

**STUDY ON THE CHANGING PATTERN OF RURAL LIVELIHOOD
IN NAGALAND WITH SPECIAL REFERENCE TO
DIMAPUR, MOKOKCHUNG AND LONGLENG DISTRICTS**

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BY

TEMJENSANGLA PONGENER
REGISTRATION NUMBER 525/2013



**Department of Geography
School of Sciences
Nagaland University
Headquarters: Lumami- 798627
Nagaland**

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(TEMJENSANGLA PONGENER)



Department of Geography

School of Sciences

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Headquarters: Lumami, Dist: Zunheboto, (Nagaland), Pin Code-798 627

मुख्यालय: लुमामी, जुन्हेबोटो (नागालैण्ड), पिन कोड - 798627

CERTIFICATE

This is to certify that the thesis entitled "Study on the changing pattern of rural livelihood in Nagaland with special reference to Dimapur, Mokokchung and Longleng Districts" submitted to Nagaland University in partial fulfilment of the requirements of the degree of Doctor of Philosophy (Ph.D.) in the Department of Geography, embodies the original research work carried out by Smt. Temjensangla Pongener, Registration Number 525/2013, under my supervision and guidance.

Further, I certify that no part of this thesis has been submitted anywhere for any other research degree. The assistance and help received during the course of study have been duly acknowledged.

Place : Lumami

(Prof. SANGYU YADEN)

Date: 23/07/19



Department of Geography

School of Sciences

(A Central University established by an Act of Parliament No.35 of 1989)

(संसद द्वारा पारित अधिनियम 1989, क्रमांक 35 के अंतर्गत स्थापित केंद्रीय विश्वविद्यालय)


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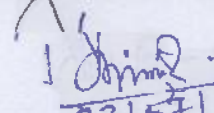
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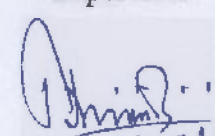
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This is been submitted to Nagaland university for the award of the degree of Doctor of Philosophy in Geography.


23/07/2019
(TEMJE NSANGLA PONGENER)


23/07/19
(Prof. SANGYU YADEN)

Supervisor


23/07/19
(Prof. SANGYU YADEN)

Head of Department

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ABBREVIATIONS

AAY	: Antyodaya Anna Yojana
AICRIP	: All India Coordinated Rice Improvement Programme
APMC	: Agricultural Produce Marketing Committees
BRGF	: Backward Region Grand Fund
BPL	: Below Poverty Line
CEO	: Chief Executive Officer
CGI	: Corrugated Galvanized Iron
CMCF	: Chief Minister's Corpus Fund
DAB	: Disputed Area Belt
DDHDR	: Dimapur District Human Development Report
DFID	: Department for International Development
DHDR	: District Human Development Report
DPD	: District Planning and Development Boards
DRDA	: District Rural Development Agency
DWCRA	: Development of Women and Children in Rural Areas
FDA	: Forest Development Agency
FGD	: Focus Group Discussions
FPS	: Fair Price Shop

GDP	: Gross domestic product
GIA	: Grant-in –aid to VDBs
HH	: Household
HMNEH	: Horticulture Mission for North East and Himalayan States
HTM	: Horticulture Technology Mission
IAY	: Indira Awaas Yojana
ICAR	: Indian Council of Agricultural Research
ICDS	: Integrated Child Development Service Scheme
ICRAF	: International Centre for Research in Agro forestry
ICRISAT	: The International Crops Research Institute for the Semi-Arid Tropics
IDS	: Institute of Development Studies
IRP	: Indian Reserve Police
ITDP	: Integrated Tribal Development Project
IWMP	: Integrated Watershed Management Programme
MCG	: Matching Cash Grant
MDHDR	: Mokokchung District Human Development Report
MGNREGS	: Mahatma Gandhi National Rural Employment Guarantee Act
MIDH	: Mission for Integrated Development of Horticulture
NABARD	: National Bank for Agriculture and Rural Development
NAP	: Nagaland Armed Police

