legislation to integrate all programmes into National Employment Guarantee Schemes (NREGS) cannot achieve more. Kent (2006) deals with ICDS and how this programme has helped the children and women. But he expects even more than that not only with ICDS but also with the entire right to food campaign in India. According to him many social service programme faced problem in achieving appropriate quality and quantity of service.

In same year Ghosh evaluates the relative performance of 15 major Indian states on human development and he also examines economic growth and human development. Jacob and Varghese (2006) study how the National Rural Employment Guarantee Act is implemented in Kerala. According to them its implementation is largely fair and corruption free, this scheme should be more effectively and efficiently used to meet long term demand. Sarkar, Mishra, Dayal and Dev (2006) in their study they estimates human development index, human poverty index and gender development index for schedule tribes in India. In international comparison, development and deprivation among STs of India are similar to that in poor country of Sub-Saharan Africa.

Alagh (2006) has based his analysis on the reading of the historical record related with labour demand. He also discusses on the structure of organisation which helps in the success of eleventh plan and on which organisational rules of incentives and disincentives should work. Bhaumik (2007) has attempts to identify the determinants of income and employment diversification by the sample household in rural West Bengal. Sharma (2007) has assessed the impact of agro-based industries in Rural Development in terms of employment generation, income and agricultural development, improvement in literacy and migration checking. He also attempted to find out the relationship between the variables and agro-based industrial development.

Singh (2007) deals with the land use pattern as well as the distribution pattern of land and livestock among different socio-economic groups. His studies show that the percentage of land under cultivation is decreasing and uncultivated land is increasing. The quality and quantity of livestock is largest on larger size of land holding as compared to smaller size. In same year Singh, Asghar and Khan (2007) in their study they examined the sanitation facilities, drainage facilities, disposal of wastewater the storage and disposal of solid wastes and occurrence of associated diseases in sample household of Aligarh City. Cullet (2009) has investigated and discussed the Central Government policy for drinking water supply in rural areas. He also examines the evolution from 1970s onwards in particular on reforms of past decade and looking more specifically to Swajaldhara Guidelines. Abraham (2009) has focussed on the employment growth in rural areas because of the income crises in agriculture sector which generally force non-working population to enter in labour market to generate household income.

Sikligar (2009) has concluded that housing is an important basic need of human being and Indira Awaas Yojana is centrally sponsored schemes in India for marginal income group who are unable to construct the house due to poverty and low income. He also focuses on different issues like selection of beneficiaries, role of elected representative and gram Sabha and along with the perception of beneficiaries and non beneficiaries about the scheme in U.P and Bihar. Kumar (2010) has examined that by importing food material it can help to improve country's food supply situation only for short period of time, but for long term improvement country need to focus on productive enhancement. In same year Sikligar (2010) has investigated on Rural Employment Guarantee Scheme in Assam. According to him wage employment has become constitutional right in India under National Rural Employment Guarantee Scheme (NREGA) which is now affiliated to MG.NREGS (Mahatma Gandhi National rural employment guarantee scheme. This scheme ensures 100 days employment to employment seekers in their respective areas and how it does not affect the income of beneficiaries during lean seasons. In same vain Dey and Bedi (2010) has examined the functioning of National Rural Employment Guarantee Scheme between February 2006 and June 2009 in Birbhum district of West Bengal.

Since education is the fundamental right of every child it is a must for every child to be educated. Education plays a pivotal role whether it's urban or rural. Below are some of the studies which has emphasised the importance and growth of fair and equal education to all the sections of people:

Singh and Singh (2005) have attempt to analyse the level of literacy among the Tharus of Mihinpurwa Block, Bahraich District (U.P) by using't' test method. Das (Roy) and Betal (2005) they deal with the literacy rate of Hugli district in different categories of educational institution and for this purpose they divide educational institution into three categories and multiple regression models have been developed. In same year Rana, Santra, Mukherjee, Banerjee and Kundu worked together and they focussed on different primary institutions and the extent of private schooling, objectives conditions of different school. Chandrasekhar and Mukhopadhyay (2006) they discuss the goal of primary education and how the government abolished the fees of primary education. Ramachandran (2006) focussed on how the literacy rate is taken as a key indicator of a country's development and how the government declared that education of women is the

key to development. In same year Khera has focused on how the mid-day meal scheme became a universal scheme and also examines the challenges and achievements. Chakrabarti and Joglekar (2006) they examine the changes and patterns in the allocation of Government funds for education over two decades, particularly in higher education after and before the introduction of new economic policies. Biradar and Jayasheela (2007) work together and they generally highlight the effect of educational inequalities among different social groups in rural India.

In same year Bendanginla and Singh (2007) work together and they focussed on how the distribution of educational facilities plays an important role in socio-economic development. Manhas and Kotwal (2008) attempt to find out the various causes resulting girls school dropout. They also try to analyse various factor related with social, economic and education which directly or indirectly are responsible for the discontinuation of their education. Jain (2008) has focussed on importance of education, women's education and achievement of women. Unni (2009) has discussed about utility approach, capabilities approach, human capital approach, capabilities approach to education, indicators of institutional education, reason for poor school attendance, dropout rate and role of government. Biswas (2010) attempts to highlight the various socio-economic problems on education faced by the tribal children in Central India. In same year Bahuguna and Singh has investigated socio-economic determinants of school dropout in urban slums of Dehradun.

For every aspect there has to be an impact and improvement for the development of rural sector. Following studies hints at the socio-economic factors of different households where they have suggested an importance of self-help groups. Likewise the improvements of agricultural skills through various training are encouraged for their benefits:

Balakrishna (1995) has carried out preliminary statistical exercise to examine the relationship between the incidence of poverty on one hand and health and educational variables on the other. He also had undertaken another exercise to identify the rural poor by using other criteria then income. A latent dichotomy model involving three variables was used for this purpose and tentative finding was that caste should be an essential indicator followed by either 'housing type' or 'literacy category'. Verman P (2005), attempts to examine whether there is any association between the growth of Self Help Group (SGH) and increase in female account holder and whether SHGs have a tendency

to influence account holding in formal banking. He also tries to trace the socio-economic factors that determine deposit and credit holding among individuals and households. Ghosh (2006) discusses about the importance of the book 'Agricultural Sustainability: Strategies for Assessment' and how this book will help to guide current researchers and practitioners in their endeavour work either in theory or to make situational judgements. Banerjee (Chatterjee) (2009) has make an effort to estimate the impact of SHGs created under SGSY scheme of Government of India on the basis of primary data collected from the district of North 24 Parganas of West Bengal. Tiwari (2010) has focused on how the repeated training helps farmers and farmwomen to develop the skill for performing certain task. Therefore the primary aim of her study was to examine the improvement in the skills of farmwomen and secondary to study the direct and indirect effect of variables on the skills of farmwomen.

Following scholars have contributed their studies based on the importance of Panchayati Raj its works based on grass root level planning and implementation of various schemes for its development:

Gupta (1996) has focussed his study on how Public Distribution System (PDS) is very important scheme to ensure timely supply of essential commodities to the people of rural area. Srinivasan (1998) has described the various statistical and analytical tools required for analysing demographic methods. They suggested techniques to presentation of demographic data, construction of life tables, different techniques of standardization, evaluation, adjustment of data and population projection. He illustrates the cases by giving data and examples to explain the application of the techniques. In the last chapter of this book he describes the helpful software packages for learning and teaching of demographic model.

Rao (1998) has investigated the functioning of Gram Sabha and objective of his study is to examine the Gram Sabha as a basic rural institution of participatory democracy. In the same year Khatri has investigated how the introduction of people's audit to secure a well informed local participation and how to bring more transparency in the functioning of panchayats. Roy, Guruswamy and Arokiasamy (2004) have edited the book and it deals with the research paper based on the analysis of macro data, large-scale survey and small-scale field studies which focus on different state of India. It also provides insight on recent development methods of demographic analysis it include

human development index, sampling and non sampling issues. Rajput (2005) in her study on pattern of level of development in South Asia, she focuses on relationship between population, development and environment in South Asia. In same year Sumathi and Sudarsen (2005) attempts to understand the work of Panchayat under the constitutional guarantee system. Tiwary (2005) has studied and compares the village councils or the panchayats with the community based forest protection groups in West Bengal and Jharkhand from forest management perspective. He also argues that to make forest committees subservient to the panchayats and dominant village polity would not make effective forest management.

Umdor (2006) has focussed on how the different Government initiatives increase the availability of institutional credit to rural household and reduce their dependence on moneylenders. He also attempts to establish some basic characteristics and examine the structure of rural credit markets in North-Eastern regions of India. Ali and Ali (2007) they attempt to understand the existing regional imbalance in agricultural crop productivity and agricultural development in Malda District of West Bengal. De, Bindu, Bhatt, Lakhia, Nirzar and Joshi (2008) in their study they attempt to document such shifts to evaluate the micro level changes that have taken place in last 100 years with the help of past topographical sheets and satellite images. Singh (2008) through his study he attempt to identify the common source of originality of social group and to trace out their root of social, cultural, political, economic and religious life on mountain environment. He also examines the economic conditions of the people by assessing their occupation and economic resources correlated with the environment.

Sattar (2008) has attempts to assess the impact of tourism on socio-cultural milieu of Sikkim, using dress, language and gastronomy as an indicators of impact. In same year Roy attempts to analyse the socio-economic conditions of slum population of Kolkata. Reddy and Jayshree (2008) try to analyse the level of living of the people in North Eastern states in terms of poverty, employment, agricultural dependency and unemployment etc. It also brings variations between the states and among the socio-occupational group of population in that region during reform period. Purkayastha (2008) studied and tried to highlight the interstate and intrastate population growth from 1951 onwards and the present distribution of population. He also attempts to identify the factors responsible for unequal distribution, high growth rate and how migration induced

population growth. He also deals with the consequences of population growth. Chaudhuri and Gupta (2009) present a profile of levels of living, poverty and inequality for all districts of 20 major states of India. They also made an attempt to map poverty in the districts to examine their spatial disparity within the states. Arora (2009) has presents the summary of India's second Administrative Reform Commission's Twelfth Report. Ghosh (2009) in his study he attempts to explain how the decentralized governance system is more responsive to the citizenry and more permit citizen's participation in the democratic process of development. In same year Bhattacharyya has examines how the district council bodies are performing across the states in general and particularly in Birbhum District. He also gives some suggestions which may help to strengthen the structural and operational base of district councils.

Kumar, Kumar and Mitra (2009), study and they attempt to revisit the caste issue in Indian context and analysed a sample of households from the slums of four cities. Mukherjee and Levesque (2009) in their study they observe the economic status-related inequality in impatient care utilisation in rural India. Rena (2009) has discusses the agriculture extension and its impact in reduction of poverty in Eritrea. He also highlights the incidence of poverty in Eritrea and provides the methods for the improvement of production in agriculture. In same year Yadav studied and analysed the socio-economic status of Buhana Village, Rajasthan. Sarkar, Biswas and Saunders (2010) have constructs Human Development Index (HDI) by adding the distribution of income to three dimensions of human welfare: income, education and health.

OBJECTIVES

The present study attempts to analyse the extent of improvement in the general quality of life in rural areas, specifically the study aims:

- To classify Gram Panchayat Unit (GPUs) of Yuksam block on the basis of development
- To assess composite pattern of rural development
- To examine the impact of rural development programmes on socio-economic condition of the people
- To suggest proper development plan for future

HYPOTHESIS

In present study the following hypothesis has been extended for test:

- Level of development is closely associated with the infrastructure facilities
- The larger the size of the village in term of population, higher will be the level of development

DATA SOURCE

The study is mainly based on primary data supplemented by secondary sources of data. Primary data has collected directly from the respondent through field survey with schedule, apart from this field notes, observation and informal talks with the rural development beneficiaries have also been utilized for enriching the study. The secondary data related to the rural development has been collected from various sources and material available with the annual reports prepared by Rural Management and Development Department (RM&DD), Sikkim State Remote Sensing and Application Centre, Department of Economics, Statistics, Monitoring and Evaluation (DESME), Human Resource Development Department (HRDD), Sikkim Statistical Profile, State Rural Household Census (SRHC), Census of India, Village Development Action Plan (VDAP), Internet, library and official records. The data collected from the various sources were carefully collated to avoid statistical errors.

METHODOLOGY

Stratified Random Sampling method has been used for selection of household for the studies. Survey has been conducted in 30 per cent household (921 household) of each Gram Panchayat Ward (GPW). The group of respondents mainly comprises of both categories of families Above Poverty Line (APL) and Below Poverty Line (BPL) of Yuksam development block. Statistical Packages for Social Sciences (SPSS) has been used for primary data compilation. ArcGIS software (version 9.3) is used for mapping as well as for map based analysis**.** In order to analyse the data obtained from primary and secondary sources a number of statistical techniques has been adopted, these are as follows:

Arithmetic Mean - averages are most popular and widely used as position of reference for objective interpretation representing the entire data into one mean value is known as

'average' or 'arithmetic mean'. It is the simplest form of various types of averages which is obtained by adding all of the items in the data and dividing by the number of items in the data. It is calculated by applying the following formula:

$$\overline{X} = \frac{\Sigma X}{N}$$

Where $\overline{X}$ = Average mean

ΣX = Total value of observation and

N = Number of observation

Standard Deviation - among all the measures of dispersions, standard deviation is most important measures of assessment. In the mean deviation the deviations are taken irrespective of negative or positive signs which are not sensible from the mathematical point of view because signs are integral part of the values. If it has to be removed, some standardization in technique has to be implemented which can be done only by squaring the values and then adding them. This total value divided by the number of items in the data gives variance. The square root of variance is known as Standard Deviation. It expressed as:

$$\sigma = \sqrt{\frac{\sum(X-A)^2}{n} - \left\{\frac{\sum(X-A)}{n}\right\}^2}$$

Where σ is the Standard Deviation,

A is the mid value of class interval,

X is the individual value and

n is the number of observation.

Standard Score - is the most important statistical technique to standardize all type of data on a common scale and it indicates how many observations are above or below the mean. This conversion process is called standardizing or normalizing. For constructing composite index, the method of standard scores or composite standard score has been used and it is also called z-values, *z*-scores and standardized variables. The standard deviation is the unit of measurement of the z-score and it allows comparison of observations from different normal distributions. The formulas used for calculating standard score are as under:

$$Zij = \frac{Xi - \overline{X}}{\sigma}$$

Where, Zij = standard score of the observation,

Xi = original value of the observation

$\overline{X}$= mean value for all the values of X and

σ = standard deviation of X

Further the results of standard score obtained from the different indicators are aggregated by composite standard score (CSS). It helps us to classify GPUs in terms of their levels of development and it also help for obtaining the disparities. In this way the disparities in the level of development in GPU may be obtained in a common scale. It expressed as: ΣZij/N

Where, 'Zij' indicates 'z-score' of any indicators, j in GPU i and N is the number of indicators. Finally it added to determine the overall pattern of development and to assess the inequality in the level of development among the GPUs. In order to analyse the level of development 21 variables have taken into account. The variables under consideration are analysed with the help composite score. Composite index technique has been applied to assess the level of development in the study area. The equation can be explained as follows:

$$C.I = \frac{X_1\overline{X}_1/\sigma_1 + X_2\overline{X}_2/\sigma_2 + \text{----------}X_{21}\overline{X}_{21}/\sigma_{21}}{\overline{X}_1/\sigma_1 + \overline{X}_2/\sigma_2 + \text{----------}\overline{X}_{21}/\sigma_{21}}$$

Where, C.I. = Composite index

X_1, X_2 - - - - - - - - - - -X_{21} = the number of variables selected

$\overline{X}$ = Mean value of the variable in the entire area

σ = Standard Deviation of each variables.

Correlation - is a measure of the degree and direction of relationships between two variables. To evaluate the inter-relationship between pairs of variables under the study correlation co-efficient has been used. The formulas used to calculate correlation co-efficient of any two variables are as under:

$$r = \frac{\sum(X-\overline{X})(Y-\overline{Y})}{\sqrt{\sum(X-\overline{X})^2 \sum(Y-\overline{Y})^2}} = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Where r is the correlation; $\overline{X}$ is the mean of X series, $\overline{Y}$ is the mean of Y series; X- $\overline{X}$ is the deviation from mean x and Y-$\overline{Y}$ is the deviation from mean y.

The computed composite score of the variables have a wide range of variation in the GPUs of Yuksam development block. The inter GPU variations are grouped into three category of high, medium and low level of development. Therefore, an attempt is made to understand the nature and extent of association between the Gram Panchayat Unit of development block and the levels of development as reflected in demographic, socio-cultural, economic and infrastructural characteristics.

Rationale for the Selection of Study Area

The foci in this evaluation are to study the level of rural development in Sikkim; whole GPUs of Sikkim have been selected as a macro area of study. For micro level study, Yuksam development block of west district have been selected to analyze the level of rural development and to investigate the impact of various developmental activities at GPU level.

ORGANIZATION OF CHAPTERS

The present study has been divided into eleven chapters. The first chapter briefly discusses the importance of rural development and also presents objectives, hypothesis, methodology and literature survey related with rural development. Chapter I Introducing the study area presents the historical background, geographical setting of the study area. Chapter II deals with rural development concepts and dimensions. Chapter III discusses the demographic aspects and development. Chapter IV presents a detailed account of socio-cultural aspects, discussing the institutional and non institutional aspects (education, medical, sanitation, communication and social amenities) of development.

Study of economic indicator reflecting rural development has been appraised in Chapter V. Chapter VI deals with infrastructure facilities as dimension of development. Chapter VII presents the composite pattern of rural development. The impact of rural development programmes on socio-economic condition of the people has been examined with the help of comparative analysis on past and present living conditions of the beneficiaries in Chapter VIII. Problems have been discussed and planning for the development has been presented in Chapter IX. The study concludes with a summary of the observations and conclusion of the study.

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Chapter 1

INTRODUCING THE STUDY AREA

Sikkim is a small State, nestled in the lap of the Himalayas and bounded by some of the highest mountain peaks. Sikkim joined in the Indian union as 22nd State on 16 May 1975. It is located between 27º04'46" to 28º07'48" North latitudes and 88º00'58" to 88º55'25" East longitudes covering an area of 7096 sq.km. With peace and calmness Sikkim derived from a Limboo word *'su-him'*, which means happy house, Lepchas refer as paradise, Bhutias call it valley of rice; while Nepalis call it abode of the god. The world third highest mountain Kanchendzonga is located in Sikkim and it is one of the youngest states within the Indian union.

Sikkim is a unique mountainous state bounded by three different international borders with Nepal, Bhutan and China which lie in its West and shares its national borders with Darjeeling district of India. Sikkim is situated in upper part of Tista basin. It extends approximately 114km from North to South and 64km from East to West with altitude ranging from 300 to 8598m. Sikkim has 447 villages with 6, 07,688 populations in which 47 per cent are female and 53 per cent are male (Table. 1.1).

Table 1.1: Some basic facts of Sikkim (1991-2011)

Item	Year	Unit	North	East	South	West	Sikkim
Population	1991	Persons	31240	178452	98604	98181	406457
	2001		41030	245040	131525	123256	540851
	2011		43354	281293	146742	136299	607688
Literacy Rate	1991	Percent	53.47	65.13	54.08	45.62	56.94
	2001		67.21	74.67	67.31	58.80	68.81
	2011		77.39	84.67	82.07	78.69	82.20
Sex Ratio	1991	Females per thousand Males	828	859	892	915	878
	2001		752	844	927	929	875
	2011		769	872	914	941	889
S.C Population	1991	Percentage to Total Population	3.56	6.99	5.64	5.02	5.93
	2001		2.14	5.83	4.76	4.66	5.02
S.T Population	1991	Percentage to Total Population	55.38	21.09	16.91	19.66	22.36
	2001		53.06	18.50	15.57	19.33	20.60
Main Workers	1991	Percentage to Total Population	42.90	37.14	41.80	44.32	40.45
	2001		42.78	37.78	43.62	36.54	39.36

Source: Census of India, 2001 and 2011.

The population density was 86 persons/sq.km, the sex ratio was 889 (Census of India, 2011) and comprising mainly ethnic groups of Nepalese, Bhutias and Lepchas. The State remains highly dependent on agriculture. Livestock farming is another important economic activity. The State has become one of the important destinations for nature and culture in the eastern India. Water is plenty in Sikkim and it is the most important natural resources being renewable and valuable, it has great potential for the development of the State. In Sikkim Block Administrative Centre (BAC) is new as compared to other State of India. Most of the States have BAC since 1952, from the introduction of community development programmes. Block was taken as a unit of development for the implementation of the various schemes. In 2006, State Government has created 24 BAC in different part of the State, in order to facilitate administrative decentralisation. In first phase Government created 24 BAC (4 in North district, 8 in East, 6 in West and 6 in South district).

In 2008, two more BAC was created in South district, in total there was 26 BAC, 163 Gram Panchayat Unit (GPUs), 891 Gram Panchayat Ward (GPWs) (Appendix - A). Before the election of November, 2012 again delimitation of Territorial Constituencies (Zilla Panchayat) and GPUs was undertaken in Sikkim. After delimitation for Zilla Panchayat and GPUs, there has been a 10 per cent increase in the number of seats. The territorial wards for Zilla Panchayat have been increased from 95 to 110 (32 for East, 28 each for West and South and 22 for North District). Similarly, delimitation has increased the number of GPUs from 163 to 176 in 2012 (increased from 45 to 52 in East, 25 to 47 in South, 27 to 55 in West and 19 to 22 in North district). Simultaneously, the number of GPWs for GPUs has also increased from 891 to 987 in 2012. At present there are 30 BAC, 110 Zilla Panchayat, 176 GPUs and 987 GPWs (State Election Commission, 2012).

The investigation is carried out in one administrative centre of West district i.e. Yuksam development block (Fig: 1.1). Yuksam means the meeting place of three wise monks. These three monks Gyalwa Lhatsun Chempo, Gnadak Sempa Chempo and Kathok Rikzing Chempo met at Yuksam. Yuksam was the first capital of Sikkim. It is a small hamlet with an altitude of 1,780m and is located approximately 124 km from Gangtok. Yuksam is the entry point of Kanchendzonga National Park (K.N.P) and is fast developing for admired base for adventure traveller and nature lover.

Yuksam development block covers an area of 10,457 hectare, about 32.4 per cent of the district area and comprises of 9 GPUs, 51 GPWs (villages) and 3088 household (Socio-Economic Census DESME, 2008). The 9 GPUs are: Karzi Mangnam (K.Mangnam), Dhupidara Narkhola (D.Narkhola), Kongri Labdang (K.Labdang), Tashiding, Arithang Chongrang (A.Chongrang), Gerethang, Yuksam, Thingle Khachodpalri (T.Khachodpalri) and Melli GPU (Appendix - B). Following are the few tourist places within Yuksam development block:

Khachodpalri Lake or Wish Filling Lake: it is regarded as one of the most sacred lake of Sikkim at an altitude of about 1951m. It is a perfect birding area in a deep forest surrounded by sacred prayer flags. The lake waters remain perennially clear and clean as a pair of swan picks up every single leaves that falls in the water.

Khachodpalri Gumpa: is situated about 1.5 km trek uphill from the Khachodpalri Lake; from here one can get a view of Khachodpalri Lake in a shape of the left foot print pointing towards the western direction.

Norbugang Coronation Throne: is the most important historical site of Yuksam development block and it is protected by the archaeological department of India. Where the three lamas headed by Lhabtsun Chenpo consecrated Phuntsog Namgyal as first Chogyal of Sikkim there is a stone throne shaded by the massive pine tree and in front of it a foot print of head lama Lhabtsun Chenpo can be seen in a stone nearby. The Chorten (Stupa) near the throne is the oldest stupa built in Sikkim and is believed that it was made with soil and water brought from all parts of the Sikkim.

Kathok Lake: is situated in Yuksam and it is the only lake which has sloping clay banks surrounded by different trees such as rhododendron, chestnut, oaks and laurels. It is quite popular for visitors as a place to spend a quiet and peaceful time. Erstwhile religious and cultural events used to take place in the shore.

Kathok Monastery: is situated just above the Kathok Lake. It was built by Kathok Rikzing Chempo one of the monks who consecrated the first king of Sikkim. Due to improper care the old monastery was destroyed over a period of time. Beside the old site of Kathok Gumpa Yangthang Rinpoche had constructed the new Kathok monastery. This monastery houses the statue of Guru Padma Sambhava the founder of Tibetan Lamaism along with the statue of his Tibetan and Indian disciples.

Dubdi Monastery: was built by Lhabtsun Chenpo in 1701. It is considered as the oldest monastery of Sikkim and was established after first chogyal's enthronement, besides the monastery is also known as hermit's cell and is surrounded by dense forest. It is an ideal place for seeking meditation. The monastery offers a bird eyes view of Yuksam Mountain and ideal for bird watching. There are two monasteries at Dubdi. The smaller one is dedicated to the deity protector of the region. The people give offering of newly harvested crops every season to thank the deities for their blessings. People also believed that the head monk have the power to divert hailstorms, cyclone and natural calamities with the recitation of mantras. It takes 30 minute walk from Yuksam to reach Dubdi Monastery.

Phamrong Waterfalls: is located approximately 5km from Yuksam on the way to Tashiding. It looks magnificent during monsoons. A newly built staircase takes one to the base of the waterfall for a closer view.

Kanchendzonga Waterfalls: is located approximately 8 km from Yuksam towards the way to Khachodpalri. At the base of a waterfall the thunderous sound of the cold water cascading down on the rocks is so strong and loud that it makes impossible to hear each other's sound.

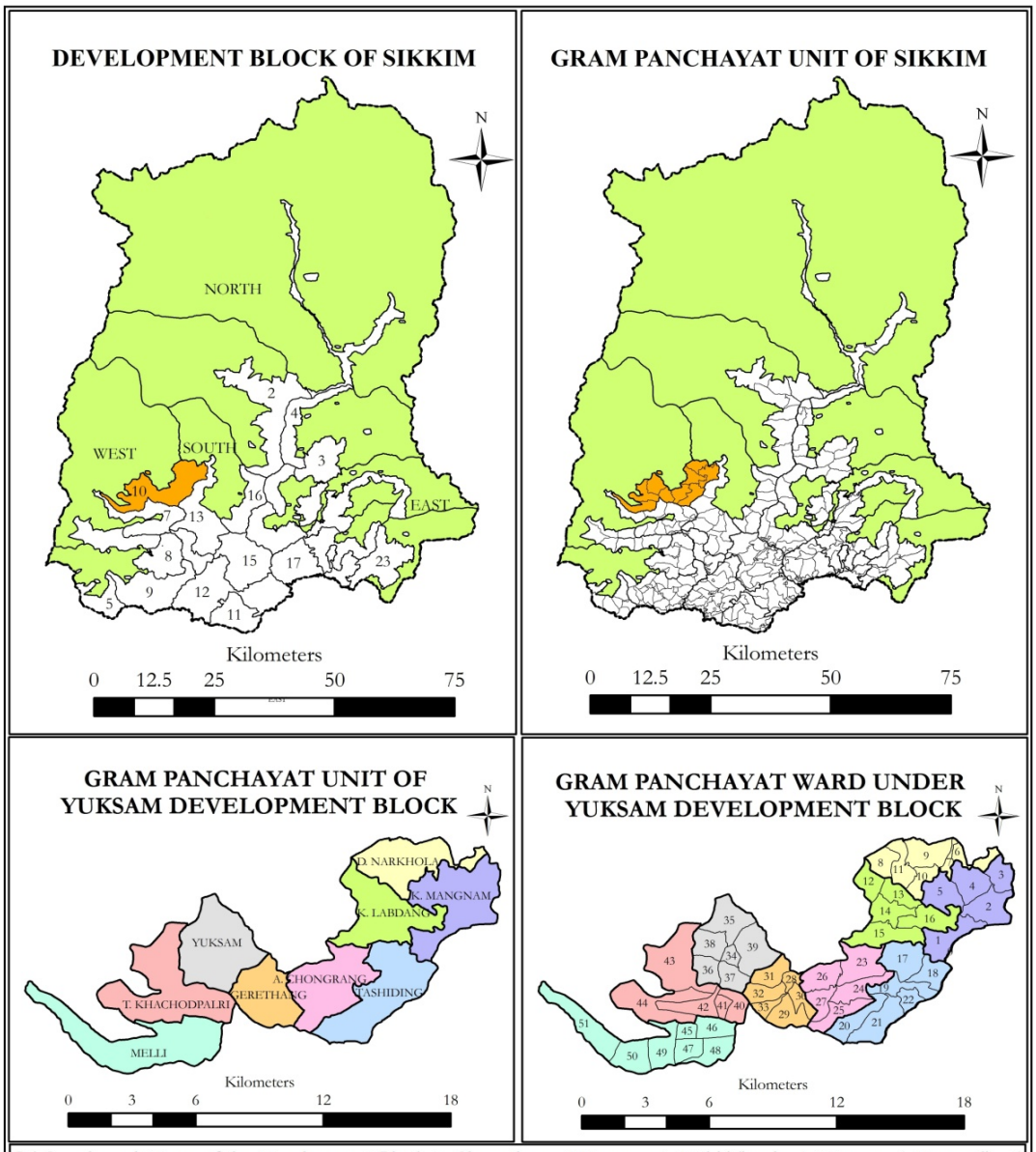
Tashiding Monastery: is considered as one of the most sacred monastery in Sikkim. It is known for major holy annual festival 'Bhum Chu' (holy water vase) festival. Sikkimese believes that the vase was created by deities. It contains holy water which can remove sin and evil spirits and prevent unfortunate bad events. It also believes that the condition and amount of water in the vase is interpreted to be the signs of whether auspicious events are going to take place.

Hungri Monastery: it takes 2.5 hours walk from Yuksam via Tsong to reach Hungri Monastery; the oldest monastery of Sikkim built before the arrival of three lamas and is managed by Lepchas.

Paha Khola Falls: is situated on the way to Kongri Labdang and is truly a very beautiful sight, especially because of wild beehive seen on the side of the water falls.

Lhari Nyingphug: is one of the four sacred caves of Sikkim. After two hour drive from Tashiding one can reach Labdang. From Labdang, Lhari Nyingphug is about 8 hour trek.

LOCATION OF THE STUDY AREA



BAC code and Name of the Development Block 1: Chungthang, 2:Dzongu, 3: Kabi Tingda, 4: Mangan, 5: Daramdin, 6 Dentam, 7: Gyalzing, 8: Kaluk, 9: Soreng, 10: Yuksam, 11: Melli, 12: Namchi, 13: Ravangla, 14: Sikip, 15: Timi Tarku, 16 Yangang, 17: Duga, 18: Gangtok, 19: Khamdong, 20: Pakyong, 21: Rakdong Tintek, 22: Ranka, 23: Reghu, 24: Wok, 25 Jorethang and 26: Rhenock.

GPW code and Name of the Gram Panchayat Ward 1: Mangder, 2: Lower Mangnam, 3: Upper Mangnam, 4: Upper Karchi, 5: Lower Karchi, 6: Narkhola, 7: Pokhri, 8: Rungdung, 9: Upper Dhupidara, 10: Yangtam, 11: Lower Dhupidara, 12: Upper Labdang, 13: Middle Labdang, 14: Lower labdang, 15: Kongri-Naku, 16: Kongri-Maneydara, 17: Ganggep (Ngadak Gumpa), 18: Mangthyang, 19: Upper Lasso, 20: Lower Lasso, 21: Tashiding (Gumpa), 22: Nerdang, 23: Upper Chongrang, 24: Middle Chongrang, 25: Lower Chongrang, 26: Nesa, 27: Arithang, 28: Upper Gerethang, 29: Tamatam, 30: Lower Gerethang, 31: Upper Labing (Gumpa), 32: Bhirkuna Lingyang, 33: Lower Labing, 34: Tsokha-Kyongtek, 35: Yuksam-Ramgaythang, 36: Ting-Ting, 37: Mangsabung, 38: T.Gufadara, 39: Dubdi (Sangha Gumpa), 40: Thingle-I, 41: Thingle-II, 42: Thingle-III, 43: Khachodpalri (Gumpa), 44: Tsozo, 45: Upper Melli (Gumpa), 46: Lower Melli, 47: Upper Melliaching, 48: Lower Meliaching, 49: Singlitam, 50: Tingbrum, 51: Topung.

Fig: 1.1

Sinon Monastery: about 1.5 hour walk from Hungri monastery via Nessa village help one to reach Sinon monastery. In a stone below the Sinon monastery there is a footprint of a famous Tibetan master Tarton Terzelingpa.

In year 1997 Kanchendzonga Conservation Committee (KCC) Non Governmental Organisation (NGO) was officially registered. KCC is a community based NGO based in Yuksam focussing on developmental and conservation work. It comprises of community members, village elders, students and different stakeholders working together to mitigate negative impact of tourism, educate visitors, monitor natural resources, awareness campaigns and takes care of almost everything in Yuksam.

1.1. HISTORICAL BACKGROUND

Sikkim history dates back to fourteenth century when Khye Bumsa, a prince from Tibet, following a divine command travelled to Sikkim and came in contact with the Lepchas. This contact led Thekong Tek, the Lepcha Patriarch, his wife Nekung Nyal and Khye Bumsa entered a blood brotherhood agreement at Kabi Longtsok in North Sikkim. In 1646 AD, three Nyingmapa lamas from Tibet Gyalwa Lhabtsun Chenpo, Kathok Rigzin Chenpo and Ngadak Sempa Chenpo, came to Yuksam and sanctified Phuntsog, Khye Bumsa's descendent as the Chogyal' or king of righteousness. Lhabtsun Chenpo also gives his family title 'Namgyal' to the king. Thus the Namgyal dynasty ruled Sikkim for around 333 years starting with the first capital at Norbugang in Yuksam. The capital was later shifted to Rabdentse followed by Tumlong and Gangtok.

However, Sikkim faced numerous invasions from Bhutan and Nepal, especially in the 18th century during which much of Sikkim's territories were lost. In 1835, Britishers seeking a hill station as a rest and recreation centres for their troops and officials convinced the Chogyal to concede Darjeeling area in return for an annual stipend. In 1890, Sikkim became a British outpost and was granted sovereignty over the next three decades. In 1947, a popular vote rejected Sikkim's joining the Indian Union and special protectorate eminence was given. A State council was established in 1955 to allow for constitutional Government under the Chogyal. The last king Palden Thondup Namgyal came to the throne in 1963 and ruled until his kingdom became the 22nd States of India on 16 May 1975.

Lhendup Dorje Khangsarpa of Sikkim congress became the first Chief Minister. He was followed by Nar Bahadur Bhandari of Sikkim Sangram Parishad in 1979 till 1994. Since then Dr. Pawan Kumar Chamling of Sikkim Democratic Front has been the Chief Minister.

1.2. GEOGRAPHICAL SETTING

Physiography: Sikkim is a small hilly State in the Eastern Himalayas with a rich biodiversity and formidable physical features. It is bounded by vast stretches of Tibetan Plateaus in the North, Chumbi Valley of Tibet and the Kingdom of Bhutan in the East, Nepal in the West and Darjeeling District of West Bengal in the South. The State receives an annual rainfall of 2000mm to 4000mm. The topography of Sikkim is characterized by great variation in elevation, ranging from 270 m to 8,580m. The State is girdled by high ridges on the north, east and west and thus looks like an amphitheatre. To the north the convex arc of the Greater Himalayas separates the State from the Tibetan highlands.

A number of peaks built up of crystalline rocks accentuate the demarcation between (Tibet) China and Sikkim. The longitudinal Chola range separates the State from Tibet on eastern side while Singalila range another longitudinal offshoot of the Himalayan arc marks the boundary between Sikkim and in the Nepal in the west. The girdling ridges on the three sides of the State contain some imposing peak and high altitude passes. The exalted peak of the Kanchendzonga (8,595m), Pandim (6,706m), and high altitude passes like Nathu la (4,728m), Jelep la (4,040 m) etc are located within this Himalayan State. Sikkim lies in upper part of the Tista basin which virtually marks the State boundary. The topography of Yuksam development block is characterized by great variation in altitude ranging from below 500m to above 2000m in height (Fig: 1.2).

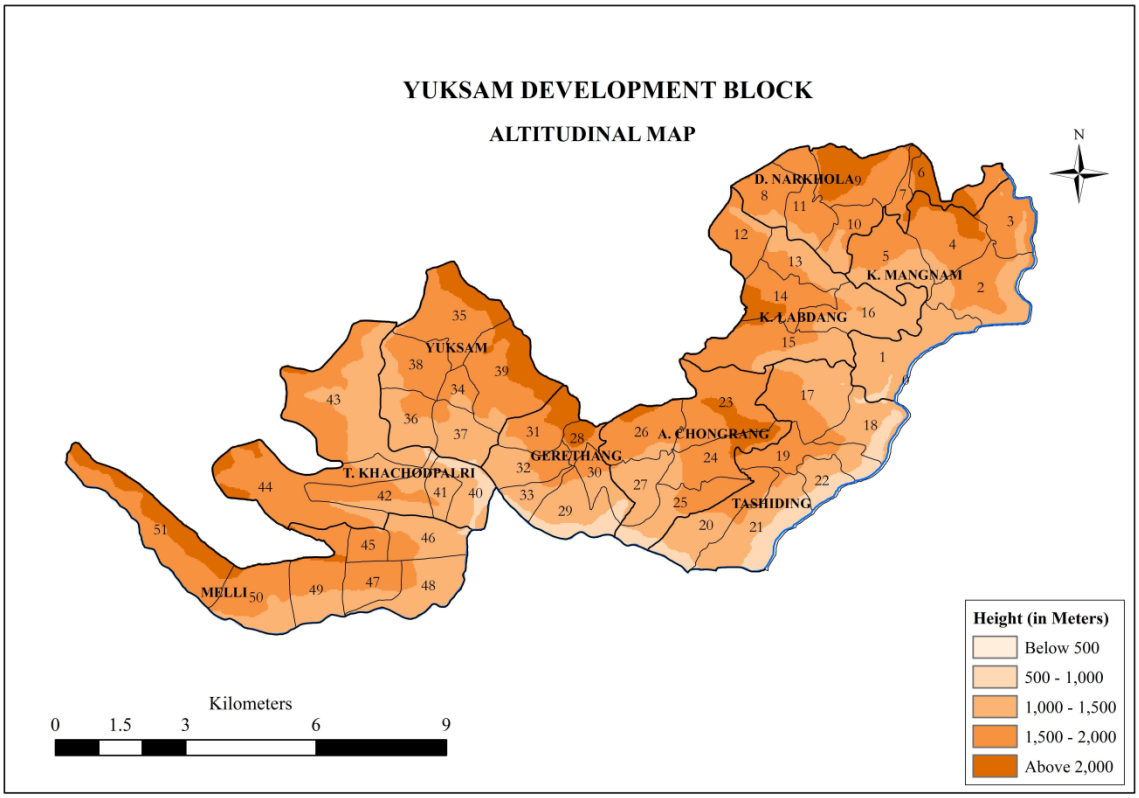


Fig: 1.2

Geology: In most of the part of Sikkim precambrian rock is found and is considered an important part of the State geology. Precambrian rock is made up of phyllite and schist and their presence makes the slope prone to the erosion and weathering. By excessive rainfall the chance of soil erosion and the reduction of mineral content are higher. The soil has less content of organic matter. 'It has a high content of the chemical compound of iron oxide. The presence of these two kinds of rock has turned the soil of these regions brown and clayey' (Karmakar, 2011). 'The soil is coarse, with large amount of iron oxide concentration, ranging from neutral to acidic and has poor organic and mineral nutrients. This type of soil tends to support evergreen and deciduous forests' (Bhattacharya, 1997). Such geology of the study area is at risk to landslides and in rainy season it frequently separates the villages from the other part of the regions.

Drainage: Tista and Rangit are the two major rivers of the State which originates respectively from Cholamu Lake and Rathong Glacier. The present landscape of the State owes much to the drainage network of the river Tista, so the entire State is drained by river Tista and its numerous tributaries and innumerable sub-tributaries. The structural slope of the land is from north to south; hence all the major rivers of the State have a southern flow. However, small stream appear from almost every corner of the State and

run on all directions. They have dissected the land so intricately that there is no sizeable piece of level land anywhere in the State. The north-western part of the State is highly elevated and therefore remains under snow cover almost throughout the year. Besides these there are numerous glacial lakes which freeze during winter while the swift flowing rivers transport loads of eroded materials chiselled by the valley side slopes. Yuksam development block is mostly drained by Rathong Chu, Rangit Chu, Rali Chhu and Nar Khola. Rathong Chu is originated from Rathong Glacier, Rimbi Khola is a major tributary of Rathong chu and it originates from Lachhmi Pokhari (Fig: 1.3).

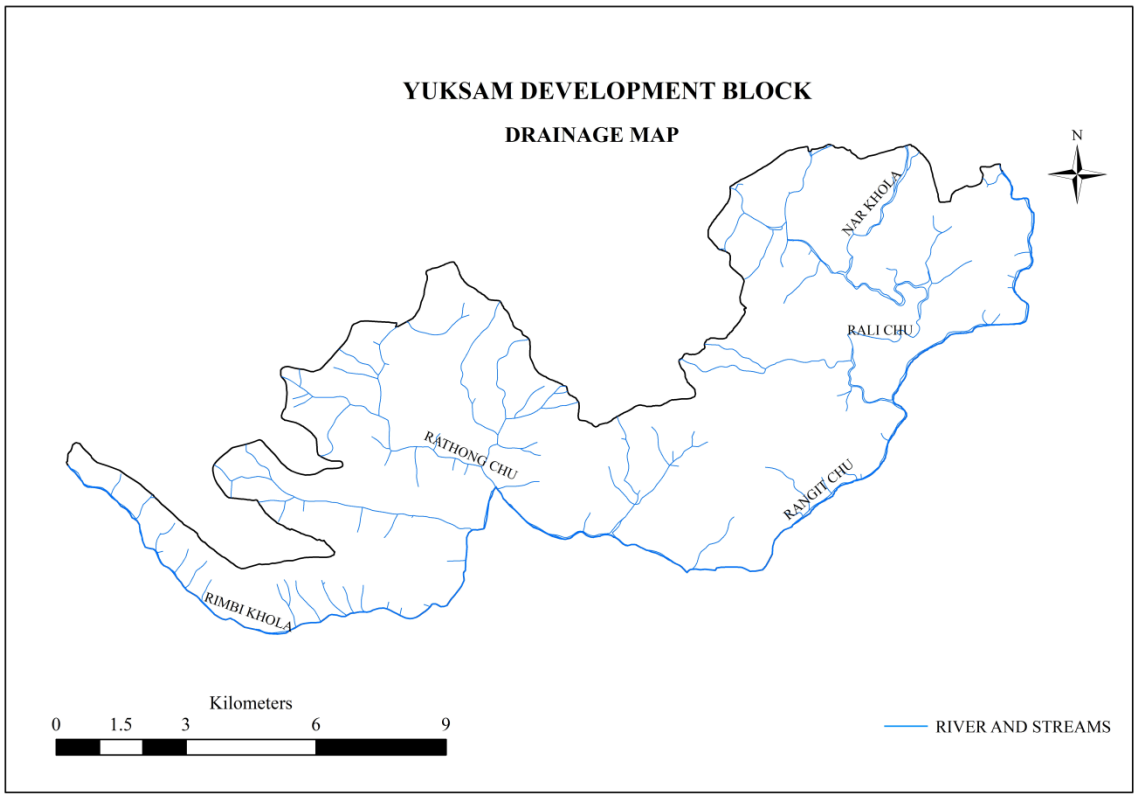


Fig: 1.3

Climatic Characteristics: In Sikkim due to presence of high mountain one can experience great climatic contrast within short distances and elevation plays a very vital role in fashioning the climatic types of the State. Climatic types and altitude also affects the rainfall, temperature and air movement of a particular area. The climate of Sikkim has broadly classified into following six divisions:

Sub-tropical Humid type: the areas lying below 1,500m experience sub-tropical humid type of climate. In summer the day temperature of this area records as high as 35ºC while in winter the minimum temperature is 6ºC and usually cold and dry.

Semi-temperate type: the area lying between 1,500m to 2,000m experience semi-temperate type of climate. Yuksam development block falls under this category. The mean annual temperature ranges from 26ºC in summer and 8ºC in winter.

Temperate type: the areas lying between 2,000m-3,000m come under this category. Here the annual temperature ranges from freezing point in winter and are always cold. In summer the temperature are as 15ºC and are never hot.

Alpine snow-forest type: this is experienced in the areas lying between 3,000m to 4,000m. From November to March here temperature remains very low. This areas experienced extreme cold from December to February. The major part of this area is uninhabited due to harsh climate.

Alpine Meadow: this climate is experienced only around the peripheries of the snow capped areas in the extreme western, northern and southern portion of Sikkim. The air temperature is very low and the night temperature ranges below the freezing point. The average elevation of this area is more than 4,000m. The ground remains snow covered and the soil remains frozen about four months of the year. No permanent settlement is found in this region.

Arctic type: this type of climate is prevailing only in the north-western part of the State where a number of snow clad peaks are located within this climatic zone above 6,000m. This whole climatic zone is bare of animal and vegetation (Chaudhury, 1998).

Temperature: Temperature varies with altitude and slope. The mean temperature in the lower altitudinal zones varies from 4.5º C to 18.5º C, whereas at higher altitudinal zones it varies from 1.5º C to 9.5º C. The maximum temperature is recorded during July - August and minimum during December - January. From May to September fog is a common feature in the entire State. At high altitude places biting cold is experienced during winter months.

Rainfall: In Sikkim rainfall is heavy and well distributed during the months from May to early October. July is the wettest month in most of the places. The intensity of rainfall during South-West monsoon season decreases from South to North, while the distribution of winter rainfall is in the reverse order. An examination of available State rainfall data shows that the mean annual rainfall is minimum at Thangu (82 mm.) and maximum at

Gangtok (3494 mm). An isotheral analysis of these data reveals that there are two maximum rainfall areas (i) South-East quadrant, including Mangan, Singhik, Dikchu, Gangtok, Rongli etc. (ii) South-West corner including Hilley. In between these two regions, there is a low rainfall region i.e. Namchi, rainfall in this area is about half of that in the former areas. There is an area in the North-West Sikkim, which gets very little rainfall (even less than 4.9 mm) and this area has mainly snow-covered mountains.

Soil: Sikkim has a wide variation of climate, geology, physiography and vegetation that influence the formation of soils. The soils of Sikkim are broadly grouped into five physiographic zones based on geomorphology. The steeply sloping slopes (>50 per cent) cover 43 per cent of the area and soil erosion through landslide is the main basis of land degradation. The National Bureau of Soil Survey and Land Use Planning Regional Centre, Kolkata, surveyed the soils of Sikkim and classified the soils into three taxonomic orders of *Inceptisol* (33 per cent), *Entisols* (43 per cent) and *Mollisols* (23.6 per cent). Further soils are broadly divided into different physiographic zones. 'Eight sub-groups of soils reported in 1981 by High Level Team for Land use plan of Sikkim survey.

Natural vegetation: Sikkim constitutes 0.22 per cent of the total geographical area of India. Its unique geographical position, high annual rainfall, varied topography, minimum population pressure make the State one of the unique and richest botanical treasure house of the nation. The Sikkim Himalayas shows remarkable biological diversity. More than 5,000 species of angiosperms are found here, nearly one-third of the total species of angiosperm found in the country. There are 300 species of ferns and allies, 450 to 500 species of orchids, 40 species of oaks, 4,000 species of flowering plants, 144 species of mammals, 30 to 40 species of primulas and bamboos, 500 to 600 species of birds, over 400 species of butterflies and moths and many species of reptiles are found in the State' (Government of Sikkim, 1999). The vegetation of Sikkim is broadly classified into tropical, sub tropical, temperate and alpine types (Singh and Chauhan, 1998).

Tropical vegetation: this zone ranging up to 800m consists mainly of tropical moist deciduous to semi-evergreen species with Sal as a dominant specie.

Sub-tropical Vegetation: confined to the elevation range from 800 to 1500m. The forest is represented mainly by *Alnus nepalensis* (Uttis), *Castanopsis* (Kattus), *Macaranga* (Malata), *Engelhardtia spicata* (Mahua), *Toona ciliate* (Tooni), *Machilus* (Kawla),

Machilus (Kawla), *Cinnamomum* (Sinkoli), *Symplocos* (Kharane) etc. Shrubs include *Rubus* (Aiselu), *Daphne* (Algeri), *Leucosceptrum* (Ghurpis) etc.

Temperate Vegetation: the forest lying between 1,500 to 3,500m elevations. Which include the middle and upper hill forest. The main component of species are *Alnus nepalensis* (Uttis), *Quercus* (Oak), *Castanopsis* (Kattus), *Acer* (Kapasi), *Juglans* (Okhar), *Machilus* (Kawla), *Cinnamomum* (Sinkoli), associated with *Rosa* (Rose), *Rubus* (Aiselu), etc. Ferns, Lichens, Moss and other epiphytes are found lavishly.

Alpine Vegetation: this zone ranges from 3,500 to 5,000m. This zone support bushy vegetation of shrubby species of *Rhododendrons, Juniper, Rosa* and *Barberries* are common. The vegetation of this zone is practically scattered shrubs, snow covered and barren at higher elevations. While the meadows consist primarily of *Primula, Anemone, Caltha, Iris, Bistorta, Rhodiola, Sedum* are common in this zone (Sikkim study series and KCC Handbook).

1.3. TRANSPORT

Roads play a vital role in Sikkim. The absence of a rail network and commercial air services motor transport is the only means of getting around. Since 1946 Sikkim Nationalised Transport (SNT) has been in continuous service when it first started as a trucking service. It has made important contributions to the process of development in Sikkim. It has linked various complicated remote areas by supplying goods and services to the people. In 2003-04, SNT had a fleet of 106 tankers/trucks and 106 buses, for the services of passenger and goods. In the State it has a monopoly on transport services.

SNT carries about 60 percent of the total goods whereas the remaining 40 percent is carried by private organization. The existing freight transport ability of SNT does not satisfy the growing demand of goods in Sikkim. The rising demand leads to outsourcing the freight from SNT to the local private operators. SNT paid a royalty for every truck load that it outsources to the local private operators. Sikkim has a mutual agreement between West Bengal under which number of their registered trucks allowed into each other areas should be equal.

Road: National Highway 31A is the only road that connects Sikkim with the rest of the country. This highway is 92.6 km long of which 41.3 km is in Sikkim and rest is in West

Bengal. Maintenance is carried out by Border Roads Organisation (BRO). In rainy season heavy rainfall often interrupt State's road-link by several landslides in spite of continuous maintenance effort by the BRO. The proposal to broaden NH 31A to a two -lane highway has been accepted by the BRO and its construction activity is being taking place. The construction of a second alternative highway linking Sikkim with the rest of the country is also under serious concern.

Air Transport: The four-seated helicopter is the only air services at present in the State from Gangtok to Bagdogra, but this is not quite an important part of transport activity. The neighbouring air-link of the State is through Bagdogra airport, which is around four hours by car from Gangtok. Helicopter links exist between Bagdogra and Gangtok, but the fare is too expensive, and the number of seats is also limited. From the long-term development perspective to establish better links with the rest of the country, a good airport and efficient air services have become imperative for the State. The central Government has sanctioned an airport for Sikkim. The airport is under construction at Pakyong, about 25 km from Gangtok.

Railway: The nearest railway station is New Jalpaiguri of West Bengal. A declaration has been made by the Union Government that a rail link will be prepared between Siliguri and Sikkim during the 11th Five Year Plan. The vice president of India has laid the foundation stone for Sevoke-Rangpo broad gauge Trans-Himalayan railway line on 30th October 2009. The New Jalpaiguri Division of NEF railway has already started executing the project from December 2009.

Awards and Achievements: within Yuksam development block Gerethang GPU received a number of prestigious awards for its outstanding performance in field of Panchayati Raj, internal revenue generation and Co-operative under the dynamic leadership of Shri L.P Kafley. These awards are: Nirmal Gram Puraskar in 2006, best performing Co-operative award by Gerethang MPCS, best performing Gram Panchayat award declared by Shri Mani Shankar Aiyar during his visit to Sikkim, best performing Gram Panchayat award in 2012 declared by Dr. Pawan Kumar Chamling Hon'ble Chief Minister of Sikkim. In same year Panchayat Sashaktikaran Puraskar from the hand of Shri Jai Ram Ramesh Hon'ble Union Minister of Rural Development during National Panchayati Raj Day on 24th April 2012 at New Delhi.

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Chapter 2

RURAL DEVELOPMENT CONCEPT AND DIMENSIONS

The effort to define 'rural' is not new. To define rural development, rural education or rural infrastructure, it is necessary to define rural first. 'According to Whitaker (1982), 'rural' was first used by the U.S. Bureau of the Census in 1874 when it was defined as indicating the population of a county exclusive of any cities or towns with 8,000 or more inhabitants. Modified over the years, by the 1980 census, a specific definition for rural had been dropped. Instead, the urban population is now defined as all persons living in urbanized areas and places of 2,500 or more located outside urbanized areas; all population not classified as urban constitutes the rural population' (U.S. Bureau of the Census, 1983).

'The term rural means an area which is characterised by non-urban style of life, occupational structure, social organisation and settlement pattern. 'Development' is defined in terms of technological or industrial development. But development of rural people means raising the standard of their living (Singh, 2003). Prof. Caiden says 'nobody really knows what the word development stands for any more. Economist identify with economic productivity; sociologists with social change or social differentials, political scientists with democratisation, political capacity or expended Government; administrators with bureaucratisation, optimum efficiency, performance or capacity to assume all burdens'.

According to Fred Riggs development is a movement towards freedom to choose goals and ability to realise them. H. Crops define rural development as a 'process through collective efforts, aimed at improving the well-being and self-realisation of people living outside the urbanisation area'. Mishra and Sunderam define rural development as not merely development of rural areas but also the development of quality of life of the rural masses into self-reliant and self-sustaining modern little communities. According to the quoted definition of Robert Chambers 'rural development is a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need. It involves helping the poorest among those who seek a livelihood in the rural areas to demand and control more of the benefits of rural development. The group includes small scale farmers, tenants and the landless'.

According to the paper of World Bank, rural development is ‘a strategy to improve the economic and social life of a specific group of people, the rural poor including small and marginal farmers, tenants and the landless’. Mahatma Gandhi’s view - ‘India is to be found not in its few cities but in its 70, 00,000 villages. But town dwellers have believed that India is to be found in its towns and the villages were created to minister to our needs. We have hardly paused to enquire if those poor folk get sufficient to eat and clothe themselves with and whether they have a roof to shelter themselves from sun and rain’. The concept of rural development is at top agenda and remains the main concern in national politics of the developing countries, because about 69 per cent population reside in rural areas and even in developed countries the rural areas cannot be ignored.

In fact the problem of improving the lives of 69 per cent population of rural areas assumed greater importance because of its explosive nature and vast number of people belongs to below poverty line. Logically urban area can neither develop without rural development. Soon after independence Government of India started its plan for planned growth with specific and clear objectives. The emphasis became more marked to achieve regional development, eradication of poverty and reducing disparities between urban and rural sector and within each sector itself. It has been experimented with number of rural development programmes with different goals, policy, logistics and approaches at different point of time. Various rural employment programmes were undertaken in order to develop infrastructure as well as to provide employment in the villages.

2.1. RURAL DEVELOPMENT: PRE-INDEPENDENCE VIEW

It has been well said ‘to know present, know the past, to change the present, reflect the past on to the future’. Therefore we should know the earlier efforts made by our Central Government and State Government for the development of rural areas in our country/state. The concept of rural development is not new. The improvement of the village life and development of rural economy are the chief concern and bigger challenge before the nation. Prior to the independence, the problem had received attention and well understood by the people like Rabindranath Tagore, F.L. Brayne, Spencer Hatch, Mahatma Gandhi, V.T. Krishnamachari and many others.

2.1.1. Shantiniketan: Rabindranath Tagore (1921)

Tagore's Shantiniketan, was the first systematic attempt towards this direction. Tagore is mainly known as philosopher and poet but he was also an educationalist, musician, actor and rural reformer. In all fields he had his own distinct style of work and left mark individually. It is strange to note that the great poet who mainly lived in his own world of ideas was a pioneer and originator of village uplift movement in India. In early nineteenth century Tagore first came in contact with village life when the management of ancestral Zamindari was handed to him. Then he saw poverty, life and suffering of people from close range and came to realize the solution for national regeneration was to be found in elevating the rural masses.

Tagore had few broad principles for rural reconstruction. He had no detail plans, for him removal of unhappiness was more important than the removal of poverty. So, he was very much worried about the joyless life of villagers and greatly differed from Gandhiji for whom the eradication of poverty was the first and leading problem. Helplessness of people is another aspect of village life which worried the poet and he wanted the people to stand in their own feet and cease to look others for help. To achieve this he believed in educating people and not in giving charity. He laid much stress on the principle of self-help in rural programme and on proper training of worker in various rural problems.

He believed that if work is done continuously within a limited area, its impact would emit outside and spread broadly. In 1908 he started his first experiment in rural reconstruction at Sialadaha (Bangladesh) and at Patisar (Rajashtan). In these two experiments the initiatives was from the poet and villagers and were only agreed to his suggestions. He was not happy with his early attempts and wanted to make more broad and intensive experiment in rural reconstruction. Therefore he started an Institute of Rural Reconstruction at Shantiniketan (Birbhum District) in 1921. Shantiniketan is a region where soil is poor, limited land, declining in cottage industries, conservative people, suspicious, poor and unhealthy. To rebuild such region was a difficult task. Shantiniketan Institute had four main departments:

Village Welfare Department - the activities under this department was divided under three heads. (i) Education - educational activities of the department were confined to opening

night schools, brati-balaks (Boys Scouts) and arranging lectures on rural and general problems. (ii) Sanitation and health - malaria was a great problem around Shantiniketan, about 80 per cent of the total deaths were due to it and it is also responsible for the decline in population and low birth rate. At first stage to fight against this disease, dispensary was set up at the expense of institute entirely; villagers did not try to help dispensary but they demanded medical services. So, the above service was discarded and a new Health Cooperatives scheme was set up in 1932. The Health Cooperatives was cooperative society of the villagers for providing medical facilities to them at reasonable rate. Each society maintained a dispensary with a qualified doctor and a compounder. (iii) Agriculture and industries - through demonstration better farming methods were shown to the farmers for improving agricultural production, seeds were distributed and to increase income of the villager's cottage industries were introduced. Credit cooperative societies were organised and poultry was developed.

Agriculture Department - these department tried to solve the diverse agricultural associated problems of the district as best as it could. Storage facilities were formed and commercial crops were introduced. Agriculture department demonstrated better methods of farming to improve fertility of soil. Special emphasis was laid on the selection of seeds, fertilizer and crop rotation, conservation of moisture and use of better equipment within the reach of the peasants. Beside land associated problem the agriculture department also tried to solve the problem related with poultry, cattle-breeding, fodder growing and vegetable gardening. Thus it tackles the blazing agricultural problems of the area and tried to resolve as much as it could under the conditions.

Industries Department - the chief objective of the industries department was to restart decaying cottage industries. It experimented with huge number of industries e.g. carpentry, embroidery, tailoring, weaving, book-binding, leather works etc. Industrial department had three aspects of work - production, training and marketing and extension. The main aim was to train young men engaged in various vocations so that they earn their livelihood from their respective crafts and established workshops for industries to help local artisans by providing raw materials and purchasing the finished products in cash by the institute. Thus the institute also offer employment to the workers, trained new hands and helped them to reconcile their life.

Education Department - Shiksha-Satra was a scheme of primary education introduced by Shantiniketan for rural reconstruction. The aim of this scheme was to offer freedom of growth to the child and field for self-expression in which life finds both happiness and training. There was no prescribed course, textbook, timetable and examination. It was a modified model of old ashram education where children lived with their teacher, washed their clothes, cooked meals, swept rooms, tended gardens. They lived with nature and studied nature. In girls school besides the three R's they were trained cooking, gardening and needlework.

2.1.2. Gurgaon Experiment: Frank Lugard Brayne (1927)

F.L. Brayne was appointed as the Deputy Commissioner of Gurgaon (Punjab) in 1920. He made an extensive tour in the district and saw at close range of ignorance and poverty of rural masses, his work did not end by sending his report to the Government like other officers. He verifies detail of a scheme and put it into practice with all means. It took seven years to achieve genuine result. Since then the scheme has become famous by the name of 'Gurgaon Experiment' (1927).

In the words of Mr. Brayne, the aim of the experiment was to 'jerk the villager out of his old groove, convince him that improvement was possible, and kill his fatalism by demonstrating that climate, disease and pests could be successfully fought'. The Gurgaon experiment was four-fold programme. It aims to (i) improve the farming (ii) reducing wasteful customs (iii) improving health and (iv) setting the home right - i.e. educating the women. Brayne's aim was not to make people rich but to make them happy like Tagore. In his scheme, stress was laid on agricultural production by adopting improved methods, he gave attention to develop the breed of cattle and emphasized programme in improving sanitation and public health.

Mr. Brayne also dedicated his attention to women's education and used school teachers to extend his ideas. Brayne's programme was a huge success and claimed that a 'new India had begun in Gurgaon'. The immediate results of Gurgaon in the field of animal husbandry, agriculture, cooperation were impressive, but it was short-lived programme. Within few months of Brayne's departure scheme neglected and failed down.

2.1.3. Marthandam: Spencer Hatch (1928)

Dr. Spencer Hatch undertook a programme almost at the same time as Brayne, at Marthandam formerly in Kerala and now in Tamil Nadu. This programme of rural development was experimented at and around Marthandam under the support of young Christian men's association. He was mostly interested in social aspects of rural areas and later on his efforts were built up in partnership with Christian church with special reference to juvenile delinquency (behaviour) among children. The selected area for intensive work was about 112sq.miles, comprising of 46 villages. It had a population of 45,000 persons out of which 24 percent were Christians, 72 per cent Hindus, and remaining 4 per cent consisted of Muslims and others.

The main objectives of Marthandam rural reconstruction were five fold, namely mental, spiritual, physical, economic and social. The programme was simple and inexpensive. All the experiments were perfect and planned at 'Rural Reconstruction Centre' before being demonstrated to the villagers. The method of work was self-help and intimate expert guidance. The chief media of propaganda used by the centre were rural exhibitions, dramas, inter-village competitions and demonstrations. Marthandam rural reconstruction was aimed at 'complete development - a wholly new and happier order'. The programme was comprehensive and the formula was 'self-help with intimate, expert counsel'. Except education and advice nothing is given free to the villagers. Marthandam consequently this programme seems to have limited influence and remained largely of the Christians, by the Christians and for the Christians.

2.1.4. Sevagram: Mahatma Gandhi (1931)

Gandhiji idea of rural reconstruction was experimented at Sevagram and his case was different from earlier rural reformers, such as Tagore, Brayne and Hatch and they never engrossed the attention of the whole country and more or less they remained localized. He started All India Spinners Association (1925) and All India Village Industries Association (1934), with a view to reducing the chronic underemployment and unemployment in the village. In his assorted activities he never forgot rural India and its appalling poverty, whose aim was to revive the dying village industries, propagate khadi to work for all round village development.

In order to have first hand information of village work he settled in Segoan and later he named Sevagram, a small village of 600 people near Wardha in April 1936. The village lacked in many basic facilities and requirements. At the age of 67 Gandhiji concentrated on village work and chose to stay in one roomed bamboo and mud hut. Gandhi's work began by sweeping the village lanes and advised the people to use a common place for latrines because sanitation was the basic factor for village upliftment. To learn spinning he asked to send their children to school.

Few industries were started in the village for providing work to people in their leisure hours under the support of All India Village Industries Association. To give them practical demonstration in order to improve agricultural techniques a part of ashram land was brought under cultivation with new crops. Small hospitals and dairies were also started. But the villagers were doubtful in the beginning and gradually the attitude of the villagers started changing for better. After that Gandhiji being preoccupied due to political problems could not devote more time for village work.

Gandhi's concept of rural reconstruction involved all-round development of rich and puissant life bringing into full and active play of all the resources of individual and envisages a society based on self-supporting and self-governing villages. It does not aim to abolish old village life, where necessities of life are available to all and where all enjoy, political, economic and social freedom as a result of hard work and cooperation within the individual of the society. So it is termed as 'Swaraj' - a complete emancipation because in such units of society the individuals do not depend upon any authority for the satisfaction of their basic daily needs.

2.1.5. Baroda Plan: V.T. Krishnamachari (1933)

V.T. Krishnamachari was trying to experiment in Baroda almost at same time of Sevagram. He was the Dewan of Baroda State and outlined the detailed plan of rural development during his charge of office. He attempts that rural development should be made in such a manner that improvement takes place in all its aspects of rural life. He believed that to raise the standard of villagers, it is necessary to create a desire of hope in them to that level of living. He emphasised the need for developing village leadership in order to continue the effort initiated by an agency.

The plan stressed on comprehensive improvements of programme related with all aspects of rural life. It also documented the role of panchayats as local leader and promoters of change, schools and cooperatives as centres of activities. V.T. Krishnamachari believed that programme of rural reconstruction was necessary to increase supplementary activities to promote agricultural production and that programme must be a part of broader programme. True that these earlier attempts were not called 'Community Development' or 'Rural Development' but in essence their aim was the same i.e. helping people to help themselves, which are the fundamental principle of Rural Development' (Setty, 2002).

Many of these earlier experiments come to an end when the directing hands were withdrawn, but still they give an idea about the way and their defects. Before independence the development plan created disparities and large number of its people remained unaffected by experiment. Thus, wide local and regional variations are created in most of the area. 'These imbalances can be corrected, as the planning commission has emphasized through grass root level or micro-level planning based on available local resources and the village community'(Planning Commission, 1969).

'Planning means management of men and materials available for achieving desired results. So, planning is pre-requisite for any desired goal, without which development cannot take place in right manner and in right direction' (Singh, 2003). For balanced development in a systematic way, it is essential to develop the deprived rural areas in the main stream development. Since independence, the planning was implementing as an approach to drag out the country from all kinds of problems and backlog. Present structure of rural development is being constructed on the remnants of such earlier experiments. Later on our national plan approach could be realised as it was not equally balanced and conquered by wholly economic and sectoral considerations.

The lack of integrated and harmonized approach towards development and planning appeared as the most powerful and visible reasons that accepted to poor development. Recently, all over the world rural development has been recognised as an indispensable measure of economic development. In simple way rural development means the development of the rural areas and may be broadly defined as outside the urbanised areas.

2.2. RURAL DEVELOPMENT THROUGH FIVE YEAR PLANS

In 1947 when India achieved freedom after British rule new era had begun for Indian population. The independent India had initiated a planned policy right from the beginning and number of efforts has been made by the country to free the nation from poverty and to eradicate socio-economic inequalities. Since then economic development of the country has been the prime subject of our planners. In this direction Five Year Plans laid the foundation for large scale public funded developmental activities in the country. The planning commission set out the four long term objectives of planning which are as under:

- To increase the production to the maximum possible extent so as to achieve higher level of national and per capita income.
- To achieve full employment.
- To reduce inequalities of income and wealth.
- To set up socialistic society based on equality and justice and absence of exploitation (Dutt and Sundaram, 2010).

According to the Planning Commission of India 'planning is not a one for all exercise for a five year period, it requires a constitutional watch on current or incipient trends, systematic observation of technical, economic and social data and adjustments of programmes in light of new requirements' (Krishnamachari and Venu, 1977). In order to grab these goals an inclusive development approach is needed, because most of the Indians are living in the villages and their upliftment will only make prosperous India. Accordingly rural development is assessed in terms of reduction of poverty in various forms in a society. Development strategies under Five Year Plans basically concentrated on achievement of high growth, reduction of poverty, food insecurity, social inequity and unemployment. The Five Year Plans stress on the role of rural institutions in achieving these developmental goals and suggest measures for building up the institutional strengths. Shifts in policy and paradigms that have taken place during last five and half decades in India's rural development are explained below with reference to Five Year Plans.

*First Five Year Plan (1951-56)***:** the targeted aim of First Five Year Plan was large scale agriculture production. In those periods nearly 43 per cent of country's geographical area was devoted to agricultural practices. Plan aimed to introduce land policy even though its

implementation had considerable regional disparities. To increase the employment opportunities and expand social services in wider scale was one of the main objectives of the plan. This could raise national income and a stable improvement in the living standard of the people over a period of time.

Rural reconstruction experiments of pre-independence era had generated the enthusiasm to adopt 'the whole village development' approach in 1950s. As an outcome an extension system was set up to provide support to farming community and coordinate all activities of rural life with active participation of people. During this Plan Community Development Programme (CDP) was introduced in 1952 which focus on the use of scientific knowledge in agriculture and allied activities and preparation of micro-level plan with people-participation.

'Development of three basic democratic village institutions - the school, the co-operative and panchayat was the core component of CD strategy (Rao, 2005)'. The main objective of CDP was to mobilize the local manpower and make coordinated effort of raising whole level of rural life. About 15 per cent of the plan funds were allotted for agriculture (including CDP) during this phase. Due to limited capacities and inadequate preparation of local administration and institutions resulted in limited out comes. CDP have very poor performance in education, health, housing rural communication and social welfare. But the creation of CD blocks was an effective measure in taking the Government close to the people. It also aims to increase the rate of investment from 5 per cent to about 7 per cent of the national income and completed its course on 21st March 1956.