NEFA	: North-East Frontier Agency
NEPED	: Nagaland Empowerment of People through Economic Development
NHTA	: Naga Hills-Tuensang Area
NOAPS	: National Old Age Pension Scheme
NREGS	: National Rural Employment Guarantee Scheme
NTFP	: Non-Timber Forest Produce
NUM	: National RURBAN Mission
O&M	: Operation and Maintenance
PBCA	: Phom Baptist Christian Association
PDS	: Public Distribution System
PHED	: Public Health & Engineering Department
PMGSY	: Pradhan Mantri Gram Sadak Yojana
PMF	: Promotion of Micro Financing
PRA	: Participatory Rural Appraisal
PWD	: Public Works Department
RCC	: Reinforced Cement Concrete
R.D	: Rural Development
RSVY	: Rastriya Sama Vikas Yojana
RBH	: Rural Business Hubs
SARS	: State Agriculture Research Station

SBI	: Spices Board of India,
SBM	: Swachh Bharat Mission.
SGRY	: Sampoorna Grameen Rozgar Yojana
SGSY	: Swarnajayanti Gram Swarozgar Yojana
SHGs	: Self Help Groups
SKO	: Superior Kerosene Oil
SLNA	: State Level Nodal Agency
TPDS	: Targeted Public Distribution System
TPS	: True potato seed
URF	: Urban-Rural Fringe
VC	: Village Council
VCC	: Village Council Chairman
VDB	: Village Development Board
WATSAN	: Water and Sanitation

CHAPTER 1

Introduction

1.1. General Background

Livelihood is the dynamic term with respect to time and place, its meaning varies from place to place and depend upon availability of resource in particular geographical area, people, culture and practice. Various people have defined livelihood differently. Chambers and Conway (1991) define livelihood as: “A livelihood comprises the abilities, assets (store, resources, claims and access) and activities required for means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities to the next generation; and contribute net benefits to other livelihoods at the local and global levels in the long and in the short term.”(IDS Discussion Paper No 296)

Moreover, it is important to note that “livelihoods rarely refer to a single activity. It includes complex, contextual, diverse and dynamic strategies developed by households to meet their needs” (Gaillard et al. 2009, 121).

Livelihood strategies are ranges of activities that people carry out in order to make a living. They are sustainable when the result of the processing of assets protects people against shocks and stresses (Haan & Ufford 2002). The ability to pursue different livelihood strategies is dependent on the basic material and social, tangible and intangible assets that people have in their possession. From economic point of view, such livelihood resources may be considered as the capital base from which different livelihoods strategies are created. Mentioned below are a simple set of definitions from where livelihood strategies are created.

1. Natural capital includes land, water, forest, mineral resources from which resource flows and services useful for livelihoods are derived, the main resources for a rural household.
2. Economic or financial capital – which is essential for the pursuit of any livelihood strategy, includes food stock or livestock, cash, credit/debt, savings, and other economic assets, including basic infrastructure and production equipment and technologies.

3. Human capital includes the skills, knowledge, ability to labor and good health and physical capability of a human being which is important for the successful pursuit of different livelihood strategies.
4. Social capital or the social resources includes the quality of relationship or networking among the people, social claims, affiliations, associations and social relation for e.g., in times of stress whether one has the relationship to get support and assistance from relatives and neighbors, upon which people draw when pursuing different livelihood strategies requiring coordinated actions.

The livelihood sources are changes in behaviour are known as coping strategies. If coping behaviour is constantly necessary, then the livelihood strategy becomes a survival strategy, leading to erosion of assets. The depletion of forest Changes in the external environment can affect assets, activities or outcomes. Poor households in risky environments adopt coping strategies to protect their livelihoods. These strategies include, intensification of existing income activities, diversification into new activities, migration, drawing upon social relationships and informal credit networks, drawing upon assets and adjusting consumption patterns etc.

In present days the issue of livelihood has become so crucial in the context of tribal communities. Since centuries the tribal communities who have been living in and around the forests, practicing hunting and gathering activities, fishing and shifting cultivation have faced difficulties in their survival. Traditionally they depend on forest resources for their livelihoods. Their dependence on forest was not merely for livelihood but for their cultural requirement. For these people, forests are an important source of livelihood and means of survival. Though, farming was there but it was not much prominent. Their economy was subsistence in nature. Moreover, a number of small tribal groups are completely dependent on the forest for their livelihood. Fernandes *et al* (1984) argue that the destruction of forests over the past few decades has deprived tribes of their livelihood, particularly source of food. It has also resulted in their impoverishment, indebtedness and in many cases land alienation and even bondage (Fernandes and Menon, 1987).

These studies basically describe the economy of tribes in a changed ecological context but fail to trace the path of transition. As characteristic of any tribal dominated state of the country, Nagaland is predominantly rural with only a few urban centres. Naga society was a close knit one with all the distinguishing characteristics of a tribal society. However, with the passage of time it is now fast undergoing changes though the changes, by no means, can be said as uniform among all the social groups inhabiting different parts of the state (Lanusosang, 1987).

1.2. Study area

The area to be undertaken for study comprises of the districts of Mokokchung, Dimapur and Longleng in the state of Nagaland.

Dimapur is the eighth district of Nagaland, with a population of 379,769 (Census 2011). The total area of Dimapur is 927 km² (Source-Deptt. of Land Record & Survey). The district is bounded by Kohima District on the east; Peren District on the south; the Karbi Anglong and the DAB (Disputed Area Belt) stretch of Golaghat District of Assam, in the west and the north (Statistical handbook of Nagaland, 2011).

Geographically the Mokokchung area is located between 94° 29' E to 94° 76' Longitude and 26° 20' N to 26° 77' N Latitude. It covers an area of 1,615 sq km and is bounded by Assam in its North, Wokha district to its west, Tuensang district to its east and Zunheboto district to its south. The total population is 1, 00,229 (Census 2011), the subsistence agriculture is the predominant economic activity in the district (Statistical handbook of Nagaland, 2011).

Longleng District is a strip of mountainous territory with a total area of 1066.80 sq k.m. According to 2011 census, the total population of the district is 50,593. Longleng district have one state and 3 district boundaries, on the East it is bounded by Tuensang and Mon district of Nagaland, Mokokchung on the west, on the South it shares boundary with Tuensang and Mokokchung and on North it has Nagaland's Inter-State boundary with Assam (Statistical handbook of Nagaland, 2011).

1.3. Statement of the problem

The complex and symbiotic relationship between man and his environment result in the diversification of livelihood especially among the rural communities. Land is the most important assets of the Nagas, about 92% of the land is in the hands of the community (NEPED, 2006). Their unique lifestyle arises out of their intimate relations with their land and utilisation of particular resources in their area which dictates their activities. Given the subsistence form of economy, the relationship between land and man has never been exploitative rather one of respect thereby conserving and maintaining the biodiversity of the ecosystem. However growing population pressure on land and gradual change in climate has necessitated change in the traditional economy particularly in agriculture to ensure food security. In addition, the need to keep pace with the competitive global market has necessitated diversification of economic activities thus bringing change to their traditional pattern of livelihood. Transition from traditional lifestyle to modern and developmental induced activities have affected rural areas in various ways ultimately changing their lifestyle often resulting into undefined living pattern requiring keen research and analysis of the changing pattern in the state.

The in-depth study of the changing pattern of rural livelihood in Nagaland is a new initiative and attempt to research the emerging socio-economic process in the state leaving scope for thorough research into the environmental implications resulting out of the changing pattern of the rural livelihood.

1.4. Objective

Keeping in view of these facts the main inquiries / objectives are listed below:

1. To study the traditional pattern of livelihood of local communities.
2. To assess the changing nature and pattern of livelihood.
3. To investigate the factors leading to change in the rural livelihood pattern in Nagaland.
4. To propose management plans for environmental conservation and restoration of natural habitat.
5. To promote sustainable development of people living in rural areas.

1.5. Hypothesis

The study would tend to access the impacts of all factors involved in the changing pattern of rural livelihood in the study area. The proposed theme of study seeks to evaluate the following hypothesis:

1. In the contemporary days the rural people have received numbers of option for their livelihoods. The introduction of different schemes by the government has brought changes in the lifestyle.
2. The introductions of other development projects have widened their scope of livelihoods and thus reduced the rate of migration in the villages.
3. Emerging consumerism and weakening of traditional lifestyle in the Naga society is blurring the rural-urban divide.