Second Five Year Plan (1956-61): during this period foundations were laid for the emergence of democratic pattern of society. Institutional reforms constituted the main plank of this phase. Introduction of village and small scale industries provided non-farm employment in rural areas especially for the broad based agriculture and rural development. The prime focus of Second Plan was Co-operative farming with local participation. During this plan Khadi and Village Industries Programme, Housing Project Scheme, Multi-Purpose Tribal Development, Blocks Programmes and Package Programmes were launched. It stressed that the benefits of economic development should add more to the relatively less privileged sections of the society and there should be a progressive reduction in disparity. Main aim of the Second Plan were, to increase about

25 per cent in the national income, speedy industrialisation with particular emphasis on the development of heavy industries aimed at a large expansion of employment opportunities to reduce inequalities of wealth and income. In this plan the necessity was felt to improve local initiative like extension of health and educational services.

Third Five Year Plan (1961-66): almost same objectives of second plan was taken into consideration and totally devoted to improvement in agricultural production. Some progress was made in the field of public health, backward classes and tribes and houses for low income group. Priority was given to Applied Nutrition Programme, Rural Industries, agricultural development with different specific way like High Yielding Variety Programme, Intensive Agricultural Area Programme (IAAP) were introduced by involving district-level planning. It led to qualitative and quantitative changes in development perspectives. The HYV seed was introduced to manage the food crisis. Government had given much more focus on effective implementation of agricultural programmes for increasing production, efficient marketing and effective public distribution system in rural areas.

Fourth Five Year Plan (1969-74): the development programmes initiated in 1970s, were aimed at minimising the inequalities and reduce poverty. It gives emphasis to the need for redesigning socio-economic institutions for establishing justice. Special Area Programmes like Drought Prone Area Programme, Tribal Area Development Programme, Pilot Project for Tribal Development, Cash Scheme for Rural Employment and Programme for Women and Primary Scheme Children were started for the development of backward areas. With a view to reduce imbalance, the need for regional as well as district-level plans were emphasised during this Plan Period. It aimed to raise the living standard of the people through programmes and at the same time it intended to promote equality. The plan laid emphasis on improving the condition of vulnerable handicapped and other weaker sections of the society especially through the provision of education and employment.

Fifth Five Year Plan (1974-79): during Fifth Five Year Plan multi-level approach was adopted. The Minimum Need Programme (MNP) introduced in 1974 focusing on primary education, primary health, drinking water supply, supplementary nutrition, rural electrification, rural roads, and public distribution system brought about some improvements in the quality of life of rural people. The concept of Marginal Farmers and

Agricultural Labourers (MFAL), Hill Area Development Programme, ICDS, Food for Work Programme, Whole Village Development Programme, Training of Rural Youth for Self-Employment and Integrated Rural Development Programme (IRDP) was launched to eradicate poverty in rural areas. The focus was given to eradicate poverty and attainment of self-reliance through promotion of higher rate of growth.

Sixth Five Year Plan (1980-85): with the implementation of Sixth Five Year Plan a drastic change in Indian planning is noticeable. During this decade welfare concerns were reflected to greater extent in agriculture and rural development policies of the country. Rural development receives separate plan allocation for the first time in planning history. The Plan emphasized on strengthening the socio-economic infrastructure in rural areas and initiatives were taken to reduce disparities through the Integrated Rural Development Programme, National Rural Development Programme, PM's New Twenty-Point Programme, National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP).

It also introduced the location-specific planning with the aim to raise productivity through the strategy of growth with social justice and providing employment to the rural people. During this period Intensive and Integrated Rural Development Programme was started at the block level. In the light of high poverty and huge unemployment, the development perspectives of the eighties laid greater emphasis on reduction of poverty and removal of unemployment and underemployment as well as improving the efficiency of infrastructure in diverse sectors of the economy.

Seventh Five Year Plan (1985-90): in Seventh Five Year Plan, the NREP and RLEGP were merged into a single wage employment programmes called Jawahar Rozgar Yojana (JRY). The Indira Awaas Yojana and Million Wells Scheme were also launched during this plan. It stressed on new approach to create skill-based employment opportunities and raising productivity under different schemes. Special programmes for income generation through creation of assets, endowments and land reforms were formulated for the involvement of the people at the grass roots level. Main objective of 7^{th} Plan was to build self-reliant economy, to establish a social system based on equity and justice to reduce socio-economic differences. All these poverty alleviation programmes, coupled with improved sectoral performance led to a steep fall in rural poverty form 53 per cent in 1977-78 to 39 per cent by 1987-89.

Eighth Five Year Plan (1992-97): early 1990s witnessed enthusiastic reforms globally in economic sector. Thus, one may find the decade engaged with gradual liberalisation, privatisation and globalisation also in Indian economy. In the rural context, a major paradigm shift was revitalization of the Panchayati Raj Institutions (PRIs) and Government of India had made 73rd and 74th constitutional amendments act for the emergence of PRI. Through PRI active participation of women in developmental process and their empowerment in rural areas was envisaged and *Gramsabha* provides an opportunity to face democracy to the people. In 8th Plan Employment Assurance Scheme (EAS) and National Social Assistance Programme (NSAP) was added. The Plan emphasized to build rural infrastructure through people participation. A priority was given to roads, minor irrigation, soil conservation and social forestry.

Ninth Five Year Plan (1997-2002): the main objective of Ninth Plan was agriculture and rural development with view of generating employment. In Ninth Plan the major rural Development programmes the IRDP along with the allied programmes of TRYSEM, DWCRA and MWS have been merged into the Swaranyanti Gram Swarozgar Yojana (SGSY), while the JRY has been redesigned as Jawahar Gram Samridhi Yojana (JGSY). Annapurna Scheme, Pradhan Mantri Gramodaya Yojana - Gramin Awaas (PMGY-GA) and Jawahar Gram Samridhi Yojana (JGSY) has been launched. The changes were made to encourage the process of nation-building through decentralised planning. This plan laid stress on a genuine power towards decentralisation and people's participation in the planning process through institutional reforms. It emphasised on strengthening of Panchayat Raj and civil society groups to promote accountability, transparency and responsibility in development process. 'Ninth Plan onwards agrarian reforms, considered as an intervention to poverty alleviation and sustainable rural development, were brought back in practice (Pant, 2003)'.

Tenth Five Year Plan (2002-07): the 10th Five Year Plan aimed at transforming the national economy into the fastest growing on the basis of GDP growth during the last decade. The 10th Plan initiated Bharat Nirman for rural roads creating better rural infrastructural facilities. Sarva Siksha Abhiyan (SSA) was introduced for good quality education. It also started the process of sustainable use of land and waste land reclamation for agriculture. The Tenth Plan has strategically been re-stressed in the following thrust areas:

- Greater access to potable drinking water, better roads, educational infrastructure particularly for primary education and extension of quality health services. Uninterrupted availability of power to agriculture and revitalisation of the irrigation network.
- Generation of additional employment opportunities in the private sector by promoting investment, improving marketable vocational skills with widespread use of information technology.
- Upliftment of underprivileged sections by enhancing beneficiary-oriented social security programmes, as well as specific employment generating programmes to increase their income and improve the quality of life.
- Strengthening the process of rural renewal by greater thrust to schemes for reaching out quality facilities to rural population.

During 10th Plan focus was given to generate quality employment and reduction in poverty. The experience of the schemes during the 9th Plan is the foundation upon which the further policy was laid. Wage Employment Programmes, Infrastructure Development Programmes, Rural Housing, National Social Assistance Programme (NSAP) has been continued during the 10th Plan as well. Similarly the programmes which help in creation of basic infrastructure at village level which provide houses to the shelter less and social security to the poorest of the poor has also continued. In 10th Plan the entire existing rural housing programme has merged into a single integrated programme and it has to be implemented throughout the country on a uniform basis. According to this plan 30 per cent of the elected members of PRIs have to be women.

Eleventh Five Year Plan (2007-12): the major emphasis of the plan was on social sector, including agriculture, education and rural development. The plan aims to reduce the level of poverty by 10 percentages by generating 70 million new employment opportunities and ensuring electricity connection to all villages. The plan also proposes to raise investment on infrastructure sector including irrigation, drinking water and sewage from 5 per cent of GDP in 2005-06 to 9 per cent by 2011-12. Programme like Mahatma Gandhi Rural Employment Guarantee Scheme (MGREGS) was introduced to provide more relief to rural poor, ensure inclusive growth, to give greater incentives for infrastructure and sustainable development in villages. Government has drawn a comprehensive plan to improve education sector and efforts are made to retain mid-day

meals till class VIII. In Sikkim Panchayats prepared 11th plan and passed their respective plans in Gram Sabha's and forwarded to the DPCs for consolidation and submitted to the Development Planning, Economic Reforms and NECA Department in 2006. Gram Planning Forum prepared these Plans which consists of all elected Gram Panchayat members, concerned Zilla member, all village level line departments functionaries and 5 experts who were nominated in Gram Sabha'(RMDD Govt. of Sikkim, 2008).

2.3. PLANS AND RURAL DEVELOPMENT PROGRAMMES

After mid-sixties, Government of India decided to change the concept and meaning of 'rural development'. Earlier rural development was known as agricultural development and community development covering the entire population of rural areas. However, rural development is viewed narrowly as a strategy design to improve the economic and social life of a specific group of rural people. Rural development involved both socio-political and economic development of rural areas as part of the modernisation of the entire society and distribution mechanism of overall development.

While policy makers and the development community have widely used the phrase 'rural development', what constitutes rural development seems to have changed significantly over time. How did the concept of 'rural development' evolve over time in the past 3 decades? What does 'inclusive rural development' mean? Addressing these two basic interrelated questions is important to put the issues relating to inclusive rural development in perspective. During the last 3 decades the concept of rural development has changed significantly. Rural development was synonymous with agricultural development until 1970s and hence focus was given to increase agricultural production.

This focus has been determined primarily by the interests of industrialist to extract surplus from the agriculture sector to support industries. The stated objective was to promote smallholder agriculture with the focus on rising agricultural production. Over time this agriculture-centric concept of rural development undergoes changes. According to Harris, by the early 1980s, the World Bank defined rural development as 'a strategy designed to improve the economic and social life of a specific group of people the rural poor'. With the concept change in economic development, the rural development has begun to use in a broader sense and it is more precise. In recent years improved concerns of economic growth on the environmental aspects have also influenced the changes.

Present concept of rural development is very different from that used before. The concept now includes a measurement of changes in the quality of life, environmentally safe living condition, improvement in nutrition and health, transport and communication, education and reduction in inequalities between gender and income. Now there seems to be a widespread accord that the ultimate objective of rural development is to improve the quality of life of rural people. This makes it necessary to go beyond the cause which influence the quality of life and hence inclusiveness of rural development.

Inclusive rural development is a more precise concept than the concept of rural development. In broad terms, inclusive rural development is about improving the quality of life of all members of rural society (Fig: 2.1). More specifically, inclusive rural development covers three different but interrelated dimensions. The first is the economic dimension that encompasses providing both capacity and opportunities for the poor and low-income rural households in particular to benefit from the economic growth process in such a way that their average incomes grow at a higher rate than the growth of average incomes in the sector as a whole.

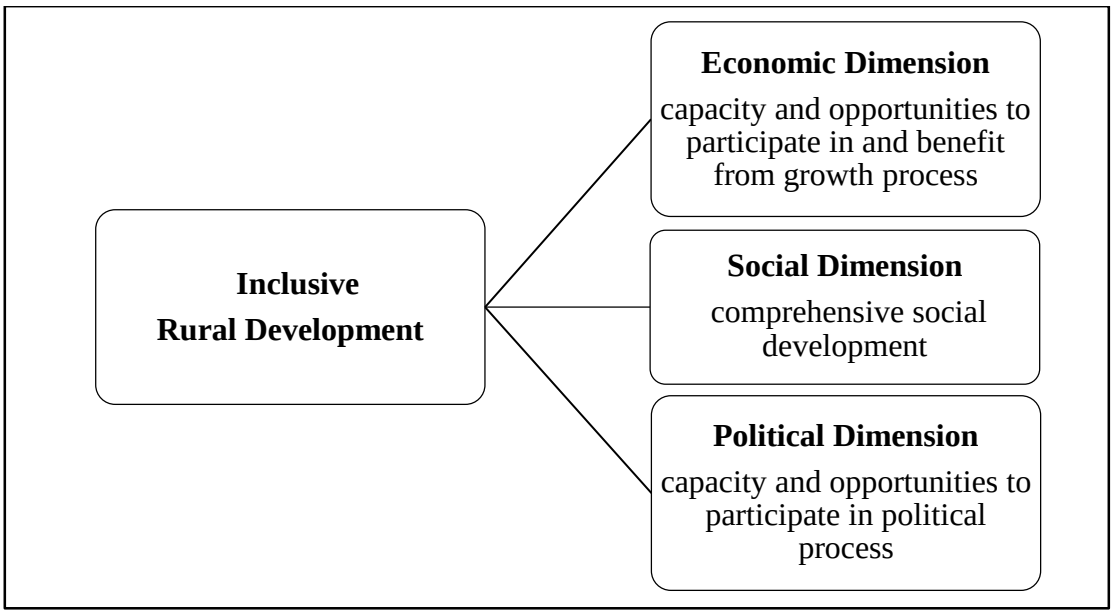

Fig: 2.1 (Source: Fernando, 2008)

Economic dimension also includes measures to reduce intra and inter-sectoral income inequalities to reasonable levels. Second is the social dimension of supporting social development of poor and low-income households and disadvantaged groups, eliminating inequalities in social indicators, promoting gender equality and women's empowerment, and providing social safety nets for vulnerable groups. Third is the

political dimension of improving opportunities for the poor and low-income people in rural areas, including women and ethnic minorities, to effectively and equally participate in the political processes at the village level and beyond compared with any other categories of the population within and outside the rural areas. If the rural-urban relationship is to be corrected then the rural development is unavoidable. So, rural development is flexible concept, multi-dimensional process, deeper in impact, wider in scope and every one interprets in their own way, but the broad accord is that more importance should be specified to development activities which mostly concern with the rural areas to enhance the quality of life of rural poor.

'Presently, the development challenges before rural development process include achieving sustainable economic growth, alleviating poverty, providing essential economic and social services to the underprivileged sections, building up necessary infrastructure, creating employment opportunities, improving administrative governance, providing justice and the most significant of all, developing human capital resources' (Sisodia, 2007). To struggle with these challenges, the planner and policy makers are stressing that Indian planning policy and development plan should be focused on the expansion of agricultural production, livestock, labour based, construction and housing, cottage and agro-processing industries, export, information technology and telecommunication.

All of these have strong potentials to create jobs and self-employment opportunities at grass roots level. Through development plan the primary mission of Government is to improve the standard of living of its rural poor. In this condition, the most sustainable and effective means of reducing rural poverty and economic growth would be the core concern of the Government. To achieve these goals, the effective implementation of each programme need political determination, social commitment and practical group effort among different ministers, stakeholders and other line departments.

Keeping in overall view of development 73rd Constitution Amendment Act, 1992 has given the approval to set up a three-tier structure of the Panchayat Raj Institutions (PRIs), enabling them to assume the responsibility of self-governing institutions at micro-levels of administration for decentralised planning and management. The core objective of decentralization is to enable people to decide on matters pertaining to their day to day life through the institution of panchayats. 'In Sikkim the concept of Panchayat Raj is not extraterrestrial. In earlier period the State was almost entirely concerned with urban

affairs and neglected the rural poor, who were allowed to run their affairs themselves. However, the modern State has taken excellent interest in rural affairs due to the emergence of political consciousness among the rural masses. Nevertheless, the State had their own councils of traditional panchayats called *'panchayats'* in Nepali language and *'gyeme'* (village leader) in Bhutia language. The traditional panchayats were not concerned with the welfare activities of the areas and they were mainly concerned with the trial of petty village cases which were referred to them by the judicial authorities.

The number of members of the panchayats were not fixed and nor were they permanent. They usually consisted of five people or *'paanch'* as the name suggested. The first recorded attempt to establish panchayats in Sikkim was made in 1948, immediately after the abolition of Zamindari and Addas under the landlords. The leaseholder system was dropped and people obtained right to pay direct tax of land to the State. A trignometrical survey was made of all lands and land rent assessed on the basis of this survey. The Sikkim Panchayat Act of 1965 was promulgated to consolidate and improve the laws relating to the panchayats in State to assist rural development and enable by all communities involvement at the village level.

The first Panchayat elections were held in 1966 under the supervision of the Chief Secretary who was the Chief Election Officer and the Land Revenue Secretary to the Sikkim Government. In 1982, a new act was enacted which created the constitution of the Zilla or District Panchayat. Sikkim Panchayat Act 1993 was enacted and notified on 18 October 1993. This act follows the guidelines laid down by the constitution 73rd Amendment Act, 1992 for the constitution of Panchayat in the State. The first election under this Act was initiated in 2002-03 with devolution of specific function, transfer of enhanced grants and posting of suitable manpower to the panchayats.

The term of panchayats is 5 years, from the date of first meeting of the newly nominated panchayat members. Sikkim follows a two-tier system of Panchayati Raj with the Zilla Panchayat at the District level and Gram Panchayat at the village level. The panchayati Raj Institutions (PRIs) of Sikkim are empowered to function as 'institutions of self Government', enhancing their power to plan and implement various schemes of economic development and social justice under Article 243G of the constitution of India. Though, various developmental programmes are targeted towards the backward and weaker sections of society. Generally they do not get adequate representation in the

development process, with a view to involve the backward and weaker sections of the society in daily developmental activities. The Sikkim Panchayat Act, 1993 provides reservation seats for the Women, Schedule Castes and Schedule Tribes of the State are made in accordance with their population in both tiers of the PRIs. It ensured direct involvement of women in position of decision making; elected women representatives are slowly bringing change in rural society by bringing women, child and social related issues to the forefront.

Further the Rural Management and Development Department (RM&DD) is of firm opinion that the panchayats can fulfil their responsibilities as institutions of self governance if decentralization is patterned between namely the three (Fs) functions, finances and functionaries. Thus, it has been ensured that the decentralization is made through legislative action rather than administrative orders. The Panchayats of different levels should be aware of the funds which are to be placed at its clearance. This is an important requirement for every tier of the PRIs to prepare plans of their respective areas. The gram and zilla plans are consolidated by District Planning Committees (DPC) and forward to State planning board for combining in State annual plan.

Strict monitoring and evaluation of the funds devolved to Panchayati Raj Institutions are done by State Level Vigilance and Monitoring Committees. In order to identify the beneficiary oriented alleviation schemes and transparent governance the full power has been given to the ward and *gramsabha*. Opportunity is provided to the people to voice their desire. Sikkim Panchayat Act of 2005 was amended to add a provision for one-third reservation for women in the quorum of a gram and ward Sabha to ensure active participation of women in all decision making. In 2012, 50 per cent reservations are provided for women for the post of Gram Panchayat, Zilla Panchayat, Up-Adhyaksha and Adhyaksha. Sikkim being a part of India for less than 40 years has also made name for itself as one of the best managed States in India.

On 24, April 2012 Union Government has ranked Sikkim State as the best State in the country in the category of its outstanding performance in strengthening and developing the Panchayati Raj institutions. In December 2002, Sikkim was added in the North Eastern Council, which was a major achievement for the State and it also gives an access to central funds allocated for incentive programmes in the region. It not only helps Sikkim to build up financial support for its agricultural and industrial set up but also

enhances its human capital. Government has mapped out a developmental plan for long-term strategy of achieving 100 per cent literacy, employment generation and poverty eradication, improving the livelihood, youth empowerment and sustainable health. In order to bottom-up development the Government decentralized power to local communities and women are viewed as absolute component of programme. So the wheels for achieving the goal for the development of State, various leaders and bureaucrats from various departments and civil societies have been involved in the formulation of development programmes. In order to achieve targeting goal and to eradicate poverty various anti-poverty programmes have been launched by the Central and State Government from time to time. Some of these programmes are as under:

Programmes on Minimum Basic Needs

- Public Distribution System (PDS)
- Rural Water Supply Programme
- Rural Sanitation
- Rural Electrification

Self-employment Programmes

- Integrated Rural Development Programme (IRDP)
- Training for Rural Youth for Self Employment (TRYSEM)
- Development of Women and Child in Rural Areas (DWCRA)
- Swarnajayanti Gram Swarozgar Yojana (SGSY)

Wage Employment Generating Schemes (WEGS)

- Jawahar Rozgar Yojana (JRY)
- Sampoorna Grameen RozgarYojana (SGRY)
- Employment Assurance Schemes (EAS)
- National Food-for-Work Programme (NFFWP)
- National Rural Employment Guarantee Scheme (NREGS)

Social Welfare Oriented Programmes (SWOP)

- National Social Assistance Programme (NSAP)
- Aam Admi Bima Yojana (AABY)
- Rashtriya Swashtya Bima Yojana (RSBY)
- National Old Age Pension Scheme
- National Family Benefit Scheme
- National Maternity Benefit Scheme

- Integrated Child Development Service (ICDS)
- Balika Samridhi Yojana
- Early Child Care Scheme
- National Handicap Aid Programme
- National Widow Grants in Aid Scheme

Rural Housing Schemes

- Indira Awaas Yojana (IAY)
- Mukhya Mantri Awaas Yojana (MMAY)

Special Area Programme

- Drought Prone Areas Programme (DPAP)
- Desert Development Programme (DDP)

Programmes on Education

- Schemes for Scholarship for Primary Education
- Mid-Day Meal Scheme
- Adult Education or Neo-Literate Programmes
- Sarva Shiksha Abhiyan (SSA)

Other Programmes

- Rajiv Gandhi National Drinking Water Mission
- Backward Region Grant Fund (BRGF)
- State Rural Business Hub (SRBH)
- Rural Produced Marketing Centre (RPMC)
- Sikkim Renewable Energy Development Agency (SREDA)
- Pradhan Mantri Gram Sadak Yojana (PMGSY)
- Model Village

2.4. WOMAN EMPOWERMENT PROGRAMMES

Government of India has launched several schemes for the welfare of the girl child and to reduce discrimination against the girl child. The State Government has also implemented some of this plan for further development of the masses. Sikkim Women's Commission was formed on 12th November 2001. The Commission for Protection of Child Rights Act, 2005 was implemented in the State in 2007 and thereafter the Sikkim Commission for Protection of Child Rights was set up in January 2008. Sikkim Government has been made compulsory to mention the name of the mother along with

father in all official documents. All benefits are provided in the name of the mother of the family. Since 7th November, 1995, women are provided with maternity facilities. Women labourers during post-natal period are given leave and Rs.30 as maternity allowance. Nowadays, this amount has been raised to Rs.500. Prerna Yojana provides additional facilities to girls in the field of education. Balika Samridhi Yojana was introduced in 1997. Under this program Rs.500 is deposited in the name of a girl child of a BPL family born on or after 15th August 1997. Laghu Pariwar Yojana was launched on 1st April 1997, for the sake of the girl child. The program seeks to delay the marriage of girls till she reaches appropriate age and also encourages them to maintain adequate space between childbirths and to encourage them to pursue higher education.

Kishore Shakti Yojana was first launched as a pilot project in the North district in 2000-01 and extended to other districts from 2005-06. This programme seeks to provide proper nutrition and health care for girls between the ages of 11-18 years. This scheme also provides vocational and capacity building training. Grant of Rs.10, 000 is being provided to widows. Bidawa Punarbibhaha Yojana was started in 1995, under this scheme a cash incentive of Rs. 10,000 is given to those persons who marry widows. Swayamsiddha Yojana was started with the aim of achieving holistic socio-economic development of women. Under this program rural women are trained to save money and they are also made a part of the local planning process. There are 988 Integrated Child Development Services (ICDS) centres in Sikkim. The Centre is under the care of one Anganwadi worker and helper; it takes care of children below 6 years of age. The children are given preschool education along with other related services. In addition, expecting women and nursing mothers are also given care.

The Hot Meal programme was launched on 14th August 2009 by Chief Minister of Sikkim for ICDS attending children from the age of 3 to 6 years, where they are fed with hot meals, milk and Take Home Ration (THR). 'Mamtalaya' was set up in 1997 at Sichey near Gangtok. It provides shelter, health facilities, counselling services and vocational training for helpless women. About 115 crèches have been opened all over the State to look after the children of working women. These crèches are managed by the NGOs and grants are regularly provided to them by the Government. Sikkim Immoral Trafficking (Prevention) Rules, 1990 has been notified under the Prevention of Immoral Trafficking Act 1956, for the safeguard of women and children against any form of

exploitation. The State Government has enforced the Protection Act in 2005 for Women from Domestic Violence. The Act endeavours to provide both Civil and Criminal remedies without too many procedural hassles making it accessible for the aggrieved women to approach the system and obtain relief. It provides quick and easy remedy to a victim of domestic violence. Small Family Scheme is a State program launched in 1997, which aims to rise the age of marriage of girls and reduce the family size to a maximum two children per family. Girls of 13 years are registered under the scheme, Rs. 8000 per beneficiary is deposited in the State Bank of Sikkim for a period of 8 years, when the girl reaches 21 years of age she becomes eligible for first incentive of Rs. 2000, If she marries only after attaining 22 years of age then additional Rs. 500 paid to her. If she marries only after 23 years of age again additional Rs. 1000 is paid to her.

On the basis of above brief assessment it can be said that there is clear paradigm shift in rural development planning in India as well as in Sikkim. Rural Development is the nodal division for subjects relating to implementation of various rural development programmes, employment generation in rural areas, poverty eradication, development and management of resources, watershed and degraded land towards enhancing the absorptive capacities of the people. Most of the governmental initiatives are designed to improve the quality of life of the people. Eradication of poverty and provision of basic minimum services are the fundamental elements of any developmental strategy. Developmental process cannot be sustainable unless it leads to visible improvement in the related areas. Alleviation of rural poverty has been one of the primary objectives of planned development in India.

Even since the inception of planning policies and programmes have been designed and redesigned with this aim. It is clear that rapid employment expansion, good health, education, water supply, sanitation, infrastructure and communication facilities will be essential for poverty reduction. Good governance in the states is crucial for prosperous development of the nation. Since from Vedic age, the rural village was the basic unit of administration and it has been still continuous and may remain in future as a land of village communities. India's national economy is mainly rural in character and very high proportion of its population still lived in rural areas. Rural development is therefore an urgent and extreme necessity in India and will be continued to be so in an upcoming.

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Chapter 3

DEMOGRAPHIC ASPECTS AND DEVELOPMENT

Man is the base of all resources and according to their needs man played an important role as modifier, regulator and controller of the resources. So man himself is considered as the most important and valuable resources of the earth. Man is the central theme of all different interrelated fields. If we know more about the population composition of the area then the implementation of the developmental tasks will be more fruitful and effective. Thus human resources can be analyzed in the form of location characteristics and sequential growth of various components. In the base of above the demographic aspects of population have been discussed in the present study. The term demography is derived from the Greek word ‘demos’ means human being.

The term seems to have coined for the first time by a Belgian statistician Achille Guillard in 1955 in the article entitled ‘Elements of human statistics or comparative demography’ (Shryock and Siegel, 1971). According to Van de Walle 1982, the term demography has both narrow and wider definition. In narrow terms demography is defined as ‘the scientific study of human population, primarily with respect to their size, their structure and their development’. Thus it is considered as a scientific study of the human population with regards to their size, development and spatial distribution and changes over the time. In its wider definition, it is also called population studies; it not only deals with levels and changes in the size, composition and distribution of the population but also with the causes and consequences of the levels and changes.

‘Since human factor has been recognized as an important factor of development, the analysis of various population indicators related to the certain geographical unit has become necessary’ (Dave, 1991). ‘An indicator or a group of indicators is a means that can recommend the strength of any system. The United Nations defines indicators as not datasets, rather models which simplify a complex subject to a few numbers that are easy to understand and grasp by policy makers. Indicators can translate physical and social science knowledge into manageable units of information that can facilitate the decision-making process’ (UNCSD, 1996; UNCHS, 1997).

'Indicators are pieces of information, which have wider significance than their immediate meaning (Bakkes et al., 1994). Recently the efforts have been made to construct indicators in different extent in order to follow sustainability i.e. the progress towards the goal of sustainable development (Dhakal, 2002). They are popularly known as sustainable development indicators (SDIs). SDIs perform functions of both proactive and reactive nature. They are like early warning systems which when carefully designed, closely watched, and wisely interpreted can not only show the critical aspect of the socio-economic-environmental status of the community but also influence the policy decisions, monitor their effectiveness and facilitate community action' (DEAT, 2001). The distribution of population is controlled by various factors. The present chapter deals with the growth and distribution, density of population, sex ratio, literacy, occupational structure and workforce of Yuksam development block.

3.1. POPULATION GROWTH AND DISTRIBUTION

Demography is the study of population and it focus on the factors that influence the population composition. It involves specially birth, death and growth patterns, division of population on the basis of sex, age, density and other factor which influence population study. 'The concept of population change or growth of the population is often used to connote to the change in the number of inhabitants of the territory during a specific period of time. Such a change can be expressed both in terms of absolute numbers and in terms of percentage' (Chandana, 2003). 'The change in size of a population is called population growth' (Ramakumar, 1986). 'Distribution of population means spatial arrangement of people in a region, which is mainly based on the aggregate of investigation about the people within small areal unit of a region.

Population distribution is a dynamic process, which is ever changing and its course and effect vary in spatio-temporal form' (Clark, 1973). 'The analysis of population distribution and density is fundamental for understanding the population geography of any area' (Chandana & Sidhu, 1980). The population distribution is also influenced by the availability of fertile agricultural land, transport and communication, education and marketing facilities. According to the census of India 2011, the total population of Sikkim was 6, 07,688 among which 3, 21,661 were male and 2, 86,027 were female. This gives an average density of 86 persons/sq.km. This is very low as compared to the density of the country which is 382 persons/sq.km.

For understanding and planning at the local, regional and national level the idea of population growth of an area is very important. Recent trend of population growth in district level of Sikkim has been examined here in the perspective of last two decades as a whole. The percentage of decadal growth rate of population was recorded as 12.36 percent in 2001-2011 and its rate varied among the district. The highest decadal growth was recorded in the East district with 14.8 per cent, followed by South with 11.57 per cent, West 10.59 per cent and lowest growth is recorded in North district 5.67 per cent (Appendix - C). The study of population density under different district shows its own peculiarities. The highest population density was recorded in East district 295 persons/sq.km and lowest was recorded in North district with 10 persons/sq.km.

3.2. DENSITY OF POPULATION

Population density is another important measure of population studies. Density is the ratio between population and land. According to Clark (1977) 'density of population refers to a ratio between the number of people and area of land they occupy in term of per unit area. Population density is useful abstraction assisting in the analysis of diversity of man's distribution in space'. Distribution of population and concept of density are quite interrelated, the population geographers make distinction between these two terms for analytical purposes.

'The distribution pattern happens to be locational with reference to both physical and cultural environment. Whereas, density of population is related to the total population of the area and total agricultural land and so on. The factors that affect the spatial aspect of population are complex and varied' (Trewartha, 1969). The distribution and density of population is largely affected by the physical environment (landform, climate, soil, resources, raw material and accessibility), demographic factors, cultural patterns and history of an area. There are various types of density i.e. arithmetic density, agricultural density, physiological density and nutritional density etc.

Arithmetic density is the most common type of population density and it assessed in relation to total population and total area. The arithmetic density is calculated in the following manner:

$$\text{Arithmetic Density} = \frac{\text{Total Population}}{\text{Total Geographical Area}}$$

Physiological density is defined as the ratio between total population dependent on per hectare of cultivated area of a region. Physiological density reveals population pressure upon arable/cultivated land. Thus it is considered as a more significant indicator of a particular region. The physiological density is calculated by using the following method:

$$\text{Physiological Density} = \frac{\text{Total Population}}{\text{Arable Land}}$$

Agricultural density is the ratio between the numbers of people engaged in agriculture per unit of cultivated land at a definite time. It has been calculated as a number of agricultural populations per hectare of agricultural land. It is an effective measure and useful index to measure the man-land relationship and gives more realistic view of population density of an area. Agricultural density can be calculated by following method:

$$\text{Agricultural Density} = \frac{\text{Total Agricultural Population}}{\text{Net Cultivated Land}}$$

Wherever, the people engaged in agricultural activities are high then the agricultural density is also found high and vice-versa.

3.2.1. Average Area per GPUs

Yuksam Development Block had a population of 13,431 in 1991 increase to17,056 in 2001 to 17,334 persons in 2008, which is distributed over 10,457 hectares and exhibits great inequality and spatial variation. Similarly the average area per GPU has also been calculated for the year 2008. It is 1162 hectare per GPU and there are wide variations in the average area per GPUs. Tashiding GPU with an area of 2098 hectare has largest area whereas Gerethang GPU has the lowest area of 708 hectare, which is lower than the average area (1162 ha) under the development block (Fig. 3.1).

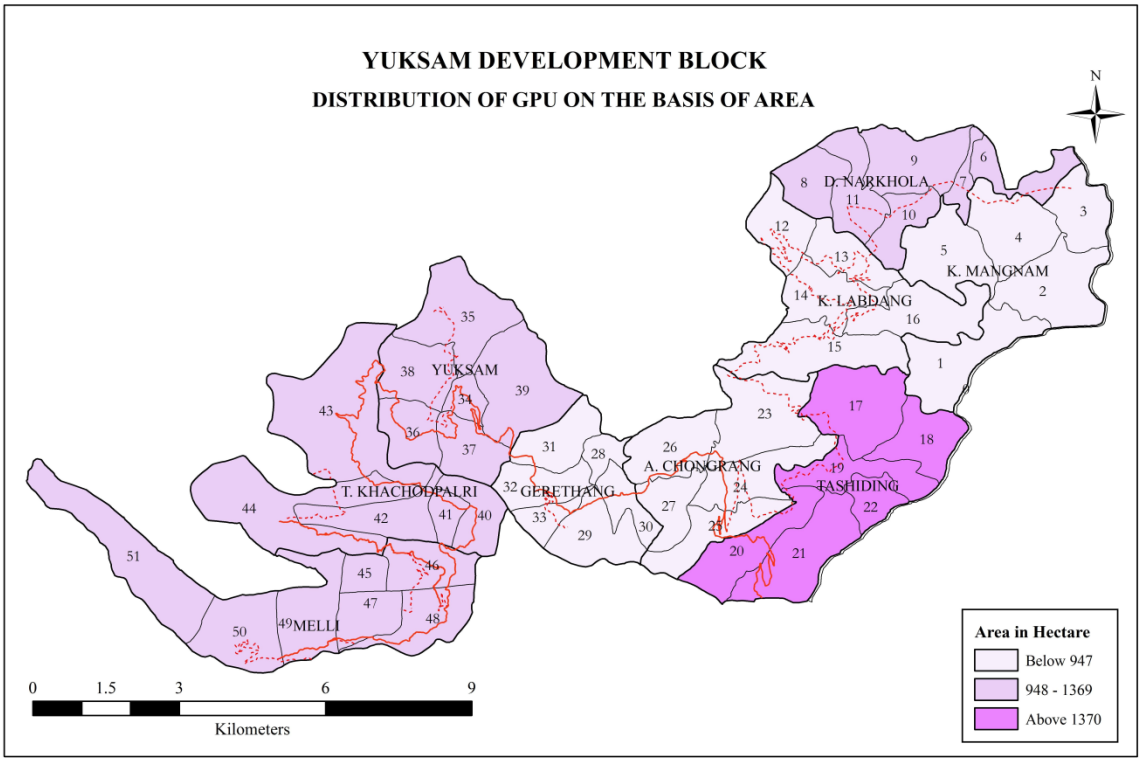


Fig: 3.1

3.2.2. Population Density among the GPUs

In demographic study, population density is one of the most important aspects which throw light on the concentration of population in a particular area. In 1991, the density of population in Yuksam development block was 2 persons/ha. While, again in 2001 for the block as a whole it was recorded as 2 persons/ha. The data reveals that from 1991 to 2001 there is steady increase in density and it was uneven among the GPUs (Table. 3.1, Fig. 3.2 and 3.3).

Table 3.1: Population Density and Sex-ratio

Name of the GPU	Area (In ha.)	Density1991 (persons/ha)	Density 2001 (persons/ha)	Sex-ratio 1991	Sex-ratio 2001
K. Mangnam	946	1	1	964	909
D. Narkhola	1135	1	1	966	944
K. Labdang	947	1	1	877	871
Tashiding	2098	2	2	904	873
A. Chongrang	905	2	3	875	866
Gerethang	708	3	3	817	847
Yuksam	1150	2	2	881	867
T. Khachodpalri	1199	2	2	890	887
Melli	1369	2	2	910	935
Total	10,457	2	2	888	883

Source: Census, 1991 and 2001.

On the basis of population density three distinct population density regions can be identified in Yuksam development block. The area having population density of 1 persons/ha shows low density. In 1991 there were three GPUs under this category, namely K.Mangnam, D.Narkhola and K.Labdang GPU.

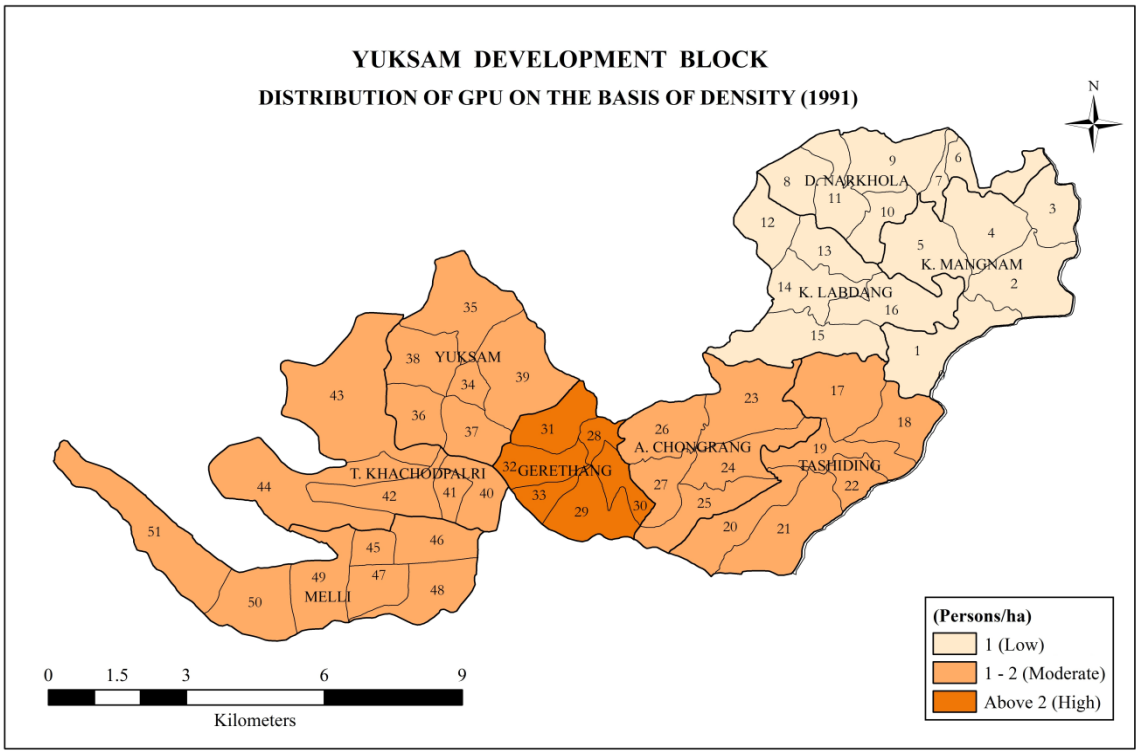


Fig: 3.2

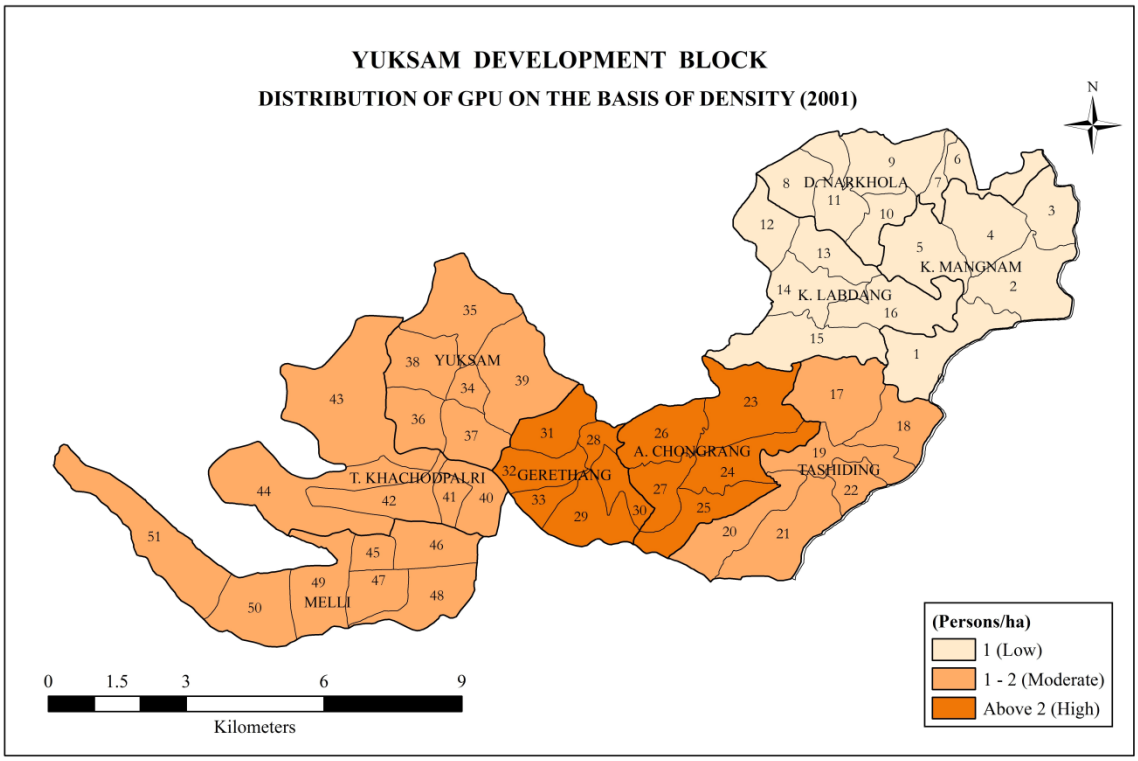


Fig: 3.3

It is interesting to note again in 2001 these three GPUs (K.Mangnam, D.Narkhola and K.Labdang GPU) remain under the same category. It shows that five GPUs namely Tashiding, A. Chongrang, Yuksam, T. Khachodpalri and Melli GPUs were under moderate density ranges between 1-2 persons/ha during 1991. But in 2001 this number decreased to four, these GPUs are Tashiding, Yuksam, T.Khachodpalri and Melli GPU. Population density above 2 persons/ha has been termed here as high category. Only Gerethang GPU was under this category in 1991. But in 2001, A.Chongrang GPU was included under this category. It may be due to increase in population during 1991-2001.

3.2.3. Distribution of GPU on the basis of Population Size

According to the number of people inhabiting in the GPUs, the study area can be divided into 3 category of population size. The first categories have a population of above 2545 persons lying in Tashiding GPU with an area of 20 per cent (Table. 3.2 and Fig. 3.4). About 5 GPU namely A.Chongrang, Gerethang, Yuksam, T.Khachodpalri and Melli are within the second category of population size with an area of 51 per cent. The third and last category of population size below 1025 persons which was taken into consideration and it was observed in K.Mangnam, D.Narkhola and K.Labdang GPU covering an area of 28.9 per cent.

Table 3.2: Distribution of GPU on the basis of Population Size

Category	Population Size	GPU (in number)	Area (in hectare)	Name of the GPU
High	Above 2545	1	2098	Tashiding
Moderate	1026 - 2544	5	5331	A.Chongrang, Gerethang, Yuksam, T. Khachodpalri, Melli
Low	Below 1025	3	3028	K. Mangnam, D. Narkhola, K. Labdang

Source: Census, 2001.

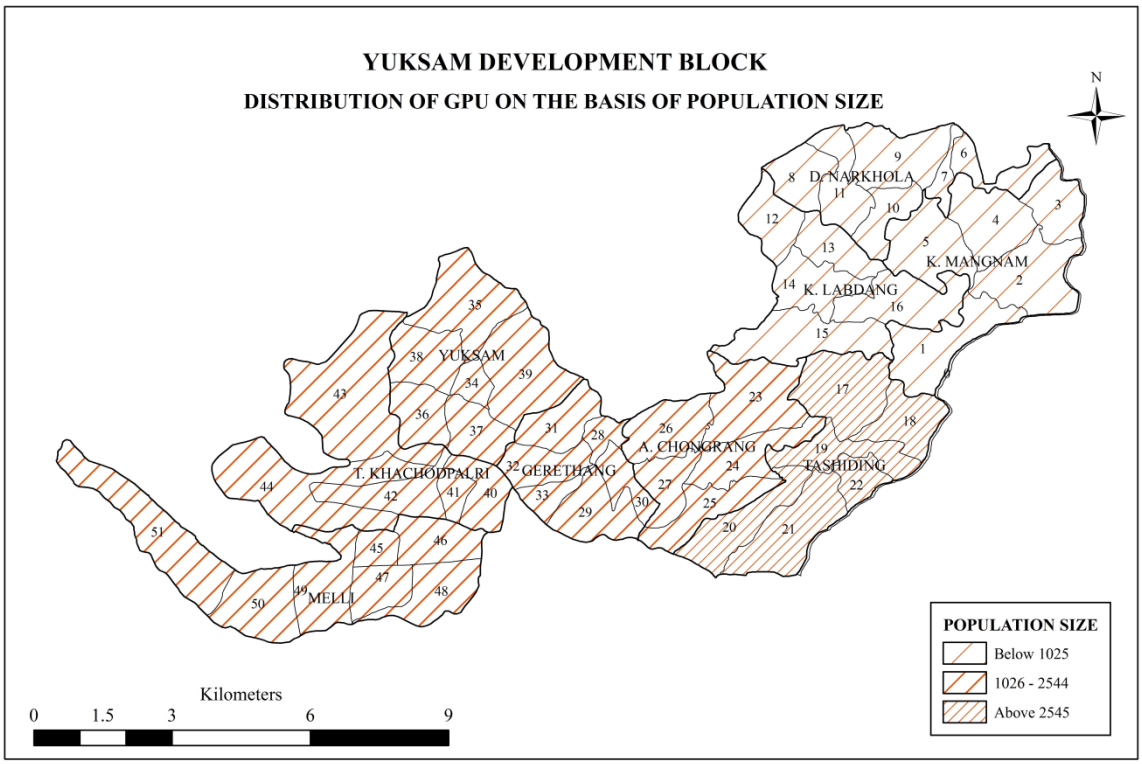


Fig: 3.4

3.3. SEX RATIO

The concern of sex ratio has been quite interesting in Sikkim. Sikkim is unquestionably a male dominated society i.e. 889 females per 1000 males in the year 2011 which has increased from 875 females per 1000 males in 2001. This means a deficit of 111 females to reach the balance point. It is an important social indicator related to population biological characteristics. It is defined as the number of females per thousand males and plays an important role in a society at a given point of time. In between 1971 to 2011 the sex ratio of the State was dropped in 1981 and in 2001. Inter-district comparison in Sikkim shows that the sex ratio is higher in West district with 941 females per thousand males and the North district has recorded lowest sex ratio in the State with 769 females per thousand males (Appendix - D).

There was also a difference in the ratio of female population residing in the villages observed in 1991-2001. Out of 9 GPUs there were 7 GPUs in which the sex ratio was dropped in the year 2001 (Table. 3.1, Fig. 3.5 and 3.6). Melli and Gerethang GPUs was recorded the increased sex ratio within the development block. In general during 2001, Yuksam development block had 883 females per thousand males' populations against the State ratio of 875 females per thousand males. This situation may be appeared

because of rural population migrate to the urban area for employment. The general range of sex ratio varies from 847 females per thousand males in Gerethang to 944 females per thousand males in D.Narkhola GPU respectively.

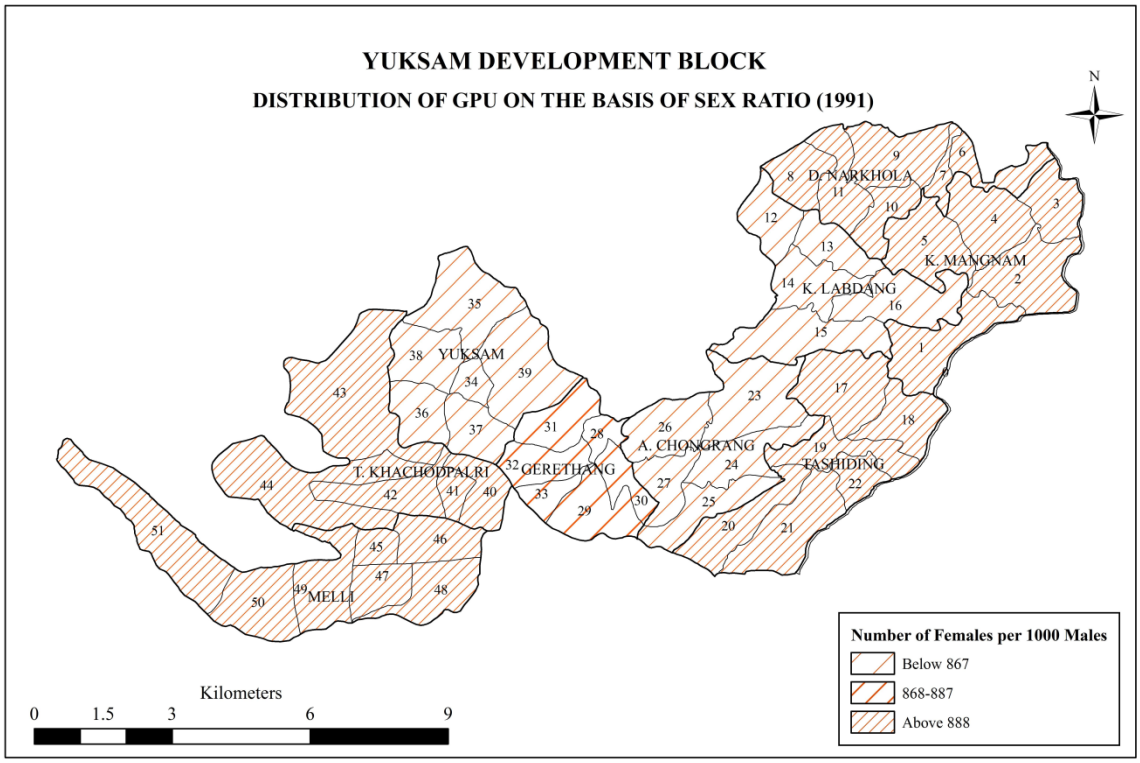


Fig: 3.5

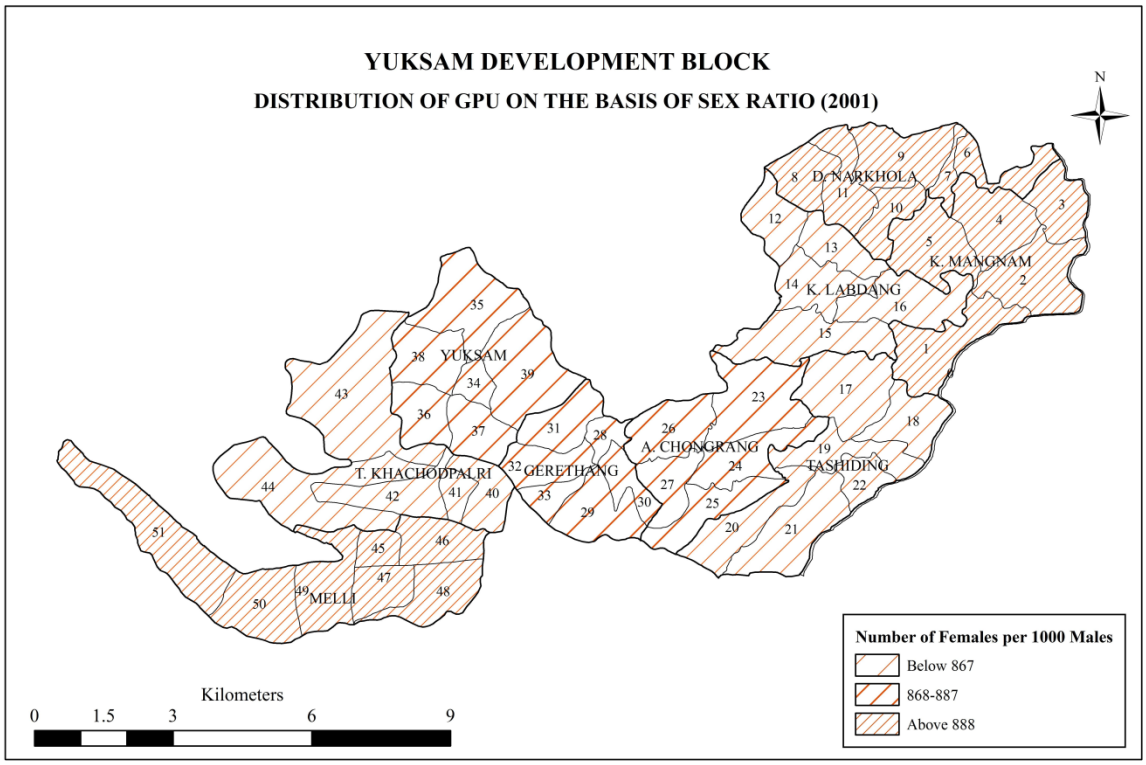
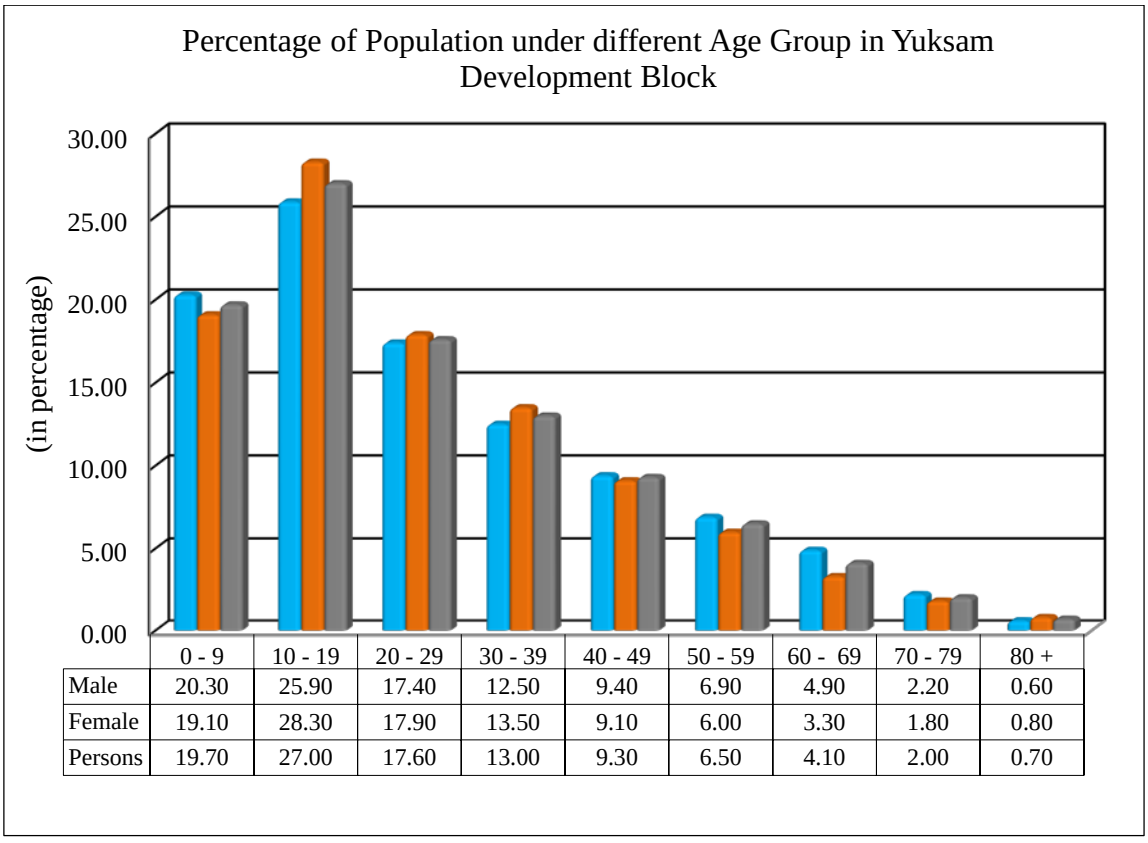


Fig: 3.6

3.4. AGE STRUCTURE

Age structures are one of the most basic characteristics of a population and have great importance in population studies. The categorization of population into various age group help in comparisons in their distribution. The population of Yuksam development block is generally grouped into nine broad categories. First age group includes children below 9 years of age, which account for 19.7 per cent of the total. The adult population in the age group of 20 to 39 years is 30.6 per cent while in the middle age group of 40 to 59 years; it constitutes 15.8 per cent of the total population. In the old age group people with more than 60 years of age accounts for only 6.8 per cent of total population (Fig. 3.7). In the first age group male percentage is higher than female, while after that in three age groups (10 to 19, 20 to 29 and 30 to 39) the female percentage is higher than male percentage. Where as in four groups (40 to 49, 50 to 59, 60 to 69 and 70 to 79) the male percentage is higher than female, while again in last group (80 +) female percentage is higher than male percentage.



	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 +
Male	20.30	25.90	17.40	12.50	9.40	6.90	4.90	2.20	0.60
Female	19.10	28.30	17.90	13.50	9.10	6.00	3.30	1.80	0.80
Persons	19.70	27.00	17.60	13.00	9.30	6.50	4.10	2.00	0.70

Fig: 3.7

On the basis of above analysis it is an outcome of the fact that high percentage of child population result in high dependence on working population. On the other hand the low percentage of old age groups shows the less dependency.

3.5. LITERACY

Literacy means the ability to read and write. The census terminology illustrates that a literate is ‘a person aged 7 years and above who can read and write both with understanding in any language. The children below the age of 6 years who are going to school and have picked up reading and writing are treated as illiterate’ (Census, 2011). Moreover it is not necessary that a person who is literate should have received formal education or should have passed any minimum educational standard in any institution.

Literacy is one of the good indicators of enhancement of a society, so it plays a very important role for the socio-economic development of a region. Education enhances better opportunity and economic security, improvement in health eradicates poverty and improves communication skill of an individual. Education is a very important factor for the development of society. The level of development of an area is largely dependent on the human resources. There was no formal education system in Sikkim till early 20th century. The mode of informal education was imparted through monastic school situated in different part of the State.

Temples and monasteries played an important role in the contribution of education in the State. During different periods in the history of Sikkim four type of education have been established. ‘Traditional education of Sikkim was very life-centred, practical and experience based’ (Sikkim HDR 2001, p-54). The first Government Bhutia boarding school was established in 1906 and in 1907 another Nepali boarding school was set up. After the merger of Sikkim with Indian union in the year 1975 it led to steady enlargement in number of schools in the State.

Education sector has been receiving high priority in the State and its outcome is reflected in the literacy rate among the population of the State and gone up rapidly from 34.05 per cent in 1981 to 82.2 per cent in 2011 and it is more than national level (74.04 per cent). During the same period the rise in the female literacy is also very impressive, moving from 22.2 per cent to 76.43 per cent (Fig. 3.8). The Spatio-temporal distribution shows that almost all the district have more than 75 per cent literacy rate and the east district have higher literacy than the State 84.67 per cent.

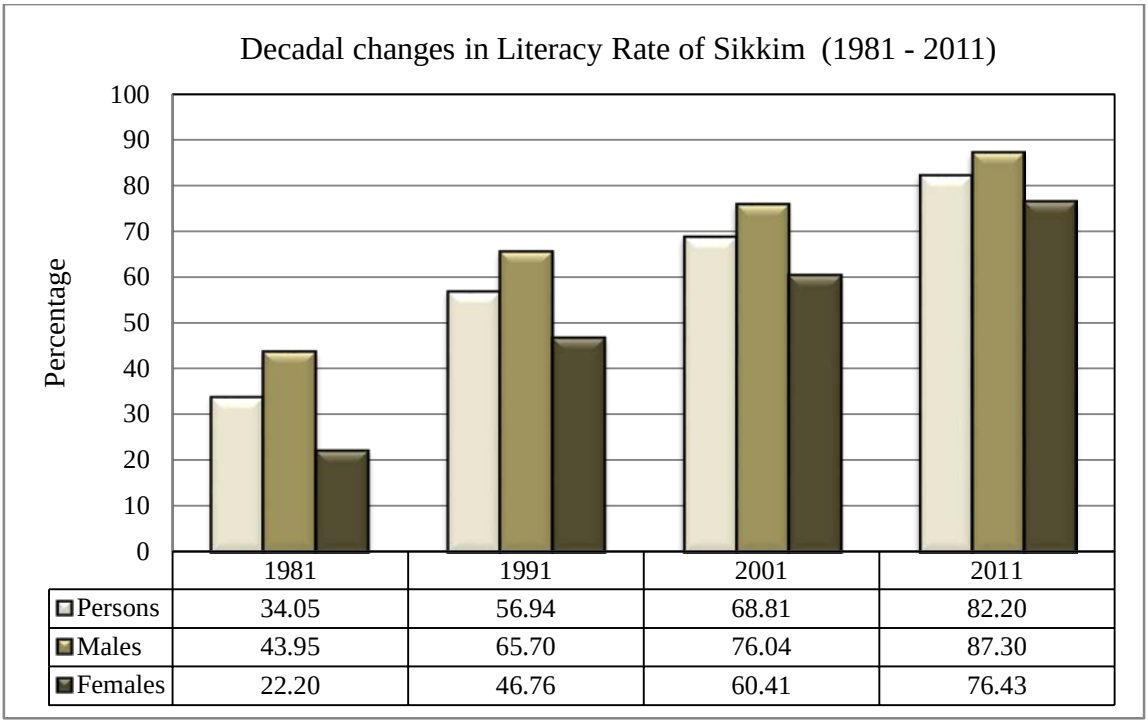


Fig: 3.8

Note: Literacy rates for the years 1981 to 2011 related to the population aged seven years and above.

In Yuksam development block literacy rate move up rapidly from 34.41 per cent in 1991 to 60.40 per cent in 2008. In almost all the GPUs of Yuksam development block there has been more than 50 per cent literacy rate. In general literacy rate was varies from 65.46 per cent in Yuksam GPU to 54.44 per cent in K.Labdang GPU (Table. 3.3 and Fig. 3.9). During 1991, Yuksam GPU recorded the highest literacy rate (43.60 per cent) and in 2001 Gerethang GPU recorded highest literacy rate (51 per cent) among the GPUs of the development block.

Table 3.3: Gender-wise Percentage of Literates

Name of the GPU	Persons Literates (%)			Male Literates (%)			Female Literates (%)		
	1991	2001	2008	1991	2001	2008	1991	2001	2008
K. Mangnam	32.72	25.52	55.42	42.00	27.00	53.00	23.00	24.00	47.00
D. Narkhola	19.00	25.00	55.00	25.60	27.50	53.00	12.30	22.00	47.00
K. Labdang	23.82	22.82	54.44	35.00	33.00	51.00	11.00	11.00	49.00
Tashiding	37.00	42.00	62.76	44.00	47.60	50.80	29.00	35.40	49.20
A. Chongrang	40.60	39.65	56.74	50.00	45.00	51.60	29.60	33.00	48.40
Gerethang	36.00	51.00	61.89	49.00	60.40	52.90	21.40	39.00	47.10
Yuksam	43.60	46.00	65.46	55.00	52.00	53.40	31.00	38.00	46.60
T.Khachodpalri	32.00	43.60	61.75	38.50	51.50	50.00	24.00	34.60	50.00
Melli	26.50	39.00	57.73	36.00	45.00	52.00	16.00	32.00	48.00

Source: Census of India, 1991-2001 and DESME, 2008.

Note: * Literacy rate is the percentage of literates to population aged 7 years and above.

The highest female literacy is observed in T. Khachodpalri GPU (50 per cent) and the lowest percentage was recorder in Yuksam GPU (46.6 per cent). In the year 2001 steady decline in literacy rate in K.Mangnam, K.Labdang and A.Chongrang GPU have been observed (Census, 2001). Due to the improvement in education sector the quantum jump in literacy rate among the whole GPUs have been noticed in 2008. There is a distinct variation among the percentage of male and female literacy rate. The equal literacy among the male and female is marked in T.Khachodpalri and in remaining all the GPUs male literacy is higher.

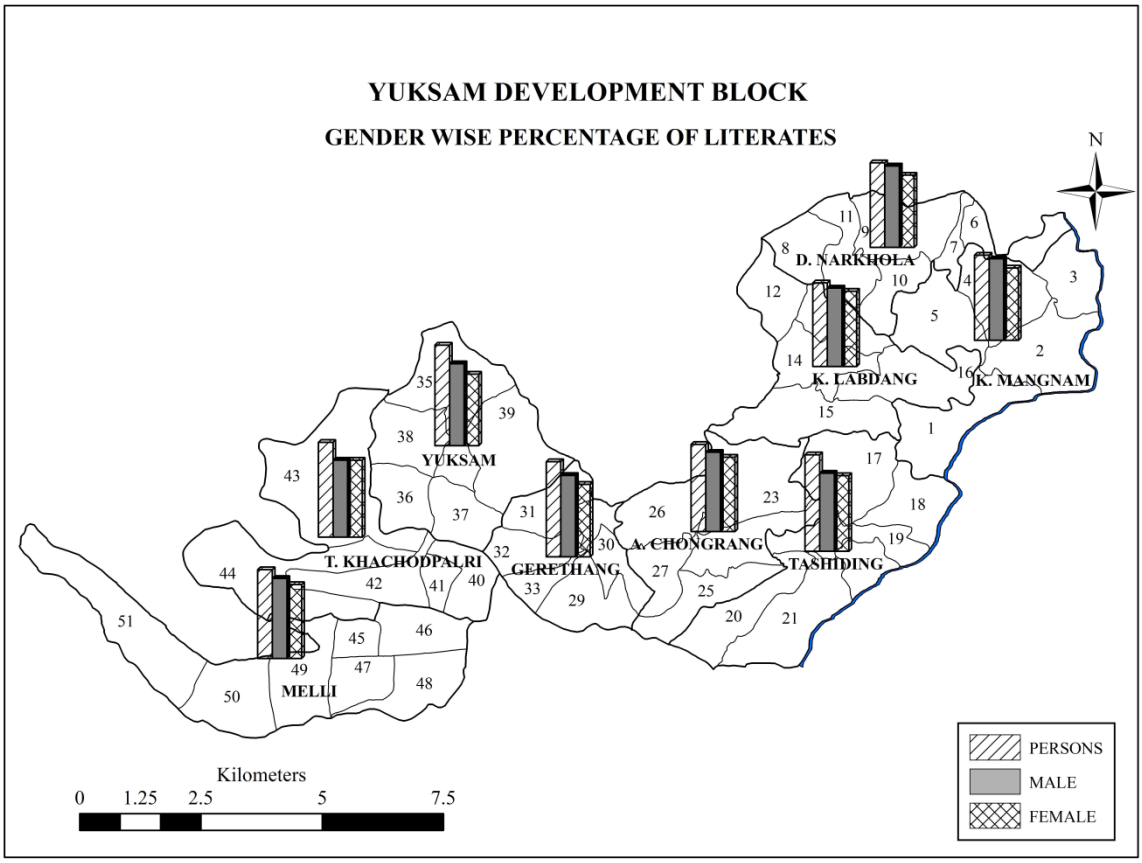


Fig: 3.9

The percentage of male literacy varies from 53.4 per cent in Yuksam to 50 per cent in T.Khachodpalri GPU in the year 2008. The low level of literacy among the females in rural area is may be due to the girls child is engaged in helping their parents, cleaning the house, taking care of siblings, the sick and elderly, preparing food, collecting firewood and grazing animals are some of the key tasks to be performed. Early marriage of a girl child has a negative effect on education. Women hardly get opportunity to create their choices for themselves. Therefore a strong gender inequality exists in literacy rate of a rural area.

3.6. OCCUPATIONAL STRUCTURE AND WORKFORCE

The pressure of population on resources and land has become clear when we study occupational structure of an area. Perhaps, none of the aspect of a population throws as much light on the economic development of region as its occupational structure (Chandrashekhar, 1967). An analysis of population composition unfolds the diverse demographic, economic and cultural attributes of an area, which form the basis for region's social and economic development (Chandana, 2003).

Occupational structure is starting with the definition of 'work'. 'Work is defined as participation in any economically productive activity with or without compensation, wages or profit' (Census, 2001). Actual work is not only work it also includes supervision and direction; it even includes unpaid work on family enterprise or in any other unpaid activity on farm. 'Occupation' is known as a person's job and 'workforce' is known as a group of people who work together. Main workers are those workers who had worked for the major part of the reference period (i.e. 6 months or more) are termed as main workers.

Primary worker: this sector consists of cultivator, persons engaged in livestock, agricultural labour etc.

Cultivator: For purposes of the census a person is classified as cultivator if he or she is engaged in cultivation of land owned or held from Government or held from private persons or institutions for payment in money, kind or share. Cultivation includes effective supervision or direction in cultivation. A person who has given out her/his land to another person or persons or institution(s) for cultivation for money, kind or share of crop and who does not even supervise or direct cultivation of land, is not treated as cultivator. Similarly, a person working on another person's land for wages in cash or kind or a combination of both (agricultural labourer) is not treated as cultivator. Cultivation involves ploughing, sowing, harvesting and production of cereals and other crops.

Agricultural Labourers: A person who works on another person's land for wages in money or kind or share is regarded as an agricultural labourer. An agricultural labourer has no right of lease or contract on land on which she/he works.

Other Workers: All workers, i.e., those who have been engaged in some economic activity during the last one year, but are not cultivators or agricultural labourers or in Household Industry, are 'Other Workers (OW)'. The type of workers that come under this category of 'OW' include all Government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc. In effect, all those workers other than cultivators or agricultural labourers or household industry workers are 'Other Workers'.

Non Workers: Persons who did not work during the reference period was treated as non-worker. The non workers broadly constitute students who did not participate in any economic activity, the person who were attending to daily household chores like cooking, looking after children, cleaning utensils, fetching water etc. pensioners those who are drawing pension after retirement, and the persons who are seeking/available for work, beggars, prostitutes and persons having unidentified source of income and not engaged in any economically productive work during the reference period are included in this category.

Note-* Primary Worker (Agriculture wage labour, Non agriculture workers), Other Worker (State Government employees, Central Government services, Private sector, Business man /Trader, Muster roll, Self employed, Contractor, Others) and Non Worker (unemployed, pensioners, housewife, student).

3.6.1. Work Participation Rate

In rural Sikkim primary sector employs about 50.8 per cent of the working population, 43.9 per cent are involved in other activities and remaining 5.3 per cent of the total rural economically active population was found to be unemployed (Appendix - E). At block level highest proportion of primary worker to economically active population was noted as about 68.4 per cent in Yuksam development block, whereas the lowest was recorded in Gangtok block 27 per cent.

The maximum other worker among the block was noted as 62 per cent in Gangtok block, 56.5 per cent in Kabi and 52 per cent in Rakdong Tintek block during 2009 respectively while minimum is notice at Yuksam development block 29.7 per cent. Among non worker it was highest as 12.6 per cent in Chungthang, 10.8 per cent in

Mangan and Gangtok block respectively and lowest was observed in Yuksam development block. As a whole the data also reveals that population was found to be unemployed due to the issue of underemployment and it was a matter of concern. Unemployment is highest in block with higher levels of education and those that are adjacent to urban areas.

To find out the occupation structure among the GPU level, the persons engaged in the diverse segment of economy have been considered. The working population has been presented by dividing into 3 broad categories (Table. 3.4, Fig. 3.10 and 3.11).

Primary Worker: Out of total population 38.2 per cent population are engaged in the primary sector of the economy. The higher percentages of working force are in T. Khachodpalri and in D. Narkhola and lowest is observed at Tashiding GPU.

Other Workers: There are 23.8 per cent of the total population who are engaged in this sector. The highest proportion of other workers is noted as 33 per cent in Tashiding GPU followed by K. Labdang and A. Chongrang. T. Khachodpalri GPU has lowest population in these activities which has been observed (15.3 per cent).

Non Workers: After deducting the total workers and other workers from total population, the remaining population is treated as economically inactive population (dependent). The numbers of people who cannot be employed and mostly supported by economically active population are aged between15-64. It is classified as those in aged under 15 remain in full time education and of old people aged 65 and over is considered as dependent population.

Table 3.4: GPU-wise Occupational Structure (in per cent)

Name of the GPU	Occupational Structure		
	Primary Workers	Other Workers	Non Workers
K. Mangnam	39.40	18.60	42.00
D. Narkhola	43.30	18.70	38.00
K. Labdang	35.00	28.00	37.00
Tashiding	32.00	33.00	35.00
A. Chongrang	35.20	25.80	39.00
Gerethang	37.40	21.60	41.00
Yuksam	40.80	22.20	37.00
T.Khachodpalri	43.70	15.30	41.00
Melli	39.60	23.40	37.00

Source: DESME, 2008.

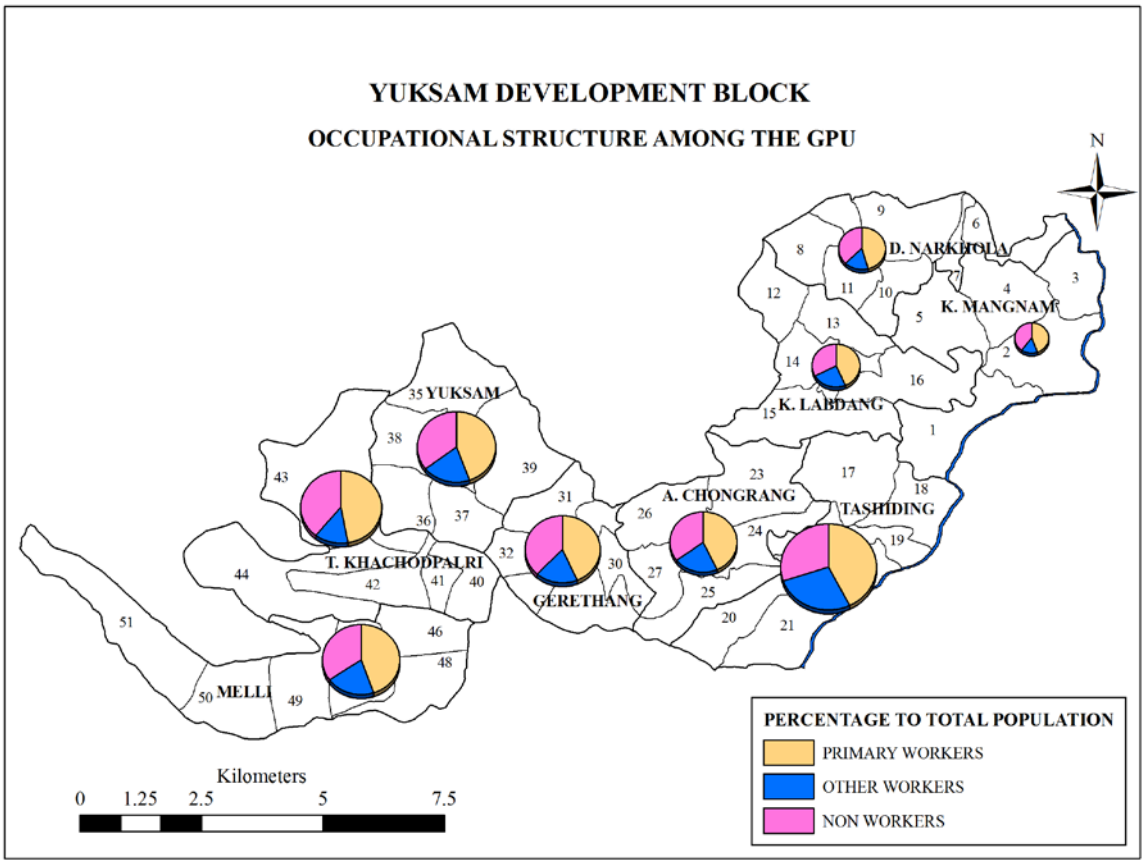


Fig: 3.10

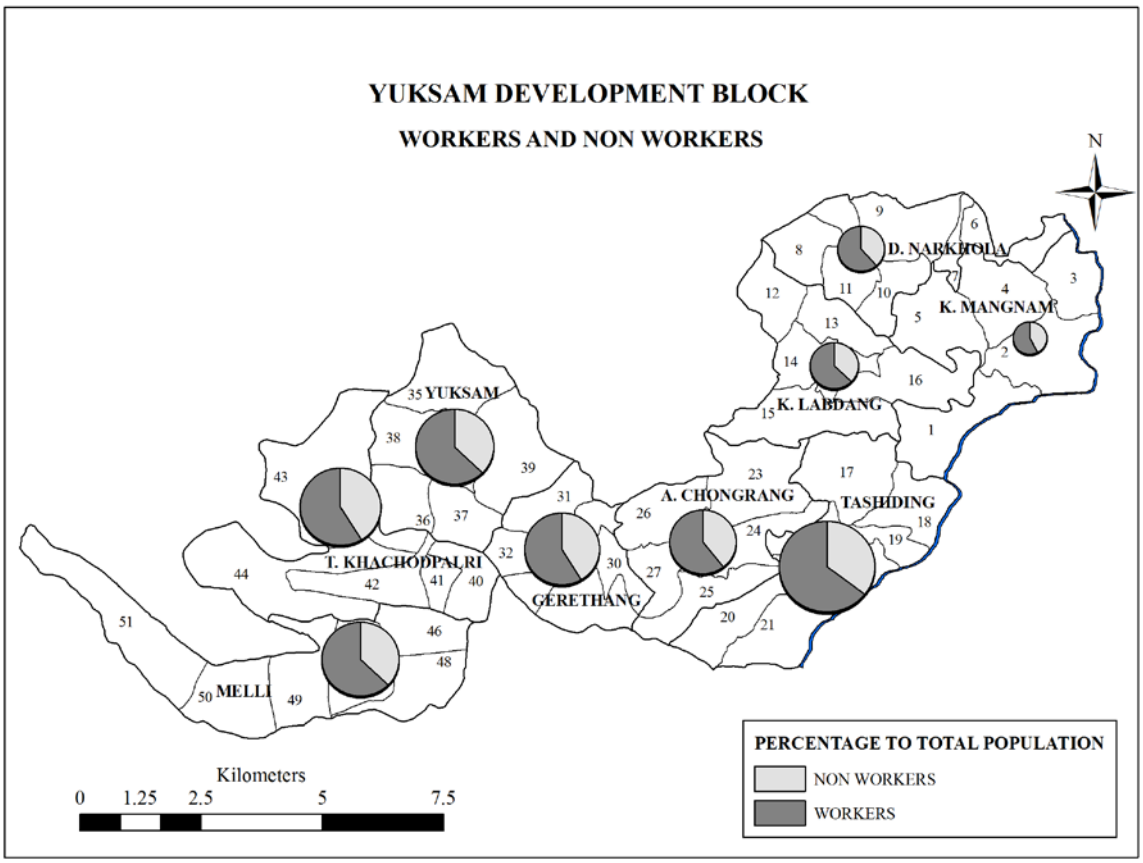


Fig: 3.11

The percentage of non-workers constitutes about 38 per cent of total population. More than the halves of the non workers are females and the children under the age of 15 years. The highest non workers population was noted in K.Mangnam GPU at 36.3 per cent, while the lowest was recorded in Tashiding GPU respectively. The wide variation was noted from one GPU to another.

3.7. LEVEL OF DEVELOPMENT (BASED ON DEMOGRAPHIC SCORE)

The following hypothesis as mentioned in introduction may be analyzed here: 'The larger the size of the village in term of population, higher will be the level of development'. The GPUs of Yuksam development block differ greatly in level of development. The dimension of population aspect is explained with the help of 6 indicators. The indicators are independent to explain the state of population pressure and congestion in the GPUs. The following demographic indicators are considered for the analysis: density of population/ha, sex ratio/1000 male, total literacy (%), female literacy (%), working population (%) and dependency ratio (%). For analysis of data 'z' score standardization model has been applied. Further the results of the standard score obtained for the different indicators were aggregated in order to find out the composite index, so that the differences in level of rural development in various GPUs may be obtained on a common scale.

On the basis of demographic score of the indicators, the GPUs have been categorised into three level of development: high, moderate and low level of development (Appendix - F). Tashiding and T. Khachodpalri GPU have high level of development. These GPUs rank first and second in population size and also in demographic score respectively. The moderate level of development is observed in A. Chongrang, Gerethang, Yuksam and Melli GPU (Table. 3.5 and Fig. 3.12). Whereas, K.Mangnam, D. Narkhola, K. Labdang GPU have a low level of development among the GPUs.

Table 3.5: Level of Development (Based on Demographic Score)

Categories	Z Score Range	Number of GPU	Name of the GPU
High	Above 0.2	2	Tashiding, T. Khachodpalri
Moderate	0 to 0.2	4	A. Chongrang, Gerethang, Yuksam, Melli
Low	Below 0 (-value)	3	K. Mangnam, D. Narkhola, K. Labdang

Source: Calculated by author

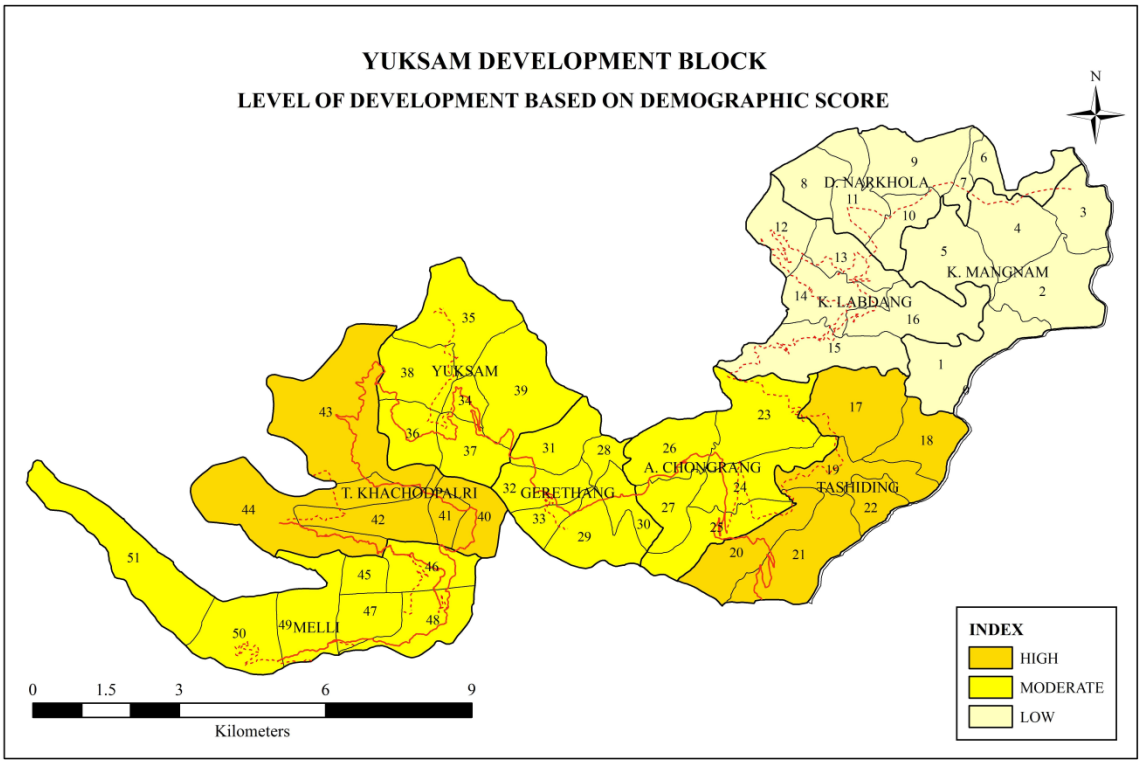


Fig: 3.12

3.8. POPULATION SIZE AND LEVEL OF DEVELOPMENT

It is observed from the below Figure. 3.13, that the level of development has a positive relationship with the population size among the GPUs of Yuksam development block. Here the regression y = 0.376, r = 0.931 and R^2 value is 0.867 as the relationship is statistically significant.

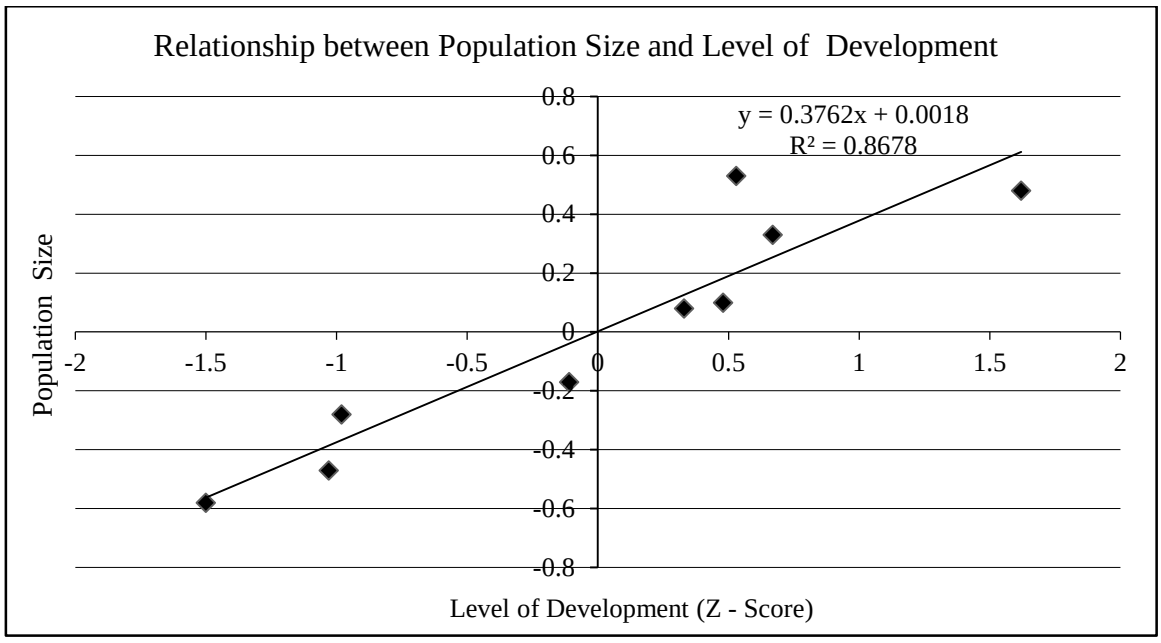


Fig: 3.13

Hence, the hypothesis framed out to test the relationship between *'The larger the size of the village in term of population, higher will be the level of development'* is found correct. It may be concluded that, demographic development is inseparable from the process of development. People are the sole beneficiary and main concern of the development. In order to decrease the disparities in literacy and occupational structure special educational programme should be initiated for the weaker section of the society. The sex ratio and literacy rate has recorded increasing trend in present decade. The percentage of dependency ratio has been noticed highest in K. Mangnam GPU followed by Gerethang and T. Khachodpalri GPU. The lowest percentage of dependency ratio is found in Tashiding GPU. Higher stress should be given to occupational transformation in the rural area. This will spontaneously work for rural development and help to eliminate the gap between rural and urban sector.

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Chapter 4

SOCIO-CULTURAL ASPECTS AS INDICATORS OF DEVELOPMENT

'The development of rural economy is highly associated with socio-economic conditions of the people' (Mc Ewen, 1975). Increasingly, development is viewed in terms of improvement in quality of life rather than increase in per capita income. So in this scene social development is differentiated from economic development. The concept of socio-cultural development is inclusive of economic development but it differs from economic development in the sense that it emphasises in the improvement of the totality of the society in its economic and socio-cultural aspects. Socio-cultural aspect is thus not claimed for a larger allocation of welfare and social services; though such allocations may be justified on other grounds it is really claimed for an integrated view of the capacity of development which should hold development in all its different facets. So it is considered important for the development of a rural area which leads to overall development of a country which exists in all developmental planning in every developing country. The social development clearly depends upon the type of society in which planning has to be undertaken and to provide better living condition to the people.

4.1. CULTURE AND RELIGION

The customs, traditions, religion, caste and tribe of any society shape the demographic structure of a society. The custom includes food habit, living style, age of marriage, women status in the society, sex of child they prefer etc. Thus, religion is important to understand the demographic nature of different socio-cultural groups of a people. Sikkim presents a mosaic of social-cultural group.

All communities in Sikkim live in harmony sharing each other's culture, ethnicity and traditions. The customs and rituals of Sikkim are as diverse as the ethnic that dwell in the land. The distribution of population in Sikkim has three major communities Lepchas, Bhutias and Nepalese. The people of Sikkim are warm, simple and friendly with a nature gaiety and fun loving. They love to get together and celebrate their festivals and dances. Hindu celebrates Dusshera, Diwali, Maghe sankranti, Ram Navami as an important festival.

Buddhist celebrates two important festivals one dedicated to the mountain deity Kanchendzonga, other in celebration of the New Year. Apart from this Loosong, Buddha Jayanty, Saga Dawa and Bumchu are some other festivals use to celebrate by Buddhist.

Lepchas: The original inhabitants of Sikkim are said to be Lepchas. They existed much before the Nepalese and Bhutias migrated to the State. Before adopting Buddhism or Christianity as their religion, the earliest Lepcha settlers were believers in the bone faith or mune faith. This faith was basically based on spirits, good and bad. They worshipped spirits of mountains, rivers and forests which was but natural for a tribe that co-existed so harmoniously with the rich natural surroundings. The Lepcha (Zongu) folklore is rich with stories.

The Lepcha population is concentrated in the central part of the Sikkim. This is the area that includes the confluence of Lachen and Lachung rivers and Dickchu. Life in a Lepcha dwelling is very simple. The male Lepcha wears a dress called a ‘pagi’ made of cotton, which is stripped. The female Lepcha wear a two piece dress. The Lepchas speak the language lepcha, although this language is not very well developed but is rich in vocabulary related to the flora & fauna of Sikkim. Lepchas are very good at archery. The polyandry marriages are officially recognized amongst the Lepchas.

Bhutias: These are the people of Tibetan origin. They migrated to Sikkim perhaps somewhere after the fifteenth century through the State of Sikkim. In Northen Sikkim, where they are the major inhabitants, they are known as the Lachenpas and Lachungpas. The language spoken by the Bhutias is sikkimese. Bhutia villages are as large as those compared to Lepchas. A Bhutia house called ‘Khin’ is usually of rectangular shape. The traditional dress of the male member is known as the ‘Bakhu’ which is a loose cloak type garment with full sleeves. The ladies dress consists of a silken ‘Honju’ which is a full sleeve blouse and a loose gown type garment.

Nepalese: The Nepalese constitute more than 80 per cent of the total population. The Nepali settlers introduced the terraced system of cultivation. Cardamom was an important cash crop introduced by the Nepalis'. The Nepali language is spoken and understood all over the State. This language is similar to Hindi and uses the Devangri script. The traditional male nepali dress consists of long double breast garment flowing below the waist and a trouser known as ‘Daura Suruwal’. The female dress consists of a double

breasted garment with strings to tie on both the sides at four places, which is shorter than the Daura and is known as ‘Chow Bandi Choli’. They also wear a shawl known as ‘Majetro’. The ‘Khukri’ which has become a synonym to the Nepali culture, is a very sharp edged, angled, heavy weapon carried in a wooden or leather scabbard known as ‘Daab’.

Life in Sikkim is an endless celebration with vibrant festivals throughout the year and it is a reflection of the rich cultural heritage of the State. It is not rare to see a Hindu bowing before a monastery or a Buddhist joining hands at the temple. Perhaps this force of acceptance has tied all the communities to live in peace. These three ethnic communities display a remarkable feature of society with its cultural harmony and peaceful coexistence. A rich blend of beliefs, rituals and legends find expression in the most colourful celebrations and traditional dances. Folk Dances and songs are an ingrained part of the culture.

The study of religion is essential because it affects and reflects the socio-cultural and economic condition of the people in a particular region. The major religions of the State are Hinduism, Buddhism and Christianity. Hinduism is the most predominant religion at Sikkim around 68 percent population follow Hinduism, Buddhism is the second largest religion of the state which account for 27 percent, Christians constitute around 3 percent of the total population and remaining 2 percent practice other religion i.e. Muslims, Sikhs etc.

4.1.1. Population by Religious Group

Hindu, Buddhist and Christian are the major religious community of the Yuksam development block. The largest percentage of people follows Hinduism (59 per cent), Buddhists occupy the second position with 38.7 per cent and only 2.3 per cent population practice Christianity. Within the development block religion wise distribution of population among the GPUs is different (Table. 4.1 and Fig. 4.1). At GPU level highest proportion of Hindu population was noted in D. Narkhola, Gerethang, Yuksam, T.Khachodpalri and K. Mangnam GPUs. The percentage of Buddhist population is found to be more in K. Labdang and Tashiding GPU. The share of Christian population was noted highest as 6.3 per cent in T. Khachodpalri, followed by 5.7 per cent in Melli and 4.9 per cent in D. Narkhola GPU respectively based on 30 percent sample survey.

Table 4.1: Population by Religious Group (in per cent)

Name of the GPU	Hindu	Buddhist	Christianity
K. Mangnam	58.30	41.70	0.00
D. Narkhola	90.20	4.90	4.90
K. Labdang	11.80	88.20	0.00
Tashiding	42.10	56.80	1.10
A. Chongrang	73.50	26.50	0.00
Gerethang	87.60	11.50	0.90
Yuksam	69.30	30.70	0.00
T. Khachodpalri	59.40	34.30	6.30
Melli	42.30	52.00	5.70
Total	59.00	38.70	2.30

Source: DESME, 2008 and Field survey, 2010-2011.

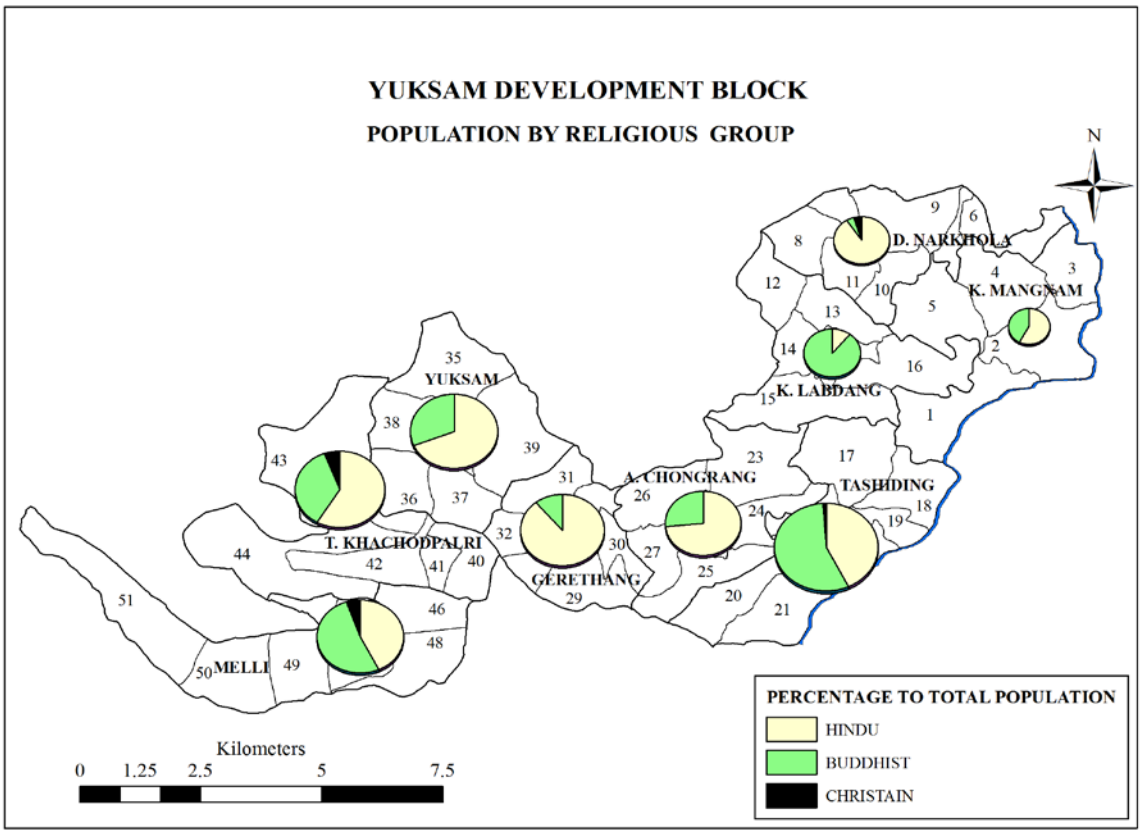


Fig: 4.1

4.2. SOCIAL GROUP-WISE POPULATION DISTRIBUTION

Sikkim is the State of multi-ethnic and presents a mosaic of socio-cultural group. Further the population are broadly divided into four minor social groups:

- *Scheduled Tribes (ST):* Lepchas, Bhutias, Sherpas, Tamang and Subba
- *Scheduled Caste (SC):* Kami, Darjee, Sarki, Majhi and Berdewa
- *Most Backward Caste (MBC):* Gurung, Manger, Rai, Mukhia and Bhuzel
- *Other Backward Caste (OBC):* Chettri, Sharma, Sanyasi, Kherga and Pradhan

According to the social group-wise population distribution in the GPUs, the study shows that Yuksam development block is mostly dominated by STs population. There exists an outstanding disparity in the spatial distribution as it varies from 13.4 per cent to 74 per cent. This is evident from the fact that out of 9 GPUs there are 7 GPUs in which more than 50 per cent habitants are STs and 2 GPUs are dominated by MBC population (Table. 4.2 and Fig. 4.2).

Table 4.2: Population by Social Group (in per cent)

Name of the GPU	OBC	MBC	SC	ST	General
K. Mangnam	0.00	35.90	0.00	64.10	0.00
D. Narkhola	0.60	75.70	10.30	13.40	0.00
K. Labdang	3.00	54.70	0.00	42.30	0.00
Tashiding	24.80	11.00	9.00	51.70	3.50
A. Chongrang	29.30	11.50	4.00	55.00	0.00
Gerethang	16.70	6.00	3.00	74.00	0.40
Yuksam	14.00	8.70	3.00	73.20	1.00
T. Khachodpalri	13.00	28.00	1.00	58.00	0.10
Melli	5.50	34.40	1.60	58.20	0.20
Total	14.90	22.80	3.90	57.40	1.00

Source: DESME, 2008 and Field survey, 2010-2011.

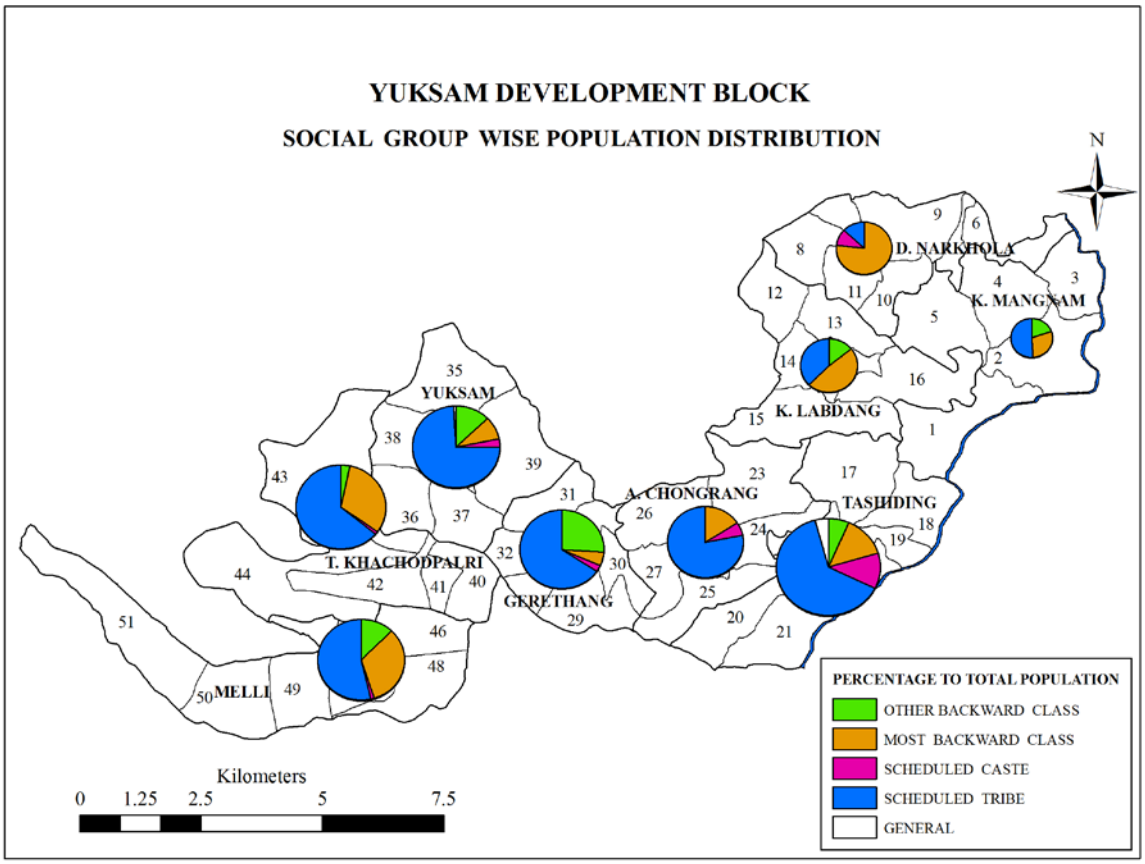


Fig: 4.2

The highest concentration of STs are observed in Gerethang with 74 per cent, followed by Yuksam (73.2), K.Mangnam (64), Melli (58.2), T. Khachodpalri (58), A. Chongrang (55) and Tashiding (51.7) GPU. The MBC population covered an area of D.Narkhola (75.7) and in K.Labdang with (54.7) population. In K.Mangnam and K.Labdang no schedule caste population is found and the highest concentration of SCs is observed in D.Narkhola GPU. In four GPUs i.e. K.Mangnam, K.Labdang, D.Narkhola and A.Chongrang no general population is found. There are very less percentage of OBC, SC and General are lying over the villages of Yuksam Development Block. The following socio-cultural facilities and amenities have been considered as an indicator under this chapter.

4.3. EDUCATION

'Education is an indispensable tool of attaining and a dynamic process to improve the qualitative life of the individual in a society. Quality is at the heart of education, it influences what students learn, how well they learn and what benefits they draw from their education' (Education for All; Global Monitoring Report, 2005). Education is an important factor of development and the main indicator of human progress in a society. The Central and State Government has made sincere efforts by adopting various schemes to improve the quality of education and to universalize in the State with a clear view that without improving the quality education for all cannot be achieved. So, in December 2002 the Indian constitution made free and compulsory education for all the children in an age group of 6-14 years. In 2003 Sarva Shiksha Abhiyan (SSA) launched for universalization of elementary education programme.

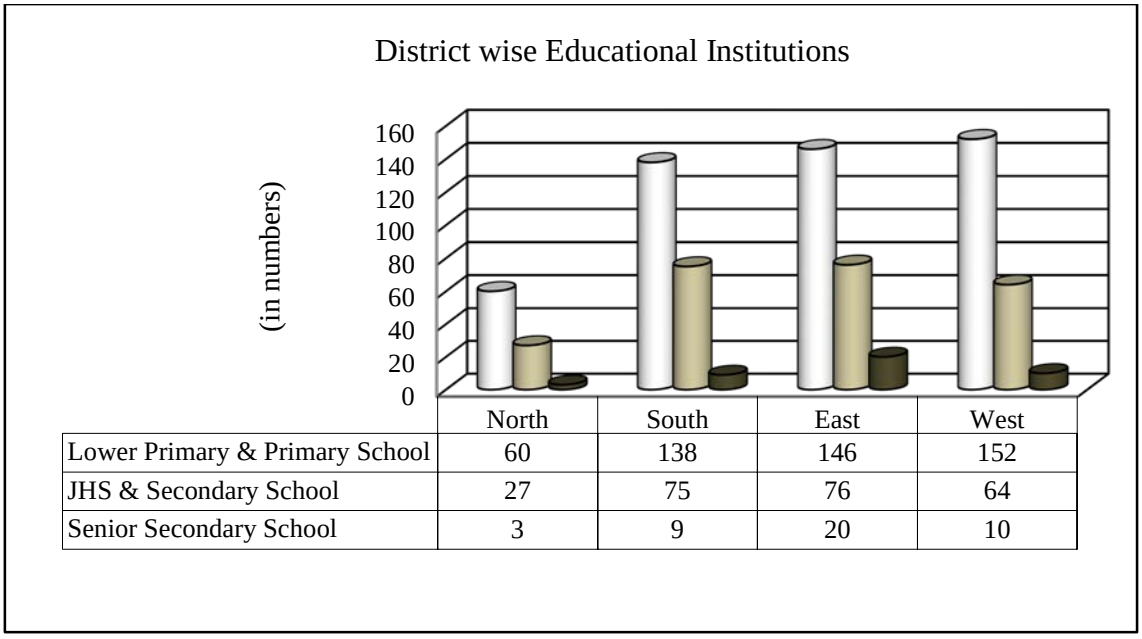
Rastriya Madyamik Shiksha Abhiyan (RMSA) was launched in the year 2007 for good quality education, affordable and accessible to all the people in an age group of 14-18 years at secondary stage. Saakshar Bharat Mission was launched by Prime Minister of India on 8th September 2009. The aim of this mission is to promote adult education, especially for women and adult who have lost the opportunity to access formal education at their standard age. Education plays a very important role for the development of the country and also helps to provide strong base for all round development of an individual. Education helps to improve the communication skill of an individual; it also enhances better economic opportunity and security.

'The level of education is a versatile indicator of regional development as such education is the key to prosperity as it finds its instant expression in the educational standards of the people' (Dube & Mishra, 1981). So it deserves the highest priority among the other facilities of development. 'Four modes of education have been prevalent at different periods in the history of Sikkim' (Lama, 2001). The origin of Monastery schools is traced back to the arrival of Buddhism in Sikkim. During that time monastic schools and temples imparted religious education for the preparation of monks and priesthood, Monasteries and temples were the main centre of education in those days. Even today in Sikkim there are 163 monasteries and temples. Sikkim since, from the merger with Indian union in 1975, there has been a steady expansion in the number of educational institution and teachers.

'During 1978 total of 50.5 per cent (42.3 within the habitation and 8.29 per cent up to 0.5 km) of the rural population had accessibility to primary schools between 0 - 0.5 km. The latest data based on 7th All India School Education Survey 2002 shows that 87.28 per cent of the rural Sikkimese had access to primary school within 1 km of walking distance and 83.63 per cent to upper primary school within 3 km of walking distance. Another document issued by the State Government in 2005 stated that 80.45 per cent of the rural habitation had access to secondary school within 5 km of walking distance and 66.95 per cent of them had access to senior secondary school within 8 km' (Economic survey, 2006-07).

4.3.1. Educational Institutions and Literacy

Due to low population density schools are unevenly distributed across the State. Dubey (1992), made an important exposition that educational infrastructure consists of junior basic and primary schools that work for universal education; secondary schools that prepare the students for higher skill; higher secondary schools that are instrumental to increase the work efficiency of the students; and colleges that are the base for the higher quality of work and higher quality of life. The degree in distribution of educational institutions is uneven and varied in regards to accessibility and availability from primary to higher institutions. In North district hardly 11.5 per cent of total schools were located and it has the lowest concentration of schools in 2006-07; against 31 per cent in the East district, 28.5 per cent in the South district and 29 per cent in West district (Fig. 4.3).



	North	South	East	West
Lower Primary & Primary School	60	138	146	152
JHS & Secondary School	27	75	76	64
Senior Secondary School	3	9	20	10

Fig: 4.3

Its percentage share was nearly 63.6 per cent of lower primary and primary schools, while it was 31 per cent for junior high school and secondary schools and 5.4 per cent was senior secondary school. Education sector has been receiving higher priority among the other sectors and it is reflected in its literacy rate among the population which are moving up gradually from 17 per cent in 1971 to nearly 57 per cent in 1991, 68.81 per cent in 2001 to 82.2 per cent in 2011. During the same period the rise in female literacy rate has been very impressive, moving from 8.9 per cent to over 46 per cent in 1991, 60.41 per cent in 2001 to 76.43 per cent in 2011. In 2011, the East district recorded the highest literacy rates (84.67 per cent) followed by South and West district, while the North district recorded the lowest literacy rates (77.39 per cent).

GPU-wise Educational Institution and Literacy: literacy rate is considered as an important indicator of development. The educational institution plays an important role in literacy and level of education. The educational system is formal and the institution are classified into 5 categories i.e. monastery school, primary school, junior high school, secondary school and senior secondary school. Below figure shows GPUs wise distribution of educational institution and literacy rate of each GPU. Primary institutions serve as the base of education, so it has a great impact in the literacy of a particular area. The institution providing education up to the level of class V standard has been considered as primary institution.

There are total 50 institutions out of this there are 6 monastery schools and 29 primary schools in Yuksam development block (Table. 4.3 and Fig. 4.4). Within 51 village's primary school are widely distributed into 29 villages, while in 30 villages there is no primary school. The institution which provides education from class VI to VIII standard has been considered as Junior High School (JHS). In the whole development block there are 9 JHS, which are found in 6 GPUs and other is serving by this. There are 4 secondary schools which provide education up to class X standard and located in 4 GPUs of the development block. There is only one senior secondary school in this development block which provides education from class VI to XII standard. Recently one livelihood school have been started at Tashiding GPU, as a part of Government initiative to convert 100 per cent literacy rate by 2015.

Table 4.3: GPU-wise Educational Institution

Name of the GPU	Monastery School	Primary School	Junior High School	Secondary School	Senior Secondary School	Livelihood School
K. Mangnam	0	2	1	0	0	0
D. Narkhola	0	2	0	0	0	0
K. Labdang	1	1	1	0	0	0
Tashiding	2	7	0	0	1	1
A. Chongrang	0	3	3	0	0	0
Gerethang	0	1	2	1	0	0
Yuksam	1	5	0	1	0	0
T. Khachodpalri	1	4	1	1	0	0
Melli	1	4	1	1	0	0
Total	6	29	9	4	1	1

Source: HRDD, West District 2010 - 2011.

Within Yuksam development block, Tashiding GPU ranks the highest number of educational institution, followed by Yuksam, T. Khachodpalri, Melli and A.Chongrang GPUs while, Gerethang, K.Labdang, K.Mangnum and D.Narkhola GPUs contain less than 5 institutions. Most of the GPUs have higher number of primary and less number of secondary institutions. It is clear that the GPUs as it is situated close to the district highway are the centre of education, market, health etc. So the development of the pucca roads indirectly affects the educational facilities of the villages. In other words maximum educational institution has been set up on the road level than the rural interior. Rural roads connectivity plays an important role in understanding the location pattern of institutions distribution (Rohatgi and Sharma, 2011).

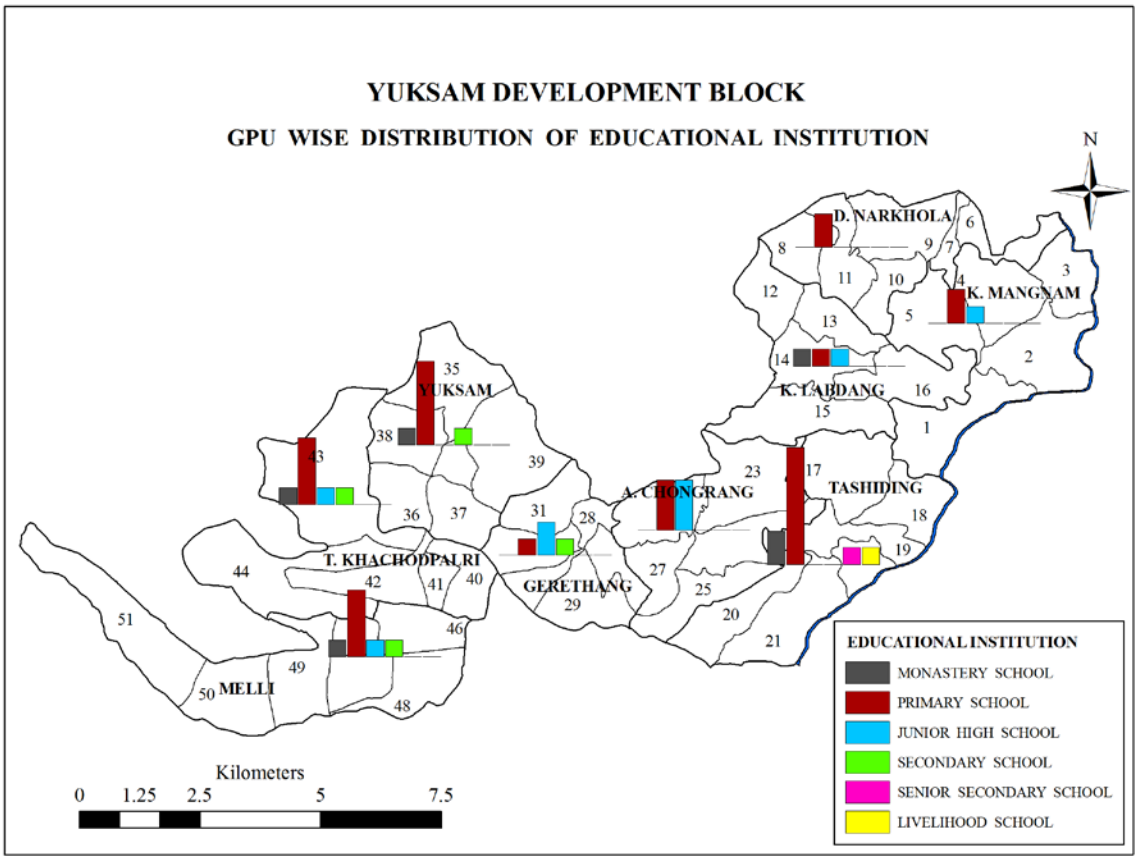


Fig: 4.4

4.3.2. Relationship between Literates and Educational Institution

The data presented in below scattered diagram shows the relationship between literates and educational institution and it has been noted highly significant and positive i.e. 0.963 (Fig. 4.5). It is observed that the level of literacy is low in all the GPUs. Though younger generation wishes to educate their children, it lags behind due to various restrictions. Low levels of income in general and poverty in particularly forces many people not to send their children to school or to pull out them from schooling during income shocks. Children are either obligated to supplement low households earnings by working outside their homes.

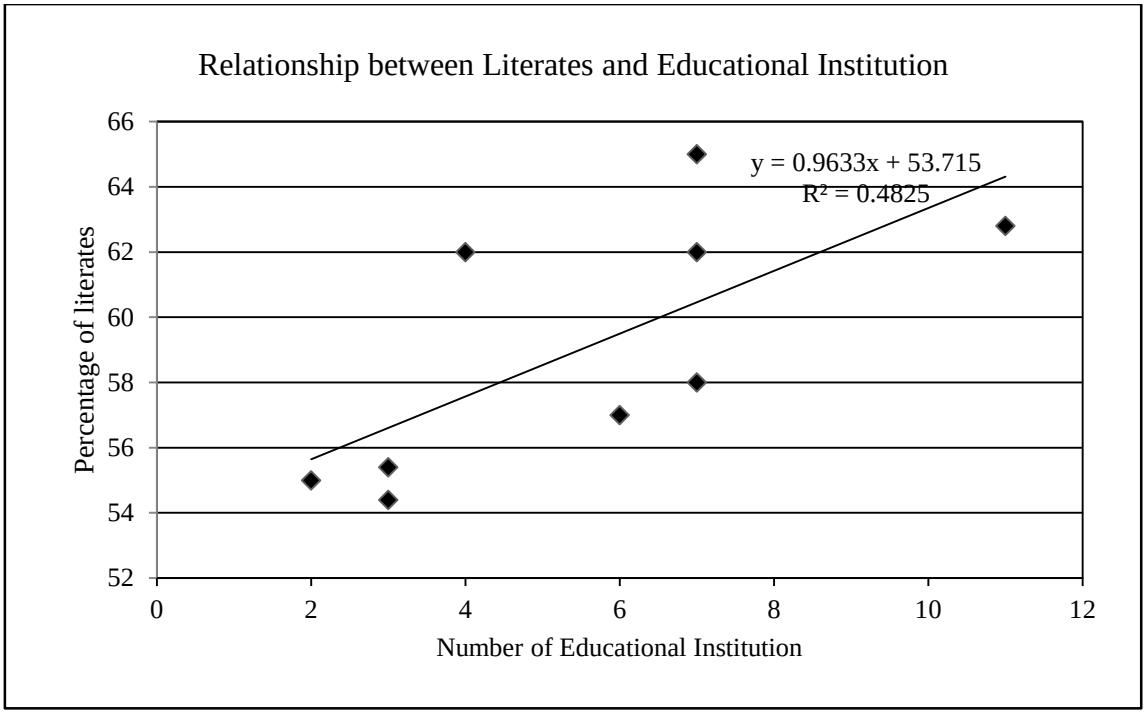


Fig: 4.5

4.3.3. Level of Literates

Literacy is an important aspect among the various demographic characteristics and it believed that through education general awareness among community will develop. It is the level and qualities of education which prepares an individual for full participation in developmental activities and also helps to meet the basic need of individual. The level of educational attainment needs to be understood especially in terms of primary, technical, professional and other higher level literates including graduate, post graduate, doctorate etc. The data related to these aspects gives an insight into the process of development and present best description of level of rural development. On the whole the level of literacy was uneven.

On the basis of State Rural Household Census 2009, as a whole the level of primary literates was higher in the State 37.2 per cent are having education up to primary level, 24.5 per cent are secondary literates, 4.75 per cent are senior secondary literates, whereas very low proportion of literates had education levels of graduation and above 4.66 per cent (Fig. 4.6). In view of the distribution of population among various development block there is a need for increasing the number of schools and higher institutions within the block. The present figures of educational institutions are insufficient to meet the growing demand of the student.

Similarly, the study of level of literates within Yuksam development block showed that the proportion of primary literates was over 46 per cent among the other literates followed by secondary literates 18 per cent and 3 per cent are senior secondary literates. The proportion of higher level literates was only 3.8 per cent to those who had availed education levels of graduation and above (Appendix - G).

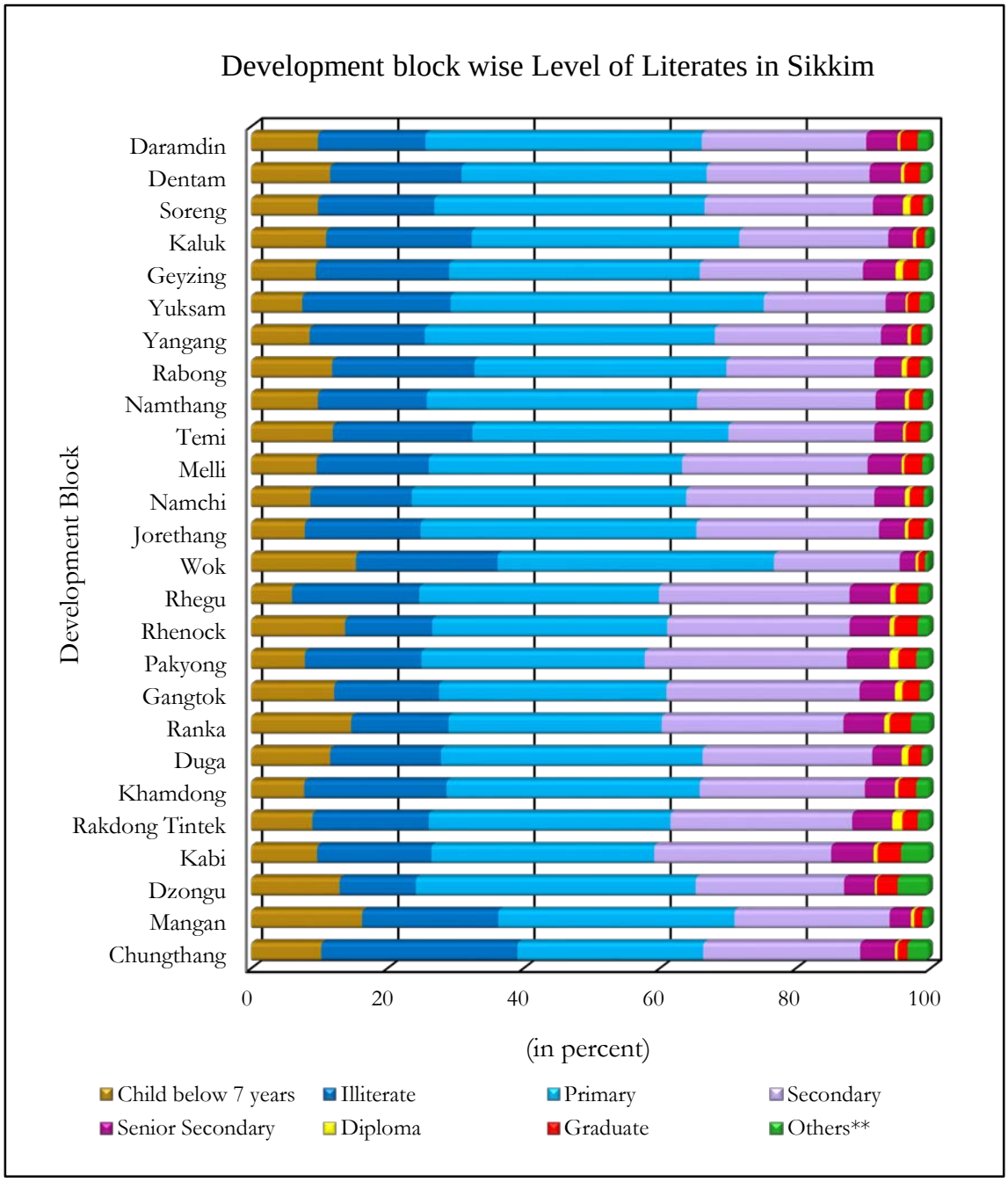


Fig: 4.6

In Yuksam development block Literacy rate went up from 60.4 per cent to 70.8 per cent in 2008 to 2009. Most of the people are educated up to the primary level i.e. 40.5 per cent in 2008 which was increased to 46 per cent in 2009 (Table. 4.4 and Fig. 4.7),

secondary literates increased from 16.4 per cent population to 18 per cent, 2.1 per cent people have graduated as against 1 per cent in 2008. About 1.7 per cent people have done higher studies against 0.2 per cent in 2008. Yuksam ranks the highest in respect of literacy rate (65.5 per cent) followed by Tashiding with (62.8 per cent) and T.Khachodpalri. K.Labdang GPU having the lowest literacy rate in Yuksam development block.

Table 4.4: GPU-wise Level of Literates (in per cent)

Name of the GPU	Primary	Secondary	Senior Secondary	Graduate	Others	Illiterate
K. Mangnam	46.75	8.10	0.40	0.20	0.00	44.60
D. Narkhola	43.00	11.30	0.40	0.30	0.00	45.00
K. Labdang	43.00	11.00	0.40	0.00	0.00	45.60
Tashiding	37.50	19.30	3.75	1.70	0.50	37.20
A. Chongrang	36.90	16.50	2.00	1.00	0.40	43.00
Gerethang	42.00	16.70	2.40	0.50	0.20	38.00
Yuksam	42.60	18.00	2.70	1.80	0.20	34.50
T. Khachodpalri	40.20	17.60	2.10	1.10	0.03	38.00
Melli	40.10	14.80	2.10	0.70	0.04	42.00
Percentage in (2008)	40.50	16.40	2.30	1.00	0.20	39.60
Percentage in (2009)	46.00	18.00	3.00	2.10	1.70	29.20

Source: DESME, 2008 and State Rural Household Census, 2009.

Level of primary literates and educational institution: the primary institution plays an important role in literacy and it serves as a base in the educational structure of an individual. The numbers of primary school are higher in Tashiding GPU followed by T.Khachodpalri and A.Chongrang GPU. Relatively the least numbers of primary institutions are found at K.Labdang and Gerethang GPU. On the basis of survey report, K.Mangnum GPU has highest percentage of primary literates (46.75 per cent) followed by D.Narkhola, K.Labdang and least percentage were observed at A.Chongrang GPU (36.90 per cent). It is clear from the above figure that the GPUs which have less number of higher institutions have maximum primary literates.

Level of secondary and senior secondary literates and institution: the percentage of literates and the number of secondary/higher secondary institutions are less in respect to the primary institutions. Much of the importance is highly attached to the high school and the higher secondary school education as it provides an entry into any field of employment or admission to higher institution of vocational or general education and the provision of these facilities is considered as a step ahead in educational development.

Since this facilities lack in this GPUs, they are not able to enhance further in their education and neither their population are able to support the school. The students those who are financially sound, they use to migrate for their higher studies and the weaker sections depend basically on primary occupation for their living. This is the main reason why Tashiding bears the highest secondary and senior secondary literates with 23.05 per cent and K.Mangnam as the lowest with 8.5 per cent.

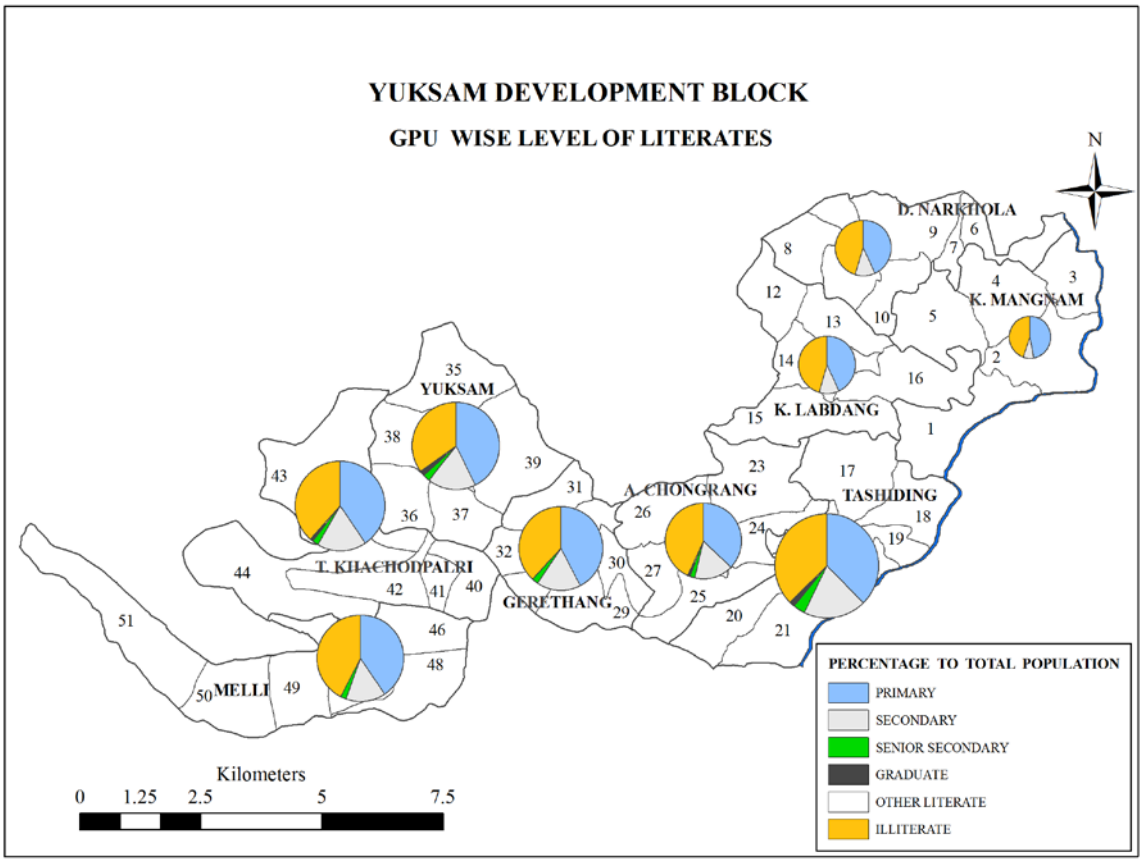


Fig: 4.7

4.3.4. Percentage of Female Literates among the GPUs

The proportion of literates among the female is equal to that of the male only in T.Khachodpalri GPU (50 per cent) (Table. 4.5). In secondary level females' literates are very low in all the GPUs. Mostly the girl child in rural area is engaged to take care of young siblings and on other minor domestic chores to free household adults. Early marriage of a girl child has a disappointing effect on education. Girls hardly get an opportunity to build their choices for themselves. Therefore a strong gender inequality still exists in rural area.

Table 4.5: Percentage of Female Literates

Name of the GPU	Percentage of Female Literates
K. Mangnam	47.00
D. Narkhola	47.00
K. Labdang	49.00
Tashiding	49.20
A. Chongrang	48.40
Gerethang	47.10
Yuksam	46.60
T. Khachodpalri	50.00
Melli	48.00

Source: DESME, 2008.

4.3.5. School Student Ratio

In order to assess the potentiality and efficiency of educational infrastructure at the GPU level, a school student ratio has been calculated (Appendix - H). The total sample block ratio of students and institution is 43 for primary school, 118 for Junior High School, 282 Secondary School, 615 for Senior Secondary School and 50 for Livelihood School respectively (Table. 4.6 and Fig. 4.8). Likewise, ratio of students per school among the GPUs of sample block is classified into following three categories:

Table 4.6: School Student Ratio (2010-11)

Name of the GPU	Primary School	Junior High School	Secondary School	Senior Secondary School	Livelihood School
K. Mangnam	29	90	0	0	0
D. Narkhola	70	0	0	0	0
K. Labdang	84	115	0	0	0
Tashiding	35	126	0	615	50
A. Chongrang	31	140	0	0	0
Gerethang	92	115	243	0	0
Yuksam	45	0	380	0	0
T. Khachodpalri	35	116	319	0	0
Melli	48	81	186	0	0
Total	43	118	282	615	50

Source: VDAP, 2011.

High ratio - the school having high number of student is included under this category. High school student ratio i.e. above 100 students per school is recorded in Gerethang and Yuksam GPU.

Moderate ratio - in maximum GPUs moderate ratio has been noticed. It includes K. Labdang, Tashiding, A. Chongrang, T. Khachodpalri and Melli GPU and it comprises 75 to 100 students per school respectively.

Table 4.7: Level of School Student Ratio (2010-11)

Category	School/Student ratio	Name of the GPU
High	Above 100	Gerethang, Yuksam
Moderate	75 to 100	K. Labdang, Tashiding, A. Chongrang, T. Khachodpalri, Melli
Low	Below 75	K. Mangnam, D. Narkhola

Calculated by author

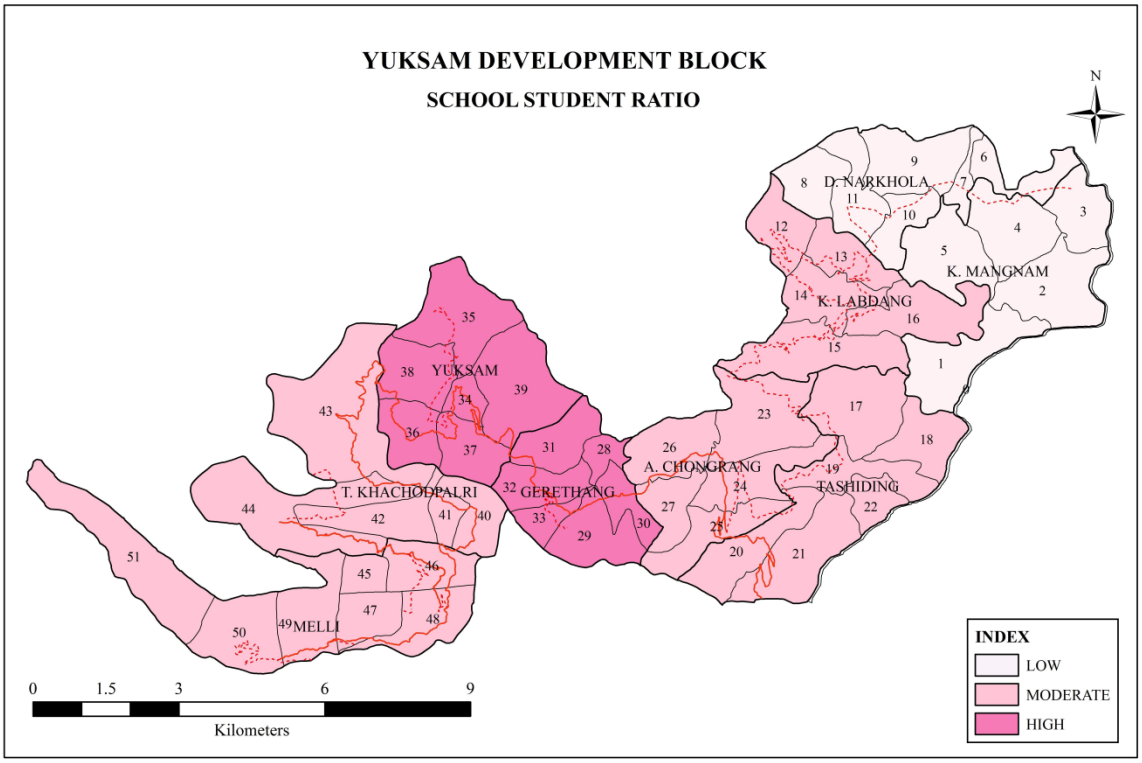


Fig: 4.8

Low ratio - is recorded among K. Mangnam and D. Narkhola GPUs, which are having below 75 students per school respectively.

4.3.6. Teacher Student Ratio

During 2010-11, total student enrolment counts 4299, shared by primary schools 1328, Junior High School 1178, 1128 for Secondary School, Senior Secondary School 615, and Livelihood School with 50 students. The total numbers of teachers are 312; out of these 112 are primary school teacher, 80 for junior high school, 62 for secondary school, 55 for senior secondary school and 3 teachers for livelihood school. The teacher student ratio found in the development block is 12 for primary school, 15 for Junior High School, 18 Secondary School, 11 for Higher Secondary School and 17 for Livelihood School respectively.

As a whole the average teacher student ratio is 1:91 i.e. 91 students / teacher, but the ratio varies among the different GPUs and it is broadly grouped into 3 categories:

High ratio - the high teacher student ratio is noticed among D. Narkhola GPU, having above 20 students per teacher (Table. 4.8, 4.9 and Fig. 4.9).

Table 4.8: Teacher Student Ratio (2010-11)

Name of the GPU	Primary School	Junior High School	Secondary School	Senior Secondary School	Livelihood School
K. Mangnam	12	11	0	0	0
D. Narkhola	20	0	0	0	0
K. Labdang	17	13	0	0	0
Tashiding	10	13	0	11	17
A. Chongrang	9	18	0	0	0
Gerethang	18	15	19	0	0
Yuksam	11	0	21	0	0
T. Khachodpalri	12	23	17	0	0
Melli	12	8	16	0	0
Total	12	15	18	11	17

Source: VDAP, 2011.

Table 4.9: Level of Teacher Student Ratio (2010-11)

Category	Teacher/Student ratio	Name of the GPU
High	Above 20	D. Narkhola
Moderate	15 to 20	A. Chongrang, Gerethang, Yuksam, T. Khachodpalri
Low	Below 15	K. Mangnam, K. Labdang, Melli

Calculated by author

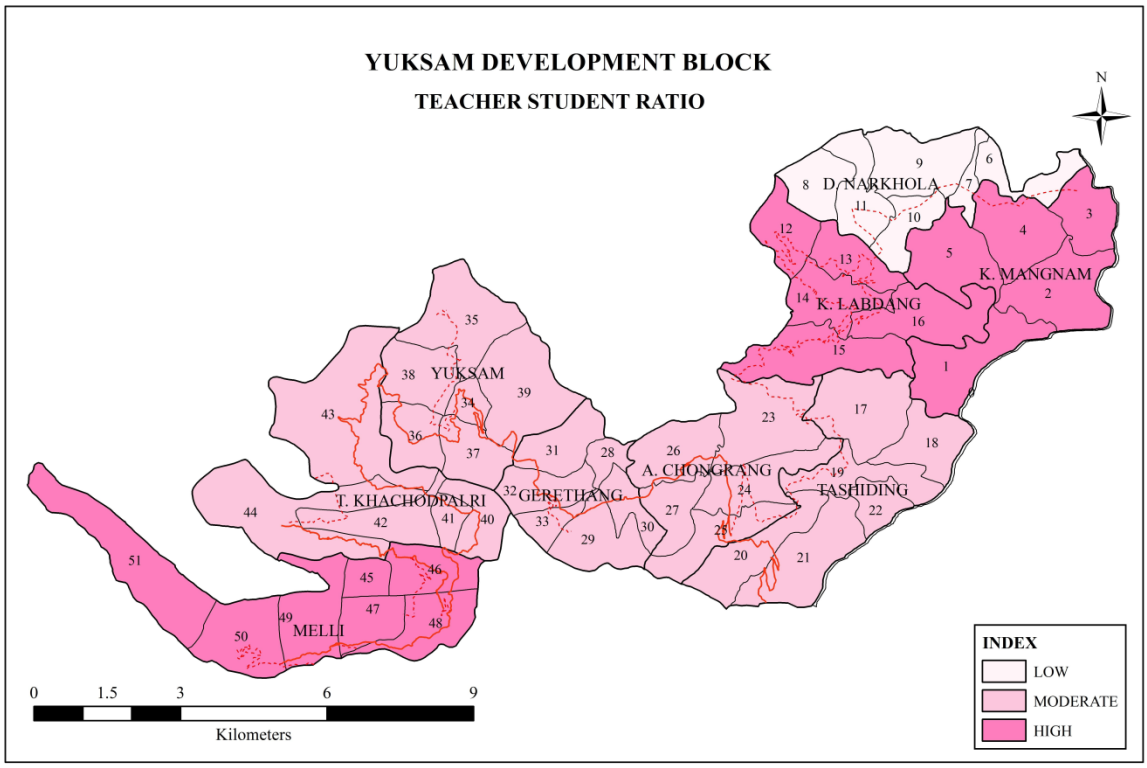


Fig: 4.9

Moderate ratio - A.Chongrang, Gerethang, Yuksam and T.Khachodpalri GPU have moderate teacher student ratio within Yuksam development block (15 to 20 students per teacher).