1.6. Data Base

No study can be meaningful without having appropriate data. The present study requires detail information about the past and the existing pattern of rural livelihoods. The study is based on both the primary and secondary data.

Primary Data

The primary data is generated by the extensive and the intensive field studies based on questionnaires and the interaction with the people on the local and regional level.

Secondary Data

Secondary data is collected from published and unpublished records of various government departments and private agencies like Census Department Nagaland, Nagaland GIS and Remote Sensing Center, Department of Land Resources Government of Nagaland, Directorate of Economics and Statistics, Nagaland: Kohima, Department of Planning and Coordination, Government of Nagaland, Block Development Office Dimapur, Mokokchung and Longleng, etc. In addition, various historical texts are consulted to trace the evolution of the village through various historical periods. After collecting the data on various aspects of the need of the subject, various cartographic and statistical techniques are used to utilize and interpret the data properly.

1.6. Methodology

Methodology refers to a set of principles and processes by which the objectives are pursued. It is a technique which is followed to prove a hypothesis. The present study is chiefly based on primary source of information which is supplemented by Secondary information. First-hand Knowledge is obtained through Secondary Sources in the form of monographs, generals, research publications, other historical books etc.

The main objective of this study was to understand the livelihood status, patterns and strategies of rural households, and how these are changing over time. In order to facilitate their active and meaningful participation, the research tools were simple and was designed based on simplified framework. The method consists of the following steps: collecting of secondary data and interviews, Village level assessment which involved an initial overall group discussion and Participatory Rural Appraisal (PRA) exercises to clarify social stratification, livelihood characteristics and institutional issues, Sub-group assessment focusing on group meetings and interviews, Household survey for quantitative and qualitative livelihoods data collection. The livelihoods framework has emerged from rural development debates as a conceptual approach to understanding and analyzing how rural households depend for their security not only on agriculture, but also on a diversity of other natural resources. It brings together assets and activities of human populations and illustrates the interactions between them. The Department for International Development (DFID; UK government) has developed a standardized framework. Figure 1. explains the various components of the framework.

The researcher selected some of the key concepts that are to be considered in the simplified framework. These concepts were considered as essential in capturing the diverse and complex aspects of the livelihoods that shaped the reality of the tribal people. The simplified conceptual framework developed for the study comprises three key basic concepts. They are (a) livelihood resources and capabilities, (b) livelihood activities, and (c) outputs obtained from performing activities for fulfilling the livelihoods needs. These three concepts collectively form a comprehensive whole that captures the various aspects of livelihood reality of rural people. They are also observed to be intrinsically interlinked and interdependent on each other.

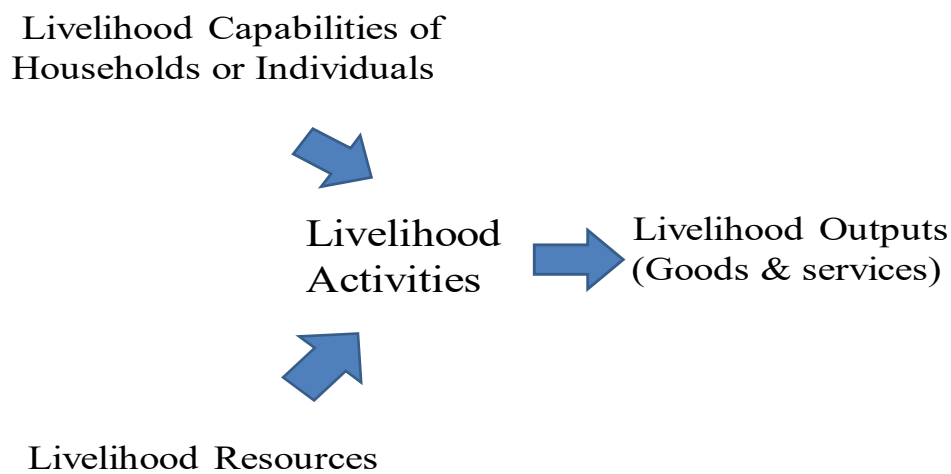


Figure 1.1: Simplified Conceptual Framework of a Livelihood

The above three concepts play an important part in fulfillment of livelihood needs. The diversification of livelihood activity conducted by the people depends upon the inputs of the livelihood resources and livelihood capabilities by the people. The livelihood activity is "the process", which further result into "outcome" that either lead to fulfillment or partial/non fulfillment of livelihood needs. These three aspects are entirely interdependent and interrelated. The changes in one of these aspects cause changes in the whole livelihood system.