Low ratio - K. Mangnam, K. Labdang and Melli GPU have low student teacher ratio comprised below (1:15) 15 students per teacher.

While, Government has implemented various educational schemes to these backward units, only a few are able to plunge to this opportunity as parental education has also a strong impact on the outcome of children's schooling. Many of them are uneducated so they always take a back seat when it comes to educating their children. Therefore the Government should keep a strict vigilance in this unit for the proper functioning of all the facilities being rendered to these backward units so that they do not neglect such benefits that have come up on their way.

4.4. MEDICAL AND HEALTH SERVICES

Health is an important social aspect of development and better health status has become a major component of quality of life. Sikkim is considered as a land of faith healers and traditional medicine (developed based on local resources and imbued with a strong religious feeling) has continued to play an important role to cure the diseases. Even these days in villages the most usual first treatment for diseases seeks advice from the traditional faith healer. There are a large number of traditional healers: *Jhankri, Dhami, Bonbo* and *Phendongba* in the Nepali community, *Bumthing* in the Lepcha communities, *Pow* and *Nejum* in the Bhutia community.

'*Jhar phuk'* is the first phrase for these great faith healers; it is an exciting, difficult but cheap course of treatment. In some cases they act very effective and they also experiment with treatment by using practical knowledge and local medicines. However awareness grows in the course of education, communication and modern mass media allopathic treatment going ahead gradually more accepted by the people. This has led to a superior choice to the hospitals.

4.4.1. Health Care Unit

Sir Tashi Namgyal Memorial (STNM) was the only one major hospital in Gangtok, before the merger with the Indian union in 1975. It was established in 1917 with three doctors and 50 beds and it expanded later with some specialized departments. From 2 hospitals in 1975, the number of Primary Health Centres and Sub-Centres has increased dramatically to 24 and 147 respectively. After 1975 there has been a huge expansion of the medical and health services and remarkable milestones have been established.

Since 1979, every district had own Community Health Centre and one Central Referral Hospital at Gangtok with 300 beds and complete arrangement of specialize services. Today in Sikkim there are 24 Primary Health Centres (PHCs), 147 Primary Health Sub-Centres (PHSCs) and 4 Community Health Centres in the State (Appendix - I). Primary Health Centres and Sub-Centres are functioning today in most of the GPUs and villages in Sikkim. This makes Sikkim the only State in the country to attain the national norm of establishing 1 primary health centre for 20,000 people and 1 PHSC for 3,000 people (on the basis of a projected population growth in 1998).

Though there is highest number of health care services in East district (59), as far as specialized hospitals are concerned, west district is at second position, followed by South and North district has lowest number of health unit within the State. The available data shows that, the highest number of hospital beds (1000) are concentrated in East district accounting for about 65.8 per cent of total hospital beds (1520 total beds) in the whole State, whereas average number of beds per district is 380. Population per doctor is higher in the West district 4810; the capacity of the hospitals is also much smaller in term of population per beds (821) as compared to similar facilities existing in other district (Appendix - J). On account of patients per doctor is higher in North district (8.67), which may be due to their lower facilities and capacities.

Health care is considered as a means of social upliftment. ‘The development of the health services must be intrinsically woven into the total socio-economic development as the healthy worker produces more for the society than the sick worker’ (Arora, 1979). The higher frequency of health services is a reference of better development of an area. There are two Primary Health Centres in Yuksam and Tashiding GPU (Fig. 4.10).

One doctor is appointed in each PHC, conceptually 2 doctors are supposed to cover all the villages within the development block. Besides this, there are 5 Primary Health Sub-Centres in K.Mangnam, K.Labdang, Gerethang, T.Khachodpalri and Melli GPU (Appendix - K). Vaccination and treatment against diseases like polio, chickenpox and measles have been provided by this centre. In major cases people were referred to district or State Referral Hospital for their treatment. As a whole average population per doctor ratio is 1:8667, i.e. 8667 population per doctor, which is quite higher than the district and State average. The distribution of the medical and health services under study area are not satisfactory and are not able to fulfil the demand of the people.

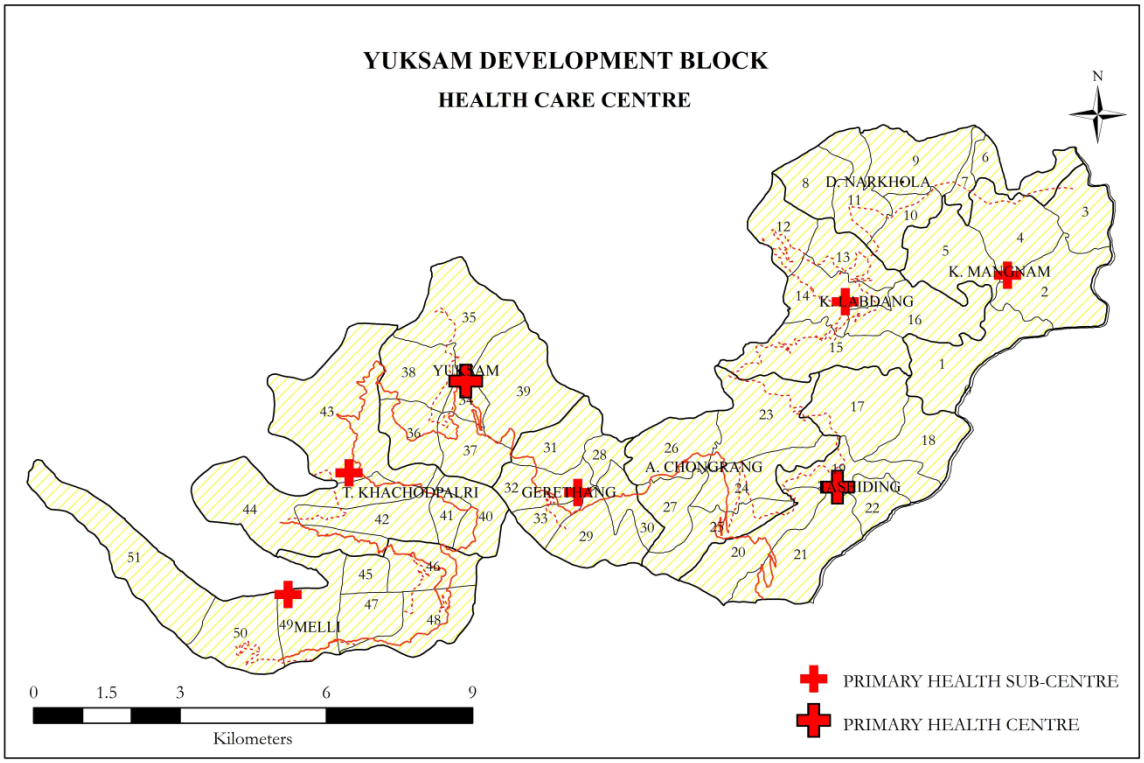


Fig: 4.10

The States Government are trying to provide basic health care at the doorsteps of the rural mass, but still there are two GPUs D.Narkhola and A.Chongrang with a population of 2806, did not have any kind of health care facilities in their own area. Every GPU have at least its own health care centre with some medicines and first aid box. It is very true that 'income, education and occupation are interdependent among themselves and also contribute individually to nutritional standard, living conditions and individual habits which are in turn closely associated with the health status of people' (Narayana, 1997).

4.5. SANITATION

'Sanitation and quality of life are closely connected. Rural sanitation programmes has therefore been added as one of the components of the Minimum Needs Programmes from 1987-88' (Maithani, 1992). The Total Sanitation Campaign (TSC) was one of the most important components of rural development in Sikkim. In Sikkim, TSC is implemented through the Sanitation Wing of the Rural Management and Development Department, Government of Sikkim under the support of the Department of Drinking Water Supply Ministry of Rural Development, Government of India. With the implementation over the years it successfully covered at large individual households, schools, aganwadis in rural areas, institutions and public places with sanitation facilities.

The basic aim of TSC was to promote hygiene education and proper sanitary habits among students and public in general. Every step is taken to eliminate and to minimize spread of diseases and risk of contamination of drinking water sources and foodstuff. The State has made remarkable progress in terms of sanitation, and there are only 797 (1 per cent) of the total 76,813 households who do not have sanitation facilities. The highest percentage of household is recorded in Geyzing development block 4 percent and least 0.2 percent is noticeable in Wok development block. The data reveals that the share of 0.5 per cent household of the Yuksam development block in 2008 does not have sanitation facilities (Appendix - L and M).

There has been considerable progress in sanitation facilities in 2009. Out of 9 GPUs, 6 GPUs were reported having 100 per cent sanitation facilities. Within Yuksam development block nearly 65 per cent households are benefited under TSC. Though the sanitation programme provides sanitary latrines in the rural household, but the field experience shows that due to lack of awareness for the maintenance such facilities are mostly put into misuse instantly after their construction. Thus, in order to highlight the importance and to improve their living environment there is also need of timely health education to the rural communities.

4.6. COMMUNICATION AND SOCIAL AMENITIES

The term 'development communication' was first coined by Nora C. Quebral in 1972, he defines the term as - 'the art and science of human communication linked to a society's planned transformation from a state of poverty to one of dynamic socio-

economic growth that makes for greater equity and the larger unfolding of individual potential'. The communication system is necessary not only to sustain the internal links between the rural societies but also gives enormous support to the rural economy. Good communication network helps to maintain the socio-economic development of a rural area. The communication facilities include postal services, telephone and telegraph offices. The distribution of the communication facilities is uneven in the villages. The post office is the only means of communication available in the area. There are 7 post offices in D. Narkhola, Tashiding, A.Chongrang, Gerethang, Yuksam, T.Khachodpalri and Melli GPU (Appendix - K). K. Mangnam and K. Labdang GPU don't have post office facilities (Fig. 4.11).

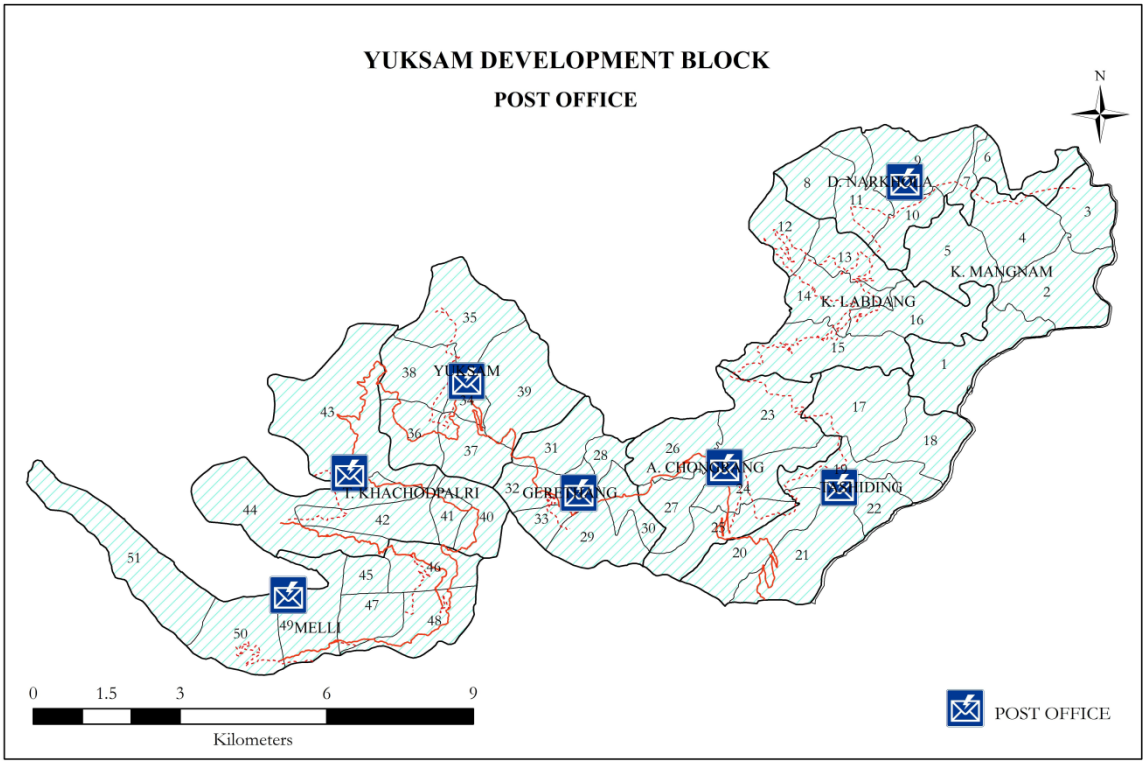


Fig: 4.11

The circulation of news paper is very limited; the villages which are situated on the main road have this facility. The telephone line is mainly confined in road side, but now a day's maximum people use cell phones for communication. It would be noticed that post office is unevenly distributed in this area. As regards the social amenities; the present study includes internet service. There are only 3 internet service centres, out of these two centres are located at Yuksam and one centre at Tashiding GPU.

The GPUs of the Yuksam development block are not adequately equipped with social amenities. Hence, among the social infrastructure the availability of education, medical, sanitation and communication facilities are basic requirement. A few villages remained devoid of these facilities. In this context, the extension of these facilities will play a helpful role in decreasing disparities and increase infrastructure facilities. The analytic framework of this study is that development is not a simple process; it is an impact of education, income distribution, availability of medical and health services. All these aspects are interdependent between the other aspects of development. Hence it is assumed that the larger the size of the village in term of population, higher will be the level of development.

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Chapter 5

ECONOMIC INDICATORS REFLECTING RURAL DEVELOPMENT

'Development is often taken to mean economic development, although economic development implies a restructuring of the economic and social system by means of new techniques of production and distribution' (Dave, 1991). R.T. Tewari states that 'development is an outcome of the progress made in different sectors of economic activities particularly primary, secondary and tertiary'. The Indian economy is comprised of rural and urban sector. About 69 per cent of the Indian population lives in rural areas and their major source of earning come from agriculture. Agriculture is the most important economic factor of our nation. The economic development implies a restructuring of the economic and social system by means of new method of production and allocation.

The rural area work both as a supplier of raw material as well as user of produce goods, so maximum attention must be given to the rural sector. Thus, it is essential to have economic development in order to raise the standard of living of the people. Various developmental schemes for rural areas are tuned for appropriate development of the economy. The central objective of every scheme and planning process is to initiate development which increase the standard of living, minimise rural urban gap, to increases production and to support weaker section of the society for overall development of an area. 'The concept of economic development is further extended to incorporate the structural changes and reallocate resources within the society with the objective of raising the overall level of human welfare' (Wilson and Woods, 1982).

5.1. AGRICULTURE

Hills are not suitable for crop production; inspite of this agriculture continues to be the backbone of the State economy and the main occupation of the area. The economy of Sikkim is based on agriculture which contributes about 49 per cent to the States income. About 65 per cent of the population depends on agriculture and related activities for their livelihood.

In Sikkim thus agriculture remained highly subsistence-oriented. The economy was further struggling by difficulty of negligible marketable surplus, low productivity and other backwardness. 'If agriculture is in a slump, it offers only a stagnant market and hampers the development of the rest of the economy. If agricultural development is neglected, it becomes more difficult to develop anything else: this is the fundamental principle of balanced growth' (Lewis, 1954). The 5th Plan document of Sikkim mentioned that, 'agricultural stagnation is the main constraint on the rate of growth of the economy and by restricting the peoples' purchasing power such stagnation also limits the scope for industrialisation'. Therefore, in the post merger period the land related issues were given a high priority. The State planned a well package of services intended to make stronger rural economy. This enclosed land reforms, provision of inputs like seeds and fertilisers, agricultural credit, marketing, minor irrigation, support to horticulture and cash-cropping to the rural poor.

5.1.1. Land use Pattern

Land is an important basic resource of human being. The entire socio-cultural and economic functions of an area depend upon it. 'Present land-use is the result of different causes, many of which are directly related to nature and quantity of land resources, others have their origin in cultural, social and economic conditions of the past' (Wink, 1975). In any region the existing land use pattern is an outcome of various contributing factors. The total geographical area of Sikkim is divided into six broad divisions. The cultivable area consist of 14.91 per cent, 10.14 per cent area is covered by permanent pastures, 11.7 per cent on non agricultural use, 24.7 per cent area covered by barren land (glaciers), 0.75 per cent land under miscellaneous trees and groves and forest cover remaining 37.9 per cent (Appendix - N). Agricultural holdings are well spread over an elevation of 300 to 3000 meters.

Most of the cultivable lands are terraced and farmers have settled these holdings by establishing regular cropping system. Marginal holdings and small holdings clubbed together comprise about 50 per cent of all operational holdings and occupy 41 per cent of the total area. Sikkim's economy is diverse; it has the largest cultivated area and production of large cardamom in India. With total 7,096 sq.kms area, crop grows in organic conditions; besides this Sikkim being an agricultural State it has also made significant progress in livestock, floriculture and horticulture sector.

The State has a diverse alpine flavour, nearly 60 per cent of its geographical area lies above 3000 m. Only (1,633 sq.km) 23 per cent of the total area is predominantly rural, while remaining is classified as forests. The average extent of each block is 6,280 hectare, while the area of Dzongu block is 16,761 hectare; Chungthang 10,755 hectare and Yuksam 10,457 hectare are the largest blocks in terms of area. Wok 3,464 hectare, Ranka 2,832 hectare and Jorethang 1,858 hectare is the smallest development block in Sikkim. Out of total rural area 163,297 hectare, dry land farming constitutes 53 per cent area, 21 per cent area is under wasteland, and 19 per cent area is under large cardamom plantations and 7 per cent area under paddy cultivation (Appendix - O).

Large cardamom is the most important cash crop of the State and it is predominantly grown in the belt of North district. The largest area under paddy cultivation is in Ranka (27 per cent), Rakdong Tintek (21 per cent), Rhenock (18 per cent) and Khamdong (17 per cent) development block, while the least area is observed in Chungthang (0.01 per cent) followed by Wok and Namchi (1 per cent) development block. The largest area under dry land farming is in Rabong (72 per cent), Geyzing (69 per cent), about 67 per cent in Jorethang and 65 per cent in Yangang development block, while the lowest percentage of area is observed under Chungthang (20 per cent), followed by Ranka (32 per cent) and Rhenock (35 per cent) development block.

The wasteland area is highest in Duga development block (36 per cent) followed by Yuksam and Gangtok development block while the lowest wasteland is found in Daramdin (2 per cent), Mangan (7 per cent) and Kabi (9 per cent) development block. The largest area under the cultivation of large cardamom is in Chungthang (53 per cent), Dzongu (48 per cent), followed by Mangan, Dentam and Daramdin (29 per cent) development block, while the least area is observed in Wok, Temi, Namthang and Yangang development block.

The total geographical area of Yuksam development block is divided into five broad divisions. The cultivable area consist of 41.70 per cent, 23.90 per cent area is covered by grass and scrub, forest covers 34.12 per cent, 0.16 per cent area covered by wasteland and landslides and remaining 0.12 per cent under river and streams (Fig. 5.1). The major crops grown in this block are maize, finger millet, ginger, potato and variety of vegetables. About 60 per cent of total cultivable area of Yuksam development block was under dry farming, 34 per cent of area is under wasteland, 4 per cent area under large

cardamom cultivation while only 2 per cent land is irrigated and is under paddy cultivation (State Rural Household Census, 2009). In recent years the paddy fields has been largely transformed into large cardamom cultivation because of its high selling value and it requires low manpower as compared to paddy cultivation.

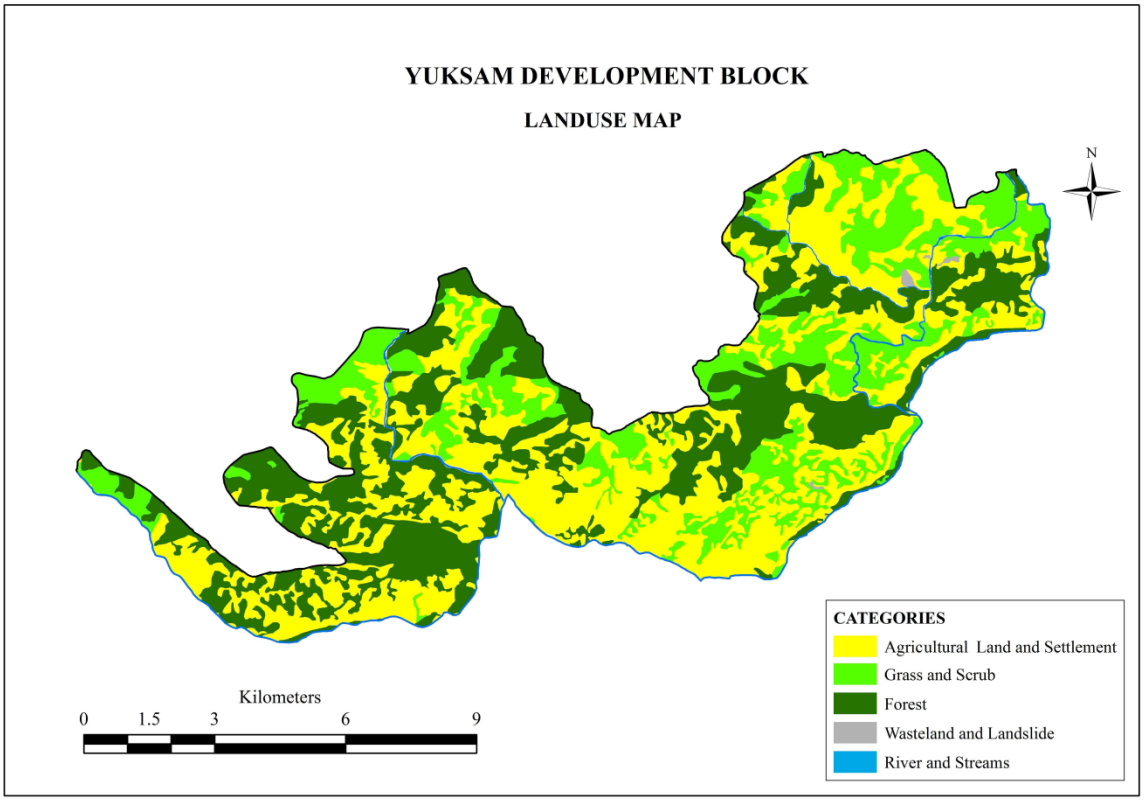

Fig: 5.1

To understand the economic background of the household, land is considered as an important basic resource of a rural area. Therefore a detailed study of land holding, cultivated area of a household, land-use, cropping pattern is obviously very important. It may be noted that due to non-availability of detailed secondary data related with land holding and crop production of villages and GPUs, present study cover this analysis based on primary data collected through field survey from the households of Yuksam development block. The primary data on different category of land utilization have been classified into three categories, i.e. (a) land not available for cultivation (build-up area), (b) cultivated area (both dry and wet cultivated area) and (c) wasteland.

Land not available for cultivation (build-up area) - this type of land includes the area under non agricultural use, i.e. area covered by house, cow shed, courtyard etc. The build-up area used for construction up to 5 decimal is maximum in A.Chongrang 29.6 per cent and minimum in Gerethang 15.8 per cent (Table. 5.1). Maximum household of

GPUs used 5 to 10 decimal of area for construction purposes, while it is maximum in T. Khachodpalri 76.7 per cent, 74 per cent in Melli and 70.9 per cent in K.Mangnam and minimum in D.Narkhola GPU 17.1 per cent. Above 10 decimal build up area used under construction purpose was more observed in K.Labdang 56.1 per cent and nil in K.Mangnam and Melli GPU.

Table 5.1: Build-up area

Area (in decimal)	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9
Upto 5 dec	29.10	26.80	21.60	22.00	29.60	15.80	26.00	20.60	23.60
5 to 10 dec	70.90	17.10	68.60	55.40	55.10	42.50	67.40	76.70	74.00
Above 10 dec	0.00	56.10	9.80	19.20	15.20	36.40	4.60	2.10	0.00
Nil	0.00	0.00	0.00	3.40	0.00	5.30	2.00	0.70	2.40

Source: Field survey, 2010-2011 based on 30 percent sample.

The study also reveals that the percentage of household those who are settled in rented house or land less is higher in Gerethang GPU (5.3 per cent) followed by Tashiding (3.4 per cent), Melli (2.4 per cent), Yuksam (2 per cent) and about 0.7 per cent in T.Khachodpalri GPU, while in remaining 4 GPUs none of the households fall under this category.

Cultivated land (both dry and wet) - this type of land include both dry and wet area which are under cultivation. The total cultivated area is 66 per cent (6894 hectares), which include dry field, paddy field and cardamom cultivated areas. It could be seen that the highest 11.2 per cent household of Tashiding GPU does not have any cultivated land and every household of K.Mangnam GPU have cultivated land. About 63.4 per cent household of Yuksam GPU had less than 0.5 acre of cultivated land holdings, while the least 9.6 per cent household is observed at D.Narkhola GPU (Table. 5.2).

Table 5.2: Percentage of Landholders by size of Cultivated Area

Area (in acre)	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9
Nil	0.00	2.40	3.90	11.20	5.10	6.20	4.70	2.80	2.40
below 0.5 ac	25.10	9.60	23.00	35.70	29.30	40.70	63.40	55.60	32.60
0.5 - 1ac	20.70	21.60	23.00	21.50	24.40	18.50	15.30	28.00	39.00
1ac - 2ac	37.60	36.70	28.00	17.60	26.80	11.40	10.00	11.20	9.70
2ac - 5ac	16.70	17.00	22.00	11.20	10.20	22.30	6.00	2.20	11.30
above 5ac	0.00	12.50	0.00	2.80	4.00	0.90	0.70	0.00	4.80

Source: Field survey, 2010-2011 based on 30 percent sample.

The proportion of households having land holding of 0.5 to 1 acre is higher at Melli GPU (39 per cent) and least (15.3 per cent) was observed in D.Narkhola GPU.Similarly, the proportion of cultivators in possession of land holdings 1 to 2 acres is

higher at K.Mangnam GPU (37.6 per cent) and lowest in Melli GPU. Further, the study also shows that the size of land holding decreased the proportion of cultivators in 7 GPUs out of 9 GPUs. However, the increase in cultivators at the size of 2 acre to 5 acre was more in Gerethang GPU 22.3 per cent and lowest was observed in Yuksam GPU which is about 2.2 per cent. Likewise, for land holding of above 5 acre highest was obtained in D.Narkhola GPU 12.5 per cent and in the three GPU K. Mangnam, K. Labdang and in T. Khachodpalri none of the cultivators have the area under this category.

Wasteland (grass land, grazing lands 'gaucharan' and barren land 'bajo') - forest uncultivable land and grazing lands are included under this category. The 34 per cent area of the development block was under wasteland. In every GPU more than 55 per cent household does not have area under wasteland (Table. 5.3). It could be seen that over 25 per cent household of K.Mangnam GPU had less than 0.5 acre of land holding under wasteland whereas much less 2.8 per cent household of T.Khachodpalri fall under this category. The proportion of wasteland 0.5 acre to 1 acre was accounted highest at A.Chongrang (9 per cent), while none of the household of K.Mangnam GPU fall under this category.

Table 5.3: Percentage of Landholders by size of Wasteland holding

Area (in acre)	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9
Nil	75.00	75.60	86.50	77.00	78.60	58.40	93.40	88.10	78.80
below 0.5 ac	25.00	19.50	7.30	7.60	9.10	24.30	4.50	2.80	1.60
0.5 - 1ac	0.00	4.90	4.00	5.60	9.00	5.20	1.40	1.40	1.60
1ac - 2ac	0.00	0.00	2.00	4.00	2.00	8.00	0.70	3.50	5.00
Above 2ac	0.00	0.00	0.00	5.80	1.00	4.10	0.00	4.20	13.00

Source: Field survey, 2010-2011 based on 30 percent sample.

Likewise, the proportion of household fall under 1 acre to 2 acre is highest in Gerethang GPU (8 per cent), while in K.Mangnam and D.Narkhola GPU not even a single household fall under this category. About 13 per cent household of Melli GPU holds the highest proportion of wasteland above 2 acre in Yuksam development block.

5.1.2. Land holding Pattern

The agricultural development of an area is totally depends on the size of land holdings among the household. Distribution of operational land holdings in Yuksam development block is skewed. The average extent of GPUs is 1162 hectares, while Tashiding (2098 ha), Melli (1369 ha) and T.Khachodpalri (1199 ha) are the biggest GPUs

in terms of area, Gerethang (708 ha), A.Chongrang (905 ha) and K.Mangnam (946 ha) are the smallest GPUs in terms of area. The highest percentage of landless household is in Gerethang (0.9 per cent) followed by Melli (0.8 per cent) and Yuksam (0.7 per cent). It could be seen that in remaining 6 GPUs every household have land holdings. About 65.3 per cent of the household of Yuksam GPU have less than 0.5 acre landholding. Against this, the proportion of household having 0.5 to 1 acre of land in K.Labdang is about 44.6 per cent (Table. 5.4 and Fig. 5.2). Similarly, the proportion of household in possession of landholding between 1 to 2 acre is more in D.Narkhola GPU 39 per cent. The proportion of household in possession of land holding between 2 to 5 acres is more in K.Mangnam GPU 37.5 per cent.

Table 5.4: Percentage of Landholders by Size of Landholding (in per cent)

Size of Land holding (in acre)	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9
Landless	0.00	0.00	0.00	0.00	0.00	0.90	0.70	0.00	0.80
below 0.5 ac	8.40	0.00	0.00	24.10	31.70	36.40	65.30	26.60	31.30
0.5 ac - 1ac	16.70	31.60	44.60	18.40	19.30	19.50	14.70	34.30	33.20
1ac - 2ac	37.50	39.00	33.50	29.30	27.50	11.40	12.00	25.90	7.30
2ac - 5ac	37.50	29.20	22.00	20.80	16.30	29.40	6.70	11.20	18.40
above 5ac	0.00	0.00	0.00	7.40	5.00	2.60	0.70	2.00	9.20

Source: Field survey, 2010-2011 based on 30 percent sample and Census, 2001.

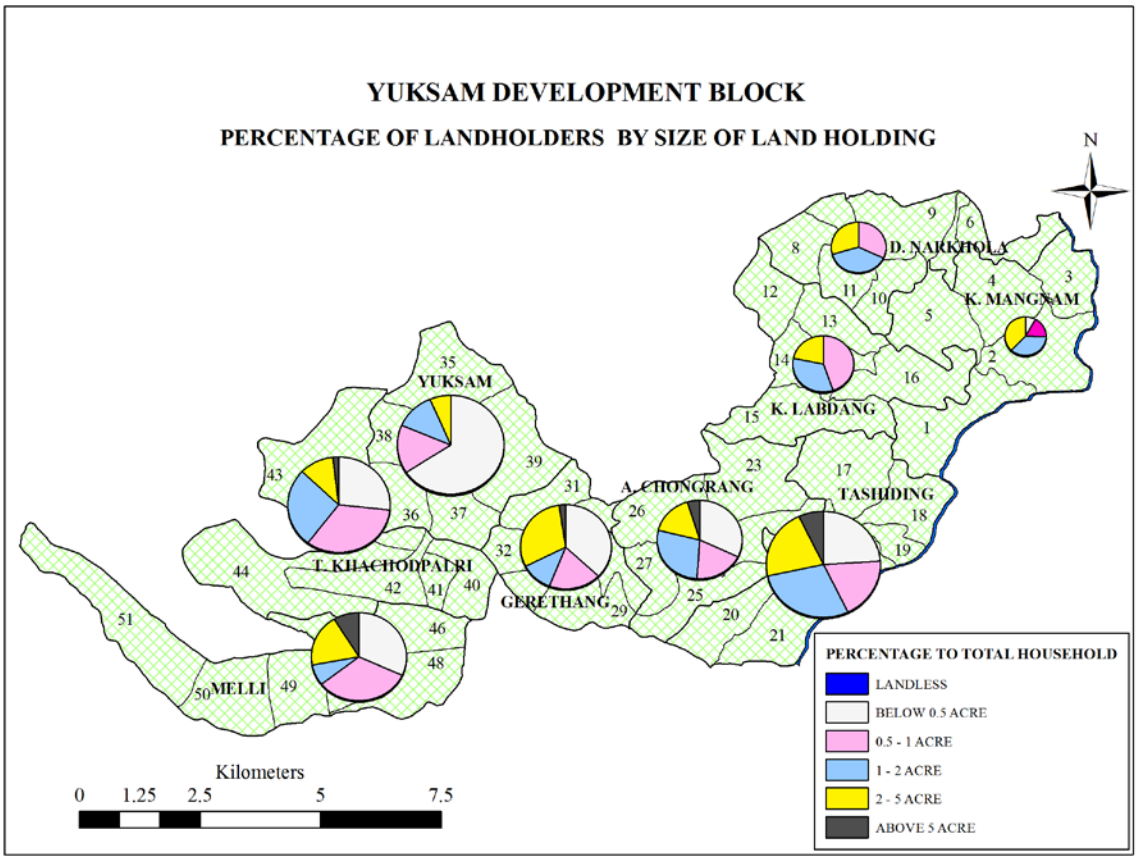

Fig: 5.2

However, it could be seen that the proportion of household who were in possession of land holdings above 5 acre was 9.2 per cent in Melli GPU followed by 7.4 per cent in Tashiding, 5 per cent in A.Chongrang, 2.6 per cent in Gerethang, 2 per cent in T.Khachodpalri and 0.7 per cent in Yuksam GPU, while none of the household in K.Labdang, D.Narkhola and K.Mangnam GPU holds above 5 acre land.

5.1.3. Irrigation

Sikkim falls under the high rainfall zone and receives a high precipitation particularly during the monsoon. Its annual rainfall exceeds 4000 mm, plenty of rainfall gives boost to harness the agriculture produce during the month of June to September but in winter season there is lack of sufficient water for irrigation purpose especially in southern belt of the State. Moreover, the rain is not uniform all over the State and the time of water requirements for the number of crops do not match.

The vegetables and floriculture need regular supply of irrigation water from essential source. Besides, these the steep terrains and soil condition do not allow retention of the rain water for longer period. Therefore, to enhance the agriculture production it is important to properly improve water resources available in the rivers and stream of the State. The major portion of the State is covered by snow and forest. The cultivable area which is suitable for practicing agriculture is about 1, 09,963 hectare and only about 15 per cent area is under irrigation. In addition to river training works, more attention is laid down to control all streams and channelize the stream water to proper outlet.

So far hardly 15 per cent of the total cultivable land has been created as an irrigation potential. In 2003-04 by covering cultivable area of over 23,864 hectares, 1138 minor irrigation channels were constructed (Appendix - P).With the objective of constructing irrigation schemes the State Government has paid strict focus to irrigation only after 1976. Fund received under Accelerated Irrigation Benefit Programme (AIBP) has supplemented to generate number of schemes. Thus irrigation has not only stabilized crop fields in kharif but also help in rabi and other seasonal crops. In addition to secure irrigation, various environmental protection works have also started under Flood Control and River Training. Such types of multi dimensional works have also started from external funding such as Non-lapsable Central Pool of Resources (NLCPR), North East Council and NABARD.

In 9th Plan the focus was given to construct many new channels to increase the potential formation and this was done to develop the socio-economic condition of rural masses. In 10th Five Year Plan attention was given to improve and upgrade the existing channels and construction of new channels to cover large cultivable command area. Goal has been set for covering 5000 hectares of cultivable area. In Sikkim, all rivers flow along the steep slopes due to steep hills with narrow valleys and rocky terrains. Some places such as Chungthang, Sirwani, Ranipool, Singtam, Reshi, Rangpo, Rorathang, Rongli, Legship, Mazitar, Melli and Jorethang suffer flash floods during monsoon season and massive river protection works are essential to protect these towns.

Due to severe rainfall, soil gets waterlogged and cause landslides in the lower regions. This is also a most important reason that causes flood. River discharge is aggravated by the debris flow due to landslide and protection is highly essential to control landslides in mountainous region like Sikkim. Maximum erosion takes place during monsoon season and deposition of soil on the river beds causes destruction and flood take place. Only minor irrigation is possible in Sikkim as the agricultural lands are available in small patches between the foothills and at the rugged terrains. The main sources of irrigation are rainfall, waters from small streams and discharges of such source are limited because of steep slopes therefore agriculture is practiced on terraced lands.

In Sikkim Accelerated Irrigation Benefits Programme has provided great opportunity to irrigation facilities. It also helps in generating employment to the villagers by providing employment opportunity; it helps to improve economic condition and enhance agriculture production. According to (Evaluation Study on Minor Irrigation Schemes) the study made by the Bureau of Economics and Statistics in the early 1990s showed that there is no scope of any major irrigation project in the hills of Sikkim. Efforts are being made to popularize sprinkler irrigation, stream irrigation and tank irrigation as these methods of irrigation require 30 to 40 per cent less water for irrigation. However, there has been no evaluation and monitoring of the existing irrigational facilities, its effectiveness and impact on crop production in the State.

5.2. AGRICULTURAL PRACTICES

The Government of Sikkim has fully declared an organic State by 2015. Four fundamental facts triggered by this declaration of the State Government are: Firstly, the

State as an entire has always been on the organic production mode. Secondly, whenever people think about Sikkim they have 'nature and natural' in their mind. This thought can be used as a major implied support in supplying its organic products in the market. For an organic product consumers are eager to pay a higher price both for the grounds of health and for changing livelihood. Thirdly, there has been an increasing position for organic products both in the international and domestic market. Finally Sikkim has various products varying from food, fruits, flowers, cheese, medicinal herbs to drinking water that might be supply to the rising organic market. Already various governmental agencies have started execution in this direction. Towards the goal of 'Organic State', the funding on fertilizer is being lessened and brought to zero. The Department is exposing and supporting farmers to implement modern and new technology of organic farming system to maintain the production process for the crops.

5.2.1. Horticulture

Horticulture product mainly includes fruits, vegetables, potato, large cardamom and ginger. The data shows that, the State has made steady improvement in horticultural production (Appendix - Q). The State has notable potentials for the development of horticulture sector; the efforts and approach have been gradually growing, according to the Agriculture Department, Government of Sikkim. The most vital horticulture products are vegetables which is mostly cultivated on a large scale and ranks first in the production of all the crops. Ginger being a cash crop ranks second, it is exported outside the State after fulfilling the local requirements.

Potato ranks third and it is produced mainly by the farmers for personal use, very few farmers grow it as cash crops. The climate and topography is favourable for the production of oranges. Fruits ranks fourth and are mostly cultivated in kitchen garden along with the combination of crops and vegetables and large cardamom ranks the last in production. Sikkim ranks first in the production of large cardamom in India. Most of Sikkim's large cardamoms are exported outside the State. Promotion of horticulture depends upon the successful marketing. The marketable surplus of products is mainly sold through rural markets. There are 17 rural markets in Sikkim (one in the North district, 6 each in the South and West districts and 4 in the East district).

5.2.2. Cash Crop

The study of cash crop cultivation under different GPUs presents somewhat similar trends with minor variations. The estimation shows that broom, ginger and cardamom are the main cash crops in Yuksam development block. Cardamom is the principal cash crop, about 19.2 per cent household of the sample block use to cultivate, broom being the cash crop ranks second in cultivation, about 11 per cent respondent use to cultivate all the cash crops (ginger, broom and cardamom), 10.4 per cent household cultivate both ginger and broom and about 7.7 per cent household cultivate only ginger (Table. 5.5).

Table 5.5: Cash Crop

Name of the GPU	Broom	Ginger	Cardamom	Broom, Ginger	Ginger, Cardamom, Broom	None
K. Mangnam	4.16	12.50	12.50	12.50	12.50	45.83
D. Narkhola	4.88	0.00	41.46	12.19	17.07	24.39
K. Labdang	1.96	0.00	72.54	0.00	0.00	25.49
Tashiding	12.92	18.53	7.86	11.23	8.42	41.01
A. Chongrang	10.20	11.22	12.24	32.65	14.28	19.38
Gerethang	11.50	13.27	10.61	11.50	24.77	28.31
Yuksam	16.00	0.66	17.33	10.00	8.00	48.00
T. Khachodpalri	15.38	3.49	26.57	3.49	4.19	46.85
Melli	25.20	2.43	14.63	2.43	13.82	41.46
Total (in Percent)	13.80	7.70	19.20	10.40	11.00	37.80

Source: Field survey, 2010-2011 based on 30 percent sample.

It could be seen that about 37.8 per cent household doesn't grow any cash crop. Most of the products are sold in market after fulfilling their household requirement. The higher level of cash crop production in the household might be contributed to their income. Even those whose main occupation is secondary, they are supplementing their income by cash crop. Along with other crops most of the household grow horticulture product like cauliflower, pumpkin, cucumber, radish, peas, beans, green leafy vegetables and potato for self consumption. Fruits like guava, orange, banana, papaya, pears etc are also grown in Yuksam development block.

5.3. CROPPING PATTERN

The four main natural elements of crop distribution are physiography, soil, climate and water resources. There are two main cropping season i.e. kharif and rabi. The kharif crops such as paddy (partially irrigated) and finger millet are purely rain fed. These crops are sown in the early summer, with the start of monsoon and are harvested in the

months of September to October. The rabi crops include wheat, maize, barley, mustard, potato and peas which are sown in the months of October to November in the last phase of rainy season. Because of hilly terrain and scarcity of water people practice dry cultivation on higher slope, the cropping pattern in Yuksam development block is distinct by several interesting characteristics. The major crops practiced are food grains, cash crops, vegetables and fruits. Food grains provide both food and cash to the farmer and also provide fodder for the livestock. Therefore it occupies highest position and plays a vital role in cropping pattern under this area.

Maize is the largest growing food grain in Yuksam development block among every GPU, it is also used for poultry feed and preparation of beer. For the production of maize 52.6 per cent area of the development block is devoted. Secondly, among the food crops finger millet and maize together claimed 27.3 per cent of the rabi cropped area. The area under paddy and wheat cultivation is only 8.4 per cent (Table. 5.6 and Fig. 5.3). Wheat is a winter crop and it is grown in the areas which are not fit for paddy with short growing period during winter.

Paddy is a summer crop and it grown in the fertile soil where the irrigation facilities are available. It is clear from the above figure, that due to availability of irrigation facilities in A.Chongrang and Gerethang GPU the area under paddy and wheat cultivation are significantly higher than that of other GPUs in the sample block. Paddy and wheat are mostly dependent on monsoonal rainfall. But the people practice both dry and wet cultivation in this area.

Table 5.6: Cropping Pattern (in per cent)

Name of the GPU	Maize	Finger Millet/Maize	Paddy/Wheat	Others	None
K. Mangnam	62.50	33.30	0.00	0.00	4.20
D. Narkhola	48.70	29.30	12.20	2.40	7.30
K. Labdang	88.00	4.00	0.00	0.00	8.00
Tashiding	48.30	24.70	4.50	10.60	12.00
A. Chongrang	34.60	34.60	20.50	4.10	6.10
Gerethang	11.50	46.00	32.80	0.00	9.70
Yuksam	61.30	26.00	1.30	0.00	11.30
T. Khachodpalri	75.00	15.30	2.00	0.00	7.60
Melli	59.30	31.70	2.40	0.00	6.50
Total	52.60	27.30	8.40	2.60	8.90

Source: Field survey, 2010-2011 based on 30 percent sample.

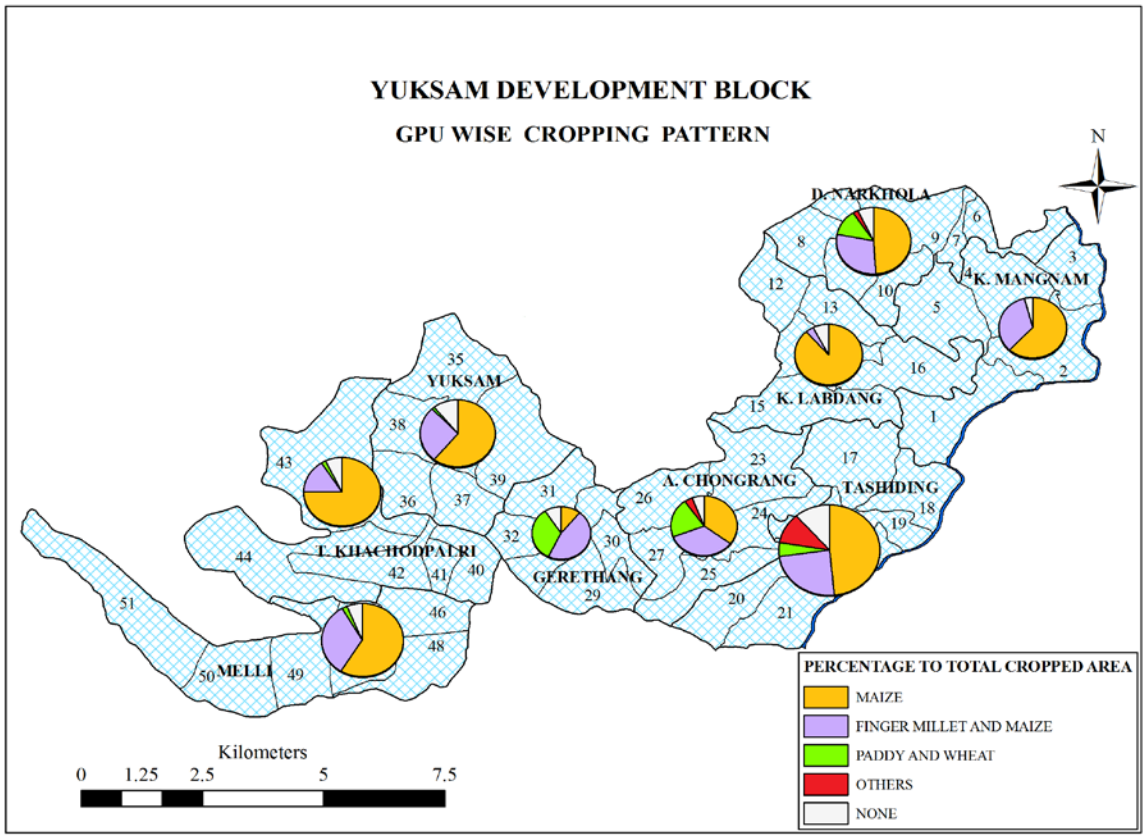

Fig: 5.3

Others crops include buckwheat *(phapar)*, oat *(oha)* and soya bean. These crops are grown on inferior soil than maize. The high land between the mountains are mainly used for the cultivation of these crop, about 2.6 per cent household are engaged in the production of these three crops. In Yuksam development block about 8.9 per cent household does not have cultivable land. People practices traditional method of cultivation and the agricultural operations are still dependent on the use of wooden plough. About 57 per cent of population in this block are engaged in agricultural activity as their means of livelihood. Agriculture is dominated by high dependency on organic source of nutrient. The chance of water logging is so less due to steepness of terrain. For the better production of the crops the proper drainage system is quite essential. In Yuksam development block not even a single household can produce self sufficient food crops for consumption, and they buy most of the items from the market.

5.4. ANIMAL HUSBANDRY

Animal husbandry is an indispensable part of the rural household economy of the State. Poultry and livestock rearing is the most important occupation of the people. There are generally two forms of animal husbandry practice in the State based upon the

agro-climatic and topographical variations. Livestock rearing is the main activity for the people living in higher altitudes of north, west, and east districts, such as Gurungs, Lachungpas, Lachenpas and Sherpas, they rear sheep, yaks and cattle which are mainly fed through grazing. Another more dominant form of animal husbandry practice is as part of a mixed farming system in the lower and mid-altitudes. The main occupation of the people is cultivation and horticulture. They rear animals mainly to maintain these activities by alternative as a bullock power and source of manure. Livestock provides milk, egg and meat to meet the protein requirement of human being.

The Department of Livestock, Animal Husbandry and Fisheries are engaged in supporting the people by providing necessary infrastructure in the State, for improving the productivity of livestock, maintenance and protection of animals through preventive and curative health care facilities and for developing the skill of farmers towards modern and scientific methods through adequate training. The Government is engaged in improvement of the poor yielding farm animals through artificial insemination and other breeding practices. For the control and prevention of diseases there are number of veterinary hospitals, dispensaries, artificial insemination centres, stockman centre, disease investigation laboratories in the State. These generally equipped for the protection of livestock is being made through an intensive network of veterinary services.

Livestock is an imperative element of the wealth of a State, and to keep the animals in good health veterinary services within the access of the farmer is necessary. Strong and healthy animal yield higher quantities of milk and meat. It is very important to raise the health standard of livestock for better earning (Appendix - R). Figure 5.4 delineate the veterinary services available in the Yuksam development block. The total number of veterinary centre is two; one is located at Tashiding and another at Yuksam GPU. There are two stockman centres which are located at Gerethang and Melli GPU.

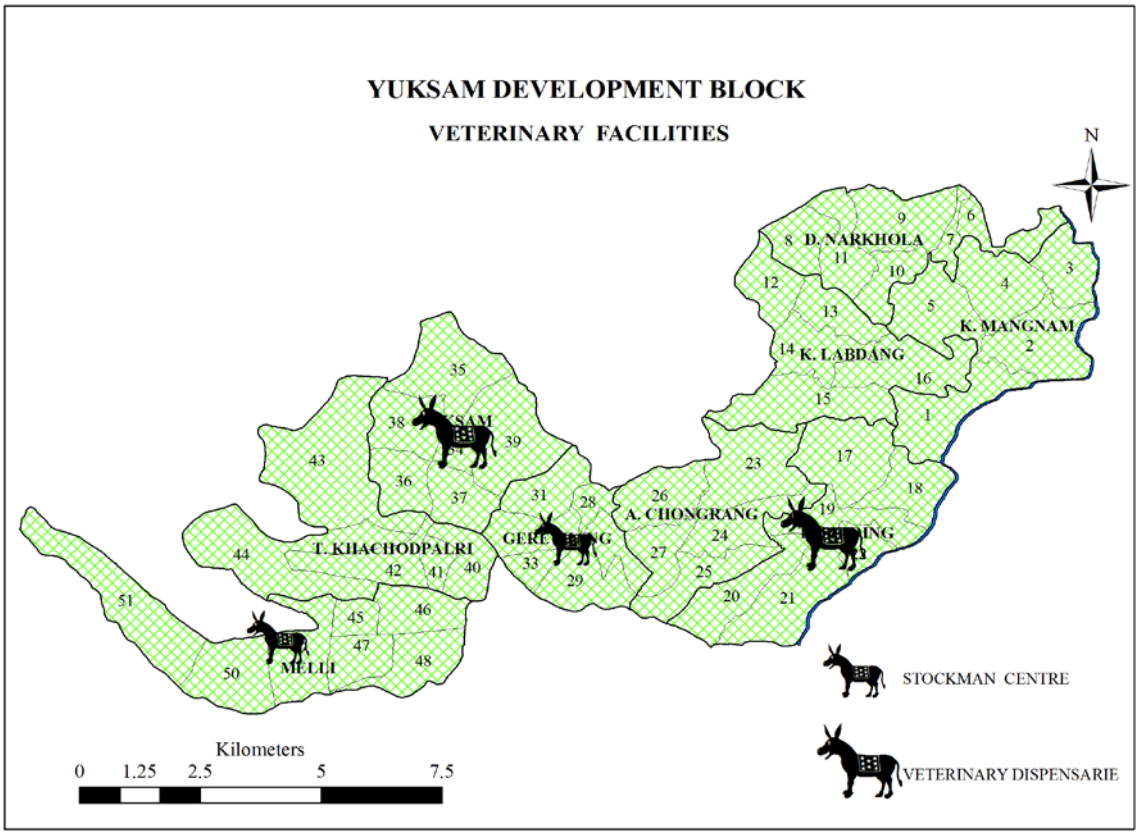

Fig: 5.4

Livestock: Income of the people mainly comes from multiple sources of agriculture, livestock, cash crop, tourism and horticulture. Livestock rearing is the second important economic activity next to agriculture of this area and livestock is a significant source of agricultural economy. In the study area livestock is mainly practised as additional activity on mixed farming basis. It consists of cow/bullock, pig, yak, poultry, goat and sheep. In addition to providing milk products, meat and manures, they also serve as a source of power for agricultural operations, mainly in ploughing, transporting goods and for threshing. Almost every family living in this area possess some livestock. The distribution pattern of livestock among the household at GPU level are shown in the below figure (Table. 5.7 and Fig. 5.5).

The total number of livestock is recorded as 6,748 out of which poultry occupies the highest 52 per cent, followed by cow/bull 21 per cent, goat 19.8 per cent, pig 6.4 per cent, yak 0.4 per cent, and sheep 0.2 per cent in Yuksam development block. The GPU wise holding analysis shows that the percentage of the livestock is highest in Tashiding GPU 16.4 per cent and least percentage of livestock is observed at K.Mangnam GPU 4.3 per cent respectively. It is clear from the below figure that the number of cows and bull

occupies the second position in comparison to other livestock. The cow produces manure, milk and calves. Milk is an important source of protein; cow dung is a source of fertilizer and bull are the chief source of power in agricultural operations in rural area.

Table 5.7: Livestock (in number)

Livestock	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9	Total
Cow/bull	81	132	67	265	234	160	166	147	167	1419
Pig	16	37	8	119	25	60	53	45	69	432
Yak	0	0	0	0	0	0	0	0	22	22
Poultry	129	298	250	488	382	359	587	384	649	3526
Goat	62	82	102	236	169	197	245	113	130	1336
Sheep	0	0	7	0	5	1	0	0	0	13
Total	288	549	434	1108	815	777	1051	689	1037	6748

Source: Field survey, 2010-2011 based on 30 percent sample.

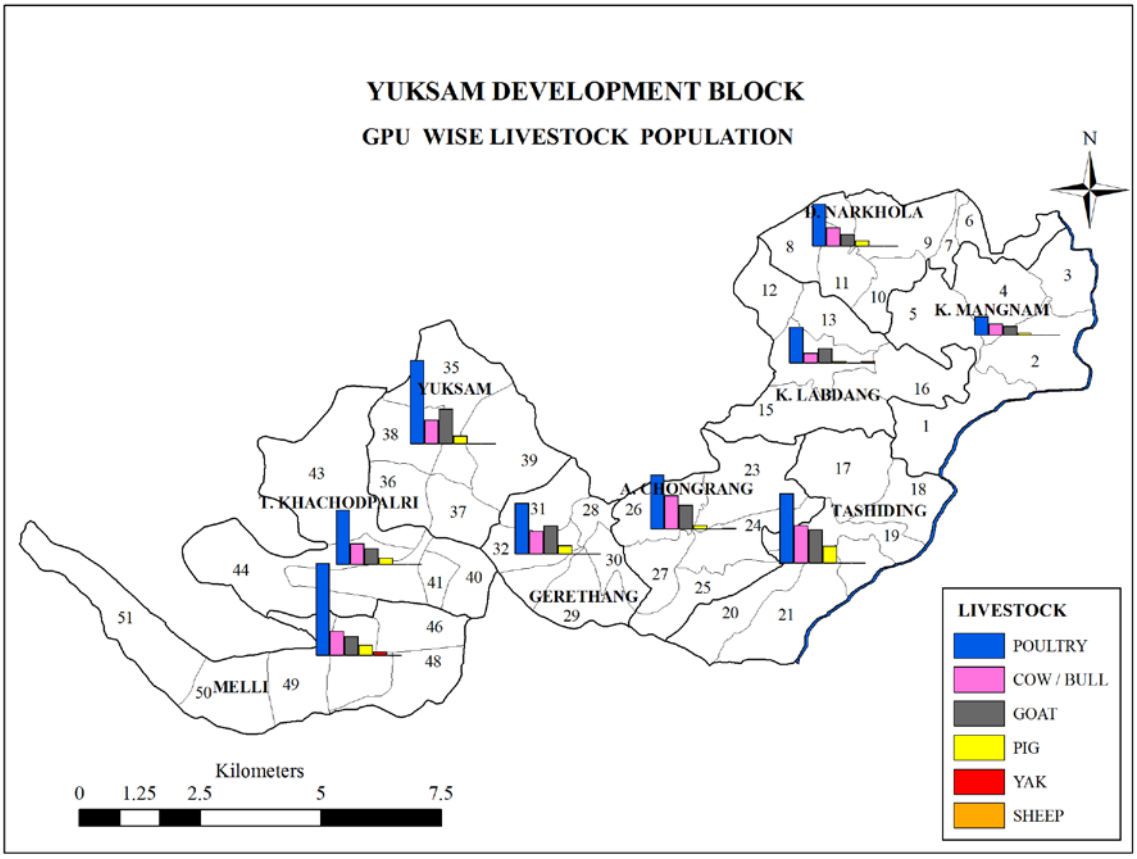

Fig: 5.5

Most of the farmers till their field with the help of bull. The goats are the most productive and cheaply reared animal, so people prefer to possess goat for meat. The collected data on livestock reveals that sheep rearing is a traditional activity among the Gurung community inhabiting in the alpine areas of the development block, yak belong to Bhutias, pig husbandry is a very popular and lucrative occupation amongst the tribal and backward community.

Livestock rearing seems to be dependent on the size of the farm, family size and income of a household. The important products obtained from the livestock are milk, curd, butter, meat, egg, etc. People use this product for self consumption and the surplus product is sold in the market. The success of agricultural development also depends upon the distribution of the land holding, irrigation facilities, use of improved seeds and fertilizer. The distribution of land holdings is unequal; the scientific cultivation could not be implemented beyond a certain level in a mountainous area. In Yuksam development block agriculture is the main occupation and centre of economy as the area has no mineral or any other resources. Thus the agricultural development is of a greater significance. There is lack of technological knowledge among the individuals, so they practice traditional method of cultivation and hence the production is low and over all development is lesser.

5.5. SOURCE OF INCOME

'Income by itself, is a crucial factor in the determination of an individual's power, prestige, consumption patterns and control of services, utilities etc' (S. Tripathi, 1987). The data related with the level of income and the information about the occupation is very important for the understanding of the economic status of population in the society. The study reveals that 57 per cent household of the Yuksam development block are engaged in agricultural activity. About 25 per cent households are engaged in service sector, 9 per cent households are engaged in trade and commerce, 8 per cent are mostly depend on daily wage earning (Table. 5.8).

Table 5.8: Sources of Income by Occupation group (in per cent)

Name of the GPU	Agriculture	Service Sector	Trade and Commerce	Daily Wage Earner	Others
K. Mangnam	54.00	12.50	12.50	21.00	0.00
D. Narkhola	39.00	19.50	14.60	24.40	2.50
K. Labdang	33.30	33.30	13.70	19.60	0.00
Tashiding	36.50	36.00	11.00	12.50	4.00
A. Chongrang	59.00	22.40	11.30	6.20	1.00
Gerethang	69.00	19.20	10.00	1.70	0.00
Yuksam	58.00	30.70	6.00	5.30	0.00
T. Khachodpalri	83.00	10.50	2.00	4.50	0.00
Melli	61.00	24.40	9.70	2.40	2.40
Total	57.00	25.00	9.00	8.00	1.00

Note: Others include non-agricultural occupations, manual labour, monks and priest.
Source: Field survey, 2010-2011 based on 30 percent sample.

This is mainly because of the poor household as they do not have sufficient land for cultivation and they are mostly depend on daily wage earning and remaining 1 per cent household are engaged in other sector includes the household who pursuing non-agricultural occupations, manual labour, monks and priests. The break-up of data on the basis of GPUs, shows that the proportion of agriculturist is comparatively higher in T.Khachodpalri GPU 83 per cent and lesser in K.Labdang GPU 33.3 per cent. But the proportion of service holder has been found higher in Tashiding GPU 36 per cent and lesser in T.Khachodpalri GPU 10.5 per cent.

The proportion of household engaged in trade and commerce is higher at D.Narkhola GPU 14.6 per cent, they mostly have small pan shops, general merchants and few of them are government contractor. Only 2 per cent household of T.Khachodpalri GPU are engaged in trade and commerce. The proportion of daily wage earner has been found higher in the D.Narkhola GPU 24.4 per cent and lesser in Gerethang GPU 1.7 per cent. In K.Mangnam, K.Labdang, Gerethang and Yuksam GPUs there have been no household who pursues other occupation. In Tashiding GPU 4 per cent household are depended on other occupation as a source of livelihood.

5.6. MONTHLY INCOME AND EXPENDITURE PATTERN

The study of income and expenditure pattern of individual household and community level holds an important place in planning process. It helps planners, social activists and Government to determine the category to which the people belong and to suggest appropriate policy interventions. This analysis reveals that nearly 10.4 per cent household have a monthly income of less than Rs. 1000 (Table. 5.9 and Fig. 5.6).

Table 5.9: Monthly Household Income

Monthly Income Range (Rs.)	GPU 1	GPU 2	GPU 3	GPU 4	GPU 5	GPU 6	GPU 7	GPU 8	GPU 9	Percentage of Household
Below 1000	12.50	4.90	9.80	14.00	14.30	19.40	4.70	9.00	4.00	10.40
1001-2500	37.50	36.50	33.30	30.90	42.80	40.70	46.70	67.00	47.00	44.30
2,501-5,000	50.00	44.00	31.40	27.50	23.40	28.30	32.00	21.00	35.00	29.40
5,001-10,000	0.00	7.30	11.70	12.30	10.20	6.20	12.60	1.40	11.40	9.00
10,001-20,000	0.00	7.30	11.70	10.70	5.10	3.50	3.30	1.40	1.60	5.00
Above 20,000	0.00	0.00	2.00	4.50	4.10	1.70	0.70	0.00	0.80	1.80

Source: Field survey, 2010-2011 based on 30 percent sample.

There are 44.3 per cent household with incomes of Rs. 1001-2,500, about 29.4 per cent household incomes ranges between Rs. 2,501-5,000, 9 per cent with incomes of Rs. 5001-10,000, 5 per cent household ranges between the monthly income of Rs. 10,001-20,000 and only 1.8 per cent household with income above 20,000. The GPU wise distribution of data reveals that the income level of the household in K.Mangnam GPU is comparatively lower and more unsatisfactory than that of the households of Tashiding GPU.

Table 5.10: Monthly Household Expenditure

Monthly Expenditure Range (Rs.)	GPU 1	GPU 2	GPU 3	GPU 4	GPU 5	GPU 6	GPU 7	GPU 8	GPU 9	Percentage of Household
Below 1000	12.50	12.20	13.70	15.70	15.30	16.80	8.60	10.50	2.40	11.70
1001-2500	75.00	56.00	45.00	39.30	49.00	45.00	62.70	76.20	74.80	57.30
2,501-5,000	12.50	22.00	25.50	22.00	24.50	31.00	22.60	10.50	18.20	21.00
5,001-10,000	0.00	9.70	15.70	16.80	9.20	5.30	5.30	2.80	3.00	8.00
10,001-20,000	0.00	0.00	0.00	5.60	2.00	1.80	0.70	0.00	1.60	1.80
Above 20,000	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.10

Source: Field survey, 2010-2011 based on 30 percent sample.

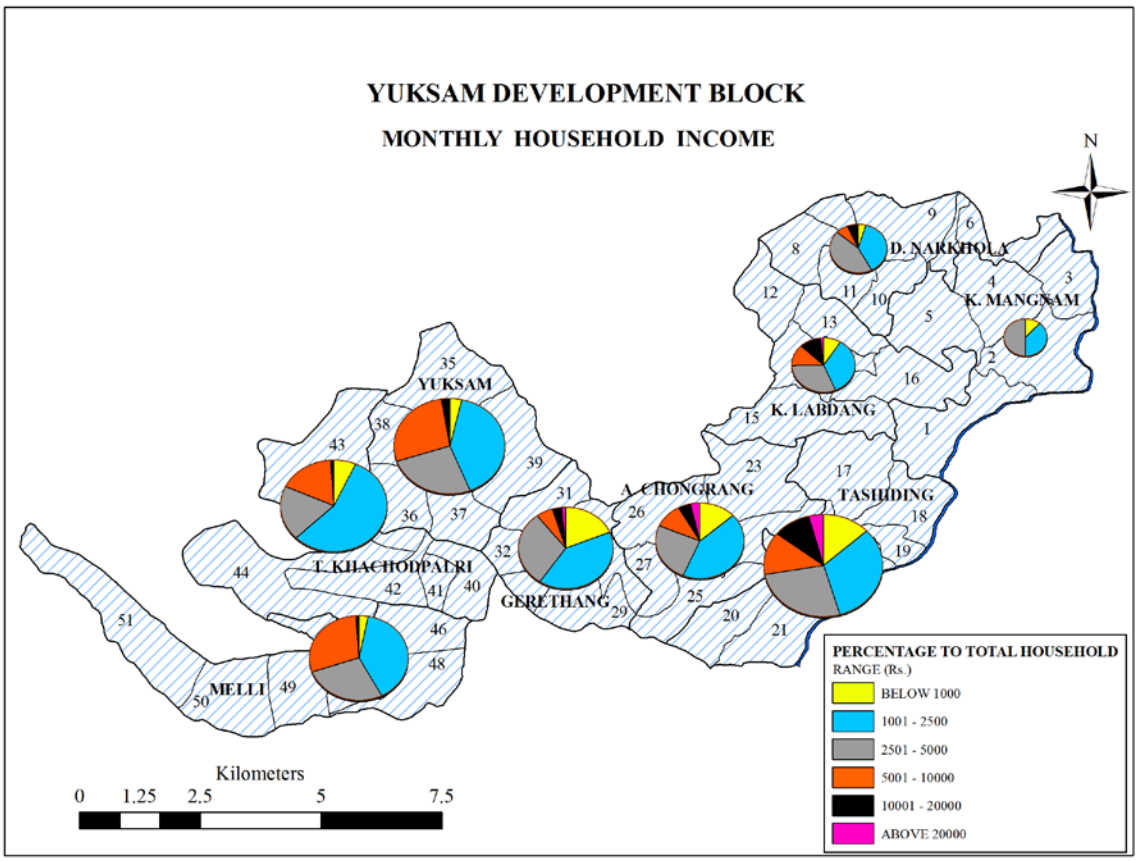

Fig: 5.6

The study of expenditure pattern of the households shows that higher share of households' income are being spent on meeting consumption requirements of the family. The analysis reveals that nearly 69 per cent respondents' monthly expenditure is less than Rs. 2,500 (Table. 5.10 and Fig. 5.7). But if we consider their income then only 54.7 per cent respondents monthly earning is less than Rs. 2,500.

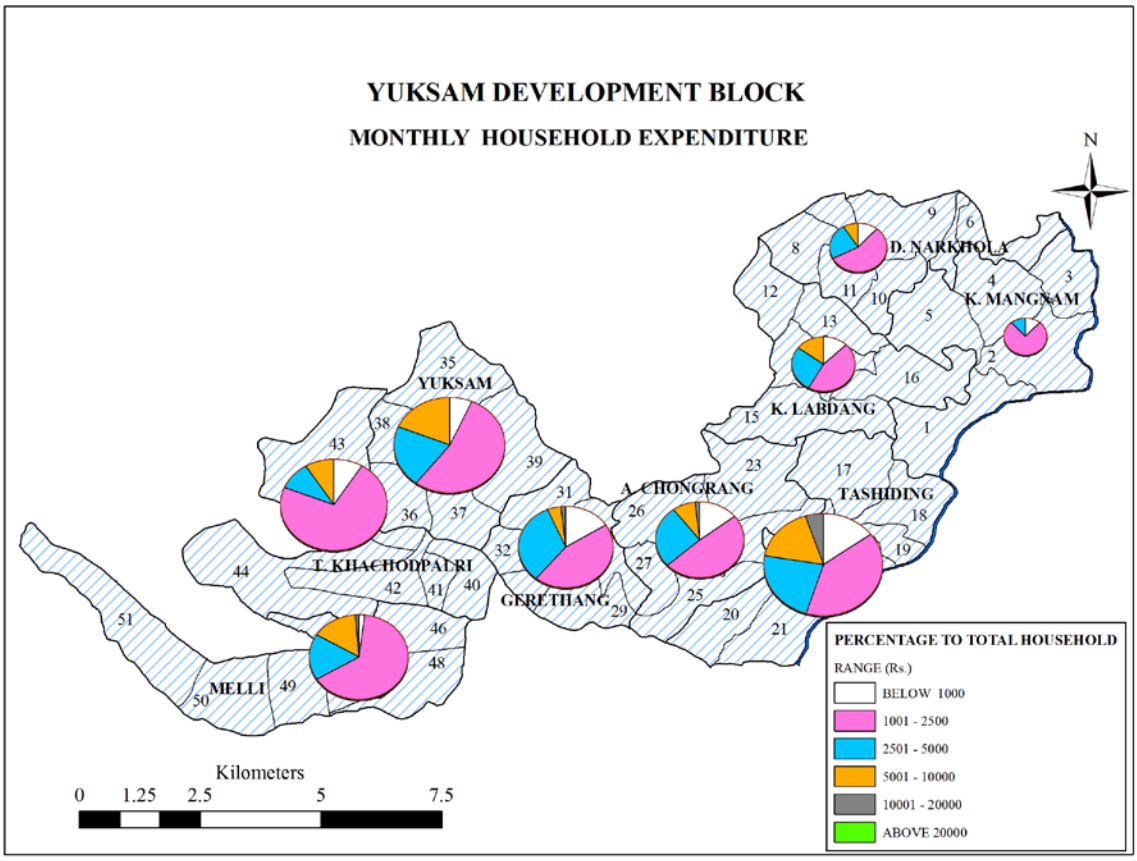

Fig: 5.7

5.7. ANNUAL INCOME AND EXPENDITURE PATTERN

In the present study, the annual income and expenditure of a household has been grouped in the following six categories viz., (i) income and expenditure below Rs. 10,000 (ii) income and expenditure between Rs. 10,001 - 25,000 (iii) between Rs. 25,001 - 50,000 (iv) between Rs. 50,001 - 75,000 (v) between Rs. 75,001 - 1, 00,000 and (vi) income and expenditure exceeding Rs. 1, 00,000 (Table. 5.11 and Fig. 5.8). The analysis shows that about 2.4 per cent of the households having annual earning to be less than Rs. 10,000, 30.6 per cent households' annual income ranges between Rs. 10,001 - 25,000.

Table 5.11: Annual Household Income

Annual Income Range (Rs.)	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9	Percentage of Household
Below 10,000	8.30	0.00	0.00	4.00	0.00	5.30	0.70	3.50	0.00	2.40
10,001-25,000	25.00	19.50	27.40	30.30	12.30	23.00	33.30	51.70	30.90	30.60
25,001-50,000	54.20	43.90	33.30	24.70	43.50	37.20	35.30	33.50	34.00	34.70
50,001-75,000	12.50	14.60	11.80	13.50	20.40	16.80	15.30	8.40	22.00	15.00
75,001-1,00,000	0.00	9.70	0.00	2.80	8.30	5.30	4.00	1.40	5.70	4.20
Above 1,00,000	0.00	12.20	27.40	24.70	15.40	12.40	11.30	1.40	7.30	13.00

Source: Field survey, 2010-2011 based on 30 percent sample.

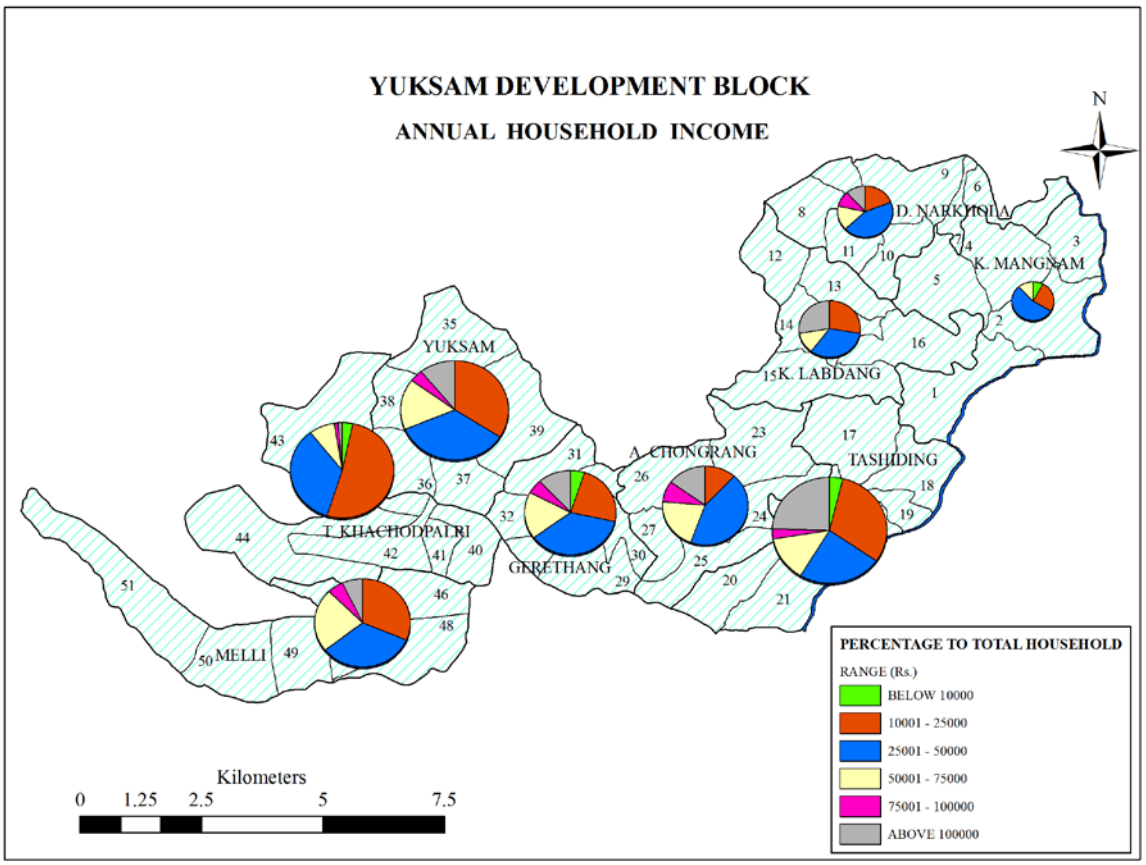

Fig: 5.8

The highest majority of 34.7 per cent respondents annual income ranges between Rs. 25,001 - 50,000, 15 per cent household ranges between Rs. 50,001 - 75,000. The analysis also reveals that about 4.2 per cent household of the sample block earns between Rs. 75,001 - 1, 00,000 annually and only about 13 per cent household with income above Rs. 1,00,000 per annum. In present study, it is also observed that the expenditure level of the household is generally higher than their income. The analysis reveals that 5 per cent households' annual expenditure ranges below Rs. 10,000, about 52.5 per cent household expenditure ranges between Rs. 10,001 - 25,000 (Table. 5.12 and Fig. 5.9).

Table 5.12: Annual Household Expenditure

Annual Expenditure Range (Rs.)	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9	Percentage of Household
Below 10,000	0.00	2.50	7.50	6.20	7.00	6.20	5.30	5.60	0.00	5.00
10,001-25,000	79.20	58.50	33.00	39.30	48.00	47.80	52.70	70.60	59.30	52.50
25,001-50,000	20.80	22.00	41.00	27.00	30.60	33.60	34.70	21.70	31.70	29.60
50,001-75,000	0.00	12.20	11.60	11.20	8.20	7.00	3.30	1.40	6.50	6.70
75,001-1,00,000	0.00	4.80	5.00	6.70	2.00	0.90	2.60	0.70	0.00	2.60
Above 1,00,000	0.00	0.00	2.00	9.50	4.00	4.40	1.30	0.00	2.40	3.50

Source: Field survey, 2010-2011 based on 30 percent sample.

Similarly in the household having higher income it has been found that their expenditure level is lower than their income. There are 29.6 per cent household with annual expenditure between Rs. 25,001 - 50,000, 6.7 per cent household ranges between Rs. 50,001 - 75,000, about 2.6 per cent household with expenditure between Rs. 75,001 - 1,00,000 and remaining 3.5 per cent household range with expenditure above Rs. 1,00,000 per annum. Assessing from the observations, it can be said that a very high proportion of the families in Yuksam development block was found that their expenditure was more than their income.

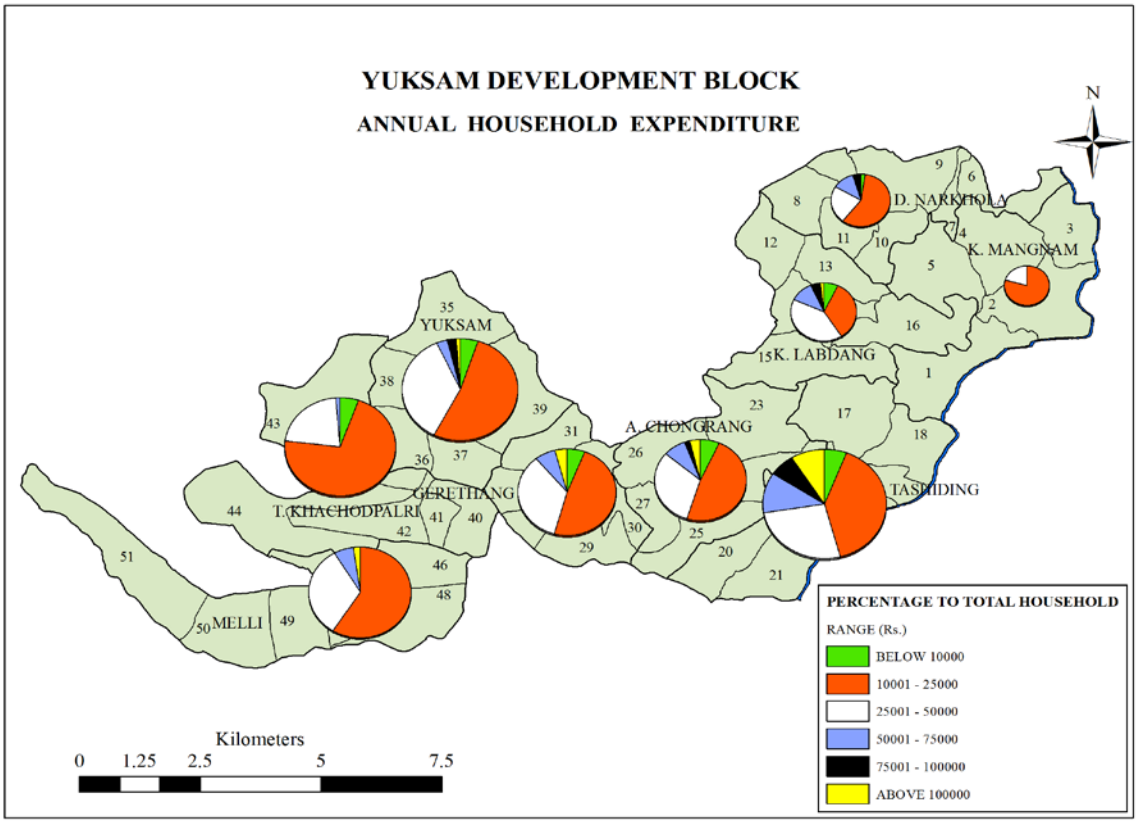

Fig: 5.9

5.8. PER CAPITA INCOME AND AVERAGE MONTHLY INCOME BY SOCIAL GROUP

The average monthly incomes and expenditure of the respondents are more or less equal and there is hardly any surplus with them for saving. The per capita income of Tashiding GPUs ranks the highest (78,236), followed by A.Chongrang, K. Labdang and Gerethang GPU. Relatively low per capita income is found at T.Khachodpalri and K.Mangnam GPU. If we consider the average monthly income of a household again Tashiding GPU ranks the highest among the other GPU (Table. 5.13). On the basis of social group, the average monthly income of the Most Backward Class (MBC) of Tashiding GPU ranks the highest within the Yuksam development block, followed by the OBC of the same GPU.

Table 5.13: Per Capita Income and Average Monthly Income by Social Group

Name of the GPU	Per Capita Income	MBC	ST	SC	OBC	Total Average Monthly Income
K. Mangnam	34837	2714	2450	0	0	2604
D. Narkhola	49733	4167	4000	2750	0	4085
K. Labdang	68415	5460	4591	0	5000	5264
Tashiding	78236	7950	5036	3556	7482	5611
A. Chongrang	75432	3120	2631	4214	6710	4875
Gerethang	55330	3440	2556	3383	7160	3657
Yuksam	48953	2817	3985	4686	3085	3711
T. Khachodpalri	30993	2333	2308	1500	2625	2354
Melli	51685	3313	4120	2000	3383	3824

Source: Census, 2001 and Field survey, 2010-2011 based on 30 percent sample.

5.9. RANGE OF SAVING AND LOAN

In Yuksam development block annual income and expenditure among the lower income group are by and large equal. Mostly due to less income and higher expenditure about 9.8 per cent household do not have any saving (Table. 5.14 and Fig. 5.10). The analysis reveals that nearly 26.6 per cent household have savings less than Rs. 10,000 and about a little over 29.7 per cent of the household saving ranges between Rs. 10,001 - 25,000. The majority of 17.2 per cent household saving ranges between Rs. 25,001 - 50,000. However, only 16.7 percentage of household have a saving more than Rs. 50,000 per annum as compared to the other range.

Table 5.14: Annual Household Saving

Saving Range (Rs.)	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9	Total
Below 0 (-value)	16.70	2.40	11.80	0.00	8.20	19.50	10.70	16.80	7.30	9.80
0-10,000	29.20	27.00	29.40	5.00	20.40	16.80	35.30	46.80	35.80	26.60
10,001-25,000	25.00	34.10	21.50	33.00	31.60	29.20	26.70	28.00	32.50	29.70
25,001-50,000	29.20	22.00	11.80	21.30	18.40	23.00	17.30	7.00	14.60	17.20
50,001-75,000	0.00	2.40	3.90	13.00	10.20	5.30	4.00	0.70	4.90	6.00
75,001-1,00,000	0.00	2.40	7.80	3.60	2.00	2.60	3.30	0.00	3.20	2.70
Above 1,00,000	0.00	9.70	13.70	24.00	9.20	3.50	2.70	0.70	1.60	8.00

Source: Field survey, 2010-2011 based on 30 percent sample.

When reason behind their indebtedness was asked to reveal, most of the respondents expressed that their socio-economic necessities such as food and to meet health needs are the basic reasons for their indebtedness. These situations force them to borrow money from moneylenders, shop keepers, neighbours, friends, financial institutions and other sources to meet their requirements. The respondents who are indebted are mostly the families whose annual income ranges below Rs. 25,000 (Table. 5.15 and Fig. 5.11).

However, about 78 per cent of the households of development block expressed that they do not have any loans or debts. The highest percentage of the borrower is 14 per cent, who borrowed less than Rs. 5000 per annum, 4.5 per cent household borrowed Rs. 5,001 - 10,000 per annum, 1.7 per cent families borrowed Rs. 10,001 - 15,000 per annum, 0.4 per cent households borrowed Rs. 15,001 - 20,000 and only 1.3 per cent household have more than Rs. 20,000 debts.

Table 5.15: Percentage of household those who have taken Loan

Household Annual Loan (in Rs.)	GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9	Percentage of Household
Loan less	75.00	87.80	90.00	76.40	68.30	39.00	89.30	85.30	93.50	78.00
Below 5000	8.30	9.70	1.80	13.50	25.50	40.00	6.60	8.40	5.70	14.00
5,001-10,000	12.50	2.40	4.50	6.20	4.00	11.50	0.60	3.50	0.80	4.50
10,001-15,000	4.20	0.00	1.80	1.00	1.00	5.30	2.00	1.40	0.00	1.70
15,001-20,000	0.00	0.00	0.00	0.60	1.00	1.70	0.00	0.00	0.00	0.40
Above 20,000	0.00	0.00	1.80	2.30	0.00	2.60	1.30	1.40	0.00	1.30

Source: Field survey, 2010-2011 based on 30 percent sample.

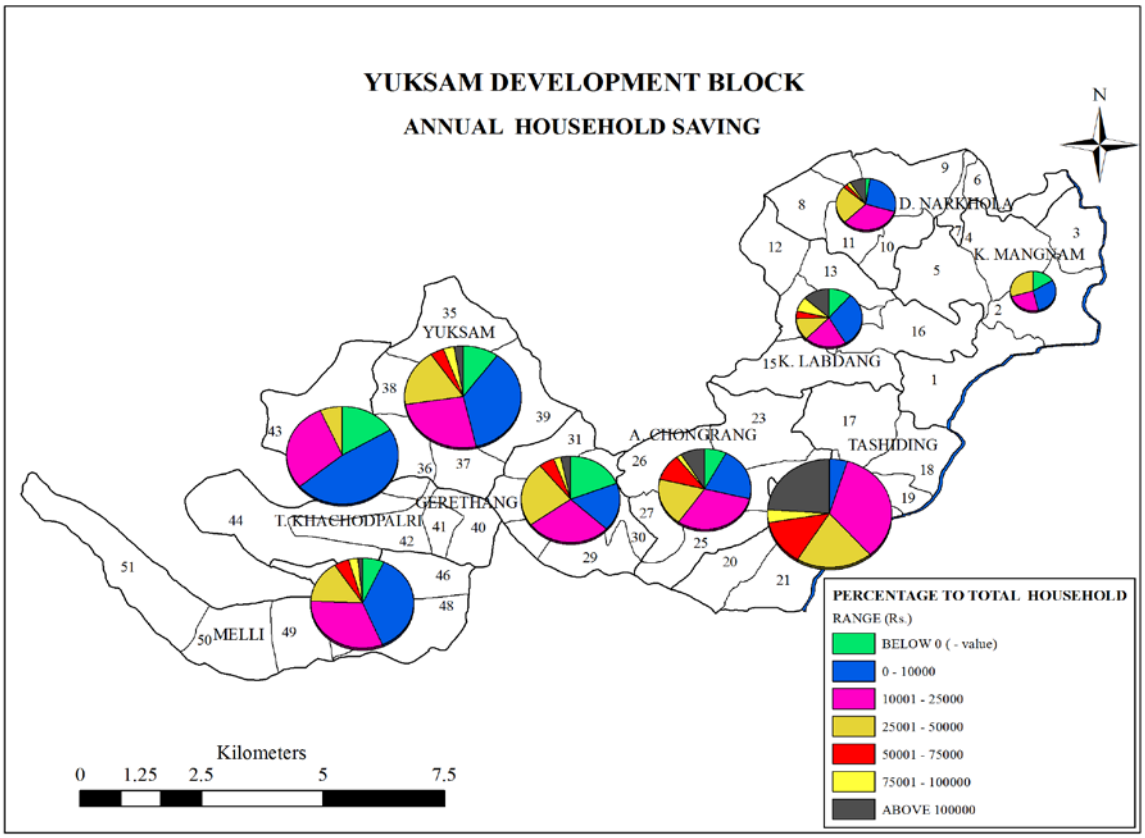

Fig: 5.10

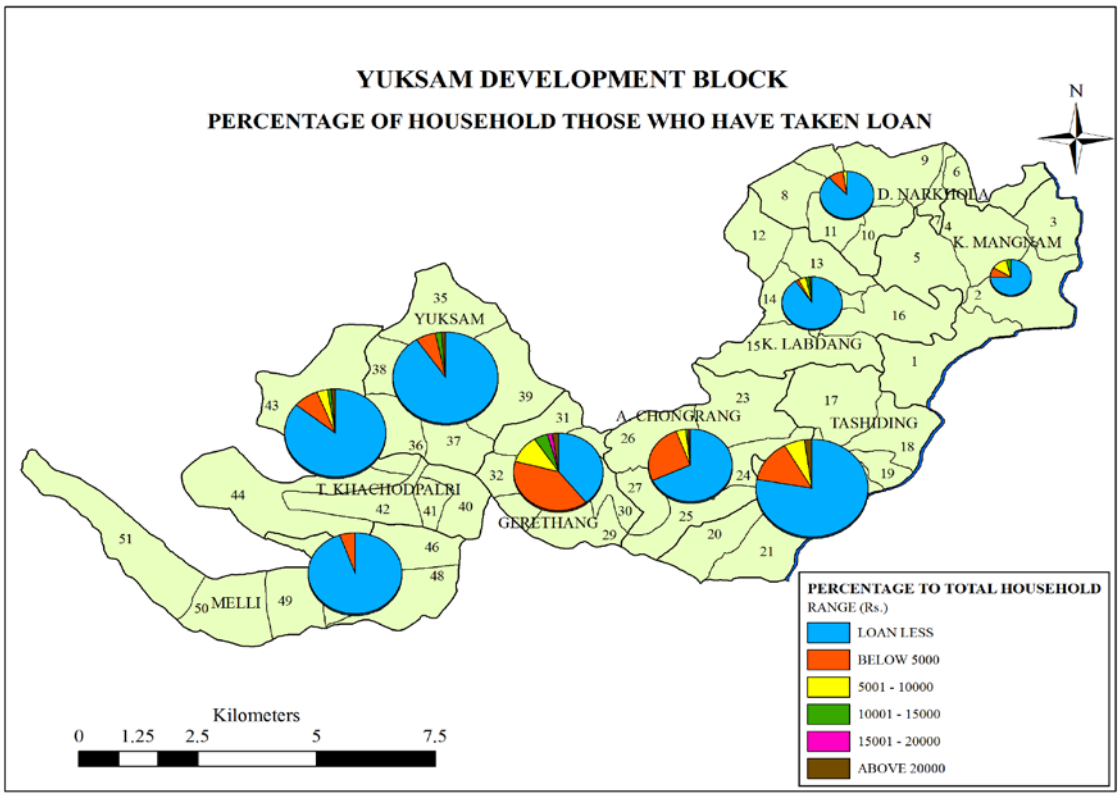

Fig: 5.11

5.10. BANKING FACILITIES

'Banks are meant to regulate the flow of money for the welfare of the people. The availability of such services in a region activates the process of concentration of modern economic activities including industry and commerce' (Dave, 1991). The Banking Facilities are the most important services for the development of any area. The analysis of banking facility as per GPUs reveals that there are only three banks in Yuksam development block (Appendix - R). There is one branch of State Bank of Sikkim (SBS) at Yuksam; all the Government transactions are done over this bank, one branch of Sikkim State Cooperative Bank Limited (SISCO) is at Gerethang and one mini bank of NABARD (National Bank for Agriculture and Rural Development) are located at A.Chongrang GPU (Fig. 5.12). There are 6 GPUs where the banking facilities are not available. Due to lack of financial institutions and lack of knowledge about the loaning facilities people basically do not prefer to borrow loans from the financial institutions.

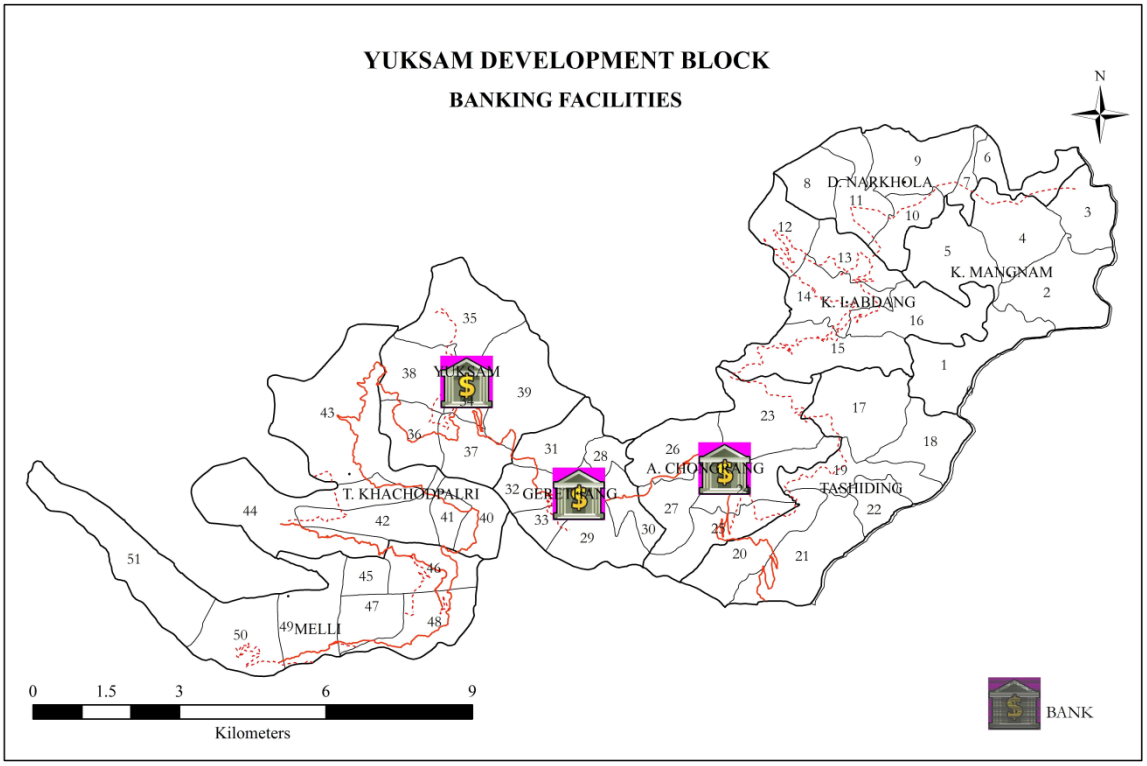

Fig: 5.12

5.11. LEVEL OF DEVELOPMENT (BASED ON ECONOMIC SCORE)

The classification of GPUs within each category is attempted on the basis of level of development as reflected in economic score. The three significant groups of GPUs have been identified on the basis of economic score: (i) High, (ii) Moderate and

(iii) Low level of development (Appendix - S). In the region as a whole, Gerethang and A. Chongrang is the only GPU which has high level of development (Table. 5.16 and Fig. 5.13). Moderate development is noticed only at Yuksam GPU, similarly K. Mangnam, D. Narkhola, K. Labdang, Tashiding, T. Khachodpalri and Melli GPU fall under low level of development in Yuksam development block.

Table 5.16: Level of Development (Based on Economic Score)

Categories	Z Score Range	Number of GPU	Name of the GPU
High	Above 0.2	2	Gerethang, A. Chongrang
Moderate	0 to 0.2	1	Yuksam
Low	Below 0 (-value)	6	K. Mangnam, D. Narkhola, K. Labdang, Tashiding, T. Khachodpalri, Melli

Source: Calculated by author

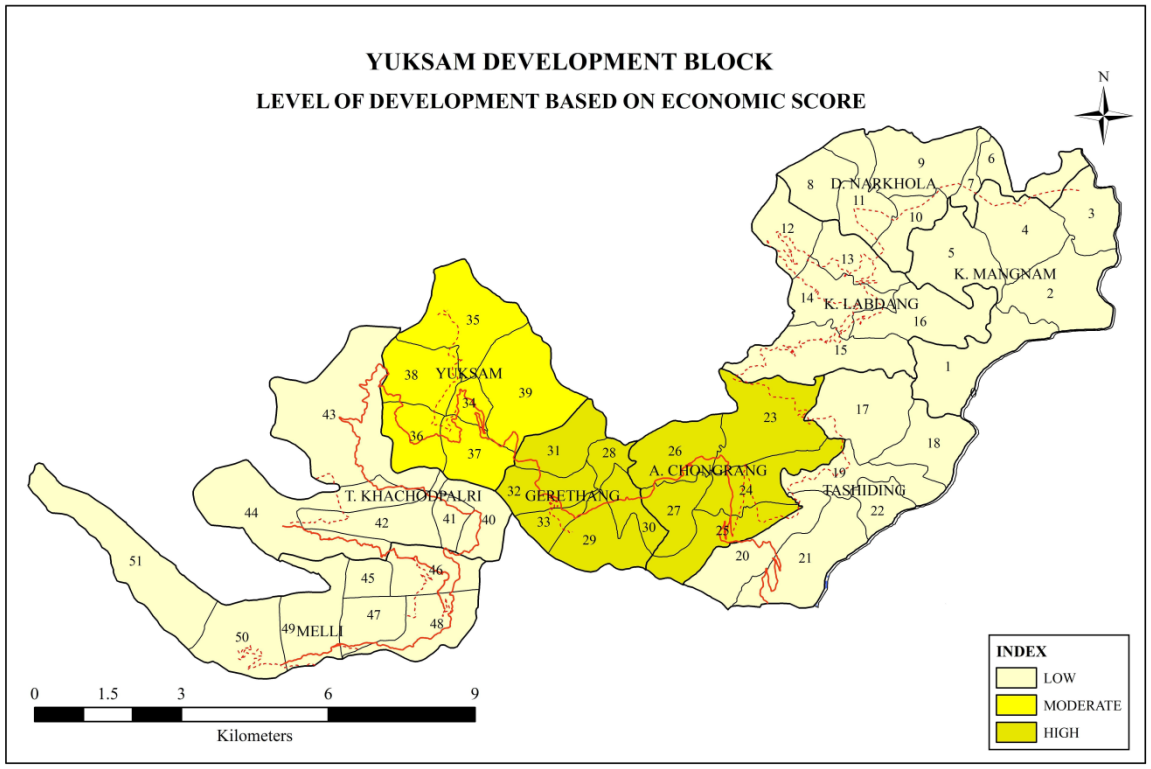

Fig: 5.13

In spite of limited area of cultivated land, difficult hilly terrain, smaller land holdings, diverse agro-climatic condition existing at short distances, lack of sufficient supportive infrastructures for agriculture development, agriculture is the most important economic factor of these areas. The process of economic development is associated with infrastructure such as education, medical, irrigation, transport and communication, banking and credit facilities. Distribution of these facilities is highly uneven and lagging behind. In order to decrease unevenness, importance should be given to increase irrigation, veterinary, banking and credit facilities to this area.

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Chapter 6

INFRASTRUCTURE FACILITIES AS DIMENSION OF DEVELOPMENT

Infrastructure is a supportive system or arrangement which acts as a medium in activating the development process in the area. There are certain facilities which are very useful both socially and economically such as electricity; roads, health and education are known as basic infrastructure. 'Infrastructure is a common public facility created by investing public funds' (Maithani, 1992). Infrastructure is considered as an extremely essential variable in development planning. 'The regional development, to a great extent, depends upon the level to which its infrastructure has been developed' (Pant & Pandey, 2004). The pledges given by successive leaders and Gandhiji's dream of a prosperous rural India can only be realized if transport and communications are enhanced. Other physical and social infrastructure would follow automatically, paving the way for development.

'Socio-economic development of rural areas is of crucial significance in the framework of integrated growth and social justice' (Arora, 1979). Quality infrastructure leads to development, so the provision of basic infrastructure is essential for development of any region. Being a hilly State the most important aspect of development in Sikkim has been infrastructure. This is a crucial fact that in Sikkim most of its areas situated in the hills and mountain. In every aspect of development connectivity has a major difficulty. 'Limited market access, underdeveloped communications system, restrictions on free movement of people, goods and services and most importantly the recurrent natural calamities have all very adversely affected the development process' (Economic Survey, 2006-07).

The structural progress of socio-economic development is mainly depend upon how the physical infrastructure has been developed within and around the region. In every sector the development related with industries, agriculture, health services, marketing, education, electrification, sanitation and housing and drinking water facilities has been associated with balanced distribution of infrastructure. Hence, it is essential to present a detail account of infrastructure facilities in terms of their quantity and distributional pattern over the area.

Government has tried to initiate various developmental programmes to the people for their comprehensive growth. With the help of different ongoing programme there has been a major progress in infrastructural development in Sikkim, this has led positive impact on the overall development process in the State. Bharat Nirman has been a major scheme conceived as a time-bound plan for rural infrastructure. It seeks to provide drinking water supply to all uncover and slipped-back households, electricity to all remaining villages, connect all habitations with the population (1000 in plain and 500 populations in tribal and hilly areas) with an all-weather road, create additional irrigation facility; build houses for the rural poor and to cover every village with a telephone.

More significantly, the State is now gradually getting more expose to modern means of communications and hence the process of development has been increasing. The expansion of the PMGSY road network across the State, the spread of mobile network and internet connectivity to even remote parts of the State have enlarged connectivity greatly among people previously living in remoteness. 'The Union Government has also notified Sikkim for investment subsidy in infrastructural projects under the Central sector scheme known as 'strengthening / development of agricultural marketing infrastructure grading and standardization'. Under this scheme, infrastructure projects will now be eligible for investment subsidy of 25 per cent of the capital cost up to Rs. 5 million on each project' (Economic survey, 2006-2007). In order to continue and more improvement in the area of human development, it is necessary to focus on the physical infrastructure and industrial development. These can help to improve connectivity and access of the people to public services and improve the scenario of productive employment in the State.

6.1. STATUS OF INFRASTRUCTURE

The mountainous steep rocky slope, various deep gorges, streams and major rivers are the challenges not to overcome through suitable infrastructure in Sikkim. The Rural Management & Development Department has been always trying to fill this infrastructure gap where ever it exists. Infrastructure facilities not only form an essential part of development but it also considers a part in the procedure of further development. 'The infrastructural facilities on the one hand, indicate the level of social development in an area and on the other hand, these indicate the likely trends in its future progress' (Dave, 1991). The State is divided into four districts.

The analysis of the status of rural infrastructure in Sikkim shows that, the East district is the most populous among the entire district with 32.7 per cent household and 34.5 per cent of total population. The North district is largest in area but sparsely populated with only 8.4 per cent of State population. Among the four districts, the East district has highest number of pucca house 3,955 (39.3) per cent followed by South district with 3,053 household, the least number of pucca household are located at West district (Table. 6.1). The spatial distribution of semi-pucca household is quite higher at West district with 16,866 household and least number of 3,737 household is observed in North district of Sikkim. The higher number of Kutcha household was also found in West district 6,523 household and lowest number is observed at north district 2,286 respectively.

Table 6.1: Status of Infrastructure District-wise Sikkim

District Name		North	East	South	West	Total
Total Household		7,688	24,549	19,837	23,042	75,116
Total Population		32,340	133,022	98,882	121,061	385,305
Household as on 31st March, 2008	Pucca	1,618	3,955	3,053	1,434	10,060
	Semi Pucca	3,737	12,464	11,474	16,866	44,541
	Kutcha	2,286	4,971	5,351	6,523	19,131
Pucca Houses constructed		834	4,869	2,073	2,214	9,990
Households (with toilets)		6,886	21,481	16,083	16,904	61,354
Households (without toilets)		399	2,310	3,294	5,437	11,440
Number of shops		296	932	534	803	2,565
Number of Govt. Schools		96	208	175	205	684
Number of Govt. Colleges		0	3	3	1	7
Number of Private Schools		13	84	74	103	274
Number of Private Colleges		0	1	4	7	12
Number of Govt. Hospitals		16	39	21	23	99
Number of Private Hospitals		0	3	1	0	4
Number of Petrol Pumps		1	4	3	4	12
Number of Industries		4	10	8	25	47
Number of Registered Clubs		12	132	116	133	393
Number of Functional SHGs		190	320	495	463	1,468

Source: DESME, 2008.

The number of construction of pucca household since 1994 till 31st March 2008 was also recorded highest in the East district 4,869 household; it may be because of its location in State capital and highest number of urban dwellers. The least number of pucca houses are constructed at north district. According to the data of DESME 2008, the number of household with toilets is highest in the East district 21,481 household and

lowest at North district 6,886 household. In the case of household without toilets, the West district has recorded 5,437 household which is highest among the entire district and while North district has only 399 household. In Sikkim there are large numbers of places which will be an attraction for the tourists and tourism is the most outstanding noticeable piece of evidence in Sikkim at present. It consists of diverse operation ranging from hotels, tour and travel agencies and promotion of transportation. The State has been trying to achieve the major steps in promoting tourism industry, by opening up of new places and destinations for tourist.

The Government of Sikkim views the tourism industry as a significant tool for employment generation and for economic growth. Sikkim offers various categories of tourism such as adventure, eco-tourism, village tourism, cultural tourism, religious and leisure tourism. The tourist spot is scattered all over the State and attracts the people from within and outside the State. The accommodation and transports for tourist are mostly carried out by the private sector. To promote tourism and to provide excellent accommodation and modern facilities to tourist there are 442 private and Government hotels in different parts of the States. To promote village tourism, thirty model villages having all the basic and modern facilities are being constructed by Government in different parts of the State. There are total 2,565 shops in all over the State, the highest numbers of shops are observed in East district 932 and the lowest in North district 296 shops. Most of the big shops are located in the urban areas and there are few Government fair price shops (MPCS) and private shops along the roadside in the villages.

Lack of marketing facilities in the villages compels the people to depend upon the middlemen for selling of cash crops, horticulture and agricultural surplus. Though they received low costs of production for their goods, these entire factors discourage them from making strong interest into any major activities. Education is the most essential factor in economic development and educational institutions are skilled tools for rural modification. There are 958 Government and private schools and 19 private and Government colleges within the State. The above table also represents that West district has higher number of private and Government schools and the North district has less 109 number of educational institutions. Except North district the facility of colleges exist in every district of Sikkim. In Sikkim there are 99 Governments and 4 private hospitals.

The highest number of hospitals are located at East district and the least 16 hospitals are located in the North district of Sikkim. There are 12 petrol pumps, 47 industries, 393 numbers of registered clubs, 610 numbers of unregistered clubs and 1,468 numbers of functional SHGs distributed in all over the district of Sikkim.

Within Yuksam development block the highly dense distribution of household and population has been observed at Tashiding GPU (GPU 4) having 592 household and 3405 population and least number of household is observed at K.Mangnam (GPU 1) with 79 household and 554 populations. Figure 6.1 shows that there are 19.6 percent pucca house and 57.4 per cent semi pucca household in Yuksam GPU and it also represents that in K.Mangnam (GPU 1), D.Narkhola (GPU 2), K.Labdang (GPU 3), T.Khachodpalri (GPU 8) and A.Chongrang (GPU 5) have below 10 per cent pucca household and maximum number of semi pucca household is observed at K.Mangnam (GPU 1) and K.Labdang (GPU 2) 76 per cent (Appendix - T).

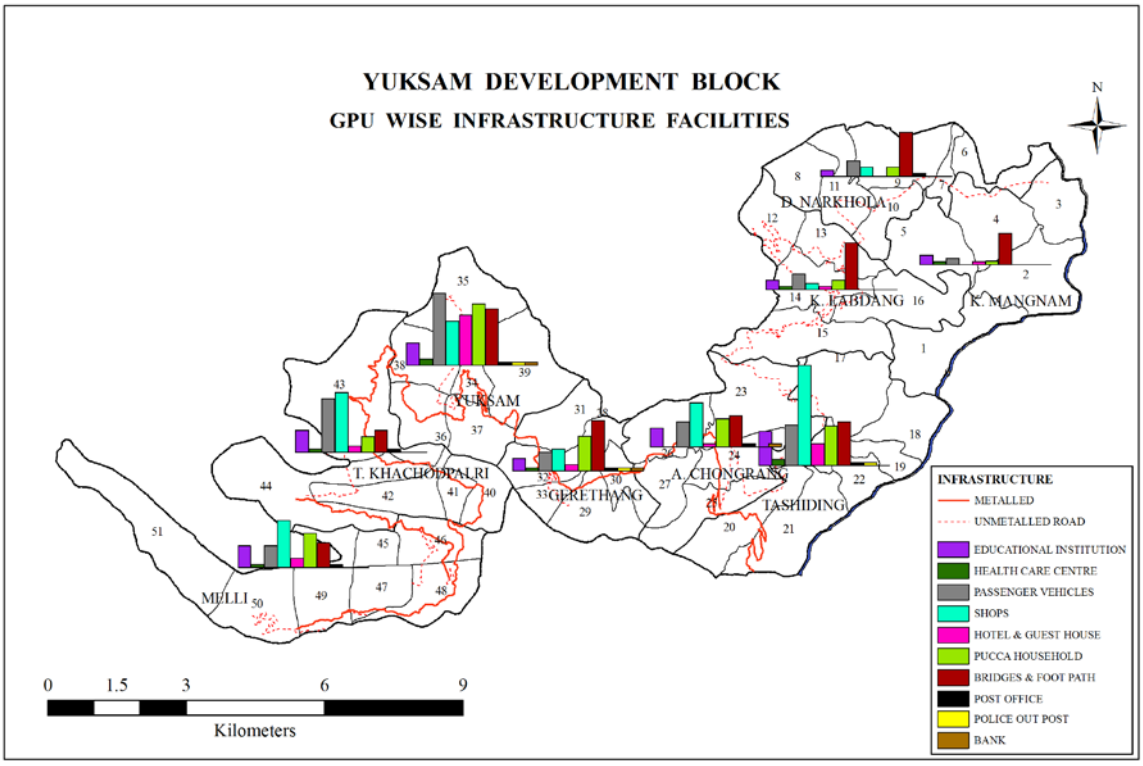

Fig: 6.1

The higher percentage of kutcha household is noticed at D.Narkhola (GPU 2) 50 per cent household and lowest percentage is observed in K.Labdang (GPU 3) 21 per cent household respectively. The data also reveals that in six GPUs namely K. Mangnam, D. Narkhola, K. Labdang, Tashiding, Yuksam and Melli (GPU number 1, 2,3,4,7 and 9) have 100 per cent sanitation facilities in every household and in A.Chongrang, Gerethang

and T.Khachodpalri there are few household who does not have sanitation facilities. The highest 14 number of hotels has been observed in Yuksam GPU, in among 6 GPUs (GPU 1- K. Mangnam, GPU 2 - D. Narkhola, GPU 3 - K. Labdang, GPU 5 - A.Chongrang, GPU 6 - Gerethang, GPU 8 - T.Khachodpalri) there are no hotel facilities. In all over the development block there are total 106 shops, the highest number of shops can be observed in Tashiding GPU (32) and there is not even a single shop in K.Mangnam GPU. Most of the shops are located in the road side and there are single Government fair price shops (Multi Purpose Cooperative Society) in each GPU.

The availability of the police out post indicates the social security of a public, individual and to protect the property. Out of 9 GPU, only 4 GPUs have Police out post namely Tashiding, Gerethang, Yuksam and T.Khachodpalri GPU. The availability of the guest house indicates that the larger the size of the guest arrived the higher would be the number of the guest house. Except D.Narkhola and K.Labdang GPU all the GPUs have guest house facility. The highest number of guest houses was observed in the Tashiding GPU followed by Gerethang, Yuksam and T.Khachodpalri GPU, whereas lowest number was in K.Mangnam, A.Chongrang and Melli GPU. On the whole, there are only 3 GPUs where banking facilities are available.

6.2. ROAD NETWORK

In the mid of 1950s when the planning process started in Sikkim, there were a few kilometres of road around Gangtok and a very narrow road linking between Rangpo to Gangtok. There was no road network in other parts of the State. Since then it has come a long way, by the end of 9^{th} Plan there was total 1,889 km road length under the administrative control of the department. About 89 km have been added during 10^{th} Plan and the total length 269 km of roads that have been upgraded and resurfaced during the 10th Plan. At present the entire road network is to be over 2,873 km in which 894 km is maintained by the Border Roads Organisation (BRO) and 1,979 km by the State Government (Economic survey, 2006-07). The fast increases in technology and improvements has made-up an excellent growth in the number of passenger vehicles and a necessity for heavy goods carrying vehicles to move goods in and out in different parts of the State. During the earlier plans there has been a steady increase in black-topped roads generally the earthen roads were upgraded to water-bound macadam (WBM).

Well organized and proper drainage systems have been introduced. Since 2001-02, rural roads are upgraded and repaired under the Pradhan Mantri Gramodaya Sadak Yojana (PMGSY). State Government categorised roads by its quality into State highways, major district roads, other district roads and rural roads. Much of the Plan funds have been used to upgrade the road and bridges network. In Sikkim since 1981-82, road density has been increasing, but the State still ranks low as compared to the other States.

Roads and Transport

'The transport and communication represent a social circulation, including purposeful movement of goods, people and their ideas, credit, development innovations and messages' (R.J Johnston, 1973). Up to a great extend the advancement of an area depend upon the transport network. Road network may be considered as life line and a backbone in the rural area. Road act like an instrument in bringing backwards area in close contact with others urban centres of the region and promotes the marketing facilities for the rural production. It has a certain effect on helping and strengthening the socio-economic improvement of the region. Yuksam development block is served by roads and not connected by any other means of transport. The 30 villages/wards served by existing SPWD roads, the construction and maintenance of the roads have been taken up under Sikkim Public Works Department (SPWD).

Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched in the year 2000, is a 100 per cent Centrally Sponsored Scheme. Under these programmes the construction of the village road and various types of bridges that are constructed for rural connectivity such as steel composite and RCC motor able bridges come under the same scheme on which rural road i.e. PMGSY roads are constructed. The construction and maintenance of the roads have been taken up under Rural Management and Development Department (RMDD). There are 11 villages which have been connected by PMGSY roads (Appendix - U). Bhirkuna Lingyang village/ward is served by both PMGSY/SPWD roads. Still there are 9 villages in the remote pocket which remain unconnected to the proper transport and communication network (Fig. 6.2). During rainy season except a few villages situated along metalled roads, almost all the villages remain cut off from other part of the district as well as neighbouring areas of other district of the State. The area is served by private

taxi; shared jeeps are mainly used for transporting passengers. There are 86 number of passenger vehicles in whole development block (Appendix - T).

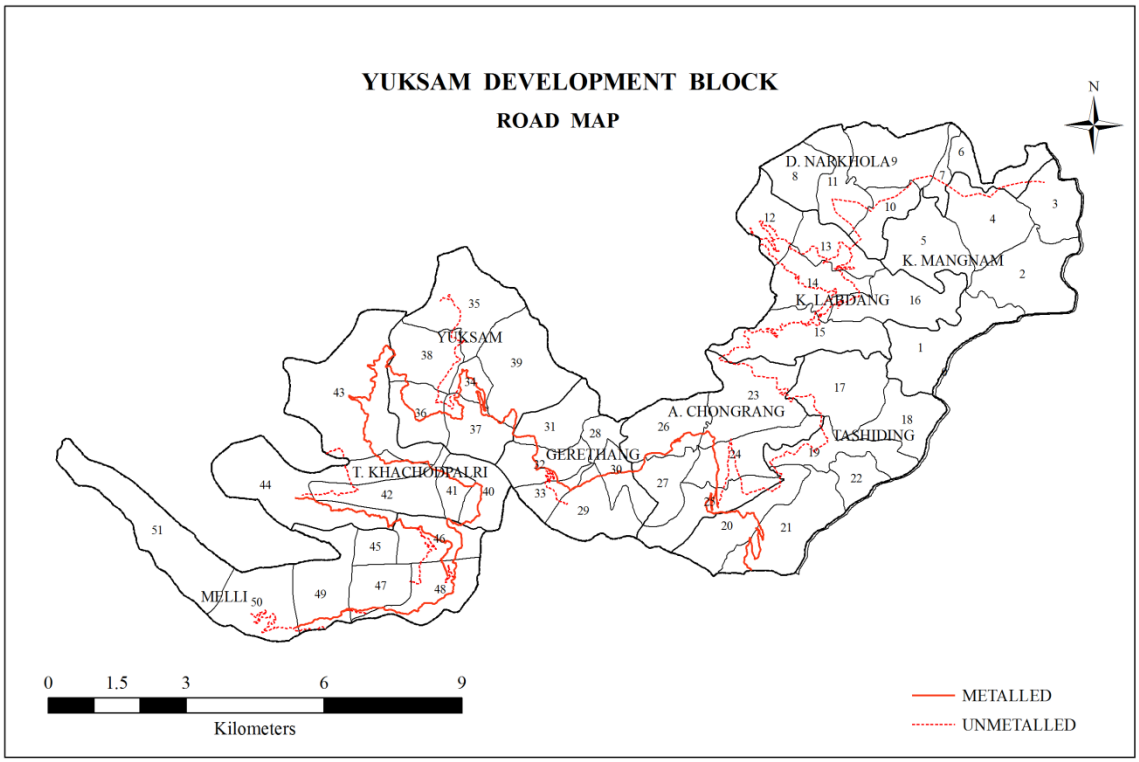

Fig: 6.2

6.3. FOOTPATH AND BRIDGES

In Sikkim connectivity is not complete and admirable if the challenges of overcoming numerous deep narrow valley gorge, steep rocky slopes, stream and major rivers are not overcome through suitable infrastructure. Certainly it will be found that intersperse between all the villages and beside communication routes to primary health centres, schools, gram prashasan kendras and the neighbouring market, there will be a certain stream, river or a gorge to be crossed. If proper foot bridges over natural walkways have not been provided to overcome the terrain difficulties, then the connectivity through footpaths and roads even of superior quality will not serve purpose.

Footpath and bridges greatly reduce distances as well as save time and provide safe way when travelling between different places. This connectivity is very essential during the monsoons when the rivers discharge are extremely high and risky to cross particularly by sick, elderly and by school going children. The Rural Management and Development Department has been constantly attempting to fill the infrastructure gap where ever seen to exist. In addition to build new foot bridges the Department has also

begin to replacing and upgrading existing wooden suspension foot bridges with all mild steel components for durability and longevity. Where the distance of gorges and streams are up to 7 meters Reinforced Cement Concrete (RCC) bridges are provided, in between 7 to 15 meters distance pre-fabricated steel bridges are provided. The different types of bridge and footpath which are being constructed in Yuksam development block for rural connectivity are wooden bridge, steel bridge, reinforced cement concrete bridges and footpath. There are total 37 numbers of bridges which have already been constructed in the different villages of the GPUs for the communication linkages (Appendix - V).

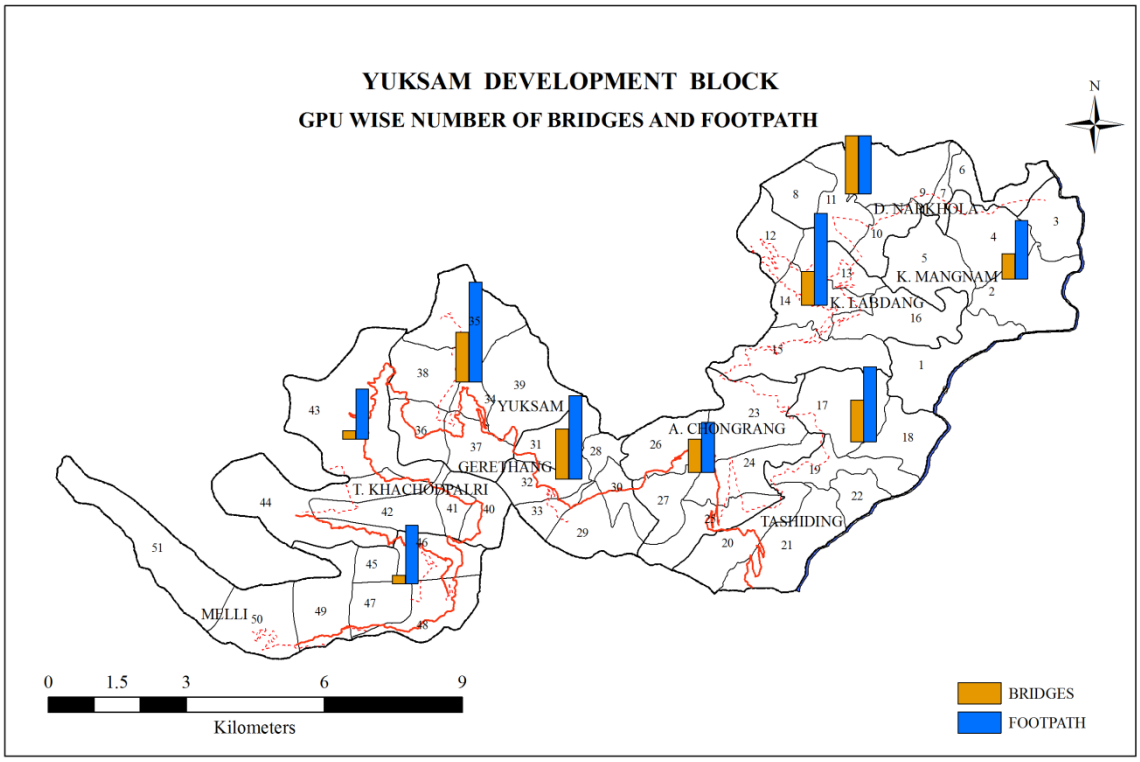

Fig: 6.3

It is clear from the above figure that the number of bridges is higher in D. Narkhola GPU followed by Gerethang and Yuksam GPU and lowest number of bridges are observed in T. Khachodpalri and Melli GPU (Fig. 6.3). If we considered the footpath then the highest number of footpath are observed at Yuksam GPU (12), followed by K. Labdang (11), Gerethang (10) and lowest number of footpath is available at A. Chongrang GPU.

6.4. WATER SUPPLY

Government of India had set the goal to provide safe drinking water to all the rural habitations for drinking, cooking and other basic needs on a sustainable basis. Rural

water supply is a State subject in order to attain this objective Central Government has providing assistance to the State Government. There are many schemes like Prime Minister's Gramodaya Yojana - Rural Drinking Water (PMGY-RDW) and Accelerated Rural Water Supply Programme (ARWSP) had been implemented in the rural area and renamed as National Rural Drinking Water Programme (NRDWP). The power to plan, approve, implement and monitor the schemes under NRDWP has been given to States. These schemes were designed to resolve drinking water crises in the rural areas and it also emphasised the need for community participation, sustainability of resources and rain water harvesting. Government of Sikkim has implemented these programmes under Public Health and Engineering Department and Panchayati Raj Department in order to provide clean and safe drinking water to all habitations.

Government had also taken steps for institutionalizing community participation in rural water supply programmes and wide range of activities of the Rural Drinking Water supply program that bear upon infra-structural development and sustainability of the system will remain in special focus. But still there is an acute water shortage during dry season in winter, November to March and which is due to reduction in the discharge of the mountain springs during these 5 months and the rural water security is badly affected and people have to face great difficulty. Out of 76,183 rural household there are 42,922 (56.3 per cent) household with water shortage. There are 26 development blocks out of these 13 blocks namely: Duga, Rakdong, Pakyong, Rhenock, Khamdong development block in East district, in South district Namthang, Jorethang, Melli, Namchi, Wok and Temi development and in west district Kaluk, Soreng and Geyzing development block need to get greater emphasis on drinking water protection programs and other appropriate measures for sustainability of water sources (Appendix - W).

6.4.1. Drinking Water Source

All the villages in Yuksam development block depend upon natural spring, rivers and streams for drinking water source. While all the villages have tap water facilities, the study area falls under water shortage, where people have to face the difficulty due to lack of RMDD tap water supply especially in dry season and they use to depend upon local sources. Many schemes of rural drinking water supply were implemented and many works are under construction. These schemes is more significant but much wastage of water happens due to leakage in tank, broken pipes due to landslide,

broken tap and lack of proper maintenance. It may be due to these reasons, in Gerethang GPU about 37.2 per cent household depend upon local sources of water and in T. Khachodpalri GPU about 83.2 per cent household enjoy RMDD water source (Fig. 6.4). However, nowhere there are filtering facilities (Appendix - X). Even today the status of water quality in the mountains remains better than that available in the urban areas. Over 92 per cent of the households purify water for drinking by boiling it, while about 8 per cent use water filter for the same.

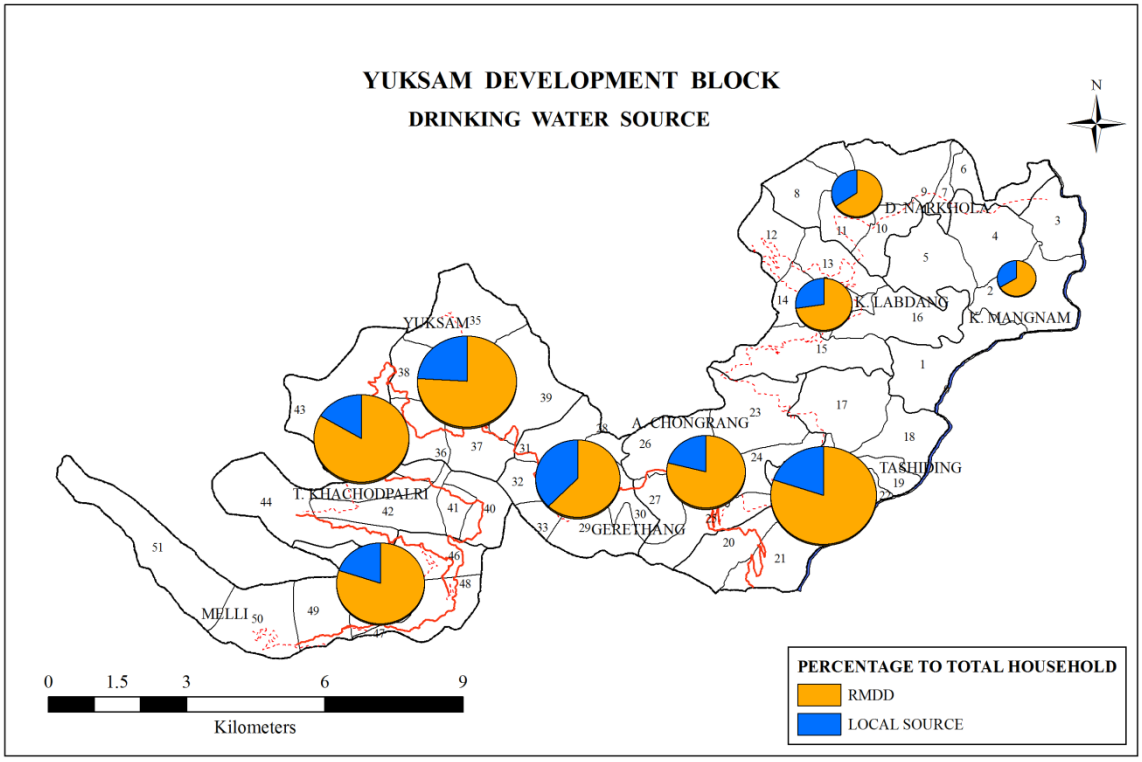

Fig: 6.4

6.5. POWER SUPPLY

Electricity is considered as one of the basic human needs and rural electrification is an important programme for socio-economic development of rural areas. In Sikkim rural electrification has been the most discouraging mission because of the acute and unfriendly topographical conditions and it needs huge financial and technological resources involved. The villages in the hills of Sikkim is highly scattered which makes any developmental project much uneconomic and the distribution becomes very difficult. The power supply in Sikkim before 1975 was in immaturity stage and its demand was also low. There were only 8 declared towns which used electricity till the end of 1975, while the rest of the areas throughout the State had no power supply. By the end of 1978, the State had 3 small power stations with an installed capacity of 3 MW, i.e. Jali Power

House, Rimbi and Rothak power house. The power necessity of capital and a few townships falling beside the National Highway was met by the small 2.1 MW Jali Power House. Likewise Rimbi in west and Rothak in South with an installed capacity of 200 kW each were under operation to feed the major townships and District Headquarters in the South and West districts, while the North district had to manage by a 50 kW manual micro-hydel unit (Appendix - Y). The State determined to undertake the expansion of electrification to the townships and villages more rapidly. Since then several power projects have been especially prepared in the State. The availability of electricity in rural areas will lead to the economic improvement and its associate development benefits like literacy, communication, food security, better health etc. However, the use of power in villages for creative and survival desires is still very inadequate.

If the people are in a position to use electricity for their daily activities as well as for commercial and industrial purpose, then only the real benefits of the funds made in the rural electrification programme can be realised. Therefore, the widespread use of power and rural electrification programs by the rural individuals would represent a major rising move in the demand for electrical energy. About 91 per cent of the villages in Sikkim have been electrified. Still there are about 10 per cent of the households in a village that has to be electrified. The State Government took strengthening schemes for the expansion of the rural electrification to uncover households by providing two point free connections to the household under poverty line in accordance with the National 20-Point Programme.

Since the early 1980s, the Government started to give ‘two point free connections’ to the households below the poverty line. This was made as a part of the Minimum Needs Programme and later renamed as Kutir-Jyoti Programme. It is meant that one has to spend Rs 900 per household for the electrification. Despite the fact that Sikkim was 25 years behind other States in the Central Plan process, all the 45 habitable revenue blocks in the State had access to electricity by March 1991, by this means Sikkim was the first State in the entire eastern region to have 100 per cent coverage of electricity. ‘On the other hand, though all the villages are electrified, a sample survey conducted by the State Government in 1989 showed that only 61 per cent of the households in rural areas and 85 per cent in urban areas were found to have electricity connection’. About 405 villages were electrified out of 447 inhabited villages in Sikkim

as per 1991 census. Every village have power connection, about 95.7 per cent household of Yuksam development block are electrified (Fig. 6.5). In respect of electrification, Tashiding GPU is more developed where about 99.4 per cent of the household have this facilities and Gerethang is the most backward GPU where only about 89.4 per cent household is electrified on the basis field survey 2010-2011. The study shows that about 4.3 per cent household are facing the problem related with power supply (Appendix - T). The household which fall under this category are may be due to broken electric poles, landslides, poverty, and lack of maintenance and newly build households.

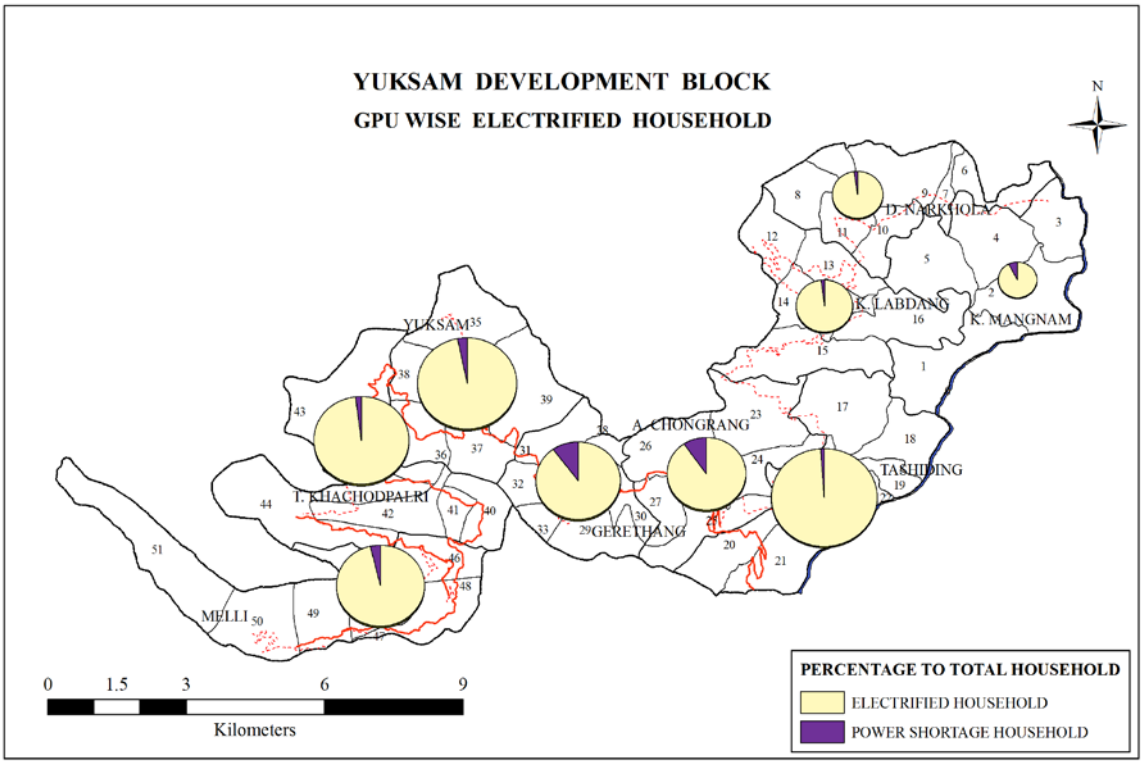

Fig: 6.5

6.6. LEVEL OF DEVELOPMENT (BASED ON INFRASTRUCTURAL SCORE)

The following hypothesis as mention in introduction may be analyzed here, *'level of development is closely associated with the infrastructure facilities'*. The development of any area depends on the availability of infrastructure facilities and amenities. Infrastructure is a broad term that includes all those elements which support the process of development in a society and better infrastructure facilities provide higher opportunities for the development.

The dimension of infrastructure includes 11 variables. The existing infrastructure facilities and level of rural development is highlighted through the application of composite score of 11 variables. The computed scores have a wide range of variation and it is divided into three categories viz. high, moderate and low level of development. The category of high level of development ranges from +0.2 and above, the score ranging from 0 to 0.2 are categorised in moderate level of development and the GPU showing infrastructure score below 0 (-value) are grouped in low categories of infrastructure development (Appendix - Z). In Yuksam development block as a whole, there are three GPUs in high categories of level of development and their score vary from 0.47 to 0.93 (Table. 6.2 and Fig. 6.6).

Table 6.2: Level of Development (Based on Infrastructural Score)

Categories	Z Score Range	Number of GPU	Name of the GPU
High	Above 0.2	3	Tashiding, Yuksam, T. Khachodpalri
Moderate	0 to 0.2	1	Melli
Low	Below 0 (-value)	5	K. Mangnam, D. Narkhola, K. Labdang, A. Chongrang, Gerethang

Source: Calculated by author

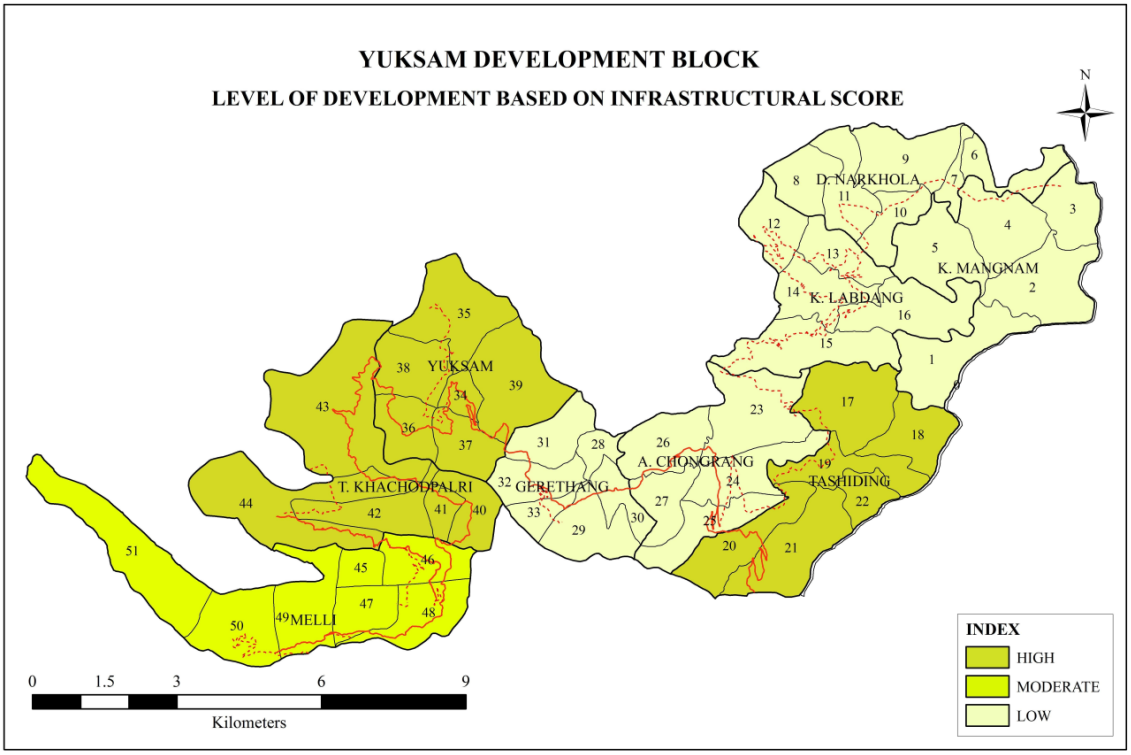

Fig: 6.6

Yuksam GPU score maximum 0.93 followed by Tashiding (0.86), and T. Khachodpalri GPU (0.47) due to higher infrastructural facilities. These GPUs has well developed educational institution, health care facilities, good connectivity of roads, good supply of drinking water and electricity. Moderate level of development is noticed only at Melli GPU. The low infrastructural development has been noticed in 5 GPUs of the study area namely K. Mangnam, D. Narkhola, K. Labdang, A. Chongrang and Gerethang. In this category, the ranges of infrastructural score vary from -0.65 to -0.23. The lowest value has been recorded in K. Mangnam GPU (-0.65) while the highest value in this grade has been recorded in K. Labdang GPU (-0.23).

Above figure show that the north-eastern and middle part of the development block makes a compact region of low level of infrastructural development. It may be observed from the above table that there are three GPUs which have high level of infrastructural facilities, because these GPUs having the facility of education, health care centre, metalled road and other facilities. The medium level of infrastructure facilities has been observed in single GPU. The low infrastructure facilities have been noticed in five GPUs of Yuksam development block.

6.7. INFRASTRUCTURE AND LEVEL OF DEVELOPMENT

The correlation and regression analysis has been carried out between infrastructure and level of development is calculated for this purpose. The GPUs has been classified on the basis of infrastructure score to examine the extent of interrelation between infrastructure and development and it reveals that there is a positive correlation between these two variables. Here the regression y =1.446, r = 0.926 and R^2 value is 0.858 as the relationship is statistically significant (Fig. 6.7 and 6.8). As a consequence the first hypothesis *'level of development is closely associated with the infrastructure facilities'* has been proved.