A literature review focusing on the participatory and interactive data collection methods was conducted. Participatory Rural Appraisal (PRA) and Focus Group Discussions (FGDs) which is extensively used in livelihood studies were being used in the investigation from the district level, to village/settlement level, to the household and individual level to gather qualitative data. Qualitative methods are necessary to comprehend the intangible aspects of livelihoods, e.g., the intangible concepts such as security, sustainability, satisfaction, or vulnerability

The first step towards designing the research tools was breaking down the conceptual framework into simpler or less abstract concepts. To capture spatial and

jurisdictional differences, Purposive selection of three districts was recommended reflecting the variety of different physical, socio-economic and institutional circumstances selecting two villages from each district. The aim in choosing the villages was to represent the differing aspects of the particular patterns of resource use being examined at the location. The Villages also differ from each other in some important respect so that it might be important for comparative purposes. This difference could be varying degrees of remoteness from infrastructure and services, for example: on a main road; on a dry season-only feeder road; lacking proper road access. Villages might differ in the degree of their reliance on the natural resource. Just because livelihoods of rural people in general rely on natural environment or forest, this does not mean that all households interviewed need to rely heavily on that resource for their livelihoods. From a livelihood's perspective, families rely on varieties of resources and are involved in different activities in a variety of different ways, and for various strategic reasons.

Three key concepts emerged from this exercise: resources/capabilities, livelihood activities, and livelihood outputs/needs satisfaction. These concepts provided the base for listing down the livelihood's activities, which are normally undertaken by the rural communities in the area of the study.

To interview every individual household in the target population was time consuming and costly, so data collection was narrowed down to just the required key data, and ask a subset of the whole 'population' that should be as representative as possible, within the resource constraints. In order to establish the reliability of the data the reason for selection of the sample village was made explicit. Sampling choices depend both on the size of the area and on the time.

Household survey was conducted in these six villages, according to the total number of households in each village accounting for approximately 30% of the total number of households in each village spending three to five days per village to observe the day-to-day activities and the traditional agricultural practises and recent happenings in their daily life. By keeping 2001 as the base year, the household survey was conducted only among those households who had been living in the village prior to the

base year. Village information was collected at two levels; firstly, a village schedule was designed to collect basic information about the village which is an important tool that provides systematic information about the study area. The household schedule was designed in such a way that it captured the details of socio-cultural and economic information of the villagers in the study areas.

Physical and social infrastructure available within the village was also assessed through this schedule. All possible information about social, cultural, political, ecological and institutional processes was also attempted to be collected through this schedule. Intention was to have an assessment of the livelihood assets and processes representative of the village based on the information collected hence.

Secondly, a comprehensive schedule was designed to interview thirty percent of the households from each of the sample villages with an objective to obtain information about livelihood assets of and strategies adopted by the households. The households from a sample village were selected for interview randomly thereby providing equal probability to every household of getting included into the sample. An in-depth interview with household members was conducted using semi-structured questionnaires to understand the changing source of livelihood. The interview covered different cultural practices and indigenous knowledge related to resource management. The questionnaire survey mainly focused on socio demographic information of household members and their livelihood activities. Household heads were predominantly selected as interviewees, as they were usually the household decision makers and knew the key information about the family. Summary of the data was verified with village leaders to ensure reliability and accuracy of data. Separate and joint focus group interview was also conducted for the beneficiaries of the developmental schemes.