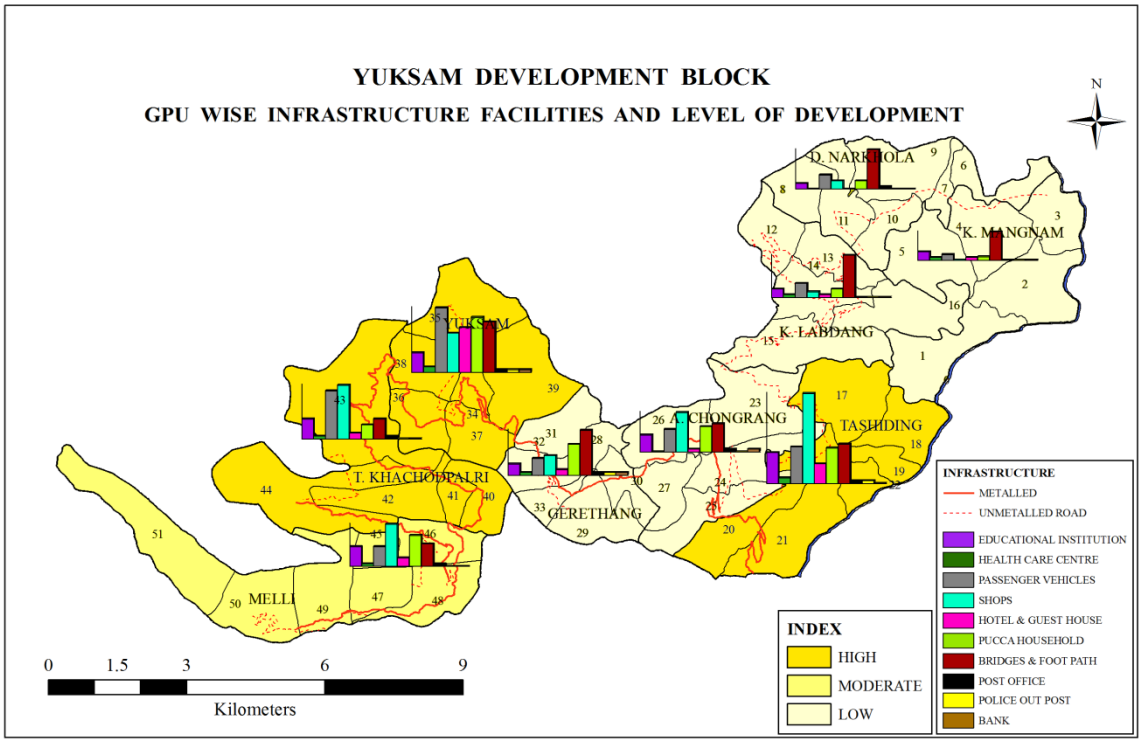

Fig: 6.7

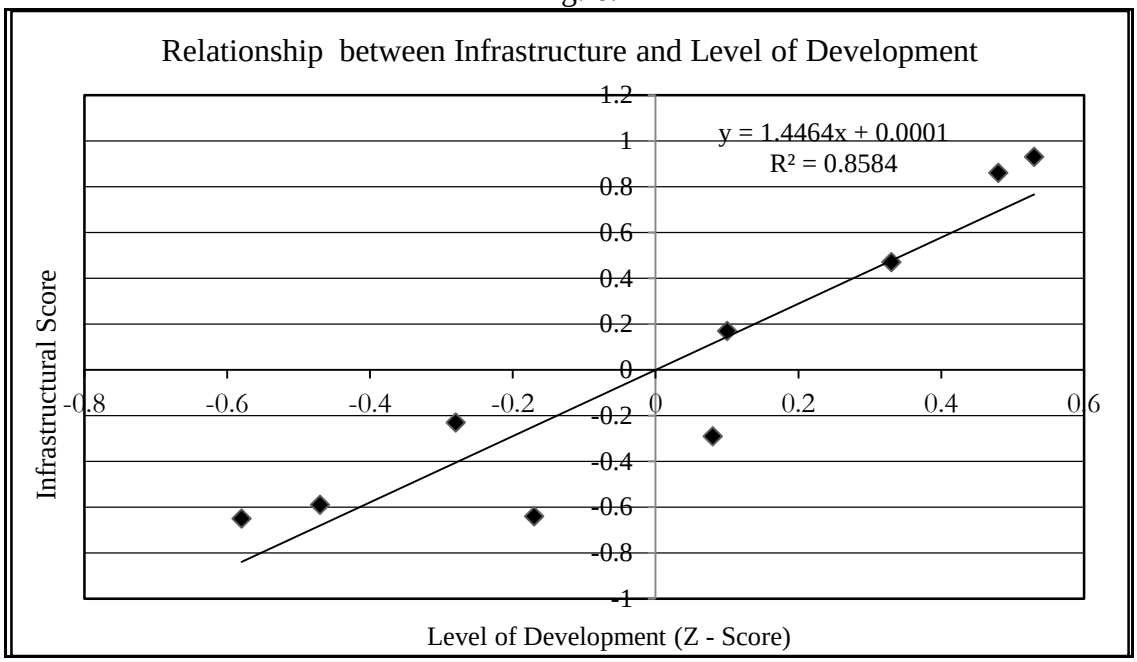

Fig: 6.8

The distribution and development of infrastructure is most helpful for the development of an area. But these facilities were getting more intensified in the GPUs which are located along the road level and poor in isolated GPUs. Thus, the pattern was highly unravelling followed by availability in the area and accessibility of these facilities. Infrastructure facilities are the base of development. In order to balance this gap of unevenness of development it is necessary to provide basic infrastructure facilities to every village.

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Chapter 7

PATTERN OF COMPOSITE RURAL DEVELOPMENT

Earlier when development was equated with economic progress, Gross Domestic Product (GDP) was used as a single measure of development. Moreover, the data for GDP are not available for lowest planning level. The limitation of GDP as indicator of development, a new search was started for meaningful and universal indicators of development. Schwartzberg (1961) employed 33 indicators of development comprising productivity, consumption and welfare aspects. Mitra (1967) employed 63 indicators of development. Drewonowski (1974) used indicators pertaining to nutrition, clothing, health, education, leisure, security, social environment and physical environment.

Krishnamurthy and Rao (1977) work out with a set of indicators to measure socio-economic development in India. Jacobs (1982) used 118 indicators for the development and he grouped them into ten divisions namely: nutrition, clothing, housing, household goods, other possessions, education, health, transport and communication, public facilities, social, religious activities, assets and liabilities. Srivastava (1982) used 32 indicators of development. In the same way many scholars employed large number of indicators based in their own enthusiasm.

7.1. SELECTION OF INDICATORS

Development is a process of socio-economic transformation in the society which is greatly influenced by human being. Rural development is now viewed closely as a strategy specifically designed to improve the socio-economic subsistence of the rural people. Rural development is governed by various aspects i.e. demographic, socio-economic, infrastructure and amenities of rural areas which interplay with the process of development and highly depends on the level of socio-economic interaction between rural and urban areas. In present study an attempt has been made to discover level of rural development by analysing various indicators. In the selection of indicators to measure the levels of rural development considerable emphasis are placed on variable which represent a change and development in a society.

In preceding discussion on level of development among the GPUs of Yuksam development block covered three important aspects namely demographic, socio-cultural and economic development by using a variety of indicators. On the process of development people are main force and sole beneficiaries. Therefore, demographic development is inseparable from the co-working process of socio-economic development (Singh & Dubey, 1985; Gosal & Krishan, 1989). To represent demographic development 6 indicators are taken into consideration.

Development is a broad concept, all the indicators discussed in previous chapter have been clubbed together to get composite picture of development. In the light of development, socio-cultural dimensions of development were discerned through educational facilities, health services, sanitation facilities, communication and social amenities. The data related with cropped area, cropping intensity and production of crops is an important part of agricultural development, but the secondary data related with this at GPU level were not available for the study period and these indicators could not be included. Economic development was envisaged through 4 indicators.

Infrastructure facilities serve social need so it is considered as an important factor of social development. It leads to qualitative development and provide better facilities to the people. The spatial distribution of infrastructure facilities was uneven. In the present study 11 indicators of infrastructural facilities have been worked out. The present study considers the following set of indicators for measuring the level of development among the GPUs of Sikkim, which are as under:

Indicators of Rural development (GPU-level Sikkim)

Indicators	Description
X_1	Density of population/ha
X_2	Total literacy (%)
X_3	Working population (%)
X_4	Percentage of primary worker to total worker
X_5	Pucca household (%)
X_6	APL household (%)

7.2. LEVEL OF DEVELOPMENT AMONG THE GPUs OF SIKKIM

Development of an area may be assessed in several ways. To examine the level of rural development in Sikkim, whole rural GPUs are chosen as the area of study. The purpose of analysis is to discover level of rural development within the GPUs of Sikkim and among the GPUs of Yuksam development block. The data has been collected from Census of India, DESME, SRHC, statistical handbook and official records of Sikkim. The indicators taken under consideration are analysed with the help of composite score. The computed composite indices of the variables have a wide range of variation, finally the variations are grouped into 3 categories and it has been applied to assess the level of rural development.

Out of 163 GPUs there are only 57 GPUs (34.96 per cent) having high level of development (Table. 7.1 and Fig. 7.1). These GPUs are Mellidara Paiyong (0.99), Tharpu (0.88), Rawtey Rumtek (0.84), Kewzing Bakhim (0.66), Chungthang (0.65), Assangthang (0.65), Khamdong (0.62), Samdong Kambel 0.62), Kartok Namcheybong (0.61), Tathangchen Syari (0.60), Barfung Zarung (0.39), Tinkitam Rayong (0.57), Sripatam Gagyong (0.59), Rolep Lamaten (0.23) and et al.

Table 7.1: Level of Development based on Composite Score (GPU-level Sikkim)

Categories	Z Score Range	Number of GPU	Percentage of GPU
High	Above 0.2	57	34.96
Moderate	0 to 0.2	28	17.20
Low	Below 0 (-value)	78	47.84

Source: Calculated by author

The GPUs having moderate category cover 28 GPUs (17.20 per cent) of the Sikkim. These GPUs are Namli (0.20), Lingmo-Kolthang (0.19), Riwa Machong (0.19), Upper Fambong (0.10), Tarku (0.08), Phengang (0.07), Lachung (0.04), Taza (0.02) and Rey Mendu (0.02) and et al (Appendix - AA). About 78 GPUs (47.84 per cent) of Sikkim fall in the low category of development on the basis of composite score. These GPUs are K. Mangnam (-1.83), Rey Mendu (-0.01), Rong-Bul (-0.02), Navey Shotak (-0.02), Okherey (-0.59), Lingi (-0.49), Mabong Segeng (-0.60), D. Narkhola (-0.49), Ship Gyer (-0.49), K. Labdang (-0.80), Darap (-0.40), A. Chongrang (-0.83) and, et al. In these GPUs there is less availability of population density, literacy, working population, pucca household and having low percentage of APL household.

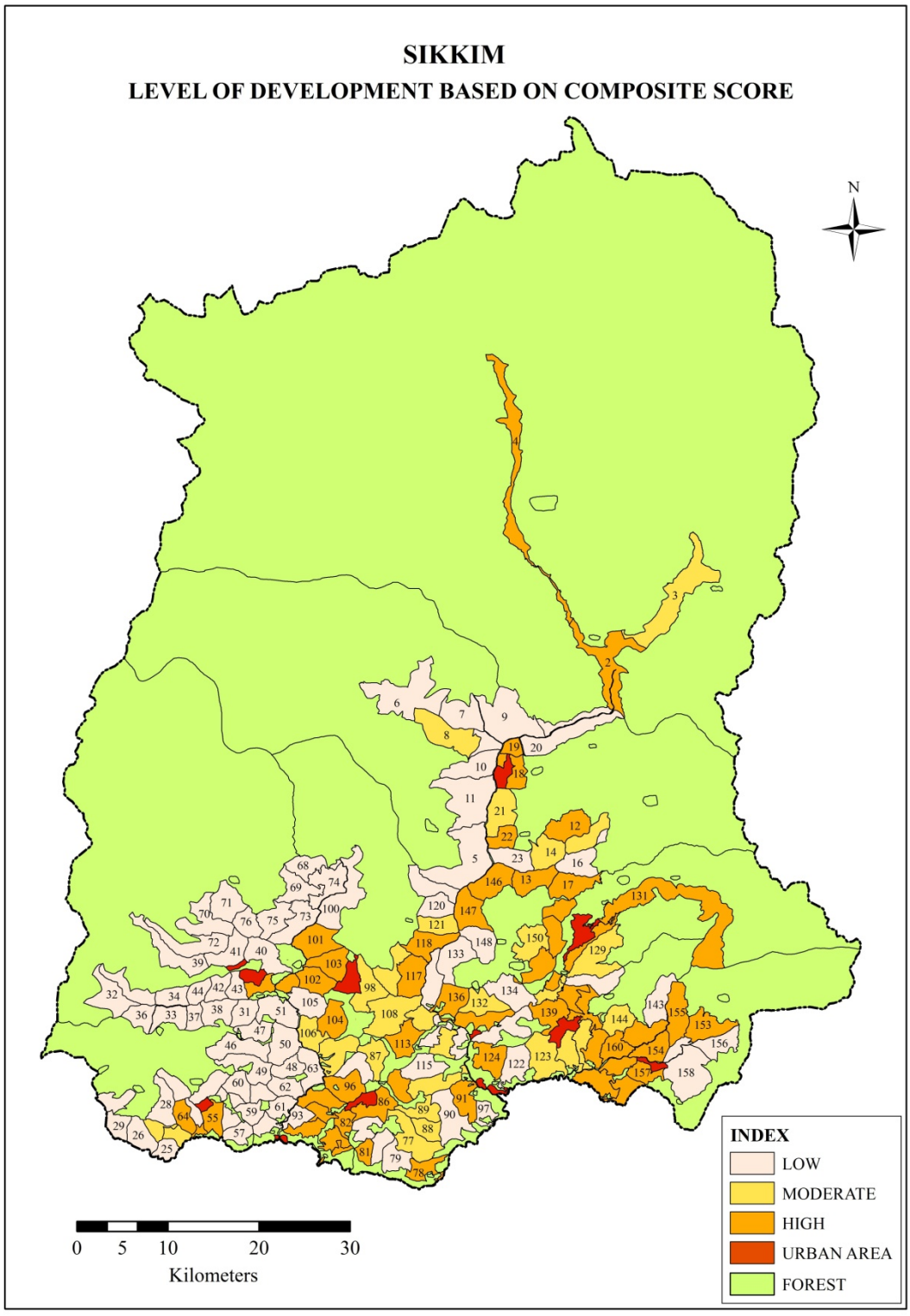
SIKKIM
LEVEL OF DEVELOPMENT BASED ON COMPOSITE SCORE
N
INDEX
LOW
MODERATE
HIGH
URBAN AREA
FOREST
0 5 10 20 30
Kilometers

Fig: 7.1

7.3.1. Level of Development among the GPUs of Yuksam Development Block

The level of development has been measured on the basis of 21 selected indicators together. The aerial pattern have been analysed and explained. The spatial pattern of level of development has been measured by transforming and combining the data related with 21 variables by using 'z' score (Appendix - BB). On the basis of the composite scores, the GPUs have been again categorized into three categories (high, moderate and low) of development. There are three GPUs of Yuksam development block having high level of development (Table. 7.2 and Fig. 7.2). These GPUs are Tashiding, Yuksam and T. Khachodpalri.

The high level of development may be due to variety of reasons. The villages of these GPUs enjoy better infrastructural facilities and amenities. The moderate level of development has been noticed in Gerethang and Melli GPUs of the block. The area having low level of development includes four GPUs of the block. These GPUs are K. Mangnam, D.Narkhola, K.Labdang and A.Chongrang GPU.

Table 7.2: Level of Development based on Composite Score (GPU-level Yuksam)

Categories	Z Score Range	Number of GPU	Name of the GPU
High	Above 0.2	3	Tashiding, Yuksam, T. Khachodpalri
Moderate	0 to 0.2	2	Gerethang, Melli
Low	Below 0 (-value)	4	K. Mangnam, D. Narkhola, K. Labdang, A. Chongrang

Source: Calculated by author

In these GPUs the availability of the facilities are almost very poor. Present study finds out that there are larger variations in the level of development at GPU level in Sikkim as well as in Yuksam development block. After analysis it may be concluded that the level of rural development show many dimensions of backwardness as well as progress. There is contrast in level of development among the GPUs of the block. The foregoing account brings to focus that the existing level of development in the study area may be partially attributed by infrastructure and population size. There is urgent need of appropriate strategy for an accelerate development for more than two third of the GPUs, especially in the field of infrastructure facilities in order to reduce the imbalances in the level of development.

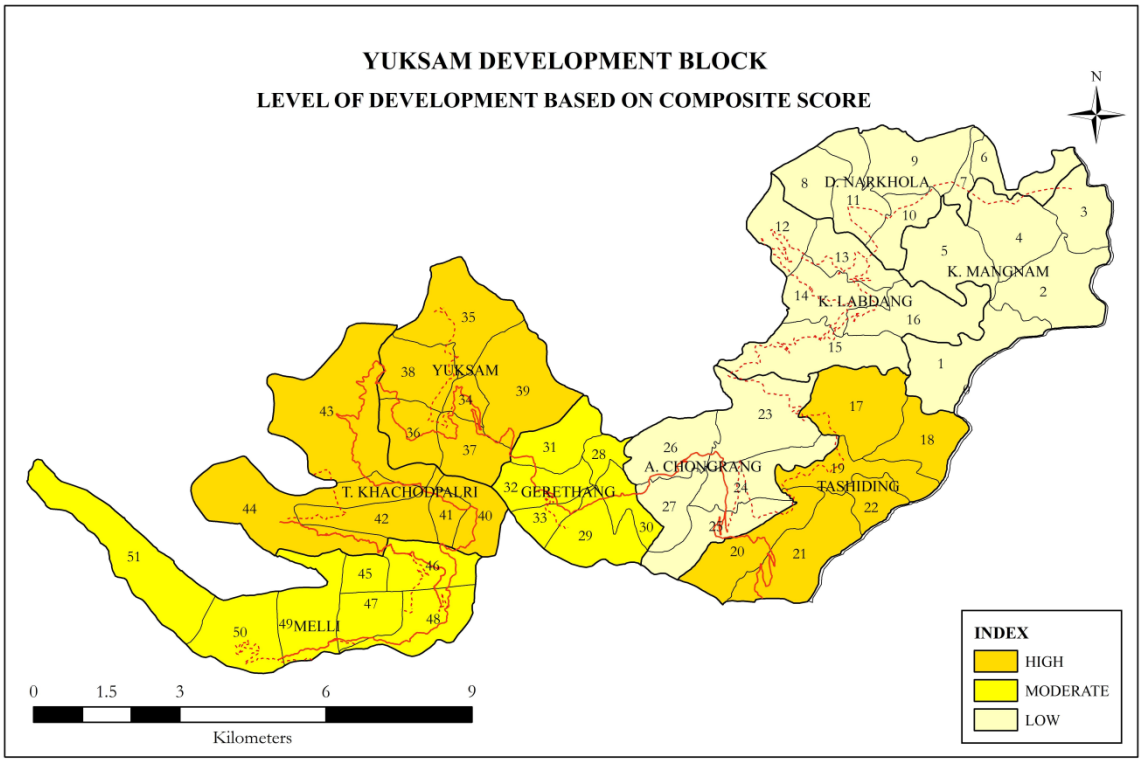

Fig: 7.2

On the basis of present analysis on level of development among the GPUs of Yuksam development block, the following salient features are worth to specify: The GPUs categorized in high level of development are larger in size in terms of population, in availability of infrastructure facilities and mostly situated in metalled road. The GPUs falling into the categories of medium and low level of development do not reveal a specific distributional pattern. These GPUs are mostly located in north eastern part of the block and are smaller in size of the population.

It may be concluded that central part of Yuksam block is well developed due to better infrastructural facilities and amenities. The village is located in the eastern and western margin of the study area, the pace of development is low, and it may be due to lack of infrastructure facilities and smaller size of the GPUs in terms of population. It has been observed that the gap between the grades of development is largely reflected in the disparity of their infrastructure. The pace of development may gain in these GPUs if the infrastructural facilities are increased by establishing good connectivity of roads in underdeveloped GPUs and development must be based on planning then only the problem of disparities will be reduced.

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Chapter 8

IMPACT OF RURAL DEVELOPMENT PROGRAMMES ON SOCIO-ECONOMIC CONDITION OF THE PEOPLE

Sikkim being the steepest and outmost State in the country poses unique mountain specific challenges for sustainable development. Inaccessibility in physical terms leads to a limited base for sustaining livelihoods. Though it was found that rural infrastructure relating to housing, sanitation, health, electricity, water supply, education, roads and footpaths, minor irrigation canals were well established. Social assistance programs relating to assist food transfers (rice, Mid-Day Meal, supplementary for feeding mother and children), cash transfer (old age pension, widow and disabled pension), general subsidies (drinking water and electricity), wage employment programme (NREGA) and service free facilities (education and health) were extensive. Social insurance programs like health, house and accidental death have been recently launched.

The goal of any rural development programme is to enrich the quality of life of the poor by meeting the basic need and generating employment opportunities on a wider scale through decentralised planning. State Government has ambitious plans to achieve 'Poverty free Sikkim' by the year 2015 by attaching highest priority to the successful implementations of anti-poverty programmes and improving the quality and delivery of public services to increase rural prosperity in the State.

The Rural Management and Development Department (RM&DD) of Sikkim is committed to improve the life of rural poor by implementing different poverty alleviation and infrastructural development programmes like construction of houses, roads, bridges, sanitary latrines, water tanks, schools, play grounds, house up-gradation, distribution of solar lights, drinking water supply, bio-gas plants, cooking gas, loans to Self Help Groups, 100 days job guarantee, pension and so on. Along this RM&DD is also dedicated to build self confidence among the rural people by engaging them in administrative process of local self governance by means of decentralization of powers to the Panchayats to execute the above schemes (Annual Report of RMDD, 2009-10).

8.1. ONGOING PROGRAMMES IN SIKKIM

- Panchayati Raj
- Backward Regions Grant Fund (BRGF)
- Devolution of powers and functions of Block Development Officers and Block Administrative Centres
- Construction of Prashasan Kendras
- Universal Financial Inclusion Programme
- New Initiatives taken up by RM&DD under SGSY
  Saras Mela/Fair
  Self Help Group Mela
- Pradhan Mantra Gram Sadak Yojana (PMGSY)
- Total Sanitation Programme
- Rural Water Supply
- Swaranjayanti Gram Swarojgar Yojana (SGSY)
- Mahatma Gandhi National Rural Employment Guarantee Act (MG-NREGA)
- Rural Housing Scheme (RHS)
- Sikkim Renewable Energy Development Agency (SREDA)
- State Institute of rural development (SIRD)
- Vigilance and Monitoring Mechanism
- Janata Mela

Improvement in the quality of life and human development has always remained the ultimate objectives of planning since the inception of Five Year Plan in the early fifties. The history of planning shows that the Government has been laying emphasis on the development of both social and economic sectors by launching a number of programmes on various plan periods. Development programmes broadly aim at strengthening the social aspect of human being by providing an array of services that cater to their basic needs like education, health, shelter, sanitation and employment. These programmes primarily target the most vulnerable section of the society, which remained isolated from the fruits of development. These programmes focus on providing them access to some basic socio-economic inputs. This chapter presents an analysis of impact of social development schemes in Yuksam development block.

In order to study the impact of various rural development programmes on socio-economic condition of the people on the basis of collected data. For this purpose data collection was done with the help of schedule especially designed for this study from selected sample households and secondary data were collected from various Government sources. The information was collected directly from the respondent and schedule was designed in such a manner so as it reflect the socio-economic strata of the rural poor. The group of respondents mainly comprises of both categories of families Above Poverty Line (APL) and Below Poverty Line (BPL). A sample of 30 per cent of total household was selected from each GPW respectively.

8.2. DISTRIBUTION OF BPL HOUSEHOLD

Integrated Rural Development Programme (IRDP) was the first marked introduction in our plan for struggling rural poverty. One of the basic conditions before implementing IRDP is identification of beneficiaries for the assistance under the programme. Identification of beneficiaries is based on the concept of poverty, norms and measurement format developed by the Ministry of Rural Development, Government of India. Through (BPL) survey Rural Management & Development Department, Government of Sikkim has also estimated the percentage of families living below the poverty line by taking an average of Rs 11,000 per annum income per family as the threshold level.

Inspite of massive programmes launched by Government for the eradication of poverty in rural areas, even today a large proportion of people are living below poverty line. In Sikkim percentage of BPL household has come down from 41.4 per cent in 1994 to 30.9 per cent in 2005 to 13.1 per cent in 2010 (Planning Commission of India, 2012). Over last 15 years the percentage of persons living below the poverty line has been rapidly decline. As it is evident from the table, survey reveals that 741 household of Yuksam development block were belong to BPL category; these constitute about 24 per cent of total household (Table. 8.1 and Fig. 8.1). The distribution of among the GPUs shows that T.Khachodpalri GPU has highest 32.6 per cent and least percentage of BPL household was observed at K.Labdang GPU 14.2 per cent.

Table 8.1: Percentage distribution of BPL Household

Name of the GPU	Percentage of BPL Household
K. Mangnam	26.60
D. Narkhola	19.80
K. Labdang	14.20
Tashiding	24.00
A. Chongrang	18.00
Gerethang	22.70
Yuksam	17.90
T. Khachodpalri	32.60
Melli	32.40
Total	24.00

Source: DESME, 2008.

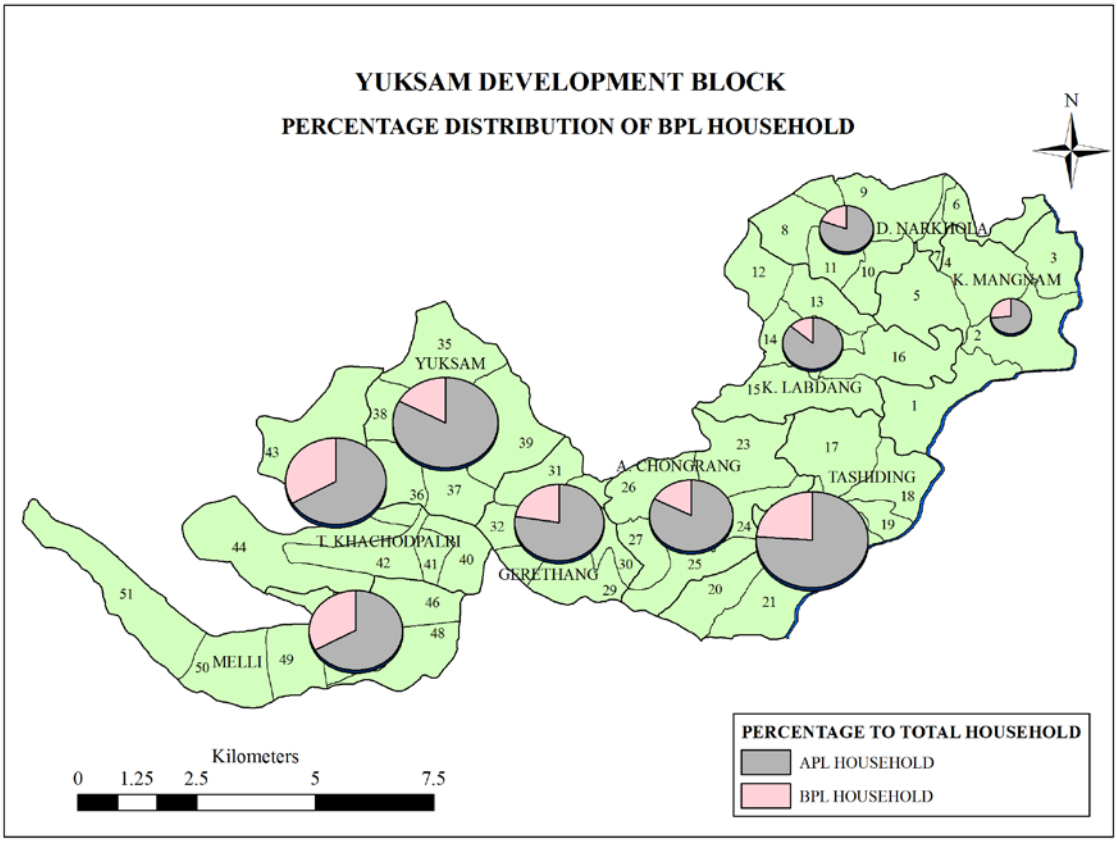

Fig: 8.1

Rural development is the top priority for the Government of Sikkim and they implemented 70 per cent of the total plan budget for the development of rural areas. Since the beginning of the planned economic development, the labor intensive programmes through public works, targeting the poor and providing food security among them has been well recognized for proper development. The State Government has recently set up a mission to build a society which is free from poverty, aim to improve lives of people and to raise prosperity in the State.

8.3. IMPACT OF RURAL DEVELOPMENT PROGRAMMES

'The impact of social sector programmes has been studied at two levels: (a) on the individual level and (b) on the community level' (Pant & Pandey, 2004). The impact on individual level has been studied by comparing the past and present socio-economic conditions of the beneficiaries. An attempt has been made to examine the impact of the programmes on socio-economic condition of the people and comparison has been made on literacy level, schooling pattern, housing pattern and sanitation. On community level the impact of the programme has been studied by analysing the perception of the respondent, with the premise that they were the people who had observed the earlier situation and they could make a meaningful judgment. The respondent was asked to express their views on the state of the facilities and amenities created at the community level which have improved their status or had remained same or have worsened their socio-economic condition over the time. To elaborate this point the survey sample contained 921 households (30 per cent household) of the Yuksam development block.

The study covers a number of major social sector development programmes. These programmes were implemented and sponsored by different Government organisations and departments like Rural Management and Development Department, Department of Welfare, Department of Land Resources, Sikkim Renewable Energy Development Agency (SREDA), Drinking Water Supply, Education and Health Department. Every department and organisations had its own objectives, plan and criteria of selection of beneficiaries. These programmes are further classified on the basis of their coverage and nature.

There are various social sector programmes covering various socio-economic aspects of the society which were in operation in Yuksam development block. These programmes has been broadly categorised into 6 separate homogenous units on the basis of their nature i.e. programmes on education, housing schemes, wage employment generating schemes, programmes on minimum basic needs, social welfare oriented programmes and other programmes. As stated earlier that the impact of schemes on individual level has been studied by comparing the status of the beneficiaries before and after receiving the schemes.

8.3.1. Programmes on Education

Education is an important factor and most crucial inputs of development. Education also helps the people for all round development. It occupied a prime place in Minimum Needs Programme (MNP) right from its inception from the Fifth Five Year Plan, in the form of elementary education. The central and State Government has made sincere efforts by adopting various educational schemes like Sarva Shiksha Abhiyan (SSA), Rastriya Madyamik Shiksha Abhiyan (RMSA), cooked Mid-Day Meal (MDM), ICDS, Saakashar Bharat Mission and Scholarship schemes to improve the quality of education. The following programmes were in operation in Yuksam development block:

Sarva Shiksha Abhiyan (SSA): this scheme helps to provide useful and elementary education for all children in 6 -14 age groups. The main objective is to bridge social, regional and gender gaps with the active participation of the community in the management of the school.

Rastriya Madyamik Shiksha Abhiyan: the scheme is being launched with an aim to achieve Universal Access and Quality Secondary Education, affordable and accessible to all people in the age group of 14-18 years.

Aims and Objectives:

- To establish secondary school within a radius of 5km and senior secondary at 7-10 km
- Providing necessary physical facilities, teaching and non-teaching staff for every secondary school
- Achieving 75 per cent access by 2012-13 and 100 per cent access by 2017-18
- Achieving 100 per cent retention by 2020
- To notice that no student shall be deprived of secondary education because of gender disparity, socio economic reasons, disability or any other reasons.

Activities taken up under RMSA:

- Construction of additional classrooms, laboratory and equipment
- Supply of furniture
- Separate toilet blocks for boys and girls
- Drinking water facility
- Annual grants for school
- Minor repair grants
- Laboratory maintenance grants, news paper and library grants

Mid-day meal scheme: launched in 1995 (the official name of this scheme is National Programme of Nutritional Support for Primary Education, but it is widely known as 'mid-day meal scheme') with the aim of 'universalisation of primary education by increasing enrolment, retention, attendance and simultaneously focusing on nutrition of students in primary classes'.

Integrated Child Development Services (ICDS): is a national policy on children proclaimed by Government of India in August 1974 and declares children as 'supremely important asset'. The aim of these scheme is to improve the nutritional and health status of backward group including pre-school children, nursing mother, pregnant women by providing packages of supplementary nutrition, health check-up, immunization, referral services and health education in anganwadi centres to promote awareness join action for child development and women empowerment.

Saakashar Bharat Mission (SBM): launched on 8th September 2009 by Hon'ble Prime Minister of India, SBM is centrally sponsored schemes of Department of School Education and Literacy (DSEL) Ministry of Human Resource Development Department, Government of India. The mission emphasises to impart education by expending educational option especially to women and those non-literates adult who lost the opportunity to access formal education and cross the standard age of receiving such education. The mission aims to promote and strengthen adult education in the age group of 15-35 years in time bound manner.

Schemes for Scholarship: the scholarship section of Human Resource Development Department, Government of Sikkim looked after the implementation of both central and State sponsored schemes. State Government also provides school uniforms, raincoat, shoes, school bag, books and note book for the students up to primary level.

The major ongoing scholarships under HRDD are as under:

Merit Scholarship for School Education: as per notification No.225/Sch/Edn dated 11.6.2007. State Government has decided to award scholarship to the student of Government school who secures first, second and position in the examination for their studies in class VI-XII standard.

Post-Matric Scholarship: Sikkim Government has two types of Post-Matric Scholarship schemes for Sikkimese student who want to pursue various Post-Matric technical and Professional courses in the various institute in and outside the State.

(a) Merit Scholarship - are awarded to that student who secure aggregate marks of 70 per cent and above in Class XII board examination or equivalent examination of any recognised board for pursuing any under graduate course of his or her preference.

(b) General Scholarship - are awarded to that student who secure above 50-70 per cent marks and fulfil the criteria for pursuing courses of Diploma, Degree and Post Graduate Level.

Scholarships for Below Poverty Line (BPL): financial assistance of Rs 300 per month is awarded to local student who belong to BPL families in colleges of the State.

Fellowship grants for Ph.D. courses: fellowship grants of Rs 6,000 per month and contingency grant of Rs 12,000 per annum is awarded to the local student for a maximum period of three years or on completion of the course. As per notification No.010/03/SCH/HRDD/2007-2008/594 dated on 13th march 2008, to encourage in-service candidate of the State for pursuing PhD, the State Government decided to provide fellowship grant of Rs 3,000 per month and contingency grant of Rs 12,000 per annum for a maximum period of three years or on completion of the course will be paid to in-service candidate.

Impact on Schooling Pattern

The study of the enrolment pattern among the children in the school enables us to examine the extent to which social sector scheme have influenced the perception of parents and motivated them towards education. The gender and class-wise enrolment pattern of the student in Yuksam development block shares many similarities. In 2008-09, the proportion of girls' enrolled in every class was higher than that of boys (Table. 8.2). The level of enrolment in 2009-10, in class I-V and VI-VIII, the proportion of girl's enrolment was higher than that of boys. It was found that in class IX- XII boy's enrolment was higher. Similarly, in 2010-11 in class I-VIII the proportion of girl's enrolment was higher. However, the proportion of boys going to school in class IX- XII was much higher than the girls.

Table 8.2: Gender-wise and Class-wise Enrolment Pattern of Student in Yuksam Development Block

Year	Class I-V			Class VI-VIII			Class IX-X			Class XI-XII			Grand Total		
	B	G	T	B	G	T	B	G	T	B	G	T	Boys	Girls	Total
2008-09	1346	1397	2743	322	356	683	71	76	147	32	37	69	2089	2146	4235
2009-10	1261	1301	2562	354	433	787	88	67	155	35	31	66	2015	2100	4115
2010-11	1311	1347	2658	462	530	992	21	16	37	21	16	37	1957	2050	4007

Source: Government of Sikkim HRDD, 2011.

The study also brings out the fact that in every year the highest incidence of girl student was enrolled in class I-VIII, which sharply declined as one moved from class VIII to higher classes. However, this drop was more noticeable in 2009-10 and 2010-11. The factors contributing to increased drop-out of girls in rural areas are due to their concern in helping their parents, preparing food, collecting firewood, cleaning the house, taking care of siblings, and grazing animals are some of the key tasks to be performed. Men hardly participate in domestic tasks and they are encouraged for better and higher education. Whereas girls are encouraged to impart domestic skills to be good mother and wives. Early marriage of a girl child has a negative effect on education. Women hardly get an opportunity to make their choices for themselves. Therefore a strong gender inequality exists in educational attainment in higher level.

Changes in Level of Literates

The impact of educational programmes shows that there has been considerable improvement in educational status in the development block. Increase in number of educational institution helps to change in the level of literates and also increase the school going children in higher level as compared to the past (APPENDIX - CC). The literates among the members of the sample households showed that the proportion of total primary literates was over 40.5 per cent in 2005, it increased and about 20.2 per cent in 2011. Similarly, in secondary level the rate of literates was around 16.4 per cent on 2005, while its percentage change was estimated over 8.6 per cent in 2011.

The comparison of literates in senior secondary level shows that the proportion of literates in 2005 was about 2.3 per cent. Against this, the percentage change was observed about 1.2 per cent in 2011. It could also be seen that same percentage change was observed in the level of graduate literates i.e. 1.2 per cent. The analysis also shows that while only 0.2 per cent members of the sample households had higher studies in 2005, the percentage changed in the member who has gone for higher studies was

accounted to be increased by 0.5 per cent in 2011. The inter GPU analysis showed that the proportion changed in primary literates was decreased among all the GPUs. The higher decrease in percentage changed was observed at Melli GPU i.e. 13.2 per cent and least was observed at A. Chongrang GPU 3.1 per cent in 2011. The analysis also shows that when we compare the percentage changed in primary literates among the GPU, it could be seen that the percentage changed was higher at Melli GPU followed by Yuksam GPU. In K. Labdang GPU the higher increase in percentage (-16.4 per cent) of secondary level literates was observed and on the other hand, less changed was noticed at T. Khachodpalri GPU (-3.1 per cent).

It further shows that the percentage increased in senior secondary literates was higher at Tashiding GPU (-4 per cent) and followed by A.Chongrang GPU. The analysis also shows that the percentage changes in level of graduate literates was higher (-2.7 per cent) at Tashiding GPU and lowest percentage was noticed at D.Narkhola and Yuksam GPU. The increased in percentage of member in higher studies was more in Tashiding GPU (-0.9 per cent) followed by Melli, A.Chongrang and Gerethang GPU. The total school going children were around 25.2 per cent among the total population (VDAP, 2011). The higher levels of children were going to school in the block could be attributed to the fact that formal education is better organized than before. Thus the result clearly showed that the households were more motivated towards the higher education than before, probably because of the facilities provided by the social sector schemes.

Impact on Illiteracy: the study of illiterate member among the households in Yuksam development block showed that it contain over 39.6 per cent illiterate in 2008 and about decreased by about 23.7 per cent in 2011. The inter GPUs study shows that the incidence of illiteracy was higher in K. Mangnam GPU (-29.2 per cent) and least was noticed at A. Chongrang GPU (-18.7 per cent) (Table. 8.3). This may be due to the impact of various educational schemes which has rendered a great amount of help to a large number of BPL household who are unable to send their children to school. Significantly there has been a huge decline in illiteracy and the number of school going children in villages have increased. The level of literacy is more aligned with the expansion of the educational institutions of the particular area. Vigilance and continued public participation helps in the successful implementation of the programme.

Table 8.3: Percentage Change in Illiterates

Name of the GPU	Illiterate in 2008 (%)	Illiterate in 2011 (%)	Changed (%)
K. Mangnam	44.50	29.20	-15.30
D. Narkhola	44.90	24.40	-20.50
K. Labdang	45.60	23.30	-22.30
Tashiding	37.20	23.50	-13.70
A. Chongrang	43.20	18.70	-24.50
Gerethang	38.10	20.00	-18.10
Yuksam	34.70	24.00	-10.70
T. Khachodpalri	39.00	27.00	-12.00
Melli	42.30	26.50	-15.80
Total	39.60	23.70	-15.90

Source: DESME, 2008 and Field Survey, 2010-2011.

8.3.2. Housing Schemes

House means a place or a space of a person to live and pattern is a particular way in which houses are constructed on a surface. Every person would like to have a roof that they can call their own. 'Food, clothing and shelter are the three basic needs of human beings. While the first two problems have been more or less effectively tackled, providing shelter to the millions of poor people still remains a challenging task. Housing facility is one of the vital aspects of civilized life. It is not only an indicator of social welfare but also of culture and economic well-being' (Dave, 1991). Government has accepted that shelter as a basic human necessity needs to be met on a priority basis. The goal of the Government is 'housing for all', with this goal 5 major housing scheme has been implemented by the State Government, the objective is to provide shelter to the homeless rural poor those who are living Below Poverty Line in the State.

In Sikkim, Kutcha house definition is clarified as follows: the house to be evaluated should be the mool ghar (main house) of the household. Depending on the basis of wall (*bhitta*) and type of roof (*chaana*) the wall and roof material such as chitra, siru, tarpaulin or drum sheet, GCI sheet loosely placed on the truss without fixing rigidly with nails and kept in place under the weight of stone, timber, bamboo etc. If the GCI sheet fixed rigidly in the household then it is not considered as a Kutcha house. The walls of the houses could be made of *chitra*, *ekra* with mud plaster, *ekra* with cement plaster, wooden planks, stone, bricks etc, while the roof could be made of plastic sheet, bamboo, drum sheet, wooden planks and GCI sheet. On the basis of used material the houses are classified into three types:

Temporary houses (kutcha house) - houses in which both the walls and roof are made of materials that needs to be replaced frequently. It includes all structures made of non pucca materials such as thatch, mud, ekra, low quality timber, grass, plastic sheets and other kutcha materials are treated as kutcha house.

Semi-permanent houses (Semi pucca house) - a structure which cannot be classified as a pucca or a kutcha structure is known as semi pucca structure. Such structure may have a combination of both pucca and kutcha materials. Such structure will have either the walls or the roof but not both, made of pucca materials.

Permanent houses (pucca house) - pucca structure is one whose both walls and roofs are made of pucca materials such as burnt bricks, stones (packed with lime or cement), cement concrete, timber and ekra. In roof material it include tiles, GCI sheets, asbestos cement sheet, RBC (Reinforced Brick Concrete), RCC (Reinforced Cement Concrete) and timber. Under housing 5 major ongoing housing programmes are figured for analysis:

Rural Housing Scheme (RHS): The scheme was initiated in the State in 1988-89 with a view to provide housing assistance to the economically weaker sections of the society. The objective can be gratifying by constructing new houses and upgrading those already constructed which are in worse condition. Beneficiaries are selected through Gram Sabha by the District Level Committee. This scheme was completely modified in 1995-96, by considering the difficulty of the rural people. After that, each beneficiary is provided with 30 pieces of GCI sheets and Rs.20, 000 cash financial assistance which is distributed in 2 equal instalments in order to take up instant repair of their houses. There are 320 numbers of RHS beneficiaries on Yuksam development block (Table. 8.4 and Fig. 8.2).

Indira Awaas Yojana (IAY): Is a centrally sponsored scheme, its objective is to provide shelter to the homeless marginal income group who are unable to construct a decent dwelling due to economic constraints and poverty and belong to scheduled castes/ scheduled tribes, physically and mentally challenged individuals, freed bonded labours, and other non SC/ST families by providing financial assistance of Rs. 38,500 for the construction of new house per beneficiary. Funding pattern is shared by centre and State Government in the ratio of 90:10.

Table 8.4: GPU-wise Housing Beneficiaries

Name of the GPU	RHS	IAY	MMAY	House Up-gradation	GCI Sheet
K. Mangnam	14	4	1	3	19
D. Narkhola	20	3	0	2	33
K. Labdang	27	4	1	8	40
Tashiding	60	4	5	17	102
A. Chongrang	24	5	0	14	53
Gerethang	37	18	1	17	62
Yuksam	58	13	15	22	90
T. Khachodpalri	31	6	5	9	67
Melli	49	7	1	16	77
Total	320	64	29	108	543

Source: DESME, 2008 and Field Survey, 2010-2011.

Note: MMAY - Mukhya Mantri Awaas Yojana, RHS - Rural Housing Scheme, IAY - Indira Awaas Yojana, GCI Sheet - Galvanised Corrugated Iron sheet.

In Sikkim, assistance is provided in the form of 24 number of green colour GCI sheets per beneficiary and remaining in cash component after deduction the cost of 24 nos. of GCI sheets and Rs. 12,500 for up gradation of unserviceable kutcha house per beneficiary under IAY. IAY assistance is provided to those beneficiaries whose names are found in the BPL list of 2005 socio economic survey conducted by DESME, Government of Sikkim. In Sikkim under Indira Awaas Yojana, altogether 14,895 families have been provided with financial assistance and GCI sheets for construction of new house, and 5,596 households have been provided with up gradation grant since the inception of the scheme. Under Yuksam development block over 64 household were benefited by Indira Awaas Yojana since this date.

Mukhya Mantri Awaas Yojana (MMAY): This Scheme was introduced in 2007 in which a pucca modern house (in the form of traditional Bhutia, Lepcha and Nepali house) made up of bricks with GCI roof, electricity, toilet at the cost of Rs. 3.97 lakh (revised cost is Rs. 6.42 lakh) will be constructed. With a view to retain absolute objectivity and transparency in selecting only deserving and genuine beneficiaries' recommendation of selection have been done through Gram Panchayat and area MLA. For construction a standard plan and design of the house prepared by RM&DD will be followed. House construction will be done through open tender and handed over to beneficiary. Till date 29 number of poorest of the poor household has been benefitted with Mukhya Mantri Awaas Yojana (MMAY) within Yuksam development block.

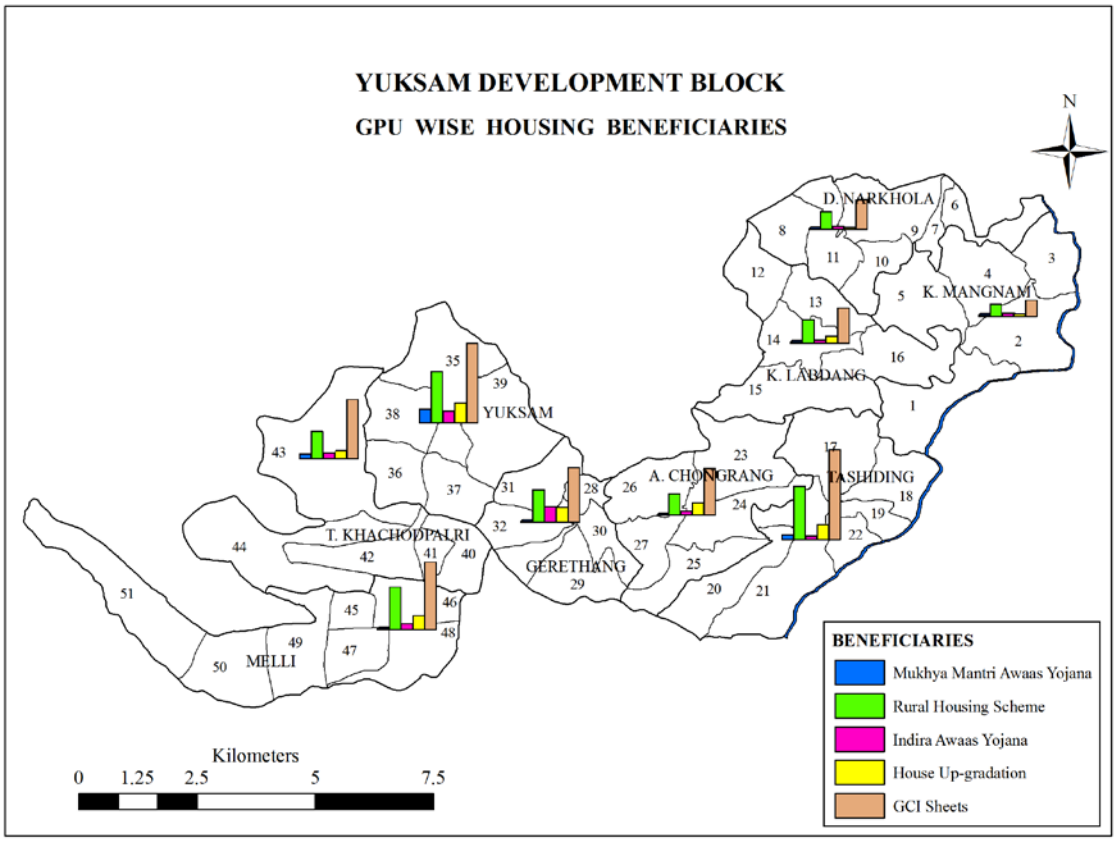

Fig: 8.2

House up-gradation: Under house up-gradation financial assistance of Rs. 15,000/- per household is provided to take up immediate repair of the houses constructed earlier which are in poor condition and need immediate repair. Study shows that over 108 household of the sample development block were availing financial assistance through house up-gradation. The study also shows that the higher beneficiaries household are belong from Yuksam GPU.

GCI Sheets (Galvanised Corrugated Iron): Under these scheme 30 pieces GCI sheets were distributed among the people below poverty line under Rural Housing Scheme. The analysis shows that till date 543 household of the sample development block are benefited with GCI sheet. The inter GPU comparison shows that the beneficiaries households in Yuksam GPU was much higher than the other GPU in the development block (Annual Report of RMDD, 2009-10).

Impact on Housing Pattern: 'It is presumed that as the socio-economic level and the status of the household rises, the conditions of the dwelling in which the families reside also undergo improvement' (Pant & Pandey, 2004). The study on the housing pattern of

the Yuksam development block shows that it comprises about 30 per cent of kutcha dwelling (Fig. 8.3), about 60 per cent semi pucca dwelling and 10 per cent household having pucca dwelling on 2008.

Roof Type: The nature and material used for the construction of the house also reflect the socio-economic conditions of the household. 'As per 2001 census, 18.86 percent of the rural households in Sikkim have thatched roof, 11.57 percent have asbestos roof and 67.83 percent have concrete houses. It is found that the proportion of thatched houses has fallen; asbestos houses have risen; and concrete houses have risen drastically in the rural areas in all the districts. The sample block analysis shows that the percentage of Kutcha house is higher at T. Khachodpalri GPU (15.4 per cent) lowest percentage is noticed at K. Labdang GPU (Table. 8.5 and Fig. 8.4). Most of them have placed GCI sheet loosely on the truss without fixing rigidly with nails and few houses used thatched.

Table 8.5: Housing Pattern and Roof Type (in per cent)

Name of the GPU	Kutcha	Semi Pucca	Pucca	Thatched and GCI Sheet	GCI Sheet	RCC	RCC and GCI Sheet
K. Mangnam	22.80	76.00	1.20	4.20	95.80	0.00	0.00
D. Narkhola	50.00	47.00	3.00	2.40	97.60	0.00	0.00
K. Labdang	21.00	76.00	3.00	2.00	96.00	2.00	0.00
Tashiding	30.50	57.00	12.60	3.40	79.20	16.30	1.20
A. Chongrang	33.00	58.00	9.00	3.10	91.80	5.10	0.00
Gerethang	29.00	60.00	11.00	13.30	74.30	8.00	4.40
Yuksam	23.00	57.40	19.60	6.00	90.00	4.00	0.00
T. Khachodpalri	31.00	64.00	5.00	15.40	81.60	3.00	0.00
Melli	31.00	58.00	11.00	8.10	87.00	4.90	0.00

Source: DESME, 2008 and Field Survey, 2010-2011.

Whereas in GCI Sheet roof D.Narkhola was much ahead with 97.6 per cent and least percentage of household was observed at Gerethang GPU with 74.3 per cent. In respect of RCC roof type, Tashiding GPU ranks first having 16.3 per cent household among its total and clearly shows that none of the household in the K. Mangnam and D. Narkhola GPU having RCC roof residence. About 4.4 per cent household of Gerethang and 1.2 per cent household of Tashiding GPU have used RCC and GCI Sheet for roof construction and none of the household in the other GPU has such type of roof. More than 70 per cent household of the sample block used GCI sheet for the construction of roof. It may be due to the impact of GCI Sheets distributed under Rural Housing Scheme.

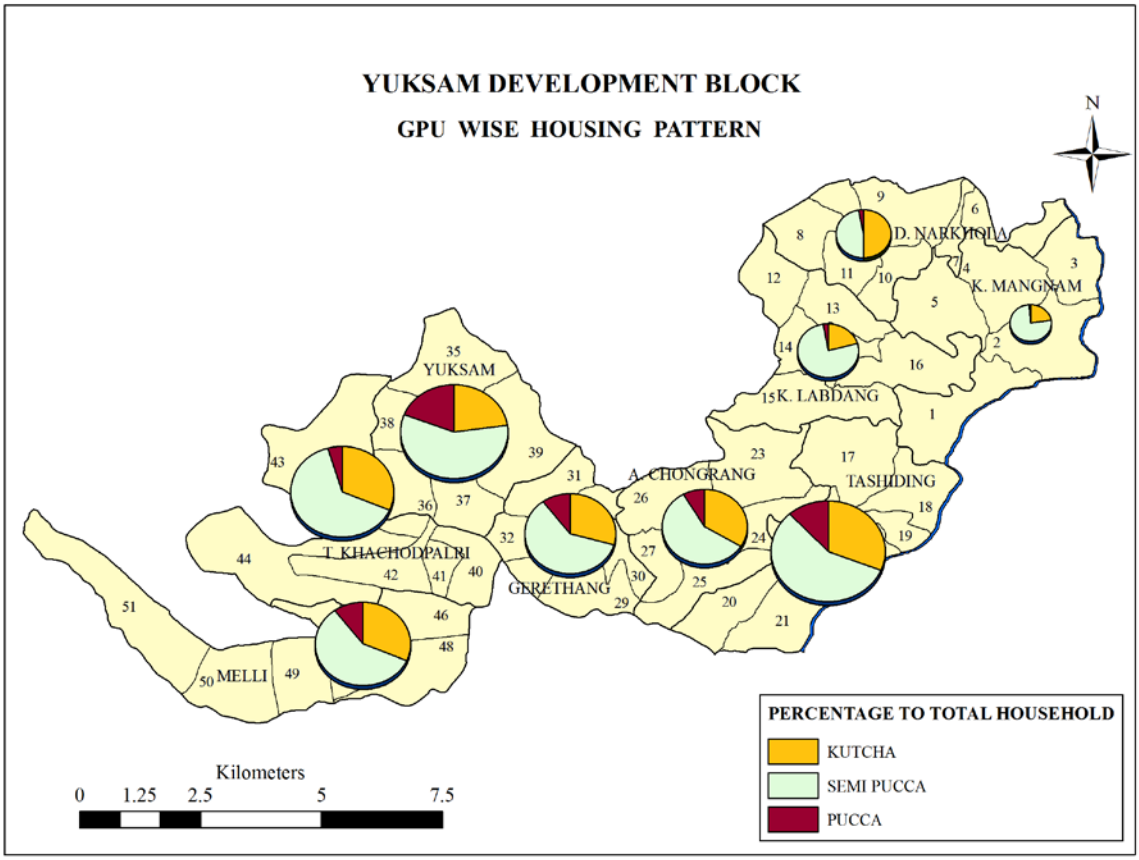
YUKSAM DEVELOPMENT BLOCK
GPU WISE HOUSING PATTERN
N
D. NARKHOLA
K. MANGNAM
YUKSAM
K. LABDANG
A. CHONGRANG
TASHIDING
T. KHACHODPALRI
GERETHANG
MELLI
Kilometers
0 1.25 2.5 5 7.5
PERCENTAGE TO TOTAL HOUSEHOLD
KUTCHA
SEMI PUCCA
PUCCA

Fig: 8.3

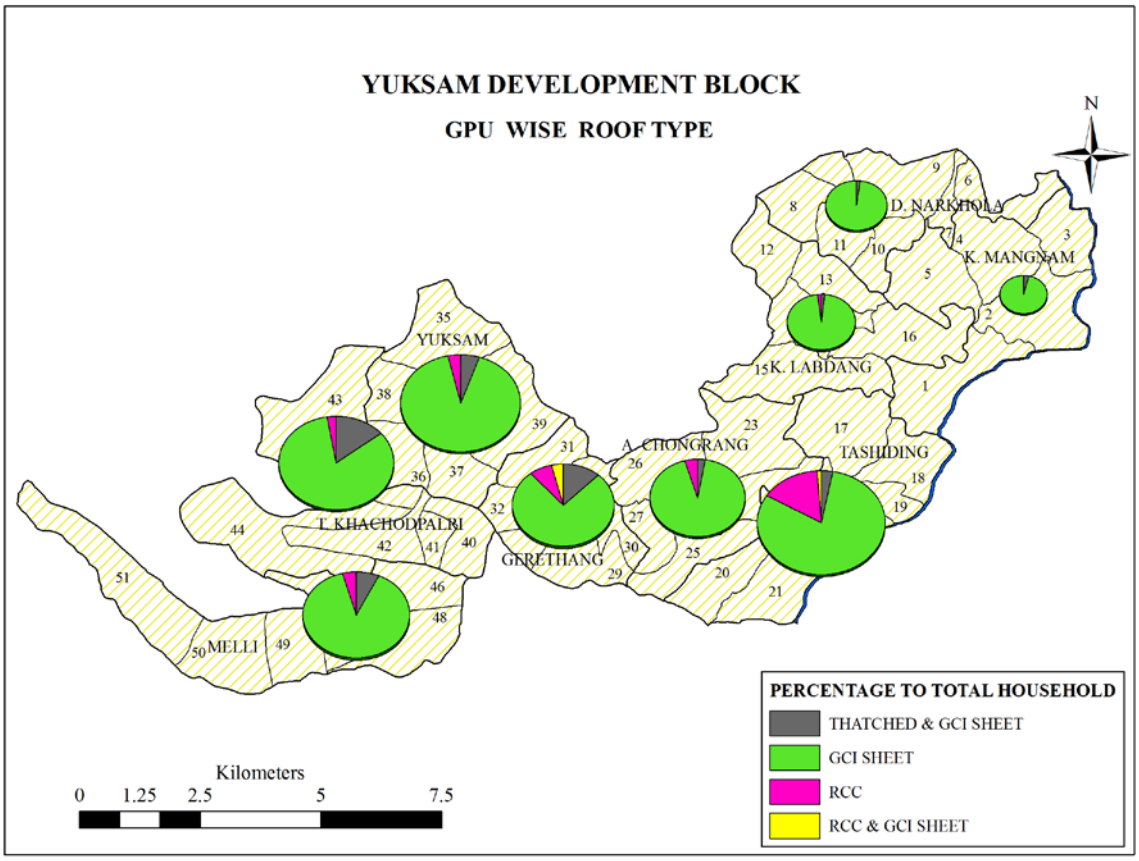
YUKSAM DEVELOPMENT BLOCK
GPU WISE ROOF TYPE
N
D. NARKHOLA
K. MANGNAM
YUKSAM
K. LABDANG
A. CHONGRANG
TASHIDING
T. KHACHODPALRI
GERETHANG
MELLI
Kilometers
0 1.25 2.5 5 7.5
PERCENTAGE TO TOTAL HOUSEHOLD
THATCHED & GCI SHEET
GCI SHEET
RCC
RCC & GCI SHEET

Fig: 8.4

On the basis of field survey, it could be said that the proportion of household moving from kutcha to semi-pucca was higher in Yuksam development block. Taking into account the area as a whole in 2011, the percentage of kutcha house occupy very high in D. Narkhola 29.3 per cent and 28.3 per cent in Melli GPU while, the lowest percentage is observed at A.Chongrang GPU (Table. 8.6). The reason behind this may be due to improvement in socio-economic condition and impact of various rural housing schemes. The higher number of semi-pucca household is observed in K.Mangnam GPU (83.3 per cent) and lowest percentage is observed in Tashiding and Yuksam GPU (58.5 per cent). There is a marked variation in percentage of pucca household it is higher in Yuksam (20.3 per cent) and Tashiding GPU (20.2 per cent) and least percentage was observed at K.Labdang GPU (3.9 per cent).

Table 8.6: Variation in Housing Pattern (in per cent)

Name of the GPU	2008 Kutcha	2011 Kutcha	Variation	2008 Semi Pucca	2011 Semi Pucca	Variation	2008 Pucca	2011 Pucca	Variation
K. Mangnam	22.80	12.50	10.30	76.00	83.30	-7.30	1.20	4.20	-3.00
D. Narkhola	50.00	29.30	20.70	47.00	66.20	-23.70	3.00	4.50	-1.50
K. Labdang	21.00	19.60	1.40	76.00	76.50	-0.50	3.00	3.90	-0.90
Tashiding	30.50	21.30	9.20	57.00	58.50	-1.50	12.60	20.20	-7.60
A. Chongrang	33.00	11.20	21.80	58.00	76.60	-18.60	9.00	12.20	-3.20
Gerethang	29.00	22.10	6.90	60.00	62.80	-2.80	11.00	15.10	-4.10
Yuksam	23.00	21.30	1.70	57.40	58.50	-1.10	19.60	20.30	-0.69
T. Khachodpalri	31.00	15.40	15.60	64.00	77.00	-13.00	5.00	7.50	-2.50
Melli	31.00	28.30	2.70	58.00	59.00	-1.00	11.00	12.70	-1.70
Total	30.00	20.50	9.50	60.00	64.20	-4.20	10.00	15.30	-5.30

Source: DESME, 2008 and Field Survey, 2010 - 2011.

The comparisons of the housing status of sample household before and after receiving the schemes shows that the proportion of household living in the kutcha dwelling was significantly higher in the past. Further the study shows that the most of the households are constructed with the help of Government assistance in different housing schemes. Till date, total 1064 families were benefited under the various housing schemes.

Number of Rooms per Household: Knowledge of the rooms in the household is essential for understanding socio-economic status of the families. Room is constructed according to size of the house and their use. Generally wealthy people use to construct big house according to their desire. But middle class family used to construct according to their need. This may presume to resemble their economic status of the rural poor.

GPU-wise distribution of the house proprietor shows that there are as large 16.8 per cent respondents who are the owner of single room house in T.Khachodpalri GPU whereas least household 2.4 per cent of D. Narkhola GPU fall under this category (Table. 8.7). Around 50 per cent respondent of every GPU have 2 to 3 rooms dwellings', K. Mangnam GPU have comparatively high percentage i.e. 83.4 per cent of household fall under this category whereas, Tashiding GPU have less 49.5 per cent household under this group.

Table 8.7: Number of Room per Household

Name of the GPU	Household (in per cent)			
	1 room	2 to 3	4 to 5	above 5
K. Mangnam	8.30	83.40	8.30	0.00
D. Narkhola	2.40	53.70	31.80	12.00
K. Labdang	3.90	51.00	21.00	24.00
Tashiding	6.70	49.50	16.90	27.00
A. Chongrang	4.00	50.00	26.60	19.40
Gerethang	15.90	64.60	14.10	5.40
Yuksam	7.30	63.30	23.30	6.10
T. Khachodpalri	16.80	67.80	12.60	2.70
Melli	8.90	59.30	26.00	5.70

Source: Field Survey, 2010 - 2011.

The third category of household having 4 to 5 room is more in D. Narkhola 31.8 per cent while, less household of K. Mangnam GPU 8.3 per cent household fall under this category. However in last category of household having more than 5 rooms is highest in Tashiding GPU 27 per cent and none of the household of K.Mangnam GPU falls under this category. The survey revealed that there is a wide disparities in the painted and unpainted household, nearly 50.8 per cent owner have painted their house with colour and 49.2 per cent household were still unpainted. Income is regarded essential to carry out and maintain household activities and it also reflects the socio-economic condition of the people. Further the percentage of painted house is very high in Yuksam GPU 71.3 per cent and the share of highest unpainted household was found in K. Mangnam 83.3 per cent within the sample development block.

8.3.3. Wage Employment Generating Schemes

Under wage employment generating schemes Mahatma Gandhi National Rural Employment Guarantee Scheme (MG-NREGS) were figured for analysis.

Mahatma Gandhi National Rural Employment Guarantee Scheme (MG-NREGS): The National Rural Employment Guarantee Scheme (NREGS) launched in 2005 and renamed in 2009 as the Mahatma Gandhi National Rural Employment Guarantee Act (MG-NREGA). 'This Employment Guarantee Act is the most significant legislation of our times in many ways. For the first time, rural communities have been given not just a development programme but a regime of rights. The NREGA gives employment, gives income, gives a livelihood, and it gives a chance to live a life of self-respect and dignity - by Prime Minister Manmohan Singh at the launch of NREGS'.

The implementation of MG-NREGA started in Sikkim from 2 February 2006 in North District, from 1 April 2007 in East and South and from 1 April 2008 onwards in whole State with aims to provide 100 days of guaranteed wage employment to rural household and to create useful asset in the villages. In the State Rural Management and Development Department, Government of Sikkim does an evaluation of the assets created under it. MG-NREGA is a demand driven programme it focuses on works relating to land development (protection wall, playground development, construction of shed and land terracing), water conservation (irrigation channel, water tank, water storage unit), afforestation and plantation (tree plantation, tree sapling plantation, orange plantation, teak plantation) and rural connectivity (footpath and motor able road development). MG-NREGA enhances food security, purchasing power among the household and also provided income to the families without making gender discrimination between men and women. Under this scheme employment was provided within the radius of 5 kilometres from the village. Now a day's MG-NREGA is one of the most important sources of alternate income in rural Sikkim.

Employment generation is an important indicator used for evaluating the impact of the schemes. On the basis of field survey, about 74.2 per cent household of Yuksam development block were directly and partially involved with MG-NREGA (Table. 8.8 and Fig. 8.5). Remaining 25.7 per cent household are not involved and they mostly drawn their income from secondary sources. The study of occupational pattern shows that 57 per cent respondent were farmers or agricultural workers. They do farming in their own land and are also associated with agriculture labour, 25 per cent are service holder, 9 per cent depend on trade and business, 8 per cent household belong to daily wage earning category and about 1 per cent household depend upon other sources of income.

Table 8.8: GPU - wise household involved under MG-NREGA (in per cent)

Name of the GPU	Totally Involved Household	Partially Involved Household	Household not Involved
K. Mangnam	12.50	87.50	0.00
D. Narkhola	4.90	68.30	26.80
K. Labdang	7.80	62.70	29.40
Tashiding	2.80	39.90	57.30
A. Chongrang	2.00	68.50	29.60
Gerethang	1.80	79.60	18.60
Yuksam	5.30	78.70	16.00
T. Khachodpalri	3.50	95.10	1.40
Melli	1.60	71.50	26.80
Total	3.50	70.70	25.70

Source: Field Survey, 2010-2011.

Further, the study of involvement of household under MG-NREGA shows that the most of the families' drawn their income from MG-NREGA. While 70.7 per cent household were partially depend upon MG-NREGA along with agriculture. On the other hand K.Mangnam GPU had highest proportion of household under daily wage earner which point out towards the MG-NREGA; the same could be said to the partially involved household which were more predominant in K.Mangnam GPU.