The main objective of the study is to make a statement about the past (2001) and the existing pattern (20015) of rural livelihoods in the sample villages and also to assess the context in which the livelihood strategies have been adopted by the rural population, no attempt has been made either to determine household incomes or to make poverty estimates. Although both these attributes in a way impact the

manifestation of livelihood strategies, yet these have been ignored and more direct and bold indicators like land ownership, level of skills and knowledge acquired, level of physical wellbeing and degree of social cohesiveness have been used. These indicators may not quantify the level of economic wellbeing or deprivation in exact terms; however, these can be extremely useful in making an assessment of the capabilities, and assets of the people and various processes occurring around which are instrumental in deciding about the pattern of livelihood strategies. Household income and number of poor households have been excluded as indicators of livelihoods from the present study mainly because of the fact that these are merely manifestations of outcome of the livelihood strategies adopted and determination of which, is not one of the objectives of the present study and partially because of non-availability of precise techniques to have accurate estimates of economic wellbeing.

Occupational status has been used as an indicator of the economic activity that an individual was engaged in throughout the year. These economic activities have been classified as main livelihood activities and supplementary livelihood activities as it is a common practice to adopt more than one livelihood strategies for a variety of reasons, especially in the mountainous regions. Main livelihood strategy is the economic activity which an individual undertakes for most of the year. Supplementary livelihood strategy represents the economic activity undertaken by an individual for a shorter period during a year. An attempt has been made to identify traditional skill based economic activities and their present status. It has been attempted to know if these traditional skill-based activities are still in practice or are in the process of extinction over the years.

Attempts have been made to explore into the factors which have led to the extinction of certain traditional skill based economic activities. The present study, hence, is a venture to systematically map the capabilities and entitlements of the rural people, the dynamic interaction of various processes that determines the strategic means of earning their livelihood. Study also attempts to identify the barriers to the sustainability of livelihood and ends up recommending for not only making rural livelihoods in Nagaland sustainable but also for improving resource availability and utilization by adopting to the changes occurring in the market oriented and fast

changing economy. After collecting the data, the data was then tabulated. The information collected and exhibited in various tables in different sections may not necessarily be identical with that published in various census reports and other reports and documents by the Government and other organizations. Tables containing information not compiled from the information collected through field survey are accompanied by the source of data at the foot of the table. The analysis of various aspects of livelihoods in the three districts in the present study is largely based on the information collected through field survey. Cartographic techniques have been used to represent the data diagrammatically. Photographs of the study area have also been taken. The aspects of the physical morphology have been represented through the maps.

To make the research tools context-specific, help was sought from the village elders, leaders of different organizations of the community. They provided information on local practices, locally significant issues and provided the terminologies for various concepts/words in the local dialect. During the initial stage of the research work meetings were held regularly with the resource persons at the grassroots level, at least once a month and even twice a month if required. In addition, training and workshops were also conducted in small groups in order to build relationship with the villagers who ultimately made easier for data collection.

After getting first-hand knowledge detailed study was conducted through an extensive field survey in the study area covering the important aspects like the economic and social characteristics. After collecting the data, the data was then tabulated. After that the interpretation of the data has been done. The survey of the households began in January 2015 and was completed in March 2017 which was used for the analysis and interpretation in this study.

1.8. Review of literature

In classic French geography, livelihoods were called *genres de vie*, meaning the entity of livelihood strategies of a human group in a specific region (VidaL de La Blache 1911a, b). In this region, the interaction with the natural environment was considered crucial for the development of livelihood strategies though these strategies were not seen to be determined by the natural environment. Contrary to the contemporary understanding of livelihoods as shaped by interactions between the local and the global (De Haan and Zoomers 2003), a *genre de vie* was regarded as a more or less closed regional system. In classic French geography individual livelihoods formed a regional system with a clear history and identity, in anthropology livelihood was used much more concretely as a set of activities – mainly economic – through which people make a living. In the first instance, this concrete view on actors' activities, "giving attention to ground realities, what people do and what people really have", set the trend in modern livelihood studies. It allowed for a genuine interest in poor people's lives and offered researchers from various backgrounds an entry point for cooperation (Geiser et al. 2011b, 261-262).

But the concrete and economic take on livelihood strategies was soon criticised from various angles. One important source of inspiration was the work of the early 20th century economist Karl Polanyi, through his posthumous book 'The Livelihood of Man' (1977). Polanyi gave the concept of livelihood a more theoretical weight, by considering the economy as socially, culturally and historically embedded, as opposed to mainstream economics that is merely concerned with individual maximising behaviour. Polanyi argued that people need a material base to satisfy their needs and wants, but to understand their livelihoods; one has to go beyond the material and thus beyond formalist economics (Kaag et al. 2004, 51).

Rural geography emerged as a distinct sub-discipline in the 1950s that was further revitalised in the 1970s with an integrated perspective and contributed to a concern for the landscape and growing interest in man-environment interactions. Contemporary rural changes worldwide indicate that the change in rural economy and society are occurring constantly and rapidly. This pace is driven by the rate of

technological innovations and social reforms. Today rural area especially in developed nations are interconnected by global, social and economic processes that cut across rural and urban space (Micheal Woods 2005).

A general view about rural economy in India is that it is exclusively based on agriculture and associated industries. However, there is a growing evidence that rural economic sector does not only mean farming but a lot more (Manig, 1991) as it represents people from all occupations, social and economic actions, physical and social infrastructure, and diversified natural resources in rural areas (Csaki and Tuck, 2000). Hence, rural livelihoods partly look at the income derived from economic activities and mainly at a holistic way of rural livelihood strategies. According to Scoones (1998), there are three core rural livelihood strategies, viz., agricultural intensification / extensification (agricultural intensification is labour-led while extensification is capital-led), livelihood diversification, and rural-urban migration. Similarly, the prospects of livelihood increases when rural households tend to adopt a wide-range of activities and assets for their survival and improvement of their living standards (Ellis, 2000). This diversification, however, is subsistence oriented in many cases. Additionally, rural people also apply the strategy of multiple employment or pluri-activity in addition to the farm activities, particularly in situation where income from the farm does not meet the demands of the farmers (Dharmawan, 1994; Upton, 1996). Some of the households diversify their activities due to externalities (lack of cash, credit or geographical conditions) while some are pulled into more remunerated activities. For instance, rural households in Pakistan often depend on off-farm activities for a reasonable proportion of their aggregate income. Nonetheless, Reardon et al., (2000) identified relatively mixed evidence with some areas in India and Pakistan where the richest households experienced smaller share of non-farm income. Off-farm employment can be classified in two major components - wage employment and self-employment (Mduma and Wobst, 2005). As poor normally rely on their labour power in the rural labour markets because it does not require any complementary physical capital on their part. The off-farm employment structures are, however, multifaceted and diverse, ranging from the roadside 'vending' to those which require assets and capital (Davis and Pearce, 2001).

Off-farm income generating activities are mostly undertaken by male and young household members. Similarly, village networks have also significant influence on participation in off-farm activities. The rural livelihood generations strategies always tend to be different for the poorest as compared to the richest rural households. It has been generally the case that rural households in the developing countries have limited control and access to resources. Nevertheless, efficient utilization of the resources and control over time lead them to improve their socio-economic situation (Meindertsma, 1997).

Participation in off-farm employment helps in income diversification and poverty reduction. Alain and Sadoulet (2001) found that education, age, ethnicity, location, and gender play important role in a household access to off-farm employment. They found that adults of the non-indigenous ethnic groups had more access to off-farm non-agricultural employment than adults of indigenous ethnic origin. Similarly, regional availability of off-farm employment opportunities and differences in gender also affect access to off-farm employment. Women and those living far from the urban centers have differentially limited opportunities to participate off-farm employment (Inayatullah et al. 2012).

An extensive review of literature identifies that a rural household's choice of diversified informal economic activities depends on a number of variables. The family size and number of households working members (household composition) play a vital role in engagement in informal jobs (Lanjouw, 1999). The increasing population, particularly in rural areas, and the resultant higher dependency ratio result into increased engagement in off-farm economic activities. Hence, the increasing population and urbanization rates in the rural areas in the last few decades, a larger absorption of labour are required both in on-farm and off-farm employment sectors (Hussain, 1989).

The rural non-farm economy is the backbone of numerous towns scattered throughout India as well as the primary source of income and employment for many of India's poor. The sector therefore plays a key role in determining future prospects for employment growth and poverty alleviation in the country. The RNFS is closely linked

to agriculture. A large share of rural manufacturing involves agro-processing and the production and supply of farm inputs. Agricultural performance therefore tends to influence growth in the non-farm economy. A growing agriculture demands production inputs in addition to supplying raw materials to transport, processing and marketing firms. Moreover, agriculture provides the livelihood of more than 70 per cent of the rural labour force and as such, increases in farm income tend to stimulate demand for consumer goods.