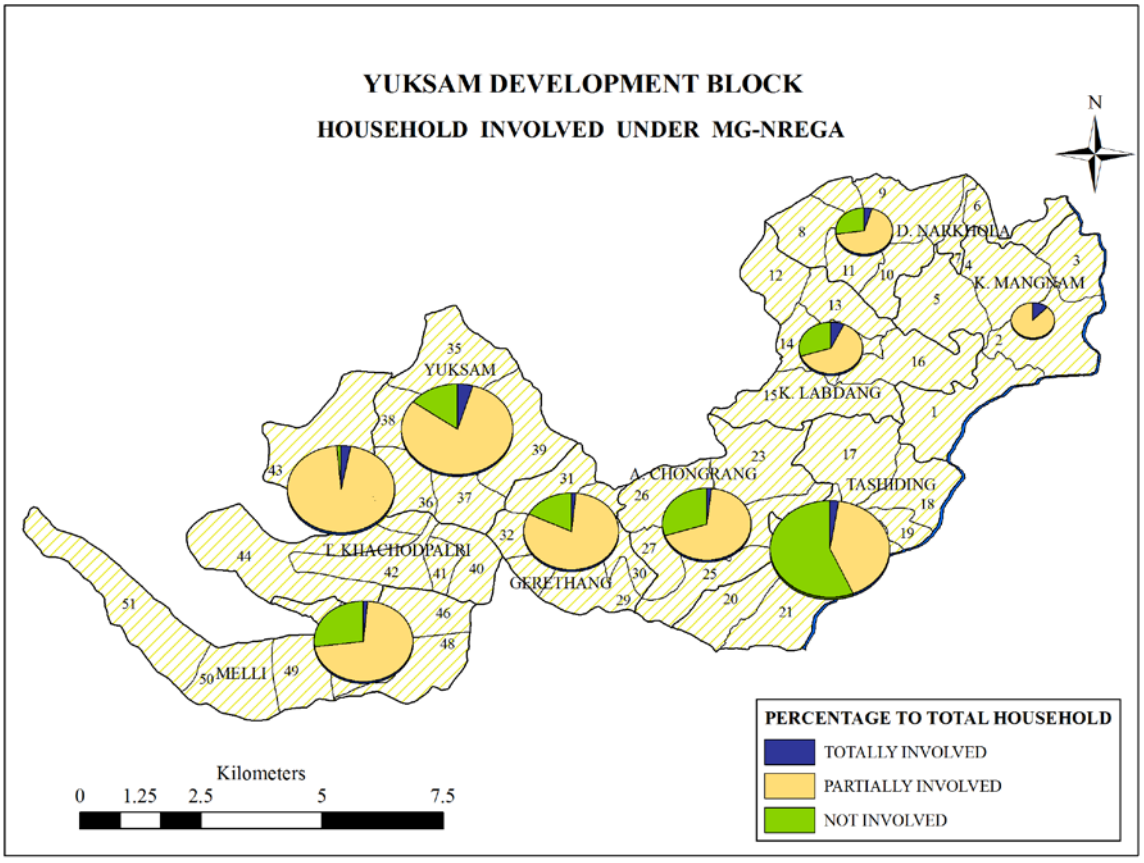

Fig: 8.5

Likewise, when the comparison of household those who are not concerned with MG-NREGA is made, it could be seen that the highest 57.3 per cent household has been noticeable in Tashiding GPU and none of the household of K.Mangnam GPU fall under this category. This may be taken as another impact of MG-NREGA which has succeeded in generating employment opportunity among the maximum household of the sample block.

General impact:

- MG-NREGA has provided supplementary source of income to the families without wage discrimination between men and women.
- In rural area MG-NREGA was one of the principal sources of earning. It provides employment especially during off-season and enhanced food security.
- MG-NREGA reduced workload, ensured social empowerment, financial support to women and it increased their self-confidence.
- MG-NREGA generate community bonding, led to established mutual trust, provide them a platform to converse common issues and create awareness with regard to existing Government schemes.
- The supplementary source of income has consciously shot up the literacy rate, parents are sending their children for higher education on other side and it had a bad impact on education which increased drop out of older children from school for earning.

Taken as a whole we may say that, MG-NREGA is an excellent rural employment and infrastructure generated scheme in the rural areas and it has done what other employment schemes could not.

8.3.4. Programmes on Minimum Basic Needs

Under Minimum Basic Needs programmes, the following programmes are taken into consideration:

Food Security Scheme: The State Government has always been consciously addressing the issue with great sense of involvement and responsibility. Food security has been of immense significance to the people of State both because of geographical inaccessibility and economic affordability. The main objective has to give basic necessity free of cost to the identified families. In order to make food and other provisions easily accessible, over

the years State Government has constructed 2 food grain godowns one at T. Khachodpalri and another at A. Chongrang GPU. The Food Security Department acquire food, supply and also looks after its storage. Under Food Security Scheme there are 4 ongoing programmes which were in operation for the people living below poverty line, which provide subsidized food grains.

BPL rice - under these schemes rice is provided to BPL families at the rate of Rs.4 per Kg in the quantity of 35 Kg per family per month. About 52 per cent families of the sample block are benefited under this scheme (Table. 8.9 and Fig. 8.6).

Table 8.9: Benefited Household under Food Security Scheme (in per cent)

Name of the GPU	BPL Rice	MMAAY	A.Sch	MMKSY	None Benefited Household
K. Mangnam	40.00	36.40	5.30	17.30	1.00
D. Narkhola	36.70	22.30	5.20	9.30	26.50
K. Labdang	50.40	16.40	4.50	10.20	18.50
Tashiding	62.40	6.70	2.70	8.20	20.00
A. Chongrang	63.60	8.90	3.10	7.80	16.60
Gerethang	64.40	13.00	3.00	9.60	10.00
Yuksam	61.00	9.00	2.50	6.80	20.60
T. Khachodpalri	44.20	11.70	4.30	8.70	31.00
Melli	28.80	7.60	2.90	6.40	54.30
Total Household (in %)	52.00	11.50	3.40	8.40	24.70

Note: BPL rice, MMAAY - Mukhya Mantri Antyodaya Anna Yojana, A.S - Annapurna Scheme and MMKSY - Mukhya Mantri Khadya Suraksha Yojana.
Source: VDAP, 2011 and GPU Survey, 2012.

Mukhya Mantri Antyodaya Anna Yojana - is a special scheme started by the State Government. Under this scheme 11.5 per cent household of Yuksam development block are benefited and getting the quantity of 35 Kg rice in free of cost per family per month.

Annapurna Scheme - Annapurna Scheme was launched on 1st April 2000, in this scheme 10 Kg rice is provided free of cost to poor senior citizens per beneficiary per month. Under this scheme 114 senior citizen are benefited till June 2012.

Mukhya Mantri Khadya Suraksha Yojana - Similarly under Mukhya Mantri Khadya Suraksha Yojana over 8.4 per cent economically backward and marginalised families are provided with rice at a subsidized rate of Rs. 3 per Kg with the limit of 35 Kgs per family per month in the sample development block.

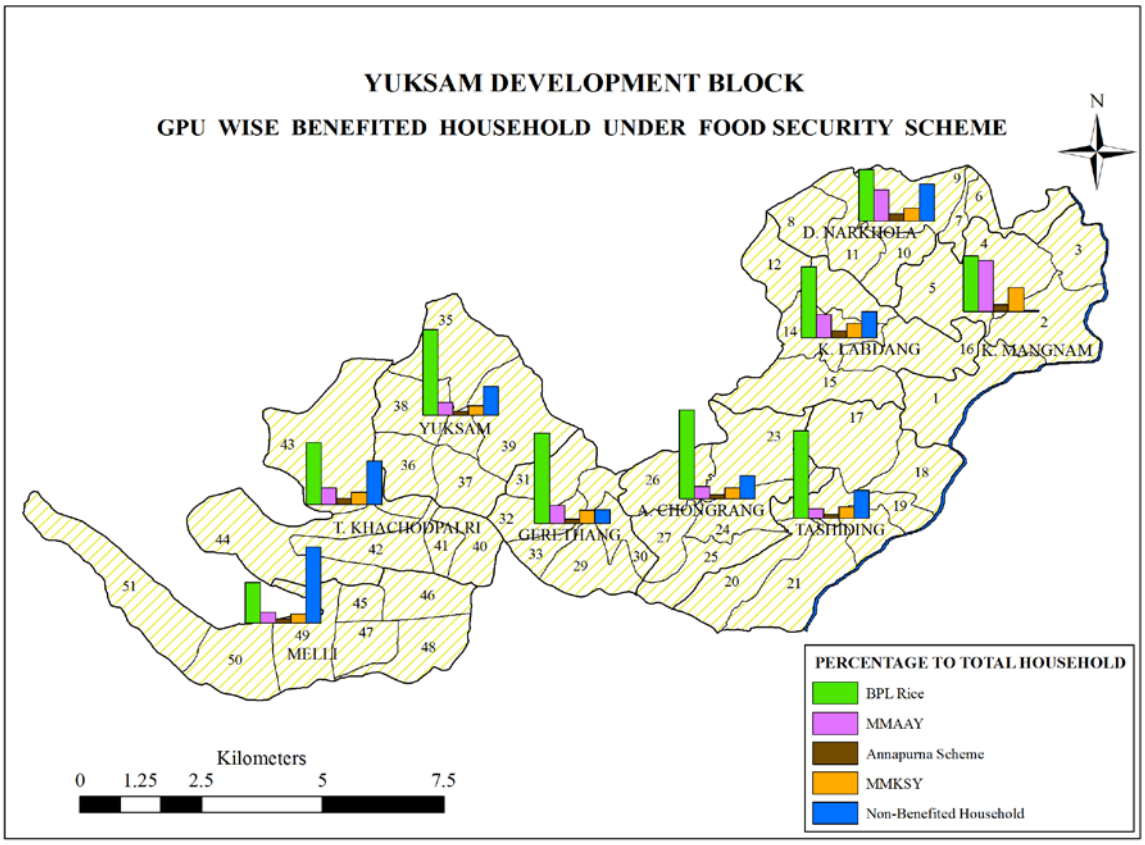

Fig: 8.6

On the basis of DESME census 2008, Yuksam development block has only 24 per cent household under BPL category, but around 75.3 per cent household of the block have been availing Food Security Scheme. This is distributed over the entire area and exhibits a greater spatial variation and unevenness. Out of 9 GPU, K.Mangnam GPU have the highest benefited household (99 per cent) followed by Gerethang (90 per cent), A. Chongrang (83.4 per cent) and K. Labdang (81.5 per cent) GPU. The lowest benefited household are observed at Melli (54.3 per cent) GPU. The rest of the GPUs come within the highest and lowest benefited range. All this has tremendously helped in providing support to the people in the rural areas. It is evident from the above table that there were 75.3 per cent household who were benefited and getting subsidized food grains under various schemes.

Total Sanitation Campaign (TSC): Sanitation is one of the basic needs, essential for healthy environment and significant indicator reflecting social status of the family. For the people living in rural area with little income it is difficult to afford sanitation facilities in their own expenditure. Before starting the Total Sanitation Campaign in Yuksam development block, about 43 per cent household does not have sanitation facilities, the

highest percentage of household being recorded in K. Labdang 60.8 per cent and least 27 per cent is noticed in Tashiding GPU (Table. 8.10 and Fig. 8.7). Due to insufficient motivation and awareness among people and lack of affordable sanitation technology; they relieve themselves in open field and jungle. Data reveals that the share of 65.1 per cent household has been benefited under TSC. The household benefited under TSC is highest 85.4 per cent in D. Narkhola and least 53.4 per cent in Tashiding GPU has been observed.

Table 8.10: GPU-wise Benefited Household under TSC

Name of the GPU	Benefited Household (in per cent)
K. Mangnam	83.30
D. Narkhola	85.40
K. Labdang	74.50
Tashiding	53.40
A. Chongrang	54.10
Gerethang	74.30
Yuksam	61.30
T. Khachodpalri	80.40
Melli	55.30
Total	65.10

Source: Field Survey, 2010-2011.

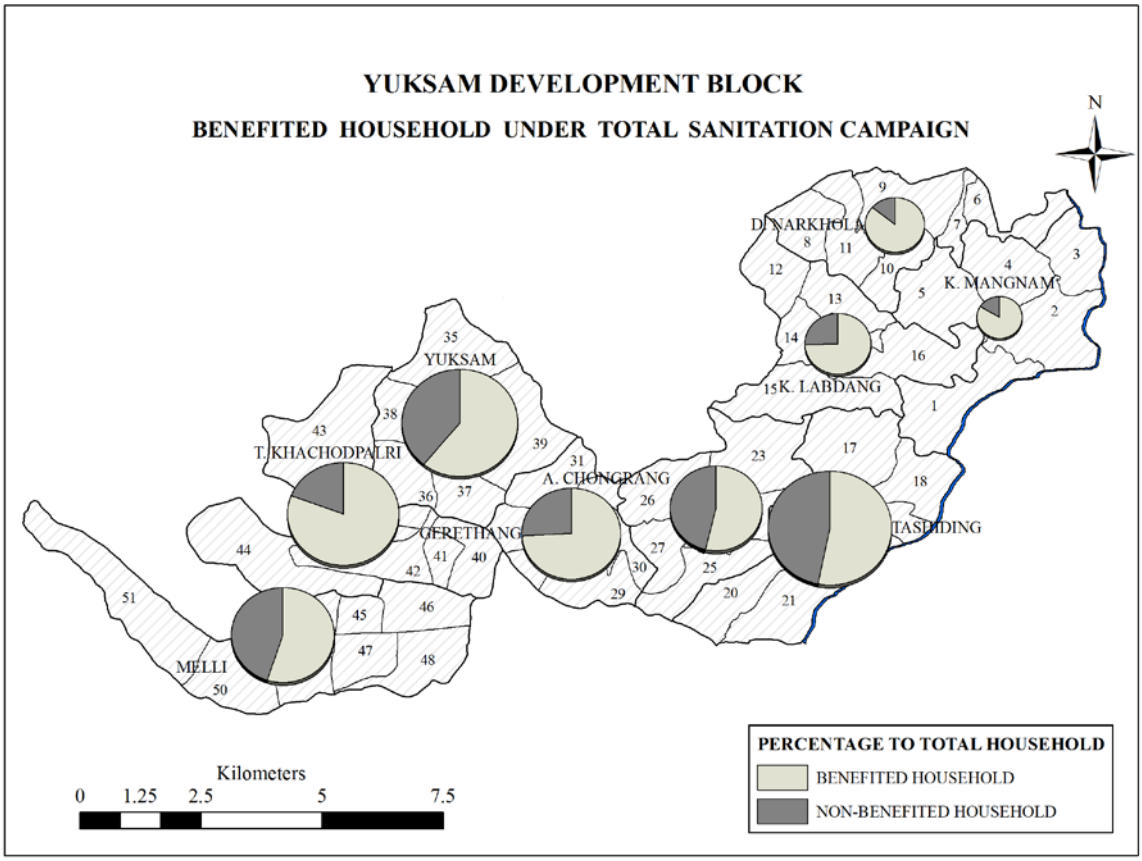

Fig: 8.7

With the implementation of this pilot project the impact clearly indicates that it has successfully covered at large individual households in rural areas; it provides great help to the people in order to construct sanitation facilities at public places, institutions and promoted hygiene education habits among the people. The dry latrines have been changed to flush latrines and the practice of eliminating manual exploration is encouraged through information and awareness campaign carried out regularly in villages and institutions.

8.3.5. Social Welfare Oriented Programmes

National Social Assistance Programme (NSAP): It is a major challenge for the Government to deal with rural poverty by implementing effective social assistance programme. There are many who are unable to participate in productive economic activity because of disability, ill health and old age. In Article 41 and 42 of the constitution directs the State to provide public assistance to its citizens in case of old age, disablement and sickness, unemployment and other cases of undeserved want within the limit of its economic capacity and development. With the aim to fulfil directive principles of the article and to provide social assistance to poor households National Social Assistance Programme was launched in 15 August 1995. The NSAP is a centrally sponsored programme under which 100 per cent central support is extended to the States/UTs to grant the benefits in accordance with the guidelines, norms and condition laid down by the Central Government. The NSAP was modified in 1998 based on suggestions received from the State Governments and from different other areas of the country. The programmes had following components namely:

National Old Age Pension Scheme - under this scheme pension is provided to that person who is of 65 years or above, are destitute in the sense of comprising small or no regular means of survival earning from his/her own sources of income or through financial support from family members. The amount of old age pension provided by Sikkim Government is Rs.1000/- per month for the person above 70 years and 600 /- per month for 65 - 70 years. On the basis of field survey 168 persons are benefited under this scheme (Table. 8.11).

National Widow Grants Scheme - in February 2009, Central Government has approved a pension of Rs. 200 per month to BPL widows in the age group of 40-64 years. But in Sikkim the State Government provides Rs.1000/- per month to those widow who have

lost primary bread earner of the family male or female whose earnings contribute substantially to the total household income. The estimated number of beneficiaries under National Widow Grants Scheme is 2 persons during 2010- 2011.

Table 8.11: GPU-wise Benefited Household under NSAP

Name of the GPU	NWGS	NHAP	SSP	NOAP
K. Mangnam	0	0	0	6
D. Narkhola	0	0	0	6
K. Labdang	0	0	0	12
Tashiding	1	2	0	44
A. Chongrang	0	2	1	23
Gerethang	1	1	0	24
Yuksam	0	4	0	20
T. Khachodpalri	0	4	0	14
Melli	0	1	0	19
Total	2	14	1	168

Source: Field Survey, 2010-2011.
Note: NWGS - National Widow Grants Scheme, NHAP - National Handicap Aid Programme, SSP - Social Service Pension and NOAP - National Old Age Pension Scheme.

National Handicap Aid Programme - Central Government has introduced a disability pension of Rs. 200 per month under Indira Gandhi National Disability Pension Scheme (IGNDPS) for BPL persons with severe or multiple disabilities between the age group of 18-64 years. In Sikkim, State Government provides Rs. 600 per month to the beneficiaries. It is estimated that 14 beneficiaries are covered under this scheme during 2010 - 2011.

Social Service Pension - is a unique kind of pension which is popular only in Sikkim. Social Service Pension is the newest scheme launched by the Government of Sikkim with a aim to provide social assistance to those social workers who serve society in the form of traditional faith healers by doing *'jhar phuk'* and they also experiment treatment by using practical knowledge of local medicines. In order to preserve and encourage this tradition among the local people the Government has started this scheme. There is only 1 beneficiary under this scheme who use gets Rs.1000 per month. The analysis shows that when we compare the beneficiaries among the GPUs within the Yuksam development block, it could be seen that the proportion of benefited household was higher in Tashiding and least in K. Mangnam and D. Narkhola GPU. Hence it could be said that the household which are situated close to the road are more exposed into the social sector programmes.

8.3.6. Other Programmes

Land Bank Schemes (LBS): 'The pattern of land holding is still highly skewed where a high concentration of land continues to be in the hands of a few owners on the one hand and growing number of marginal and sub-marginal land holders on the other' (Pant & Pandey, 2004). In order to remove this gap State Government has introduced Land Bank Scheme in 1996, as a welfare scheme. It is considered to be a new measure to consolidate land reform in the State. Under this scheme land is distributed to the landless that are termed as *'sukumbasis'* who have already been listed by the department concerned on the basis of a detailed survey. Under this scheme 1/2 acre land is handed over to each landless family with agreement and legal documents.

A remarkable characteristic of this scheme is that the responsibility of selecting suitable land is with the beneficiary, he/she can select the land of his own choice. The study of land distribution pattern shows that at present there are 24 landless household in Yuksam development block, share of about 2.6 per cent on the basis of field survey. The study also shows that till date 18 household of Yuksam development block are benefited under land bank schemes, those household are landless before. The comparison of landless household among the GPUs shows that the land distribution was more skewed in Tashiding GPU, where over 7.3 per cent of the household were classified as landless. The proportion of figuring in land holding in K. Mangnam and K. Labdang GPU was more marked where none of the household is landless neither in past nor in present. To support the national objective of women empowerment the land allotted under the Land Bank Scheme is recorded in the name of the beneficiary and his wife.

National Biogas and Manure Management Programme (NBMMP): Under this scheme 2 cubic meters family size biogas plants are constructed. Beneficiaries for this programme are selected through the recommendations of the Panchayats and after verification of criterion as envisaged in the NBMMP Programme guidelines. Under (NBMMP) 1 household of Tashiding and 2 household of A.Chongrang GPU has been benefited in Yuksam development block (Appendix - DD). The programme has found wide acceptability among rural farmers as an affordable alternative means of energy source for cooking and it reduce the burden on forest for fuel wood. It also helps to improve sanitation, save kerosene and provide good quality manure for farming.

Rural Energy Programme: Under this programme Liquefied Petroleum Gas (LPG) cylinders are given to people living below poverty line in rural areas. This programme is wholly funded by the State plan. Beneficiaries for this programme are identified by the Panchayats; each beneficiary is given a set of 2 cylinders, regulator and a double burner cooking stove. The objective is to reduce the degree of dependence on forest resources for firewood and to protect forest land from degradation. On the basis of field survey it is found that 231 household of the sample block are benefited under this scheme. Still wood continues to be the predominant source of fuel for cooking due to rise in price of LPG in the market.

Schemes for Agriculture Development: The study of the use of agricultural implements in the whole sample block shows that by and large farming was still dependent on traditional mode like the use of bullock and iron plough in agricultural operations. Similarly same could be said for irrigation as maximum household depended upon rain and natural springs, only 2.7 per cent households of the sample block are benefited by minor irrigation canal constructed by irrigation department. Further it was found that 5.1 per cent households of A.Chongrang and 17.7 per cent household of Gerethang GPU are benefited by the irrigation facilities.

Sikkim Government has declared to make a fully organic State. In order to support farmers, various Government agencies like Agriculture and Animal Husbandry, Social Welfare and Horticulture department already started to implement various schemes for organic farming system to maintain the production process. To enhance the agriculture production Government is providing vermin compose pit, compose pit, water harvesting tank, poly pipe and terracing to the household. The comparison among the schemes shows that there are maximum household who are benefited under compose pit 152 household, vermin compose pit 144 household within the sample block, 44 tribal families have received syntax under Tribal Sub Plan (Appendix - DD), 5 household are benefited by water harvesting tank, 2 household received poly pipe and 1 family are benefited by land terracing under MG-NREGA.

Janta Mela: This is a unique kind of Mela which is popular only in Sikkim. The main aim of holding Janta Mela by the State administration is to reach at the door step of the poor. Every year Janta Mela is held in all the four districts of the State with the sole objective to distribute grants and benefits to the people below the poverty line through

various schemes like Indira Awaas Yojana, State Rural Housing Scheme (GCI sheets, House up-gradation), Bio Gas, LPG connection, Solar Home Lightening Systems, Mukhya Mantri Awaas Yojana, loans and subsidies to various Self Help Groups and other benefits to the people for the upliftment of their poor economic condition.

8.4. NON BENEFITED HOUSEHOLD

The information related with the distribution of benefit and its utilization is an important base for evaluating their impact on socio-economic condition. It is assumed that only through these schemes perception of household would reflect their usage of given facilities. So far there are 6 per cent respondents (56 household) those who are not benefited by the Government assistance and on other side 94 per cent households have received single or multiple benefits. The study also shows that in D. Narkhola GPU every household are benefited under Government schemes. The highest non-benefited household was observed at K.Mangnum (8.3 percent) than the other GPU (Appendix - DD). Most of the non benefited respondent expressed that they used to live in joint families and recently detached themselves from them. The field investigation also reveals that a majority of people who deserve special attention of the Government are still not getting assistance.

8.5. PAST LIVING STATUS OF BENEFITED HOUSEHOLD

The study of past living status of the benefited household in Yuksam development block shows that around 15.2 per cent of the total household had critical economic condition, 21.6 respondents expressed that their socio-economic condition was good as they lived in semi-pucca or pucca house along with sanitation and other basic facilities (Table. 8.12 and Fig. 8.8).

Table 8.12: Past Living Status of Benefited Household (in per cent)

Name of GPU	Critical	Good	Kutcha House	No Sanitation Facilities	Joint Family
K. Mangnam	25.00	4.20	4.20	54.10	12.50
D. Narkhola	9.70	12.20	0.00	63.40	14.60
K. Labdang	7.80	23.50	5.90	60.80	2.00
Tashiding	16.30	35.90	9.50	27.00	11.20
A. Chongrang	9.20	32.60	9.20	40.80	8.20
Gerethang	26.50	18.60	7.10	35.40	12.40
Yuksam	10.00	17.30	16.00	46.00	10.70
T. Khachodpalri	12.60	9.10	9.10	60.10	9.10
Melli	20.30	20.30	14.60	35.00	9.70
Total % of Household	15.20	21.60	10.10	43.00	10.10

Source: Field Survey, 2010-2011.

Similarly, 10.1 per cent respondent use to reside in kutcha house as they don't have proper sanitation facilities. Over 43 per cent respondent expressed that they don't have pucca sanitation facilities in past. The analysis also shows that 10.1 per cent respondent used to live in joint family.

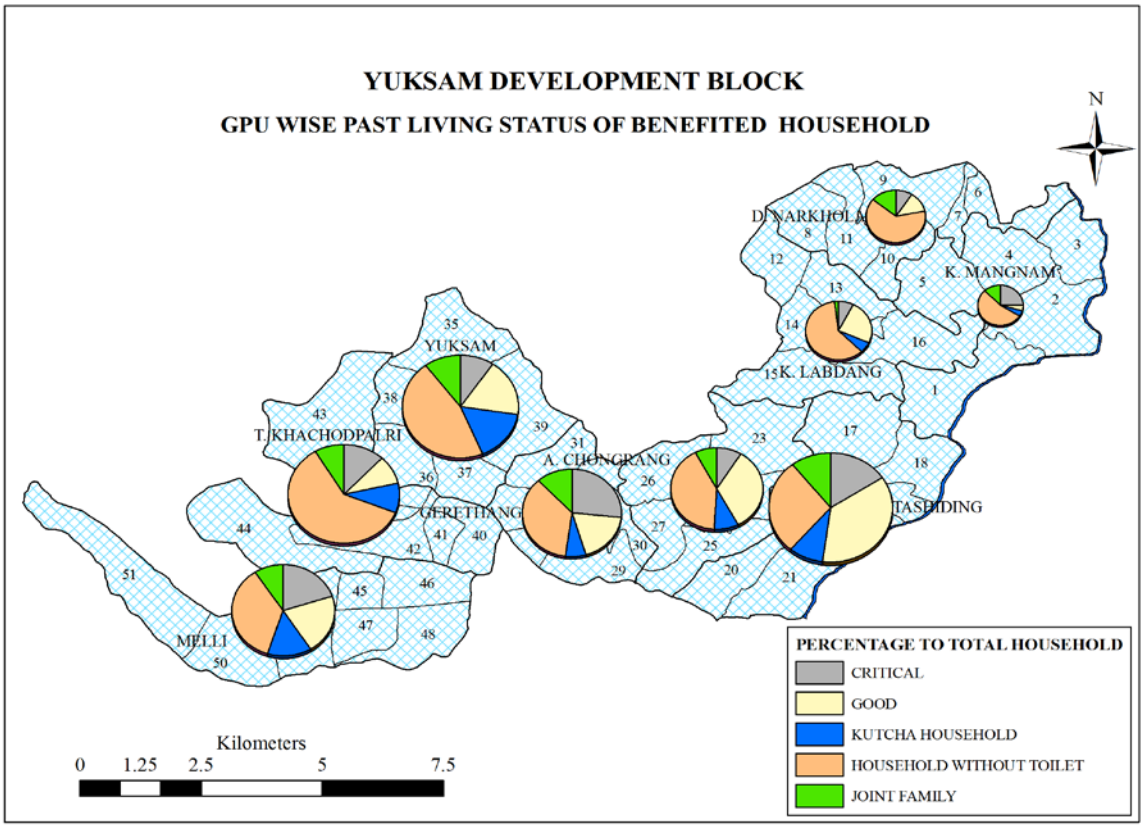

Fig: 8.8

8.6. IMPACT PERCEIVED BY THE HOUSEHOLD AFTER RECEIVING RURAL DEVELOPMENT SCHEMES

Socio-economic impact of rural development programmes and the economic consequences of any development programmes cannot be measured in a short time frame. So it is rather difficult to say, whether the rural development programmes has enabled its beneficiaries to rise above the poverty line for good. Such evaluation can be made only in a longer time frame. However, in present study an attempt has been made to assess the impact of the rural development programmes on socio-economic condition through perceptual data. In Yuksam development block, it has been found that after receiving various rural development schemes 61 per cent respondents agreed that the rural development programmes had really brought about a marginal improvement in their household economic condition, about 13.5 per cent notice significant improvement.

However, 14.3 per cent respondents failed to find any improvement in the economic condition through the programme but their living standard was good (Table. 8.13 and Fig. 8.9). Still it has been found that 11.2 per cent household are in critical situation as many respondents are not benefited and their socio-economic condition was very bad.

Table 8.13: Impact Perceived by household after receiving Schemes (in per cent)

Name of GPU	Critical	Better than past	Significant Improvement	As same
K. Mangnam	12.50	62.50	25.00	0.00
D. Narkhola	9.70	73.20	12.20	4.90
K. Labdang	0.00	78.40	11.80	9.80
Tashiding	7.30	53.40	16.30	23.00
A. Chongrang	8.00	61.00	12.00	19.00
Gerethang	16.80	47.80	23.00	12.40
Yuksam	8.00	71.30	13.30	7.30
T. Khachodpalri	21.00	61.50	5.00	12.50
Melli	11.40	60.20	10.60	17.80
Total	11.20	61.00	13.50	14.30

Source: Field Survey, 2010-2011.

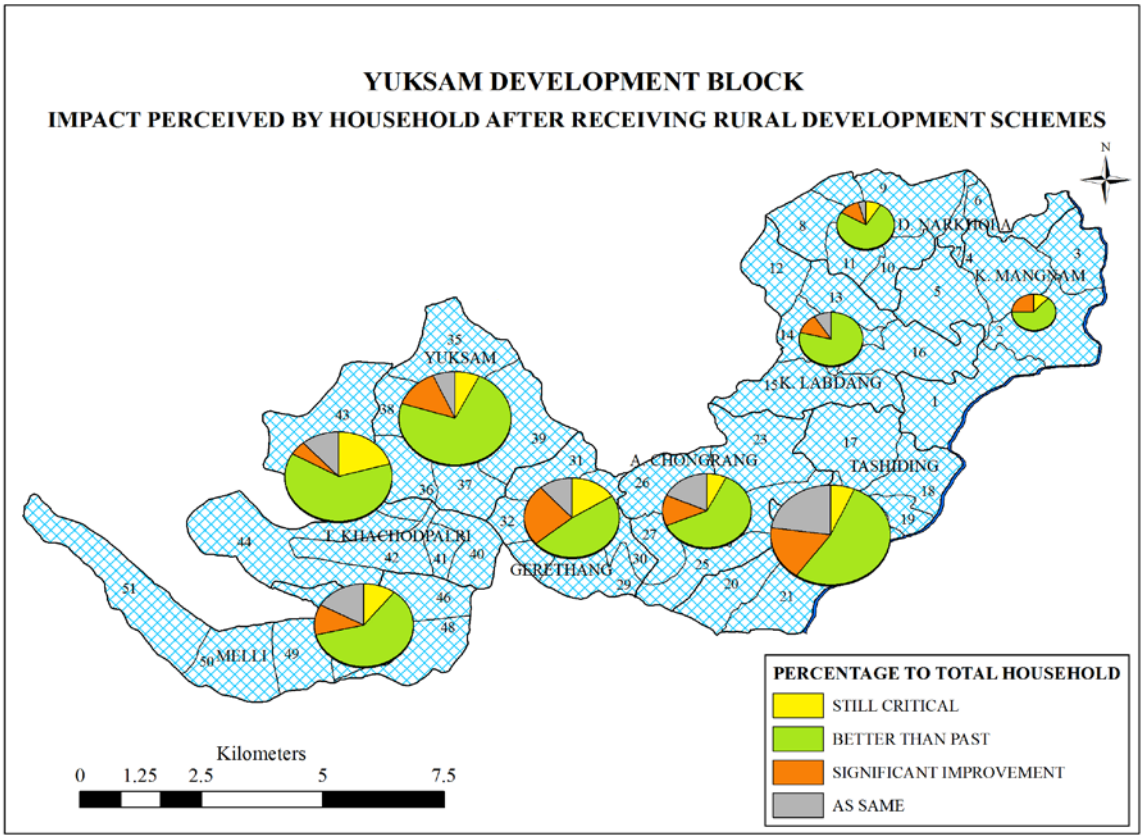

Fig: 8.9

Thus it was clear that the acceptance of the unity among the beneficiaries is not uniform. Most of the schemes have generated significant influence over this area. It is a well known fact that development has long run course through several phase and

quantification of rural development require multiple strategy. Sometime in this context, selection of beneficiaries through BPL criterion is not suitable for poverty elimination as it fail to uplift their living standard. Lastly, it may be concluded that in order to execute schemes properly it is necessary to conduct effective campaign and discussion between beneficiaries and respective department before providing any assistance to the household.

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Chapter 9

PROBLEMS AND PLANNING

The Government has been trying to reduce the rural-urban gap right from the independence. In this globalization era, while a small segment of Indian population is rich enough to eat, shop at luxuries malls and drive new cars, while in rural area millions in the vast are still struggling for survival. Especially in backward areas it is getting more entrenched, even though Government is taking lot of steps. Still in India poverty is an acute problem, about two thirds of Indian population still lives in rural areas and almost 170 million of them are poor.

In most of the underdeveloped countries there is a huge gap between urban centres and rural areas which results in the underdevelopment. The major sign of the level of development is the proper allocation of resources. When there is a discrepancy in access to these resources underdevelopment mainly *strikes.* Underdevelopment is *generally* visible due to some major problems like lack of education, medical facilities and transport and communication facilities. General causes of rural underdevelopment are as under:

- Inadequate access of employment opportunity
- Insufficient physical resources, such as land, access to credit and capital
- Poor access to the means of transport and communication facilities in the villages
- Lacking in market due to which rural poor use to sell their goods and services at low price to the middleman
- Inadequate knowledge about environment leading destruction of natural resources and it reduce productivity
- Inadequate access to rural development programmes
- Lack of local people participation in development programmes

Poverty is the prime problem in rural areas and *is a major hindrance behind* the development. As a result the living standard is far from being satisfactory. Most of the rural residents can hardly afford their basic needs and they lead a primitive life. In rural area major source of income are derived from agriculture and livestock rearing. They use primitive methods of farming and hardly contribute to their welfare. Lack of education is the major threat to their survival.

The rate of illiteracy is *extremely* high as compared to urban area and most of the rural women are deprived of educational opportunities. 'The development process has to be more spatial and decentralized and should move upward from bottom rather than flow down from top' (Parekh, 1992). So, the developmental programmes need to be outlined in terms of basic needs priority on food, shelter, clothes, health and education. So that the inequality between regions can be reduced and then other plans can be based on the needs of the society.

The needs of development are not same for all regions. Moreover, the perception of development also varies with the people concerned. The Government perception may differ from planner, social worker and local people. Perhaps the root problem lies in copying the process of development of one area for another one. 'Problem of development are bound to differ in arid areas from marshy tracts, hilly forested areas from cyclone hit coastal tracts and so on' (Desai, 1992). To develop any area it should be viewed from various angles in order to make planning process relevant to the society.

9.1. CHARACTERISTICS OF YUKSAM DEVELOPMENT BLOCK

Yuksam development block occupies an area of 10,457 hectare and is located in north-western part of the State. The terrain is hilly and undulating, with an altitude of 1,780 meters. During summer season soil erosion is prevalent due to heavy rainfall. These areas are economically depressed with low production of food crops and inadequate facilities for growth. Medical facilities are absent in two GPUs. The highest percentage of respondent (57.3 per cent) of the Yuksam development block avail basic facility and they don't have any problem related with electricity, tap water connection, housing and sanitation facility. About 2.9 per cent household of the development block are not electrified.

On analysis of drinking water facility, nearly 12.3 per cent respondent stated to be insufficient. The problem of drinking water is acute especially during summer when spring and river gets dried up. Further the study of income and expenditure among the respondent shows that there are 4.6 per cent households which seemed to have problem related with expenditure more than their income and about 0.4 per cent household are having sanitation problem. The findings also revealed that about 11.7 per cent of the household are having multiple problem related with housing, sanitation, electricity, water

supply and income. The study of the housing pattern in total sample shows that about 10.8 per cent of the families are living in kutcha house. Tashiding and Yuksam GPUs are most populated and developed in terms of administrative set-up, tourist facilities, and educational institution, and weekly market, medical facilities, post-office and connected with metalled roads.

Most of the villages which are not connected with the roads are thinly populated. Land is cultivated once in the year with low yield, lack of levelled land and farming techniques are age-old, cow dung are used for fertilizers; rain water is the main source of irrigation. Most of the farmer practiced dry cultivation, multiple cropping is practiced, agricultural plots are rather small, nearly 64.5 per cent household have less than 1 acre land, about 7.3 per cent household have below 2 acres of land holding, 18.5 per cent household having 2 to 5 acres landholding and only 9.2 per cent household have more than 5 acres of land and about 0.8 per cent household are landless.

In general planning means series of actions or shaping of an action in advance. The Oxford Dictionary defines only the verb 'to plan' meaning to make plan, to make a design, to arrange beforehand. 'Development planning for a hilly and mountainous area has acquired a new dimension with the growing awareness of the need to prevent the erosion of the life supporting resources base of the hills for sustainable use' (Maithani, 1992). Any developmental plan requires full participation of the Government, planner, social worker and local residents.

'Integrated rural area development and planning cannot be succeeded without removing the inter-areal disparities in the levels of socio-economic and politico-cultural development' (Mishra, 1985). Due to lack of co-ordination among them in the implementation of plan and programme continues to be the problem, however good the plan may be. Moreover poor management, limited resources, lack of awareness, limited funds is often responsible for improper implementation of various rural developmental schemes especially in rural areas. To overcome the problem, it is worthwhile to mention that we must understand the problem faced by the villagers; in order to minimize these disparities. In this chapter an attempt has been made to assess problem and proposals are recommended for the development.

9.2. PLANNING FOR SOCIO-ECONOMIC DEVELOPMENT

One of the objectives of this research is to suggest proper development plan for future. Geographical condition is the main problems of the hills, nature of terrain impose several limitations on productive activities and development of infrastructure facilities on the other.

Education: 'Education is one means of generating confidence and countering difference' (Rao and Kumari, 2005). Lack of education is the central problem of rural development. According to Prof. Amartya Sen, primary education advances human security by enhancing political participation, economic opportunity and human capabilities. There are multiple linkages along with education and development. Education also help to breed self-confidence, it provides greater employment opportunity, it enable people to realize their rights, education can also help to let the person to socialize towards the communities and help to provoke respect among them. So, education is considered as one of the most important factor in achieving rapid economic development with social justice.

In recent era the universal topic we often discuss is how to improve the quality of education, how to reduce educational inequality, why the students from urban backgrounds are more successful, and why do these advantages continue over time? The answers are many like difference in the social-economic, cultural, and infrastructure facilities combine to preserve advantage across generations. Change in economic inequalities also affects schooling of the children, if the people are very poor they give basic priority to stay alive. Policymakers increasingly recognize the reason behind inequality and some are taking steps to reduce these inequalities. But it is difficult to predict how a precise system completely removes the educational inequalities between the rural and urban students. Apart from the several combined solutions, direct impact on the education is through schools only.

The standard of education received in the rural and urban area has wide difference; this is the major factor that enables the urban students to do more than the rural. The rural students are being discriminated because they cannot make use of the resources and opportunities that have in big cities. Most schools are not well equipped with desks, blackboards, libraries, computers and other visual aids. As people are very poor and uneducated, poor medical care manifests itself as another problem inflicting

rural inhabitants. In Yuksam development block health services are hard to find in many villages. The rate of infant mortality is high in rural area and many women die while delivering birth. For example, it takes at least 4 hours to reach the nearest place which has a health care centre. These people are not much aware of the importance of their health. As unhealthy and uneducated people, the chances of prosperity and well-being are very low. They do not have enough money to meet the expense of health care as well.

The spatial distribution of educational institution is uneven at Yuksam development block. There are total 51 villages and 49 educational institutions. There are multiple GPWs where even primary school are absent. So many children do not go to school beyond primary level and that village cannot provide the population for maintaining school. Moreover, the teachers are unwilling to go and serve in these impoverished areas. If teachers were offered more attractive opportunities then they would be more willing to go and contribute to the disadvantaged children there. Therefore the overall literacy of the development block is quite lower (60.4 per cent) than the State average (82.2 per cent).

So there is need to improve the quality of education by improving facilities like providing special funds to the teachers who work in the remote areas, providing more funds to institutions for scholarship, furniture, building and textbook. Proper training should be given to the teachers so that the guardians feel encouraged to send their children for better and higher education. These facilities should be provided in the area especially where the education institution and literacy level is comparatively low. Therefore education is only important factor that plays a significant role for the upliftment of the rural poor and which also brings equality between rural-urban sector and also within each sector itself.

To reduce educational inequality Government should open primary school in every villages, emphasise should be given on good educational resources by improving quality of teaching faculties, infrastructure, adopting modern methods in school activities by adding extra curriculum and its prospectus and also facilitating the rural students to access all the modern educational resources such as internet, computer, teaching learning materials library and school uniforms, textbooks and mid-day meals should be made available at the right time. Educational awareness camp should also be encouraged in remote villages for the rural parents to expose educational advantages in order to fairly

execute the distribution of facilities provided by the Central and State Government. The concerned department should also keep a strict vigilance in the remote areas for the successful implementation of the programme in an appropriate manner. It is observed from various studies that education not only builds up knowledge and information but it also helps the citizens to understand the complexities of life. Some of the affordable solutions that can be accountably achievable to provide the standard education are:

Promoting rural schools as good educational resources

- Improving the physical environment (infrastructure)
- Improving the quality of teaching faculties
- Applying innovative methods in school activities
- Added curriculum which has multi functional/cultural/technical aspects

Enabling the rural students to access all educational information and resources

- Libraries and computer centres
- Counselling from experts from various Department like Education, Science and Technology, Health and Nutrition, and Culture.

Creating good educational awareness among rural parents

- Counselling, dramas, documentary films, poster exhibitions, informative leaflet should be produced for the coverage of educational advantages

Getting the local bodies to secure sustainability in acquiring quality education

- Building teams with various categories of the people like youth, member of the panchayats, parents, NGO's, and students of the higher education to be required to make school education successful

It can be noted that there is a gender disparity in educational attainment after elementary level. In case of higher education enrolment of female is very negligible and levels of female literates are more up to the elementary level. There is not much scope where female can use her capacity in a productive manner. It may be because of various restrictions that they don't desire to go for higher studies. Mostly the girl child is engaged in domestic chores to free household adults for work. Girls hardly get an opportunity to make their choices. 'There cannot be educated people without educated women. If general education had to be limited to men or to women, the opportunity should be given to women, for then it would more surely be passed on to the next generations (Dr. S. Radhakrishnan)'.

In the words of Mahatma Gandhi, 'women is a companion of man gifted with equal mental capacities, she has the right to participate in the minutes details of the activities of man; and she has the same right to freedom and liberation as of man'. In order to reduce inequalities in higher studies, the following policy should be recommended:

- Above the elementary level, all girls should have a school which is easily accessible wherever such arrangements cannot be made, a hostel should be set up.
- Provision of scholarship should be introduced for higher studies to enable girls to continue education.
- The number of female teachers needs to increase.
- Employment opportunity for women must be increased.
- Each school must have safe drinking water and separate toilet for girls.
- Gender awareness workshop should be conducted and mass media should be utilized for campaign for projecting positive image of girl child.

In Sikkim there is no women's college which is very necessary for educational empowerment of women. The department should keep more attention for proper functioning of all the facilities being rendered to these backward units so that they do not neglect such benefits that have come up on their way.

Health care: The distribution of health care and medical facilities is inadequate and are not able to fulfil essential requirement of the villagers. There are two Primary Health Centre (PHC) at Yuksam development block, one is located at block headquarter and another at Tashiding GPU, beside these there are 5 Primary Health Sub Centre (PHSC). Still there are two GPUs where health care facilities are not available. To remove these disparities and to fulfil the health requirements of the people in the area, it is necessary to plan more facilities to cover population and to remove existing gap. There are some common problems of people in the study area regarding the health care system and it has been observed during the field study:

- At early stage people have some traditional attitudes towards the disease and adopt traditional method of healing and show unwillingness to seek medical care. Due to non availability of basic health care facilities at villages, people have to travel longer distance with huge expenditure.

It is necessary to look at the national health care policy before going through the proposals. The health care is one of the important parts for the implementation of minimum need programme in the country. The aim behind this programme is to provide primary health care facilities at the door step. In order to remove these disparities Government should provide basic knowledge and education to the people about welfare schemes, health care services, first aid training, personal hygiene and family planning. The basic hospital facilities like minor surgery, X-ray unit, and pathological laboratory should be established with specialized doctor in every PHC, in order to provide primary health care facilities to the villagers.

- On the basis of field study, requirements for health care institutions and staff have been drawn. As a whole 2 PHSC are proposed for D.Narkhola and A.Chongrang GPUs, for providing primary facilities to these areas. The both PHC should have specialized doctor along with basic hospital facility.

Housing: Shelter is one of the basic needs of human being. In Yuksam development block, Government has implemented 5 major housing schemes, namely: Indira Awaas Yojana (IAY), Mukhya Mantri Awaas Yojana (MMAY), Rural Housing Schemes (RHS), distribution of 30 pieces GCI sheets and house up-gradation of Rs. 15,000 thousand per household has provided to take up immediate repair of their houses constructed earlier which are in dilapidated condition. Rural Management and Development Department has constructed so many houses till date under various schemes, many houses are under construction and many families received these schemes recently.

The analysis shows that the progress is not bad but the demand is continuously increasing at a faster rate. Still 10.8 per cent families of the development block are living in kutcha houses on the basis of field study. The major factor responsible for widening the gap in demand and supply of housing is rapid increase in population and wide spread in poverty. The entire problem should be removed by providing schemes to the household who especially belong to weaker section. Houses should be properly constructed under the norms and supervision of the Government. Effective campaign and discussion should be carried out to highlight the guidelines of the schemes to the beneficiaries in order to minimise and misuse of the schemes.

Drinking Water: Tap water facilities exist in every village; all the villages in the development block depend upon natural spring and river. Water is not filtered, from the

health point of view it is necessary to drink filtered water otherwise it may cause health hazard during the monsoon.

- The emphasis should be paid to provide filtering facilities in every GPUs and it should be supplied through tap. Beside these various preservative measures should be adopted regularly. Water tank should be covered properly; plantation should be done around the source of water in order to preserve the source. Proper maintenance and repairing should be made in order to minimize the wastage of water.

Sanitation: Sanitation is one of the most important components of development and closely related with the quality of life. Therefore, it has been added as one of the component of the Minimum Needs Programmes from 1987-88. The programme aimed to improve the quality of life in rural areas by constructing sanitary latrines for individual households. Large number of household are benefited under Total Sanitation Campaign, there is still 0.4 per cent household of the development block who does not have sanitation facilities. To remove these disparities it is necessary to provide sanitation facilities to every household. In order to increase consciousness in rural population regarding the use of sanitary latrines there is need for health education and extension to highlight the importance of sanitation. The provision of sanitary latrines should be made in public places located in the rural areas and adequate arrangements should be made for the maintenance of such facilities immediately after their construction for their daily cleaning and up keeping.

Transport and Communication: The socio-economic condition of a region is basically dependent upon transport and communication facilities. It represents social circulation and help to break isolation of people living in core areas with those residing peripheral areas. It has certain effect on the socio-economic development of the region. Within Yuksam development block there are still 9 villages which are not connected by road. Yuksam development block is only served by single metalled road, which passes through the area via Tashiding, A.Chongrang, Gerethang, Yuksam, T.Khachodpalri and Melli GPUs. Remaining three GPU namely K.Mangnam, K.Labdang and D.Narkhola GPUs are served by kutcha un-metalled road. Under Pradhan Mantri Gram Sadak Yojana (PMGSY), 10 link roads are under construction and are about to complete. The GPUs have better road network which are connected by all weather road.

- All the villages should be connected by link road with other areas. All the existing un-metalled roads should be metalled and maintenance should be done where ever needed. Yuksam development block is only served by private taxi services not served by daily bus service. Thus, there is a need for passenger buses in order to improve the transportation system.

Good communication system not only support rural economy but also gives great help to socio-economic development of rural area. In Yuksam development block the distribution of communication facilities is uneven. There is no post office at K. Mangnam and K. Labdang GPU. The circulation of newspaper is very limited. Good communication facilities are very necessary for all the villages for socio-economic development of the rural areas. The telecommunication facilities are also lacking in the villages. So to overcome these gaps following proposals have been made:

- Every GPU should have post office
- Each post office should have telephone facilities
- All the GPU should have public television

Power and Electricity: Electricity is needed for the development of both urban and rural sectors. The electrification of the study area can only serve domestic purposes. About 95.7 per cent household of Yuksam development block are electrified and 4.3 per cent household are facing problem in connection or yet need to be electrified. There are 3 household who receive the schemes of bio-gas plants which are useful in two ways, firstly it provides manure to the farmers for their agriculture field and secondly it can be used as cooking fuel and light.

- The analysis shows that about 4.3 per cent household of the development block are facing electricity problem. Most of these household are situated far from the main linked road.
- It is essential that the entire household should be linked with power connection.

9.3. PLANNING FOR AGRICULTURAL SUPPORT SERVICES

Agriculture is the major part of rural economy. So certain emphasis has been given to increase agricultural facilities and improvement in agricultural inputs.

- By timely supply of seeds, fertilizer and pesticides
- By imparting adequate knowledge about their uses and production

- The farmers feel difficulty to visit the centre situated at long distance. Moreover they do not get any information related with the distribution of seeds. It is felt that in all the centres the Village Level Worker (VLW) should provide notice to every village before distributing the seeds.
- The proposed for the appropriate location of seed distribution centres at every GPU's. Therefore, the farmer could obtain the desired knowledge, benefit from the appropriate location and it removes the distance obstacles.

Irrigation: Inspite of this agriculture constitute the main source of livelihood even though only 2 percent of its total geographical area is under irrigation and use for paddy cultivation in this development block. Irrigation has occupied top most priority in agriculture on account of indispensability for increasing productivity, reducing dependence on monsoon and it helps in removing instability of production. The source of irrigation water is natural spring and river. To provide timely supply of water to field during dry period a certain amount of irrigation would provide great help. The proposal has been made to construct irrigation canal in every village, in order to increase net irrigated area and to provide regular irrigation facilities to the villagers.

Cold Storage: It has been observed that most of the farmers are having small pieces of land holding and they do not have proper storage, marketing and processing facilities. Due to lack of these facilities farmers use to sell their product to the retailers and middlemen at less than market price. In order to cater the needs of the local people and to prevent them from exploitation, Government has to realize this fact and need to construct cold storage facilities at every GPU.

Credit and Banking Facilities: The majority of people use to borrow credit from neighbours, shops and relatives. There are only 3 banks within Yuksam development block; the condition of co-operative societies is also not up to the mark which could give benefit to the rural poor. Lack of knowledge and education about the loaning facilities is also responsible to create such problems.

- To improve the banking facilities it is suggested that villagers can directly approach and advocate the facilities which are available in the banks. The rule should be clear, simple and well spelt out so that even uneducated farmer can understand and use them.

Veterinary Centres: There are 2 veterinary dispensary and 2 stockman centres, which exists in Tashiding, Yuksam, Gerethang and Melli GPU. In 5 GPU's there are no such facilities to remove this disparity, 5 stockman centres are proposed for K.Mangnam, D.Narkhola, K.Labdang, A.Chongrang and T. Khachodpalri GPU.

9.4. CONSTRAINTS OF RURAL DEVELOPMENT PROGRAMMES

On the basis of study undertaken the following findings and suggestions have been made:

- Economic criteria should be given more importance than the social criteria for the selection of the beneficiaries.
- Awareness programmes on rural development schemes should be organised in the rural areas.
- Effective campaign against health care should be carried out.
- Exhibitions, seminars and discussion to highlight the guidelines of various rural development schemes should be organised by involving local residents within the development block.
- Documentary films, poster exhibitions, informative leaflet should be produced to raise public awareness on development issues.
- Training should be given to rural artists to uplift their skills and market their products.
- Strict monitoring is needed for proper implementation of MG-NREGA. Most of the people just went to take attendance in order to get money without any useful work.
- MG-NREGA increased the income of the individuals and reduces their work load. A problem of the unemployment is also solved. On the other side it also encourages laziness among the workers.
- Most of the farmers feel that after enjoying employment opportunity generated by MG-NREGA they are not able to do farming properly; they also lost their habit to work in their agricultural field. Besides these people become very much dependent on these schemes and have forgotten the tradition of farming.

Problem among the GPUs are area specific and study indicates that the development is normally guided by people. There is a steady growth and development preceded in the households. To remove these disparities and to fulfil the basic requirements of the people in the area, it is necessary to plan more facilities to cover population and to remove existing gap. If rural areas thrive with good educational, occupational and medical facilities and opportunities then the rural urban gap can be minimized. Therefore, the

State Government should keep a strict vigilance to make this unit for the proper functioning of all the facilities being rendered to these areas. Hence, GPU based planning strategy would be more effective in the process of development and removal of disparities.

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SUMMARY AND CONCLUSION

Yuksam development block is one of the six blocks of West district of Sikkim and it is situated in the north western part of the district. It extends between 27º35'26" to 27º40'82"N latitudes and 88º13'50" to 88º35'17"E longitudes embracing an area of 10,457 hectare. It has total population of 17,334 persons and 3088 household (DESME, 2008). The data has been collected at village/ward level in order to assess the level of development among the GPUs and secondary data has been collected for the detailed analysis of aspects.

The entire State is drained by river Tista and its numerous tributaries and innumerable sub-tributaries. Sikkim constitutes only 0.22 per cent of the total geographical area of India. Its unique geographical position, varied topography, high annual rainfall, minimum population pressure makes the State one of the unique and richest botanical treasures of the nation. The Himalayas show remarkable biological diversity. Roads play a significant role in Sikkim. National Highway 31A is the only road that connects Sikkim with the rest of the country. The four-seated helicopter is only air services at present in the State form Gangtok to Bagdogra, but motor transport is quite important part of transport activity and only means of getting around.

India’s national economy is mainly rural in character and very high proportion of its population lived in rural areas. It was 89 per cent in 1950, 72 per cent in 2001 and 69 per cent in 2011. So, rural development is at top agenda and remains the main concern in national politics of the developing countries and even in developed countries the rural areas cannot be ignored. In fact the problem of improving the lives of rural population assumed a greater significance because of its explosive nature and huge number of people belongs to below poverty line. Alleviation of rural poverty has been one of the primary objectives of planned development in India. Since from Vedic age, the rural village was the basic unit of administration and it has been still continuous.

According to the census of India 2011, the total population of Sikkim was 6, 07,688 among which 3, 21,661 were male and 2, 86,027 were female. The study of population density under different district shows its own peculiarities. This gives an average density of 86 persons/sq. km. The highly dense distribution of settlements was observed on East district and lowest was recorded in North district with 10

persons/sq.km. The percentage of decadal growth rate of population was recorded as 12.36 per cent in 2001-2011 and its rate varied among the district. Yuksam Development Block had a population of 13,431 in 1991 increase to 17,056 in 2001 to 17,334 persons in 2008, which is distributed over 10,457 hectares and reveal great inequality and spatial variation. The density of population shows wide disparity in the whole area. The average density of population in Yuksam development block is 1.6 persons per hectare. But within Yuksam development block highest density was recorded in Gerethang GPU with 2.3 persons/ha, while the lowest was observed in K.Mangnam GPU. Sex ratio is an important social indicator related to population biological characteristics and which was increased from 875 in 2001 to 889 female in the year 2011. Inter-district comparison in Sikkim shows that the sex ratio is higher in West district with 941 and the North district recorded the lowest sex ratio in the State with 769 female per thousand male.

Literacy is one of the good indicators of enhancement of the society, so it plays a very important role for the socio-economic development of a region. The percentage of literacy rate in Sikkim is 82.2 per cent (2011), which is much higher than that of national average. The highest percentage of literacy rate is observed in east district 84.67 per cent and lowest in north district. Within the Yuksam development block Yuksam GPU recorded highest literacy rates among the other GPUs. The percentage of workforce in rural Sikkim, primary sector engages about 50.8 per cent of total working force, 43.9 per cent are involved in other activities and remaining 5.3 per cent of the total population was found to be unemployed.

At block level highest proportion of primary worker was noted as about 68.4 per cent in Yuksam development block, whereas the lowest was recorded in Gangtok block 27 per cent. As a whole, data also reveals that unemployment is highest in block with higher levels of education and those are adjacent to urban areas. In order to find out the occupation structure in GPU level, the persons engaged in the diverse segment of economy have been considered. The working population has been presented by dividing into 3 broad sectors, i.e., primary worker, other workers and non workers. About 38.2 per cent population are engaged in the primary sector of the economy, 23.8 per cent are other workers and remaining population are treated as economically inactive population and mostly supported by economically active population. To represent demographic development 6 indicators are taken into consideration.

For analysis of data 'z' score standardization model has been applied. Further the results of the standard score obtained for the different indicators were aggregated in order to find out the composite index, so that the differences in level of rural development in various GPUs may be obtained on a common scale. On the basis of demographic score of the indicators, GPUs have been categorised into three level of development: high, moderate and low level of development. Tashiding and T. Khachodpalri GPU have high level of development. These GPUs rank first and second in population size and also in demographic score respectively. The moderate level of development is observed in A. Chongrang, Gerethang, Yuksam and Melli GPU.

Low level of development is observed at K.Mangnam, D.Narkhola and K.Labdang GPU. Hence, the hypothesis framed out to test *the relationship between population size and level of development* is found correct. Here the regression y = 0.376, r = 0.931 and R^2 value is 0.867 as the relationship is statistically significant. Chapter IV deals with the socio-cultural aspects of development. Under this chapter culture and religion, population by religious group, social group-wise population distribution among the GPUs, spatial distribution of population by various facilities like educational institution, medical and health services, sanitation facilities, communication and social amenities have been discussed. The dense distribution of settlement was observed along the metalled road of Tashiding, Gerethang, Yuksam, T.Khachodpalri and Melli GPU.

Yuksam development block consist of almost 57.4 per cent under ST categories followed by 22.8 per cent MBC, 14.9 OBC, SC population occupies 3.9 per cent and percentage shared by general population is only 1 per cent. There are three GPUs namely K.Mangnam, D.Narkhola and K.Labdang which have less spatial distribution of settlements. Within the sample block there are two GPUs which have less than 1000 population (K.Mangnam and D.Narkhola), about 2 GPUs have 1000-2000 population, 4 GPUs of the sample block have 2000-3000 population, while only Tashiding GPU have more than 3000 population. The primary school is the basic of education but it exist only in 56.8 percentages of total villages. Education system much of the importance is highly attached with higher secondary education as it provides an entry into the higher education and employment opportunity. Within Yuksam development block only one higher secondary school exists in Tashiding GPU.

There is lack of higher institution among the GPUs which results in less percentage of higher literates. There are 2 Primary Health Centre (PHC), each located at Tashiding and Yuksam GPU, besides these there are 5 Primary Health Sub Centre (PHSC) and there is absence of medical facilities among 2 GPU. Though there is a single doctor appointed in each PHC. The average population per doctor is 8,667 persons which are quite higher than the district and State average. There has been a considerable progress in sanitation facilities among the different development block as well as within the GPUs of Yuksam development block. About 65 per cent household of Yuksam development block are benefited under Total Sanitation Campaign (TSC) and still there is 0.5 per cent household who doesn't have sanitation facilities.

The post office and internet facilities is the only means of communication and social facilities provided for the public within the block and its distribution is quite uneven among the GPUs. Telephone connection is mainly confined in road side and most of the people use cell phone for communication. A few villages remained devoid of these facilities. In this context, the extension of these facilities will play a helpful role in decreasing disparities and in increasing infrastructure facilities. It is a well known fact that in any income and expenditure survey, there is basically under-reporting of income people probably tends to suppress their income when particularly questions are asked. Chapter V presents a detailed account on economic indicator reflecting rural development. The study has been presented in following parts namely: agriculture, agricultural practices, cropping pattern, animal husbandry, sources of income, income and expenditure pattern and banking facilities. The study of agriculture has been made under - (i) land use pattern, (ii) land holding pattern, (iii) irrigation facilities, (iv) agricultural practices, and (iv) cropping pattern.

The study reveals that due to lack of irrigation facilities most of the farmer practice mixed farming and dry cultivation. Maize is the largest growing food grain among the sample household followed by finger millet, paddy and wheat. River and streams are the main sources of irrigation. About 57 per cent of household are engaged in agricultural activity and they practice traditional method of cultivation and are highly depended upon organic source of nutrients. None of the household produces self sufficient food crops. Animal husbandry is a second important economic activity and important source of earning next to agriculture.

The percentage of poultry occupy the highest among the other livestock followed by cow and bullock 21 per cent, goat, pig, yak and sheep are also found in this area. On the basis of sources of income household are divided into 5 major categories i.e. primary worker (agriculturist), service holder, trade and business (business man and contractor), daily wage earner and other worker. The percentage of primary worker is higher in T. Khachodpalri and lowest 33.3 per cent is observed in K.Labdang GPU, percentage of service holder is highest 36 per cent in Tashiding and lowest constitute 10.5 per cent in T. Khachodpalri GPU. Primary sector engages 57 per cent of total workforce, 25 per cent earns income from service sector; 9 per cent generate income from trade and business, about 8 per cent household depend upon daily wage earning and remaining 1 per cent draw their income from other sector.

The percentage distribution of household by monthly income and expenditure shows that the higher shares of households' income are being spent on meeting consumption requirements of the families. A comparison of percentage distribution of household income and its expenditure reveals that nearly 69 per cent household's monthly expenditure is less than Rs. 2500, while if we consider their earning only 54.7 per cent household earn less than Rs. 2500 per month. The pattern of earning and consumption varied widely between GPUs and also between income groups. An analysis of the annual income and expenditure pattern also reveals same condition that a high portion of the household was found that their expenditure is more than their income.

There is also difference in the share of average monthly income and per capita income of the GPUs among the block. On the basis of field survey average monthly income of the household is calculated, Tashiding GPU ranks the highest and lowest is observed in T. Khachodpalri GPU within the sample block. The comparison of per capita income also reveals the same ranked for the Tashiding and T. Khachodpalri GPU. It is observed that mostly due to less income and higher expenditure about 9.8 per cent household do not have any saving, nearly 26.6 per cent household have savings less than 10,000 and about a little over 29.7 per cent of the household saving ranges between Rs. 10,001 to 25,000, the majority of 17.2 per cent household saving ranges between Rs. 25,001 to 50,000 thousand. However, only 16.7 percentage of household have a saving more than Rs. 50,000 per annum as compared to the other range.

The respondents, who are indebted, are mostly the families whose annual income ranges below Rs. 25,000. However, about 78 per cent of the households of the development block expressed that they do not have any loans or debts. The reason behind their indebtedness, most of the respondents expressed that the reasons is their socio-economic necessities such as food and to meet health needs. There are three banks within the sample block (A.Chongrang, Gerethang and in Yuksam GPU), the utilization of banks is being done mainly for Government transaction. Due to lack of knowledge about the loaning facilities people prefer to borrow money from moneylenders, shop keepers and neighbours in order to meet their basic requirements. Economic development was envisaged through 4 indicators. The classification of GPUs within three groups is attempted on the basis of economic score reflected by each indicator in order to find out the level of economic development.

Study reveals that within the development block, Gerethang and A. Chongrang is the only GPU which has high level of development. Moderate development is noticed only at Yuksam GPU, similarly K. Mangnam, D. Narkhola, K. Labdang, Tashiding, T. Khachodpalri and Melli GPU fall under low level of development based on economic score. Chapter VI presents an outlook of infrastructure facilities within the district and among the GPUs of Yuksam development block. Under this, the spatial distribution of various facilities like road network, means of transport, footpath and bridges, water supply, drinking water source and power supply have been included. The study area is served by roads and not connected by any other means of transport. The area is served by 86 private jeeps used for transporting passengers and goods. There are 112 footpath and bridges which connect different places and it plays a vital role during the monsoons when rivers discharge are extremely high to cross by the people. Drinking water facilities and electricity are primary needs.

Drinking water facilities in the villages are provided through tap water. But still there is an acute water shortage during dry season and people face great difficulty. Around 41 per cent of the household of the development block depend upon local source for drinking water. Rural electrification in the State has been the most discouraging mission because of the acute and unfriendly topographical conditions. The villages in the sample block is highly scattered inspite of this around 95.7 percentage of the household are electrified. The dimension of infrastructure includes 11 variables.

The existing infrastructure facilities and level of rural development is highlighted through the application of composite score of 11 variables. The computed scores have a wide range of variation and it is divided into three categories viz. high, moderate and low level of development. The category of high level of development ranges from +0.2 and above, the score ranging from 0 to 0.2 are categorised in moderate level of development and the GPUs showing infrastructure score below 0 (-value) are grouped in low categories of infrastructure development. As a whole, there are three GPUs in high categories of level of development and their score vary from 0.47 to 0.93. Yuksam GPU score maximum 0.93 followed by Tashiding and T. Khachodpalri GPU due to high infrastructural facilities. This GPUs has well-developed educational institution, health care facilities, good connectivity of roads, good supply of drinking water and electricity.

Moderate level of development is noticed only at Melli GPU. The low infrastructural development has been noticed in 5 GPUs of Yuksam development block namely K. Mangnam, D. Narkhola, K. Labdang, A. Chongrang and Gerethang GPU. The correlation and regression analysis between infrastructure and level of development is calculated and it reveals that there is a positive correlation between these two variables. Here the regression y = 1.446, r = 0.926 and R^2 value is 0.858 as the relationship is statistically significant. As a consequence the first hypothesis 'Level of development is closely associated with the infrastructure facilities' which has been proved. Chapter VII analyses composite pattern of rural development on the basis of selected indicators. In this chapter an attempt has been made to discover level of rural development by analyzing various indicators.

In selection of indicators to measure the development considerable emphasis are placed on variable which represent a change and development in a society. In order to analyse the level of development among the GPUs of Sikkim 6 variables have taken into account and 21 variables have been selected to measure level of development among the GPUs of Yuksam development block. The variables under consideration are analysed by using 'z' score. On the basis of composite score, the GPUs have been again categorized into three classes: high, moderate and low level of development. Out of 163 GPUs there are 57 GPUs which are having high level of development, These GPUs are Mellidara Paiyong, Tharpu, Rawtey Rumtek, Kewzing Bakhim, Chungthang, Assangthang,

Khamdong, Samdong Kambel, Kartok Namcheybong, Tathangchen Syari, Barfung Zarung, Tinkitam Rayong, Sripatam Gagyong, Rolep Lamaten, et al. About 28 GPUs of Sikkim fall in the category of moderate level of development. These GPUs are Namli, Lingmo-Kolthang, Riwa Machong, Upper Fambong, Tarku, Phengang, Lachung, Taza and Rey Mendu and et al. The low categories of development cover 78 GPUs on the basis of composite score. K. Mangnam, Rey Mendu, Rong-Bul, Navey Shotak, Okherey, Lingi, Mabong Segeng, D. Narkhola, Ship Gyer, K. Labdang, Darap, A. Chongrang, et al. These GPUs have low level of development because most of the indicators score have negative values. There is less availability of population density, literacy, working population, pucca household and having low percentage of APL household. The spatial pattern of level of development has been measured by transforming and combining the data related with 21 variables by using composite scores.

The GPUs of Yuksam development block have been again categorised into three categories of development. There are three GPUs in Yuksam development block having high level of development. These GPUs are Tashiding, Yuksam and T. Khachodpalri. The high level of development may be due to better infrastructural facilities and amenities. The moderate level of development has been noticed in Gerethang and Melli GPU. The area having low level of development includes four GPUs of the block. These GPUs are K. Mangnam, D. Narkhola, K. Labdang and A. Chongrang. In these GPUs the availability of the facilities are almost very poor.

After analysis it may be concluded that the level of rural development show many dimensions of backwardness as well as progress. There is contrast in level of development among the GPUs of the block. The foregoing account brings to focus that the existing level of development in the study region may be partially attributed by infrastructure and population size. There is urgent need of appropriate strategy for an accelerate development for more than two third of the GPUs, especially in the field of infrastructure facilities in order to reduce the imbalances in the level of development. An effort has been made to correlate the impact of rural development schemes on socio-economic condition of the people. The study covers number of social development schemes. These programmes are further classified into six categories on the basis of their coverage and nature i.e. programmes on education, housing schemes, wage employment generating schemes, programmes on minimum basic needs, social welfare oriented

programmes and other programmes. On the basis of analysis the impact of schemes on schooling pattern, change in level of literates and impact on illiteracy has been observed. As a result it has been observed that there has been a huge decline in illiterate and number of school going children in the villages have been increased. Under housing 5 major ongoing housing programmes are figured for analysis: Rural Housing Scheme (RHS), Indira Awaas Yojana (IAY), Mukhya Mantri Awaas Yojana (MMAY), House up-gradation, GCI Sheets (Galvanised Corrugated Iron). Impact of housing schemes have been measured by comparisons of housing status of sample household before and after receiving the schemes. Further the study shows that the proportion of family living in kutcha dwelling was significantly higher in past and most of the household are constructed with the help of Government assistance in different housing schemes.

Under wage employment generating schemes Mahatma Gandhi National Rural Employment Guarantee Scheme (MG-NREGS) were figured for analysis. The study reveals that about 74.2 per cent household among the sample block were directly and partially involved in MG-NREGA. Remaining 25.7 per cent household of the development are not concerned with MG-NREGA they are mostly depend upon Government services. Under Minimum Basic Needs programmes Food Security Schemes (FSS) and Total Sanitation Campaign (TSC) were figured for analysis. There are 4 ongoing programmes under FSS which are in operation and provide subsidized food grains to the people those who are living below poverty line. Over 75.3 per cent families of the sample block were benefited under food security schemes.

Sanitation is one of the basic needs of human being. TSC is a pilot project implemented to provide sanitation facilities among the household and it provides great help to the people. The data reveals that the share of 65.1 per cent household of the sample block has been benefited under TSC. Social Welfare Oriented Programmes includes: National Old Age Pension (NOAP), National Widow Grants Scheme (NWGS), National Handicap Aid Programme (NHAP) and Social Service Pension (SSP). Under NOAP 168 persons are benefited. There are two beneficiaries benefited under NWGS, 14 persons of the sample block are covered under NHAP and there is a single beneficiary getting benefits under SSP. The highest number of beneficiaries was recorded in Tashiding and least was observed at K.Mangnam and D.Narkhola GPU.

Other programmes includes: Land Bank Schemes (LBS), National Biogas and Manure Management Programme (NBMMP), Rural Energy Programme and Schemes for Agriculture Development. Under National Biogas and Manure Management Programme 3 household of Yuksam development block are benefited with 2 cubic meters family size biogas plants. On the basis of field survey 231 household of the sample block are benefited under Rural Energy Programme (REP). Land Bank Scheme is introduced by State Government and it is considered as a new measure to consolidate land reform in the State. Under this schemes land is provided to landless *'Sukumbasis'*. The study shows that till 2011 about 18 household of the sample block are benefited by LBS.

To enhance agriculture production, Government is providing various schemes such as: vermin compose pit, water harvesting tank, poly pipe and terracing to the household. The comparison among the schemes shows that there was 152 household those who are benefited under compose pit, 144 household are benefited under vermin compose pit, nearly 44 tribal families have received water storage tank (syntax) under Tribal Sub Plan, 5 household are benefited by water harvesting tank, 2 household had received poly pipe and a single family are benefited by land terracing under MG-NREGA. The information related with the distribution of benefit shows that there are still 6 percentage share of total household those who are not benefited by any Government assistance. An attempt has been made to assess the impact perceived by the household.

It has been found that after receiving various development schemes 61 per cent respondent agreed that it had really brought marginal improvement in their living status, about 13.5 per cent household noticed significant improvement, 14.3 per cent failed to find any improvement and remaining 11.2 household are still in critical situation and their socio-economic condition was very bad. Thus the unity among the beneficiaries and their perception regarding the schemes is not uniform. Chapter IX represent the problems and planning for further development related with various aspects such as education, health care, housing, transport and communication, agricultural support services, rural marketing, electricity and drinking water facilities. For the development of agriculture which is the main occupation of the area and contributes larger share in their income, proposal have been made for its development and improvement. Timely supply and distribution of seeds, fertilizer and pesticides are needed for improving production.

Yuksam development block are lacking in irrigation, cold storage facilities, financial assistance to the farmer and whatever it exist is unable to fulfil their requirements. So, the extension of these services has been proposed. It has been observed that in Yuksam development block there is absence of storage facilities, so provision has been suggested to provide these facilities at GPU level. It has been observed that few farmers does not know the precise use of vermin compose pit, compose pit, green house and hybrid seeds which is provided to them. Scientific knowledge and advices of expert are most important factors to them without which it fail to achieve required production.

It is proposed that the Government authorities should manage guidance programme for the beneficiaries before providing such facilities for proper utilization and success of such services. It is observed through the study that the block provides a better scope for tourism development. The numerous places such as monastery, temple, cave, lake and waterfall within the development block may be utilized for this purpose. It will also generate gainful employment for large number of people as well as side work with agriculture. To improve the income, farmers are advised to adopt mixed farming by combining poultry and livestock rearing. They should take maximum benefit of the Government schemes which are provided for the purpose. For economic development of the block through non-agricultural sector, it has been proposed to create some small scale and cottage industries based on local resources and availability of local artisans.

For socio-cultural development the proposals pertaining to the development of various sectors such as education, health, roads, sanitation, power supply and housing have been discussed. There are 51 villages and in few villages where even primary school are absent, taking into consideration the establishment of new educational institutions has been proposed. The existing health care facility in the block is inadequate; still there are 2 GPUs which does not have health care centre. To remove the spatial disparities and to fulfil health requirement, each GPU should be provided with one PHSC which will provide basic health care service to the villagers. Each PHC should be provided with specialized doctor along with basic hospital facility. The main obstacle in development process of the area is its improper linkages with block-headquarters as well as with service centres. An up-gradation and maintenance of roads has been proposed. The three GPUs namely K.Mangnam, D.Narkhola and K.Labdang should be linked with an all weather road.

New electric connections and maintenance have been proposed for un-electrified household. The existing communication facilities are unable to fulfil the requirement of the area therefore proposal for increasing the facilities have been made. Through the study of existing housing condition it has been found that there are still 10.8 per cent families who are living in kutcha dwelling and most of them belong to weaker section of the society, therefore it is necessary to provide housing schemes to them. There is need to emphasise primary worker association for the successful implementation of agricultural programme.

The success of any development plan mostly depends on the management and implementation. In few cases facilities provided to the rural poor through different schemes are not reaching down to needy and poor. In order to minimize this misuse of the schemes, effective instruction, guidelines and advices should be provided to the panchayats at grass root level. Therefore, the proposal of structural organisation for the implementation of development schemes has been made at village level. The committee for the implementation authority should include Gram Panchayat member, selected persons belong from every sections of the society and especially women.

The study area suffers from area specific problem and unbalanced distribution of infrastructure facilities and services. The existing facilities are insufficient to fulfil the growing demand of the population. It is anticipated that if the proposed development plan is implemented in proper manner it will provide ample benefit to the villagers; pace of development may gain and also help to minimize the gap between the GPUs of the study area. Thus, the above suggestions and recommendations based on detailed study may serve as useful guideline for framing long term policies to achieve healthy rural growth and development in Sikkim.

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APPENDIX - A

Gram Panchayat Unit and Development Block of Sikkim

GPU No. (1)	Name Of The GPU (2)	District (3)	Name Of The Block (4)
1	Ship Gyer	North	Chungthang
2	Chungthang	North	Chungthang
3	Lachung	North	Chungthang
4	Lachen	North	Chungthang
5	Lum-Gor -Sangtok	North	Dzongu
6	Sakyong Pentong	North	Dzongu
7	Tingvong	North	Dzongu
8	Lingthem Lingdem	North	Dzongu
9	Posingdang Safo	North	Dzongu
10	Barfok Lingdong	North	Dzongu
11	Hee Gyathang	North	Dzongu
12	Men Rongong	North	Kabi Tingda
13	Lingdok	North	Kabi Tingda
14	Rongong Tumlong	North	Kabi Tingda
15	Phensang	North	Kabi Tingda
16	Kabi Tingda	North	Kabi Tingda
17	Navey Shotak	North	Kabi Tingda
18	Ringmin Nampatam	North	Mangan
19	Sentam	North	Mangan
20	Toong Naga	North	Mangan
21	Tingchim Mangshila	North	Mangan
22	Namok Sheyam	North	Mangan
23	Ramthang Tangyek	North	Mangan
24	Upper Fambong	West	Daramdin
25	Lungchok Salyangdang	West	Daramdin
26	Siktam Tikpur	West	Daramdin
27	Lower Fambong	West	Daramdin
28	Burikhop	West	Daramdin
29	Okherey	West	Soreng
30	Ribdi Bhareng	West	Daramdin
31	Barnyak Barthang	West	Daramdin
32	Maneybung Sopakha	West	Dentam
33	Sangkhu Radukhandu	West	Dentam
34	Bongten Sapong	West	Dentam
35	Karmatar Gyaten	West	Dentam
36	Dentam	West	Dentam
37	Hee	West	Dentam
38	Pecherek Martam	West	Dentam
39	Darap	West	Dentam
40	Yangten	West	Gyalshing
41	Singyang Chumbung	West	Gyalshing
42	Lingchom Tikjya	West	Gyalshing
43	Yangthang	West	Gyalshing
44	Sardung Lungzik	West	Gyalshing
45	Geyzing Omgchung	West	Gyalshing
46	Samdong	West	Gyalshing
47	Tadong Rinchenpong	West	Kaluk
48	Takothang	West	Kaluk
49	Deythang	West	Kaluk
50	Sangadorji	West	Kaluk
51	Chingthang	West	Kaluk
52	Khaniserbong Suntoley	West	Kaluk
53	Timburbong	West	Soreng

(1)	(2)	(3)	(4)
54	Malbasey	West	Soreng
55	Soreng	West	Soreng
56	Tharpu	West	Soreng
57	Chumbong	West	Soreng
58	Zoom	West	Soreng
59	Chakung	West	Soreng
60	Chota Samdong Arubotey	West	Soreng
61	Samsing Gelling	West	Soreng
62	Mabong Segeng	West	Soreng
63	Suldung Kamling	West	Soreng
64	Dodak	West	Soreng
65	Mandogaon Berbotey	West	Soreng
66	Singling	West	Soreng
67	Rumbuk	West	Soreng
68	Dhupidara-Narkhola	West	Yuksam
69	Kongri Labdang	West	Yuksam
70	Thingle Khachodpalri	West	Yuksam
71	Yuksam	West	Yuksam
72	Melli	West	Yuksam
73	Tashiding	West	Yuksam
74	Karzi Mangnam	West	Yuksam
75	Arithang Chongrang	West	Yuksam
76	Gerethang	West	Yuksam
77	Sadam Suntoley	South	Melli
78	Mellidara Paiyong	South	Melli
79	Turuk Ramabung	South	Melli
80	Lungchok Kamarey	South	Melli
81	Sumbuk Kartikey	South	Melli
82	Mikhola Kitam	South	Namchi
83	Assangthang	South	Namchi
84	Rong-Bul	South	Namchi
85	Sorok-Shyampani	South	Namchi
86	Maniram Singithang	South	Namchi
87	Damthang	South	Namchi
88	Rateypani	South	Namthang
89	Tangzi Bikmat	South	Namthang
90	Nagi Pamphok	South	Namthang
91	Maneydara	South	Namthang
92	Tingrithang	South	Namchi
93	Tinik Chisopani	South	Jorethang
94	Salghari	South	Jorethang
95	Poklok Denchung	South	Jorethang
96	Mamley Kamrang	South	Namchi
97	Turung Mamring	South	Namthang
98	Ravang Sangmoo	South	Ravangla
99	Legship	South	Ravangla
100	Borong Phamthang	South	Ravangla
101	Ralong Namlung	South	Ravangla
102	Kewzing Bakhim	South	Ravangla
103	Barfung Zarung	South	Ravangla
104	Tiniktam Rayong	South	Sikip
105	Lamting Tingmo	South	Sikip
106	Sanganath	South	Sikip
107	Wak Omchu	South	Sikip
108	Ben Namphrik	South	Temi Tarku
109	Namphing	South	Temi Tarku
110	Chuba Phong	South	Namthang

(1)	(2)	(3)	(4)
111	Barnyak Tokal	South	Temi Tarku
112	Tarku	South	Temi Tarku
113	Temi	South	Temi Tarku
114	Chuba	South	Namthang
115	Rameng Nizrameng	South	Temi Tarku
116	Yangang Rangang	South	Yangang
117	Sripatam Gagyong	South	Yangang
118	Niya-Mangzing	South	Yangang
119	Lingi	South	Yangang
120	Paiyong	South	Yangang
121	Lingmo-Kolthang	South	Yangang
122	Central Pendam	East	Duga
123	East Pendam	East	Duga
124	West Pendam	East	Duga
125	Sumin Lingzey	East	Duga
126	Namli	East	Gangtok
127	Samlik Marchak	East	Gangtok
128	Tathangchen Syari	East	Gangtok
129	Naitam Nandok	East	Gangtok
130	Assam Lingzey	East	Gangtok
131	Gnathang	East	Gangtok
132	Byeng-Phegyong	East	Khamdong
133	Simik Lingzey	East	Rakdong Tintek
134	Martam Nazitam	East	Khamdong
135	Sirwani Tshalumthang	East	Khamdong
136	Khamdong	East	Khamdong
137	Singbel	East	Khamdong
138	Thekabong Parkha	East	Pakyong
139	Kartok Namcheybong	East	Pakyong
140	Amba	East	Pakyong
141	Changey Senti	East	Pakyong
142	Aho Yangtam	East	Pakyong
143	Latuk-Chuchenpheri	East	Pakyong
144	Riwa Machong	East	Pakyong
145	Pacheykhani	East	Pakyong
146	Rakdong Tintek	East	Rakdong Tintek
147	Samdong Kambel	East	Rakdong Tintek
148	Tumin	East	Rakdong Tintek
149	Ranka	East	Ranka
150	Rey Mendu	East	Ranka
151	Rawtey Rumtek	East	Ranka
152	Luing Parbing	East	Ranka
153	Lingtam Phadamchen	East	Regoh
154	Chujachen	East	Regoh
155	Rolep Lamaten	East	Regoh
156	Premlakha Subaneydara	East	Regoh
157	Dolepchen	East	Regoh
158	Regoh	East	Regoh
159	Aritar	East	Regoh
160	Linkey Tareythang	East	Rhenock
161	Taza	East	Rhenock
162	Sudunglakha	East	Rhenock
163	Rhenock Tarpin	East	Rhenock

Source: DESME, 2008.

APPENDIX - B

Gram Panchayat Unit and Gram Panchayat Ward of Yuksam Development Block

Name of the GPU (1)	Ward Number (2)	Name of the Ward (3)
K.Mangnam	1	Mangder
	2	Lower Mangnam
	3	Upper Mangnam
	4	Upper Karchi
	5	Lower Karchi
D.Narkhola	6	Narkhola
	7	Pokhri
	8	Rungdung
	9	Upper Dhupidara
	10	Yangtam
	11	Lower Dhupidara
K.Labdang	12	Upper Labdang
	13	Middle Labdang
	14	Lower labdang
	15	Kongri-Naku
	16	Kongri-Maneydara
Tashiding	17	Ganggep (Ngadak Gumpa)
	18	Mangthyang
	19	Upper Lasso
	20	Lower Lasso
	21	Tashiding (Gumpa)
	22	Nerdang
A.Chongrang	23	Upper Chongrang
	24	Middle Chongrang
	25	Lower Chongrang
	26	Nesa
	27	Arithang
Gerethang	28	Upper Gerethang
	29	Tamatam
	30	Lower Gerethang
	31	Upper Labing (Gumpa)
	32	Bhirkuna Lingyang
	33	Lower Labing
Yuksam	34	Tsokha-Kyongtek
	35	Yuksom-Ramgaythang
	36	Ting-Ting
	37	Mangsabung
	38	T.Gufadara
	39	Dubdi (Sangha Gumpa)
T.Khachodpalri	40	Thingle-I
	41	Thingle-II
	42	Thingle-III
	43	Khachodpalri (Gumpa)
	44	Tsozo

(1)	(2)	(3)
Melli	45	Upper Melli (Gumpa)
	46	Lower Melli
	47	Upper Melliaching
	48	Lower Meliaching
	49	Singlitam
	50	Tingbrum
	51	Topung

Source: DESME, 2008.

APPENDIX - C

Decadal Growth Rate, Distribution and Density of Population

State/District	Population 2011			Decadal growth rate of population (in per cent)		Area sq.km	Population density per sq. km.	
	Persons	Males	Females	1991-01	2001-11		2001	2011
Sikkim	607688	321661	286027	33.07	12.36	7096.00	76	86
North District	43354	24513	18841	31.34	5.67	59.55	10	10
West District	136299	70225	66074	25.57	10.59	16.43	106	117
South District	146742	76663	70079	33.39	11.57	10.57	175	196
East District	281293	150260	131033	37.32	14.80	13.44	256	295

Source: Census of India, 2011.

APPENDIX - D

Sex ratio of State and Districts: 1971-2011

State/District	Sex-ratio (Number of females per 1000 males)				
	1971	1981	1991	2001	2011
Sikkim	863	835	878	875	889
North District	853	789	828	752	769
West District	937	906	915	929	941
South District	909	854	892	927	914
East District	791	797	859	844	872

Source: Census of India, 2011.

APPENDIX - E

Occupational Structure among the Development Block of Sikkim (in percent)

Development Block	Total Population	Primary Worker	Other Worker	Non Worker
Chungthang	3884	37.00	50.40	12.60
Mangan	6489	53.20	35.90	10.80
Dzongu	4638	59.20	37.50	3.20
Kabi	7340	38.90	56.50	4.50
Rakdong Tintek	10697	42.20	52.00	5.80
Khamdong	8847	51.80	41.90	6.30
Duga	13580	47.60	48.30	4.00
Ranka	7840	42.70	49.00	8.00
Gangtok	14479	27.00	62.00	10.80
Pakyong	14104	44.30	49.20	6.40
Rhenock	7027	47.30	48.00	4.70
Rhegu	11829	42.00	50.70	7.20
Wok	3290	62.50	34.60	2.80
Jorethang	3790	62.50	35.00	2.30
Namchi	10809	56.50	40.30	3.00
Melli	10969	50.80	42.90	6.20
Temi	10796	57.90	37.40	4.70
Namthang	10363	64.40	32.00	3.50
Rabong	12557	64.30	41.80	3.80
Yangang	12097	64.80	32.30	2.80
Yuksam	12372	68.40	29.70	1.80
Geyzing	14798	44.90	51.20	3.80
Kaluk	11656	49.40	44.60	6.00
Soreng	21373	48.90	46.30	4.70
Dentam	14888	58.00	36.97	4.90
Daramdin	10599	58.40	37.30	4.30

Source: State Rural Household Census, 2009.

Note-* Primary Worker (Agriculture wage labour, Non agriculture workers), Other Worker (State Government employees, Central Government services, Private sector, Business man / Trader, Muster roll, Self employed, Contractor, Others) and Non Worker (Unemployed, pensioners, housewife, student).

APPENDIX - F

Demographic Score

Name of the GPU	Density	Sex ratio	Total Literacy	Female Literacy	Working Population	Dependency ratio	Demographic Score	Categories
K. Mangnam	-1.56	0.61	-0.89	-0.86	-1.46	1.47	-0.45	Low
D. Narkhola	-0.94	1.65	-0.99	-0.86	0.24	-0.23	-0.19	Low
K. Labdang	-0.94	-0.53	-1.15	0.81	0.66	-0.66	-0.31	Low
Tashiding	0.06	-0.47	0.94	0.98	1.51	-1.51	0.25	High
A. Chongrang	1.06	-0.68	-0.57	0.31	-0.18	0.19	0.02	Moderate
Gerethang	1.56	-1.25	0.72	-0.78	-1.04	1.04	0.04	Moderate
Yuksam	0.44	-0.65	1.61	-1.20	0.66	-0.66	0.03	Moderate
T. Khachodpalri	0.31	-0.05	0.67	1.65	-1.04	1.04	0.43	High
Melli	0.06	1.38	-0.32	-0.02	0.66	-0.66	0.18	Moderate

Source: Calculated by author

Note: *Dependent Population - the children below 15 years and old people aged above 65 are part of dependent population. **Working Population- is a ratio of adult aged between 15-64 years are considered as an economically active population or working population.

APPENDIX - G

Development block-wise Level of Literates in Sikkim (in per cent)

Development Block	Child Below 7 years	Illiterate	Primary	Secondary	Senior Secondary	Diploma	Graduate	Others**
Chungthang	10.30	28.80	27.30	23.10	5.20	0.40	1.50	3.20
Mangan	16.30	20.00	34.70	22.90	3.20	0.50	1.20	1.10
Dzongu	13.00	11.20	41.10	21.80	4.60	0.30	3.10	4.70
Kabi	9.70	16.80	32.70	26.00	6.30	0.60	3.50	4.30
Rakdong Tintek	9.00	17.10	35.50	26.70	6.00	1.50	2.30	1.80
Khamdong	7.80	20.90	37.20	24.30	4.50	0.50	2.70	2.00
Duga	11.60	16.30	38.40	25.00	4.40	1.00	2.00	1.10
Ranka	14.70	14.30	31.30	26.70	6.10	0.80	3.20	2.90
Gangtok	12.20	15.40	33.40	28.40	5.30	1.10	2.60	1.50
Pakyong	7.90	17.10	32.80	29.70	6.40	1.30	2.70	2.00
Rhenock	13.80	12.80	34.50	26.80	6.00	0.70	3.50	1.80
Rhegu	6.00	18.70	35.20	28.00	6.10	0.80	3.40	1.60
Wok	15.40	20.80	40.60	18.60	2.40	0.40	1.00	0.60
Jorethang	7.90	17.00	40.50	26.90	3.90	0.50	2.30	0.80
Namchi	8.70	14.90	40.30	27.70	4.60	0.70	2.10	0.80
Melli	9.60	16.50	37.20	27.30	5.10	0.40	2.70	1.10
Temi	12.00	20.50	37.60	21.50	4.30	0.40	2.20	1.30
Namthang	9.80	16.00	39.70	26.30	4.40	0.60	2.10	0.90
Rabong	11.90	20.90	37.00	21.80	4.10	0.80	2.00	1.30
Yangang	8.60	16.90	42.60	24.50	4.00	0.50	1.60	1.00
Yuksam	7.50	21.70	46.00	18.00	3.00	0.30	1.80	1.70
Geyzing	9.50	19.60	36.80	24.00	4.90	1.10	2.40	1.50
Kaluk	11.00	21.40	39.30	22.00	3.70	0.50	1.30	0.80
Soreng	9.80	17.10	39.70	24.80	4.50	1.10	1.90	0.90
Dentam	11.60	19.30	36.00	24.00	4.70	0.50	2.40	1.30
Daramdin	9.80	15.80	40.60	24.20	4.70	0.40	2.60	1.80
Percent	11.16	17.64	37.2	24.5	4.75	0.75	2.32	1.59

Source: State Rural Household Census, 2009.

**Other includes - Post Graduate, PhD, religious Literate and other literates.

APPENDIX - H

Current Status of Educational Facilities among the GPU (2010-11)

Name of the GPU	PS		JHS		SS		SSS		LVS	
	NOI	TCH	NOI	TCH	NOI	TCH	NOI	TCH	NOI	TCH
K. Mangnam	2	5	1	8	0	0	0	0	0	0
D. Narkhola	2	7	0	0	0	0	0	0	0	0
K. Labdang	1	5	1	9	0	0	0	0	0	0
Tashiding	9	32	1	10	0	0	1	55	1	3
A. Chongrang	3	10	3	23	0	0	0	0	0	0
Gerethang	1	5	2	15	1	13	0	0	0	0
Yuksam	4	17	0	0	1	18	0	0	0	0
T. Khachodpalri	5	15	1	5	1	19	0	0	0	0
Melli	4	16	1	10	1	12	0	0	0	0
Total	31	112	10	80	4	62	1	55	1	3

Source: VDAP, 2011.

Note: NOI means number of institution, TCH - teacher, PS - Primary School, JHS - Junior High School, SS - Secondary School, SSS - Senior Secondary School and LVS - Livelihood School.

APPENDIX - I

District-wise Health Care Services

Health Care Services	East	West	North	South	State
State Referral Hospital	1	0	0	0	1
Manipal Central Referral Hospital	1	0	0	0	1
Community Health Centre	1	1	1	1	4
Primary Health Centre	8	7	3	6	24
Primary Health Sub-Centre	48	41	19	39	147
Total	59	49	23	46	177

Source: Health Care, Human Services and Family Welfare, 2005.

APPENDIX - J

District-wise Population/Doctor, Population/Beds and Patient/Doctor

Particulars	East	West	North	South	State Average
Population/Doctor	2024	4810	3096	3631	2757
Population/Beds	555	821	357	677	600
Patient/Doctor	3.65	5.86	8.67	5.37	4.59
Number of beds in hospital	1000	170	130	220	380

Source: Health Care, Human Services and Family Welfare, 2006-07.

APPENDIX - K

Health care units, Communication and Social Amenities among the GPU

Name of the GPU	PHSC*	PHC**	T. Beds*	Post Office	Internet Service
K. Mangnam	1	0	0	0	0
D. Narkhola	0	0	0	1	0
K. Labdang	1	0	0	0	0
Tashiding	0	1	10	1	1
A. Chongrang	0	0	0	1	0
Gerethang	1	0	0	1	0
Yuksam	0	1	10	1	2
T. Khachodpalri	1	0	0	1	0
Melli	1	0	0	1	0

Note: PHSC*- Primary Health Sub Centre, PHC**- Primary Health Centre and T. Beds* - Total number of beds.

Source: Field survey, 2010-2011.

APPENDIX - L

Sanitation Facilities among the Development Block of Sikkim

Development Block	Household with Toilet (in per cent)
Chungthang	97
Mangan	98
Dzongu	99.50
Kabi	98.60
Rakdong Tintek	99.30
Khamdong	99.20
Duga	99.40
Ranka	99.40
Gangtok	99.30
Pakyong	99.70
Rhenock	99.00
Rhegu	99.20
Wok	99.80
Jorethang	99.00
Namchi	99.00
Melli	97.40
Temi	99.30
Namthang	99.60
Rabong	99.40
Yangang	99.40
Yuksam	99.50
Geyzing	96.00
Kaluk	99.20
Soreng	99.40
Dentam	99.70
Daramdin	99.20
Total Household (in %)	99.00

Source: State Rural Household Census, 2009.

APPENDIX - M

Sanitation Facilities among the GPUs of Yuksam development block

Name of the GPU	Household with Toilet (in per cent)
K. Mangnam	100.00
D. Narkhola	100.00
K. Labdang	100.00
Tashiding	100.00
A. Chongrang	98.00
Gerethang	99.10
Yuksam	100.00
T. Khachodpalri	99.30
Melli	100.00
Total	99.50

Source: DESME, 2008 and Field survey, 2010-2011.

APPENDIX - N

Land use pattern of Sikkim (in hectare)

Type	Area	Area (in %)
Cultivable area	1,09,068	14.91
Permanent pastures	73,947	10.14
Land put to non agricultural use	85,362	11.70
Barren land (glaciers)	1,80,230	24.70
Land under miscellaneous trees & groves	5,450	0.75
Forests	2,76,553	37.90
Total geographical area	7,09,600	100.00

Source: Economic survey, 2006-07.

APPENDIX - O

Development Block-wise rural area and Land use pattern (in per cent)

Development Block	Total area (in ha)	Paddy Field	Dry land	Wasteland	Cardamom
Chungthang	10,755	0.01	20.00	27.00	53.00
Mangan	7,809	6.00	58.00	7.00	29.00
Dzongu	16,761	2.00	38.00	12.00	48.00
Kabi	5,893	9.00	57.00	9.00	25.00
R.Tintek	5,174	21.00	49.00	17.00	13.00
Khamdong	4,743	17.00	41.00	27.00	15.00
Duga	5,029	7.00	38.00	36.00	19.00
Ranka	2,832	27.00	32.00	22.00	20.00
Gangtok	4,400	12.00	45.00	33.00	10.00
Pakyong	5,765	16.00	54.00	16.00	15.00
Rhenock	3,942	18.00	35.00	19.00	28.00
Rhegu	8,088	6.00	52.00	17.00	28.00
Wok	3,464	1.00	64.00	32.00	3.00
Jorethang	1,858	5.00	67.00	24.00	5.00
Namchi	6,718	1.00	61.00	31.00	7.00
Melli	4,001	7.00	55.00	32.00	6.00
Temi	5,265	7.00	63.00	27.00	3.00
Namthang	5,817	3.00	62.00	32.00	3.00
Rabong	6,699	4.00	72.00	20.00	5.00
Yangang	6,017	12.00	65.00	20.00	3.00
Yuksam	10,457	2.00	60.00	34.00	4.00
Geyzing	6,301	11.00	69.00	13.00	6.00
Kaluk	5,918	3.00	65.00	21.00	11.00
Soreng	8,979	6.00	62.00	24.00	8.00
Dentam	6,439	11.00	63.00	16.00	10.00
Daramdin	4,173	9.00	59.00	2.00	29.00
State Rural Area (%)	163,297	7.00	59.00	21.00	29.00

Source: State Rural Household Census, 2009.

APPENDIX - P

District-wise Land Distribution and Minor Irrigation Channel Constructed till 2003-04

District	Number of Channel	Cultivable command area (Ha)	Total Area (Ha)	Percentage share
East	460	9467.99	31,846.16	28.96
North	87	2097.9	16,228.00	14.75
South	290	6173.54	29,629.77	26.95
West	301	6124.62	32,259.07	29.34
Total	1138	23864.05	109,963.00	100.00

Source: Economic survey, 2006-07, Land Records Section, Department of Land Revenue, Government of Sikkim.

APPENDIX - Q

Horticulture Production in Sikkim1975-2006 (tonnes)

Crops	1975-76	1980-81	1985-86	1990-91	2002-03	2005-06
Fruits	4700	6350	8200	10500	6530	13465
Vegetables	2000	3400	13900	15000	26000	44969
Potato	5000	6646	16400	18000	23715	33140
Large Cardamom	2300	3500	3900	2600	4200	3520
Ginger	2000	3200	10900	16000	23000	36000

Source: Economic Survey, 2006-07.

APPENDIX - R

Veterinary and Banking Facilities

Name of the GPU	Veterinary Centre	Stockman Centre	Banking Facilities
K. Mangnam	0	0	0
D. Narkhola	0	0	0
K. Labdang	0	0	0
Tashiding	1	0	0
A. Chongrang	0	0	1
Gerethang	0	1	1
Yuksam	1	0	1
T. Khachodpalri	0	0	0
Melli	0	1	0

Source: Field survey, 2011-2012.

APPENDIX - S

Economic Score

Name of the GPU	Irrigated Area	Primary Worker	Per Capita Income	Number of Banking Facilities	Economic Score	Categories
K. Mangnam	-0.43	-0.04	-1.21	-0.66	-0.59	Low
D. Narkhola	-0.43	-0.97	-0.31	-0.66	-0.59	Low
K. Labdang	-0.43	-1.32	0.82	-0.66	-0.40	Low
Tashiding	-0.43	-1.12	1.41	-0.66	-0.20	Low
A. Chongrang	0.46	0.26	1.24	1.34	0.83	High
Gerethang	2.55	0.88	0.03	1.34	1.20	High
Yuksam	-0.43	0.20	-0.35	1.34	0.19	Moderate
T. Khachodpalri	-0.43	1.74	-1.44	-0.66	-0.20	Low
Melli	-0.43	0.38	-0.19	-0.66	-0.23	Low

Source: Calculated by author

APPENDIX - T

Status of Infrastructure in Yuksam Development Block

GPU Number		GPU1	GPU2	GPU3	GPU4	GPU5	GPU6	GPU7	GPU8	GPU9
Total Household		79	136	169	592	328	375	520	479	410
Total Population		554	980	1025	3405	1826	2225	2409	2544	2366
	Pucca	1.20	3.00	3.00	12.60	9.00	11.00	19.60	5.00	11.00
	Semi Pucca	76.00	47.00	76.00	57.00	58.00	60.00	57.40	64.00	58.00
Household as on 31st March, 2008	Kutcha	22.80	50.00	21.00	30.50	33.00	29.00	23.00	31.00	31.00
Households (with toilets)		100.00	100.00	100.00	100.00	98.00	98.30	100.00	99.30	100.00
Number of Hotels & Guest House		1	0	1	7	1	2	16	2	3
Number of shops		0	3	2	32	14	7	14	19	15
Number of Educational Institution		3	2	3	11	6	4	7	7	7
Number of Health Care Centre		1	0	1	1	0	1	1	1	1
Number of Shared Jeep service		2	5	5	13	8	6	23	17	7
Number Bridges & Foot Path		10	14	15	14	10	16	18	7	8
Household enjoying tap water (%)		66.70	65.90	72.50	79.80	78.60	62.80	76.00	83.20	79.70
Police outpost		0	0	0	1	0	1	1	1	0
Electrified Household (%)		91.70	97.60	98.00	99.40	89.70	89.40	96.70	98.00	96.00

Source: DESME, 2008 and VDAP, 2011.

Note: (GPU 1- K. Mangnam, GPU 2 - D. Narkhola, GPU 3 - K. Labdang, GPU 4 - Tashiding, GPU 5 - A.Chongrang, GPU 6 - Gerethang, GPU 7 - Yuksam, GPU 8 - T.Khachodpalri, GPU 9 - Melli)

APPENDIX - U

GPW-wise Road Network

Name of the GPU (1)	Name of the Ward (2)	Connected by road (Yes / No) (3)	Type of road (4)
K.Mangnam	Mangder	No	-
	Lower Mangnam	No	-
	Upper Mangnam	Yes	SPWD
	Upper Karchi	No	-
	Lower Karchi	No	-
D.Narkhola	Narkhola	Yes	SPWD
	Pokhri	Yes	SPWD
	Rungdung	No	-
	Upper Dhupidara	Yes	SPWD
	Yangtam	Yes	SPWD
	Lower Dhupidara	No	-
K.Labdang	Upper Labdang	Yes	SPWD
	Middle Labdang	Yes	SPWD
	Lower labdang	Yes	SPWD
	Kongri-Naku	Yes	SPWD
	Kongri-Maneydara	Yes	SPWD
Tashiding	Ganggep(Ngadak Gumpa)	Yes	SPWD
	Mangthyang	Yes	PMGSY
	Upper Lasso	Yes	SPWD
	Lower Lasso	Yes	SPWD
	Tashiding (Gumpa)	Yes	SPWD
	Nerdang	Yes	SPWD
A.Chongrang	Upper Chongrang	Yes	PMGSY
	Middle Chongrang	Yes	SPWD
	Lower Chongrang	Yes	PMGSY
	Nesa	Yes	PMGSY
	Arithang	Yes	SPWD
Gerethang	Upper Gerethang	Yes	SPWD
	Tamatam	Yes	PMGSY
	Lower Gerethang	No	-
	Upper Labing (Gumpa)	Yes	PMGSY
	Bhirkuna Lingyang	Yes	PMGSY/SPWD
	Lower Labing	Yes	PMGSY
Yuksam	Tsokha-Kyongtek	Yes	PMGSY
	Yuksom-Ramgaythang	Yes	SPWD
	Ting-Ting	Yes	SPWD
	Mangsabung	Yes	SPWD
	T.Gufadara	Yes	SPWD
	Dubdi (Sangha Gumpa)	Yes	PMGSY
T.Khachodpalri	Thingle-I	Yes	SPWD
	Thingle-II	No	-
	Thingle-III	Yes	SPWD
	Khachodpalri (Gumpa)	Yes	SPWD
	Tsozo	Yes	SPWD

(1)	(2)	(3)	(4)
Melli	Upper Melli (Gumpa)	No	-
	Lower Melli	Yes	SPWD
	Upper Melliaching	Yes	SPWD
	Lower Meliaching	Yes	SPWD
	Singlitam	Yes	SPWD
	Tingbrum	Yes	PMGSY
	Topung	Yes	PMGSY

Source: VDAP, 2011.
Note: (SPWD - Sikkim Public Works Department, PMGSY - Pradhan Mantri Gram Sadak Yojana).

APPENDIX - V

Footpath and Bridges

Name of the GPU	Total Number of Foot Path	Wooden Bridge	Steel Bridge	RCC Bridge	Total Number of Bridge
K. Mangnam	7	1	2	0	3
D. Narkhola	7	3	3	1	7
K. Labdang	11	4	0	0	4
Tashiding	9	3	1	1	5
A. Chongrang	6	0	0	4	4
Gerethang	10	3	1	2	6
Yuksam	12	1	3	2	6
T. Khachodpalri	6	0	1	1	1
Melli	7	0	0	1	1
Total	75	15	11	12	37

Source: VDAP, 2011 and Field survey, 2011-2012.

APPENDIX - W

Block-wise Drinking Water Shortage Household (in percent)

Development Block (1)	Number of Water Shortage Household (2)	Percent (3)
Rhenock	1908	96.00
Khamdong	1749	76.00
Namthang	2086	76.00
Rakdong Tintek	2234	73.00
Jorethang	777	73.00
Wok	672	72.00
Soreng	4402	70.00
Kaluk	1924	64.00
Namchi	1908	63.00
Melli	1839	61.00
Duga	2261	60.00
Temi	1793	60.00
Pakyong	2257	58.00
Yangang	1764	58.00
Geyzing	2429	58.00
Gangtok	2282	52.00
Daramdin	1482	49.00

(1)	(2)	(3)
Rhegu	1553	48.00
Rabong	1702	47.00
Yuksam	1299	41.00
Dentam	1638	39.00
Tshungthang	449	38.00
Dzongu	518	37.00
Kabi	601	32.00
Ranka	773	31.00
Mangan	622	20.00
Total	42,922	56.00

Source: State Rural Household Census, 2009.

APPENDIX - X

Drinking Water source

Name of the GPU	RMDD	Local Source
K. Mangnam	66.70	33.30
D. Narkhola	65.90	34.10
K. Labdang	72.50	27.50
Tashiding	79.80	20.20
A. Chongrang	78.60	21.40
Gerethang	62.80	37.20
Yuksam	76.00	24.00
T. Khachodpalri	83.20	16.80
Melli	79.70	20.30

Source: Field survey, 2010-2011.

APPENDIX - Y

Power Installed Capacities (in kW)

Power House	Installed Capacity at the end of the year (in kW)
Lower Lagyap (H)	12,000
Upper Rongnichu (H)	8,000
DPH Gangtok (H)	4,000
Mayongchu (H)	4,000
Rabomchu (H)	3,000
Rongnichu-II (H)	2,500
Jali Power House (H)	2,100
Kalez K.H.E.P (H)	2,000
DPH Ranipool (H)	1,000
Rimbi-II (H)	1,000
Rimbi- I (H)	600
Diesel (D)	500
Lachung (H)	200
Rothak (H)	200
Chaten (Lachen) (H)	100

Note: H: hydel; D: diesel
Source: Economic Survey, 2006-07.

APPENDIX - Z

Infrastructure score

Name of the GPU	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	Infrastructure score	Categories
K. Mangnam	-0.90	0.52	0.58	-1.08	-0.53	-1.11	-0.64	-1.16	-0.85	-0.99	-1.04	-0.65	Low
D. Narkhola	-1.25	-1.75	0.58	-0.92	-0.73	-0.67	0.41	-0.87	-0.85	-1.10	0.64	-0.59	Low
K. Labdang	-0.90	0.52	0.58	-0.92	-0.53	-0.67	0.67	-0.97	-0.85	-0.19	0.74	-0.23	Low
Tashiding	1.92	0.52	0.58	-0.11	0.66	0.51	0.41	2.01	1.07	0.81	1.09	0.86	High
A. Chongrang	0.16	-1.75	-2.32	-0.41	-0.53	-0.23	-0.64	0.22	-0.84	0.65	-1.37	-0.64	Low
Gerethang	-0.55	0.52	-0.72	-0.24	-0.33	-0.52	0.93	-0.47	1.07	-1.53	-1.44	-0.29	Low
Yuksam	0.51	0.52	0.58	0.78	2.45	1.98	1.46	0.22	1.07	0.29	0.41	0.93	High
T. Khachodpalri	0.51	0.52	-0.43	1.46	-0.33	1.09	-1.43	0.72	1.07	1.28	0.74	0.47	High
Melli	0.51	0.52	0.58	1.46	-0.13	-0.37	-1.16	0.32	-0.84	0.79	0.23	0.17	Moderate

Source: Calculated by author

Note: X_1 means Educational Institution, X_2 - Health Care Centre, X_3 - Household with Toilet, X_4 - Pucca Household, X_5 - Hotel & Guest House, X_6 - Passenger Vehicles, X_7 - Bridges & Foot Path, X_8 - Number of Shops, X_9 - Police Out Post, X_{10} - Household with Drinking water, X_{11} - Electrified Household.

APPENDIX - AA

Level of Development based on Composite Score

GPU Number (1)	Name of the GPU (2)	X_1 (3)	X_2 (4)	X_3 (5)	X_4 (6)	X_5 (7)	X_6 (8)	Z Score (9)	Composite Rank (10)	Level of Development (11)
1	Ship Gyer	-1.44	0.74	1.97	0.66	-1.38	-3.50	-0.49	148	Low
2	Chungthang	-1.31	0.30	3.07	-0.83	2.69	0.47	0.65	5	High
3	Lachung	-1.29	-0.55	3.80	-0.85	-0.86	1.85	0.04	78	Moderate
4	Lachen	-1.37	-0.72	3.37	0.26	1.35	1.16	0.48	19	High
5	Lum-Gor -Sangtok	-1.31	-0.28	1.00	-1.96	-0.52	-0.13	-0.51	149	Low
6	Sakyong Pentong	-1.47	-0.03	-0.65	0.77	-0.93	-0.22	-0.39	137	Low
7	Tingvong	-1.35	0.25	0.15	0.83	-0.91	-1.08	-0.17	107	Low
8	Lingthem Lingdem	-1.30	0.67	0.74	1.00	-0.34	0.04	0.13	64	Moderate
9	Posingdang Safo	-1.36	0.64	-1.00	0.69	-0.41	0.56	-0.24	114	Low
10	Barfok Lingdong	-1.20	0.11	0.2	1.06	-0.52	0.64	-0.06	92	Low
11	Hee Gyathang	-1.21	0.12	-0.53	0.87	-0.42	1.34	-0.19	110	Low
12	Men Rongong	-1.09	-0.33	-0.13	1.18	2.01	-1.17	0.27	40	High
13	Lingdok	-0.34	0.39	2.65	-0.21	-0.24	0.47	0.37	33	High
14	Rongong Tumlong	-0.87	0.12	0.17	-0.13	0.97	1.16	0.04	77	Moderate
15	Phensang	-0.90	0.32	0.25	-0.01	0.78	0.04	0.07	73	Moderate
16	Kabi Tingda	-0.89	-0.31	0.45	0.60	-0.01	0.90	-0.03	88	Low
17	Navey Shotak	-0.62	0.35	-1.05	-1.12	3.72	1.42	0.21	54	High
18	Ringmin Nampatam	0.03	0.08	0.72	-0.08	0.95	1.85	0.28	39	High
19	Sentam	-0.50	-0.07	0.02	0.18	1.64	1.42	0.21	56	High
20	Toong Naga	-1.01	-0.13	-0.31	0.22	-0.24	0.9	-0.25	115	Low
21	Tingchim Mangshila	-0.41	-0.20	0.06	1.22	0.17	-0.65	0.14	61	Moderate
22	Namok Sheyam	-0.81	-0.02	0.87	1.21	0.49	-1.00	0.29	38	High
23	Ramthang Tangyek	-1.08	0.03	0.33	1.15	-1.42	-0.50	-0.17	106	Low
24	Upper Fambong	1.50	0.25	-0.82	-1.26	0.90	0.21	0.10	67	Moderate
25	Lungchok Salyangdang	0.84	-0.22	-0.25	-0.50	-1.14	-1.86	-0.21	112	Low
26	Siktam Tikpur	-0.25	0.46	-0.55	-1.03	-0.53	-0.39	-0.32	129	Low
27	Lower Fambong	2.20	0.65	-1.38	-0.90	-0.46	0.47	0.02	83	Moderate
28	Burikhop	-0.81	-1.88	0.96	-0.83	-0.88	-1.00	-0.57	151	Low
29	Okherey	0.13	-0.81	-0.76	-0.79	-1.32	0.56	-0.59	152	Low
30	Ribdi Bhareng	0.39	0.02	-1.34	2.25	-1.50	0.56	-0.03	89	Low

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
31	Barnyak Barthang	0.36	0.00	-0.73	-1.16	-0.63	0.21	-0.36	134	Low
32	Maneybung Sopakha	-0.17	1.01	-0.91	-0.89	-0.72	-0.39	-0.28	125	Low
33	Sangkhu Radukhandu	0.04	-0.03	0.01	-0.90	-0.67	-0.22	-0.26	118	Low
34	Bongten Sapong	-0.17	-0.04	-0.07	-0.93	-0.44	-0.31	-0.27	121	Low
35	Karmatar Gyaten	-0.64	1.35	-0.44	-1.13	-1.14	-0.31	-0.33	131	Low
36	Dentam	1.36	-0.85	-0.86	-1.23	0.01	0.04	-0.26	120	Low
37	Hee	0.43	-0.57	-1.18	-1.01	-0.37	-0.22	-0.45	143	Low
38	Pecherek Martam	0.13	0.29	-1.23	-0.97	-1.11	-0.39	-0.48	145	Low
39	Darap	-0.56	-0.31	-0.72	-1.26	0.44	0.21	-0.40	140	Low
40	Yangten	-0.36	0.06	-0.57	-1.40	-0.06	0.04	-0.39	138	Low
41	Singyang Chumbung	-0.47	-1.16	-0.32	-1.10	1.63	0.38	-0.24	113	Low
42	Lingchom Tikjya	0.14	-0.08	0.17	-1.29	-1.01	-0.39	-0.35	133	Low
43	Yangthang	0.79	-1.08	-0.93	-1.12	-0.06	-0.13	-0.40	139	Low
44	Sardung Lungzik	0.13	-2.20	-1.19	-0.67	-0.43	0.13	-0.72	158	Low
45	Geyzing Omgchung	0.59	-0.21	1.31	-1.46	1.41	0.73	0.27	41	High
46	Samdong	-0.27	0.57	0.12	0.02	-0.75	0.04	-0.05	91	Low
47	Tadong Rinchenpong	0.45	-0.61	-1.36	-0.79	0.63	0.30	-0.28	126	Low
48	Takothang	-0.04	-1.48	-1.2	-1.07	-0.30	-0.22	-0.68	157	Low
49	Deythang	-0.39	0.73	0.12	-1.01	-0.98	-1.52	-0.25	117	Low
50	Sangadorji	-0.49	-1.31	-1.00	-1.09	-0.86	-0.39	-0.79	159	Low
51	Chingthang	-0.13	0.09	-0.88	-0.83	-0.69	-0.83	-0.41	141	Low
52	Khaniserbong Suntoley	-0.41	-1.52	-0.66	-0.32	-0.91	-0.83	-0.64	156	Low
53	Timburbong	1.80	1.11	-1.78	-1.02	-0.66	0.73	-0.09	96	Low
54	Malbasey	0.43	1.13	-0.68	-1.59	-0.24	0.21	-0.16	105	Low
55	Soreng	1.05	0.61	-0.43	-1.13	1.82	1.25	0.32	34	High
56	Tharpu	5.09	2.99	-1.72	-1.01	-0.06	0.82	0.88	2	High
57	Chumbong	-0.15	0.15	0.44	-1.15	-0.77	-0.65	-0.25	116	Low
58	Zoom	0.45	0.35	-0.83	-1.04	0.03	0.64	-0.17	108	Low
59	Chakung	-0.21	-1.80	-1.38	-0.93	-0.43	0.04	-0.79	160	Low
60	Chota Samdong Arubotey	-0.70	-0.47	-0.34	-1.12	-1.06	0.04	-0.61	154	Low
61	Samsing Gelling	0.37	0.53	-0.19	-1.21	-0.41	0.21	-0.15	103	Low
62	Mabong Segeng	-0.21	-1.41	-0.51	-0.91	-0.55	-0.31	-0.60	153	Low
63	Suldung Kamling	-0.13	0.51	-1.34	-0.96	-0.15	0.64	-0.34	132	Low
64	Dodak	3.23	2.99	-2.1	-1.01	-0.04	0.30	0.51	14	High
65	Mandogaon Berbotey	1.05	0.24	-1.71	-0.22	-0.08	0.30	-0.12	100	Low

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
66	Singling	0.32	-0.41	-1.21	-0.59	0.95	0.47	-0.16	104	Low
67	Rumbuk	-0.53	1.03	-0.25	-1.31	-0.84	0.13	-0.32	128	Low
68	Dhupidara-Narkhola	-1.15	0.30	0.42	-1.16	-1.34	-2.64	-0.49	146	Low
69	Kongri Labdang	-1.15	-1.03	-0.55	-0.75	-1.34	-1.17	-0.80	161	Low
70	Thingle Khachodpalri	-0.67	-0.71	-0.37	-0.88	-1.09	0.21	-0.62	155	Low
71	Yuksam	-0.62	-0.08	-0.53	-0.90	0.92	-0.05	-0.20	111	Low
72	Melli	-0.76	-0.90	0.44	-0.98	-0.38	-0.83	-0.43	142	Low
73	Tashiding	-0.76	1.65	0.00	-0.82	-0.21	-0.31	-0.02	87	Low
74	Karzi Mangnam	-1.39	-5.13	-1.78	-1.13	-1.52	-4.63	-1.83	163	Low
75	Arithang Chongrang	-0.38	-2.48	-0.77	-0.71	-0.66	-0.13	-0.83	162	Low
76	Gerethang	-0.19	-0.51	-0.23	-0.92	-0.42	-0.74	-0.38	136	Low
77	Sadam Suntoley	-0.06	1.68	0.98	-1.01	-0.86	-1.17	0.12	65	Moderate
78	Mellidara Paiyong	2.54	0.94	-0.19	1.01	1.60	1.25	0.99	1	High
79	Turuk Ramabung	-0.02	-1.43	-0.26	0.56	-0.52	-0.91	-0.28	123	Low
80	Lungchok Kamarey	0.05	-1.29	-0.19	-0.52	-1.17	-1.69	-0.52	150	Low
81	Sumbuk Kartikey	0.43	0.34	0.65	1.07	0.05	0.47	0.42	23	High
82	Mikhola Kitam	0.00	1.35	0.84	0.13	0.65	-0.05	0.49	18	High
83	Assangthang	0.28	-0.25	0.29	1.18	2.41	0.30	0.65	6	High
84	Rong-Bul	-0.73	-0.70	0.23	1.03	-0.24	-0.31	-0.07	95	Low
85	Sorok-Shyampani	0.22	0.64	-1.01	1.83	0.80	-0.22	0.41	25	High
86	Maniram Singithang	-0.6	1.47	1.17	0.04	-0.83	-0.48	0.21	57	High
87	Damthang	-0.54	0.75	0.26	1.02	-0.88	0.90	0.10	66	Moderate
88	Rateypani	-0.35	0.30	0.18	1.06	-1.09	-0.83	0.02	84	Moderate
89	Tangzi Bikmat	-0.46	-0.55	-0.10	1.26	-0.03	0.04	0.02	82	Moderate
90	Nagi Pamphok	-0.14	0.59	-0.95	0.28	0.16	-0.05	-0.01	86	Low
91	Maneydara	0.82	-0.78	-1.09	1.49	1.02	0.99	0.24	46	High
92	Tingrithang	-0.77	-1.83	-0.11	0.91	-1.04	-1.08	-0.47	144	Low
93	Tinik Chisopani	0.58	-1.15	0.22	0.66	-0.70	-1.08	-0.07	93	Low
94	Salghari	-0.01	-0.24	2.57	0.78	-0.65	0.30	0.41	27	High
95	Poklok Denchung	0.09	1.38	0.99	0.57	-0.77	-0.22	0.38	31	High
96	Mamley Kamrang	-0.27	1.45	0.54	1.56	-0.29	0.47	0.50	16	High
97	Turung Mamring	0.21	-1.58	-1.24	1.30	0.23	0.73	-0.18	109	Low
98	Ravang Sangmoo	-0.48	-0.86	0.50	1.29	-0.10	0.13	0.06	76	Moderate
99	Legship	0.99	-1.92	-0.06	0.89	1.58	-0.22	0.25	45	High
100	Borong Phamthang	-0.90	0.03	0.93	-0.92	-0.81	-0.05	-0.28	124	Low

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
101	Ralong Namlung	-0.96	-1.20	0.76	1.45	1.29	-1.43	0.22	53	High
102	Kewzing Bakhim	-0.36	1.05	0.85	1.02	1.37	0.21	0.66	4	High
103	Barfung Zarung	-0.42	-0.23	1.67	1.30	0.03	-2.29	0.39	28	High
104	Tiniktam Rayong	-0.25	0.85	0.37	1.58	0.89	-1.17	0.57	12	High
105	Lamting Tingmo	-0.64	-0.10	0.99	-1.05	-1.16	-1.43	-0.33	130	Low
106	Sanganath	-1.02	-2.04	0.15	2.03	1.24	-2.04	0.06	75	Moderate
107	Wak Omchu	-0.58	0.83	-0.10	1.31	-0.96	0.30	0.08	70	Moderate
108	Ben Namphrik	-0.61	0.57	0.83	-0.79	0.44	0.13	0.07	72	Moderate
109	Namphing	1.01	0.64	-0.15	0.57	0.20	0.13	0.38	30	High
110	Chuba Phong	0.15	1.99	-0.42	0.02	-0.92	0.99	0.14	62	Moderate
111	Barnyak Tokal	-0.26	-1.27	0.40	1.37	-0.06	0.64	0.03	79	Moderate
112	Tarku	0.85	-0.06	-0.46	0.36	-0.24	0.64	0.08	71	Moderate
113	Temi	3.25	-0.35	-0.60	0.35	0.32	1.51	0.50	17	High
114	Chuba	0.88	0.87	-0.41	1.57	-0.44	0.13	0.41	26	High
115	Rameng Nizrameng	-0.85	-1.79	-0.32	1.63	-0.22	-1.69	-0.26	119	Low
116	Yangang Rangang	-0.06	-0.01	0.33	0.72	-0.61	0.21	0.06	74	Moderate
117	Sripatam Gagyong	0.41	1.19	0.41	1.51	0.02	-0.65	0.59	11	High
118	Niya-Mangzing	0.31	1.66	-0.07	1.46	-0.85	-0.22	0.42	24	High
119	Lingi	-0.67	-1.52	-0.63	0.85	-0.96	-0.39	-0.49	147	Low
120	Paiyong	-0.59	-0.84	-0.27	1.27	-1.32	-0.22	-0.29	127	Low
121	Lingmo-Kolthang	-0.39	0.52	0.33	1.41	-0.75	0.13	0.19	59	Moderate
122	Central Pendam	1.81	0.45	-0.99	-0.33	0.62	0.90	0.26	43	High
123	East Pendam	-0.07	-0.53	-0.13	1.03	-0.14	0.13	0.03	80	Moderate
124	West Pendam	2.53	0.34	-0.53	-1.11	1.55	1.34	0.46	20	High
125	Sumin Lingzey	0.16	-0.30	-0.93	0.66	-0.30	1.25	-0.12	99	Low
126	Namli	0.08	0.12	0.44	-0.32	0.86	0.38	0.20	58	Moderate
127	Samlik Marchak	0.38	0.39	-0.11	-0.49	1.26	0.73	0.24	47	High
128	Tathangchen Syari	2.38	0.60	-0.69	-1.52	2.81	1.85	0.60	10	High
129	Naitam Nandok	1.11	0.34	-0.56	-0.85	0.50	0.99	0.09	69	Moderate
130	Assam Lingzey	0.10	0.40	-0.50	-0.11	-0.29	0.38	-0.07	94	Low
131	Gnathang	2.05	-0.11	3.89	-2.04	-1.19	2.20	0.44	22	High
132	Byeng-Phegyong	-0.02	-0.01	-0.38	0.14	0.81	1.08	0.09	68	Moderate
133	Simik Lingzey	-0.86	-0.05	-0.04	0.71	0.03	-0.39	-0.03	90	Low
134	Martam Nazitam	-0.05	-0.14	-0.33	0.24	-0.29	0.64	-0.09	97	Low
135	Sirwani Tshalumthang	0.96	0.12	-0.28	-1.21	1.83	0.56	0.24	48	High

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
136	Khamdong	0.19	0.07	0.41	0.17	2.88	0.99	0.62	7	High
137	Singbel	0.58	-0.27	-0.99	-0.26	-0.70	0.38	-0.28	122	Low
138	Thekabong Parkha	0.42	0.22	-0.62	1.10	0.27	0.64	0.23	51	High
139	Kartok Namcheybong	-0.45	0.46	2.23	-0.27	1.68	-0.05	0.61	9	High
140	Amba	-0.15	-0.04	1.08	1.25	-0.86	-0.13	0.21	55	High
141	Changey Senti	1.31	0.33	0.35	0.26	0.89	1.68	0.52	13	High
142	Aho Yangtam	1.66	0.58	-0.39	-0.42	0.34	1.08	0.30	36	High
143	Latuk-Chuchenpheri	-1.07	-0.19	0.15	1.45	-1.04	-0.05	-0.12	98	Low
144	Riwa Machong	-0.22	0.18	0.10	0.93	0.12	-0.22	0.19	60	Moderate
145	Pacheykhani	0.42	0.13	0.55	0.06	-0.37	0.21	0.13	63	Moderate
146	Rakdong Tintek	-0.27	0.04	1.12	1.01	0.44	0.64	0.39	29	High
147	Samdong Kambel	0.24	1.04	1.07	0.17	1.18	0.82	0.62	8	High
148	Tumin	-0.22	-0.51	-0.81	-0.36	-0.34	-0.39	-0.37	135	Low
149	Ranka	0.87	0.24	-0.12	-0.49	1.00	0.99	0.25	44	High
150	Rey Mendu	-0.33	0.44	0.23	-0.26	0.01	0.13	0.02	85	Moderate
151	Rawtey Rumtek	1.13	2.65	0.24	-0.93	1.95	1.77	0.84	3	High
152	Luing Parbing	0.44	0.23	-0.22	0.87	0.09	1.16	0.23	50	High
153	Lingtam Phadamchen	-0.84	-0.01	1.01	1.08	1.75	-0.65	0.50	15	High
154	Chujachen	-0.03	0.17	1.61	0.25	0.69	-0.83	0.45	21	High
155	Rolep Lamaten	-1.13	0.26	0.33	0.34	1.55	-2.81	0.23	52	High
156	Premlakha Subaneydara	-1.01	-0.27	-0.38	0.61	0.17	-0.48	-0.15	102	Low
157	Dolepchen	0.57	0.78	0.87	-0.12	-0.34	0.04	0.29	37	High
158	Regoh	-1.19	-0.33	-0.05	1.44	-0.70	-1.43	-0.14	101	Low
159	Aritar	0.57	0.66	0.10	-0.10	0.55	-1.86	0.30	35	High
160	Linkey Tareythang	0.01	0.29	0.92	1.02	-0.63	0.04	0.27	42	High
161	Taza	-0.32	-0.10	0.38	0.82	-0.66	0.04	0.02	81	Moderate
162	Sudunglakha	0.06	0.43	0.78	0.66	-0.52	-0.83	0.23	49	High
163	Rhenock Tarpin	2.06	0.51	0.25	-1.12	0.57	0.90	0.38	32	High

Source: Calculated by author

Note: X_1 - Density of population/ha, X_2 - Total literacy (%), X_3 - Working population (%), X_4 - Percentage of primary worker to total worker, X_5 - Pucca household (%), X_6 - APL household (%).

APPENDIX - BB

Levels of Development based on Composite Score, Yuksam Development Block

GPU No.	Name of the GPU	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	Z Score	Composite Rank	Level of Development
1	K. Mangnam	-1.56	0.61	-0.89	-0.86	-1.46	1.47	-0.43	-0.04	-1.21	-0.66	-0.90	0.52	0.58	-1.08	-0.53	-1.11	-0.64	-1.16	-0.85	-0.99	-1.04	-0.58	9	Low
2	D. Narkhola	-0.94	1.65	-0.99	-0.86	0.24	-0.23	-0.43	-0.97	-0.31	-0.66	-1.25	-1.75	0.58	-0.92	-0.73	-0.67	0.41	-0.87	-0.85	-1.10	0.64	-0.47	8	Low
3	K. Labdang	-0.94	-0.53	-1.15	0.81	0.66	-0.66	-0.43	-1.32	0.82	-0.66	-0.90	0.52	0.58	-0.92	-0.53	-0.67	0.67	-0.97	-0.85	-0.19	0.74	-0.28	7	Low
4	Tashiding	0.06	-0.47	0.94	0.98	1.51	-1.51	-0.43	-1.12	1.41	-0.66	1.92	0.52	0.58	-0.11	0.66	0.51	0.41	2.01	1.07	0.81	1.09	0.48	2	High
5	A. Chongrang	1.06	-0.68	-0.57	0.31	-0.18	0.19	0.46	0.26	1.24	1.34	0.16	-1.75	-2.32	-0.41	-0.53	-0.23	-0.64	0.22	-0.84	0.65	-1.37	-0.17	6	Low
6	Gerethang	1.56	-1.25	0.72	-0.78	-1.04	1.04	2.55	0.88	0.03	1.34	-0.55	0.52	-0.72	-0.24	-0.33	-0.52	0.93	-0.47	1.07	-1.53	-1.44	0.08	5	Moderate
7	Yuksam	0.44	-0.65	1.61	-1.20	0.66	-0.66	-0.43	0.20	-0.35	1.34	0.51	0.52	0.58	0.78	2.45	1.98	1.46	0.22	1.07	0.29	0.41	0.53	1	High
8	T. Khachodpalri	0.31	-0.05	0.67	1.65	-1.04	1.04	-0.43	1.74	-1.44	-0.66	0.51	0.52	-0.43	1.46	-0.33	1.09	-1.43	0.72	1.07	1.28	0.74	0.33	3	High
9	Melli	0.06	1.38	-0.32	-0.02	0.66	-0.66	-0.43	0.38	-0.19	-0.66	0.51	0.52	0.58	1.46	-0.13	-0.37	-1.16	0.32	-0.84	0.79	0.23	0.10	4	Moderate

Source: Calculated by author

Indicators	**Description**
X_1	Density of population/ha
X_2	Sex ratio/1000 male
X_3	Total literacy (%)
X_4	Female literacy (%)
X_5	Working population (%)
X_6	Dependency ratio (%)
X_7	Irrigated area (%)
X_8	Percentage of primary worker to total worker
X_9	Per Capita Income (Rs)
X_{10}	Number of banking facilities
X_{11}	Number of educational institution

Indicators	**Description**
X_{12}	Number of health care unit
X_{13}	Percentage of household with toilet
X_{14}	Pucca household (%)
X_{15}	Number of hotels and guest house
X_{16}	Number of passenger vehicles (taxi)
X_{17}	Number of bridges and footpath
X_{18}	Number of shops
X_{19}	Number of police outpost
X_{20}	Percentage of household with drinking water
X_{21}	Percentage of household with electricity

APPENDIX - CC

Percentage Change in Level of Literates

Name of the GPU	Pry*	Pry**	(% C)	Sec*	Sec**	(% C)	S.Sec*	S.Sec**	(% C)	Gr*	Gr**	(% C)	P.G & Other*	P.G & Other**	(% C)
K. Mangnam	46.70	38.70	8.00	8.10	16.30	-8.20	0.40	1.40	-1.00	0.20	0.70	-0.50	0.00	0.00	0.00
D. Narkhola	43.00	38.20	4.80	11.40	22.00	-10.60	0.40	1.20	-0.80	0.30	0.40	-0.10	0.00	0.00	0.00
K. Labdang	43.00	33.70	9.30	11.00	27.40	-16.40	0.40	2.40	-2.00	0.00	1.70	-1.70	0.00	0.00	0.00
Tashiding	37.50	29.20	8.30	19.30	25.50	-6.20	3.70	7.70	-4.00	1.70	4.40	-2.70	0.50	1.40	-0.90
A. Chongrang	36.90	33.80	3.10	16.50	26.10	-9.60	2.00	4.30	-2.30	1.00	3.00	-2.00	0.40	1.00	-0.60
Gerethang	42.00	37.90	4.10	16.80	22.50	-5.70	2.40	4.00	-1.60	0.50	2.80	-2.30	0.20	0.80	-0.60
Yuksam	42.60	31.50	11.10	18.00	27.10	-9.10	2.70	2.90	-0.20	1.80	1.90	-0.10	0.20	0.50	-0.30
T. Khachodpalri	40.20	36.00	4.20	17.60	20.70	-3.10	2.10	2.65	-0.55	1.10	1.70	-0.60	0.03	0.50	-0.47
Melli	40.10	26.90	13.20	14.80	29.00	-14.20	2.10	3.00	-0.90	0.70	1.20	-0.50	0.04	0.90	-0.86
Total	40.50	60.70	-20.20	16.40	25.00	-8.60	2.30	3.50	-1.20	1.00	2.20	-1.20	0.20	0.70	-0.50

Source: DESME, 2008 and Field Survey, 2010-2011.

Note: Pry - primary literates, Sec - secondary literates, S.Sec - senior secondary literates, Gr - graduate, P.G & Other - post graduate and other literates. (*) represent literates of 2005, (**) literates of 2011 & (%C) percentage change in level of literates.

APPENDIX - DD

Number of Benefited and Non Benefited Household

Name of the GPU	LBS	Biogas	LPG	V.P	C.P	Syntax	W. H.T	P.P	Terracing	NBH (%)
K.Mangnam	0	0	5	1	3	9	0	0	0	8.30
D.Narkhola	0	0	14	1	4	0	0	0	0	0.00
K.Labdang	1	0	15	0	3	1	1	0	0	1.90
Tashiding	3	1	51	52	43	22	2	0	0	7.30
A.Chongrang	2	2	25	29	17	6	1	0	0	7.00
Gerethang	7	0	20	3	9	2	1	1	0	7.00
Yuksam	5	0	40	40	60	1	0	1	0	7.30
T.Khachodpalri	0	0	18	17	2	0	0	0	0	4.20
Melli	0	0	43	1	11	3	0	0	1	6.50
Total	18	3	231	144	152	44	5	2	1	6.00

Source: Field Survey, 2010-2011.
Note: LBS - land bank scheme, V.P - vermin compose pit, C.P - compose pit, W.H.T - water harvesting tank, P.Pipe - poly pipe, NBH - non benefited household.

APPENDIX - EE

HOUSEHOLD SCHEDULE SOCIO-ECONOMIC SURVEY

Schedule No:
Date:

General Particulars

1. Name of the GPU/ Revenue block:

2. Village/Ward name:

3. District:

4. Distance from the district headquarters:

5. Name of head of the family:

i. Age:

ii. Sex:

iii. Tribe/ Caste/ OBC/ MBC:

iv. Religion:

v. Birth Place:

Population aspect

Sl. No.	Name of family member	Relation with family head	Age	Sex		Marital Status	Education Level	Occupation			
				M	F			Stu	Pry	Sec	Ter
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

Note: Marital Status: Below Marriageable Age (Male > 21 yrs & Female > 18 yrs-1, Married – 2, Unmarried – 3, Widow/ Widower – 4.
Educational Level: Child below 7 years – 1, Illiterate 2, Literate – 3, Primary – 4, Secondary 5, Higher Secondary – 6, Graduate – 7, Others- 8.

Economic aspect

i. The main occupation of the family:

ii. Occupation changed if any, within last 5 years:

Occupation	M (in number)	F (in number)
Person engaged in cultivation		
Person engaged in animal rearing		
Person engaged in small scale industry		
Person engaged in Govt. services		
Person engaged in other works		

(Others worker includes the person engaged as monk, prest and other social service)

House Type

a. Type of house - Kutcha / Semi- Pucca / Pucca	
b. Roof: Thatched / Tinned / RCC (reinforce, cement, concrete)	
c. Wall: Bamboo/ Wood / Earth plastered / Brick / Concrete (sand, cement, stone)	
d. Number of Rooms	
e. Whitewash: Present / Absent	
f. Provision of drinking water, (RMDD/Local source)	

Agricultural Scenario

1. Do you have any land (yes / no)

2. If yes acre: decimal:

3. Land use pattern

Landuse	Area (in Acre)
i. Total area:	
ii. Built up area:	
iii. Cultivated area:	
Irrigated (*Khet*)	
Unirrigated *(Sukha bari)*	
Culturable waste (*Banjo*)	
Cardamom (*Alainchibari*)	
Forest land	

4. Type of agriculture practiced (wet/dry cultivation):

5. Cropping pattern:

i. Name of the crops grown:

ii. Name of the cash crops:

iii. Name of the horticulture product

Fruits:

Vegetables:

6. Weather use irrigation water (yes/no):

7. Whether self sufficient in food product (yes/no):

8. Any Marketable surplus (yes/no):

9. Whether use own / hired bullock to plough:

10. Live stock possessed name and number

Livestock	Number
Cow/Bull	
Poultry	
Goat	
Sheep	
Pig	
Yak	

Income and Expenditure

Household Income

Sl. No	Income Source	Monthly (in Rs.)	Yearly (in Rs.)
1	Service		
2	Agriculture		
3	Trade and Business		
4	Pension		
5	Livestock		
6	Dairy product		
7	Horticulture		
8	Rent		
9	Private job		
10	Agriculture Labour *(Khetala)*		
11	Wage employment (MG-NREGA)		
12	Others		

Household Expenditure

Sl. No	Expenditure	Monthly (in Rs.)	Yearly (in Rs.)
1	Food		
2	Fuel		
3	Cloth		
4	Health		
5	Education		
6	Livestock		
7	Religious Performance		
8	Agricultural equipments		
9	Household equipments		
10	Others		

1. Monthly income / Yearly income:
2. Monthly expenditure / Yearly expenditure:

Household Credit

Credit Institutions	Total Amount	Reasons
Bank		
Relative		
SGHs		
Neighbour		
Shops		
Other		

Impact of Rural Development Schemes

Name and number of rural development scheme received by the household

Sl. No	Name of the Schemes	Received Year	Past Living Status	Present Living Status	Perceived Impact
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Past and Present Living Status: critical - 1, good - 2, kutcha house - 3, no sanitation facilities - 4, and joint family - 5.

Impact: critical - 1, better than past - 2, significant improvement - 3, as same - 4.

Problems of the Household

Sl. No	Problems	Causes	Solution
1	Electricity		
2	Drinking water		
3	Kutcha house		
4	Sanitation		
5	Expenditure is more than Income		
6	Multiple		
7	None		

Personal observation:

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