Agriculture has long been the main stay of rural population and the driving force of the rural economy and influence the organisation of the rural society and culture. By the end of the Second World War, there was a transformation in the tradition setup as farms in most developed nations become increasingly integrated into modern capitalised economy. Along with changes in agriculture, other rural economies like forestry, fishing, mining, and quarrying have experienced similar changes marked by declining employment sometimes creating pockets of extreme deprivation within a once self-contained community. This was marked by a rise in employment opportunities in service sectors and manufacturing in the rural areas thus a shift in the balance in the primary industries based on exploitation of the natural environment to the secondary and tertiary sectors (*Vijay 2012*).

Since the ages rural communities live in the lap of the nature. Their economy and culture are closely associated with nature and the nature is like the womb of the mother. The life style and tradition of each indigenous community is unique and is related to the utilization of particular natural resources and particular type of work. They had been collecting resources from forest without causing any damage to it. The forest provides them with food and livelihood security. The interaction between human being and nature has always been reciprocal. It is evident that there exists a symbiotic relationship between the livelihood pursuits and the surrounding natural resource base like the forest, land, water bodies, mineral resource and other flora and fauna among the tribal communities. For tribal people land is important source of livelihoods. Indigenous communities have long lived in close proximity with biodiversity endowed landscapes in their knowledge has for generations helped its sustainable use. This

reciprocal, nurturing relation is based on the traditional rationale that judicious use of its resources is beneficial and destruction particularly to forest is counterproductive and unsustainable. However, the limited natural resource base surrounding to an extent reduced its ability to supply them with other services owing to the lack of diversification of livelihood pattern and forest resource based it was not sufficient to support the demands of a growing population.

Millions of people around the world depend on forest products and services for their daily income (Vedeld *et al.*, 2007). The importance of these timber and non-timber forest products to people's livelihoods and wellbeing has been documented for various tropical regions (Wiersum, 1997; Sunderlin *et al.*, 2005). Some scholars argued that forests in addition to providing a source of income to rural households also provide a safety net for people in times of scarcity or emergency (Reardon and Vosti, 1995; Angelsen and Wunder, 2003; Neumann and Hirsch, 2000; De Sherbinin *et al.*, 2007). Therefore, stimulating incomes from forest has been perceived as a possible strategy to improve incomes among rural dwellers (Pokorny *et al.*, 2012). Others, however, have warned that a strong reliance on forest products may limit future economic perspectives (Malmberg and Teegenu, 2007; Kusters, 2009).

Understanding how forests are related to rural incomes is essential for the design of policies that support livelihoods and for developing sustainable pro-poor incentives in forest rich regions, especially in the tropics (Chambers and Conway, 1992; Bebbington, 1999; Scoones, 1998, 2009; Cahn, 2006; Robinson and Fuller, 2010). This is because the natural resource base proves to be a necessary main source of monetary and non-monetary incomes (Angelsen *et al.*, 2011). The portion of income derived from forests is referred to as 'forest dependence' (Coomes and Barham, 1997; Takasaki *et al.*, 2001; Angelsen and Wunder, 2003; Pyhälä *et al.*, 2006) and is expressed as the proportion of total income. Both absolute and relative incomes from forests vary among households within a given community (Cavendish, 1999a; 2003). However, not all household incomes in forest communities derive from forest products, often it complements other economic activities, e.g., agriculture or services (Escobal and Aldana, 2003; Adhikari *et al.*, 2004).

A family's geographic location within the landscape also influences resource use patterns, as it influences access to certain resources (Coomes *et al.*, 2004). By considering household-incomes generated from forests as part of the entire complex of economic activities, but also the needs and purposes linked to forest incomes, one can broaden the understanding of forest-based livelihoods. For instance, households can depend on forest as a means of securing livelihoods or to secure capital to be reinvested in other activities, or as a seasonal cash income (Byron and Arnold, 1999; Angelsen, 2005).

Not all income of households in forest communities is derived from forest products: often part of the income is obtained from agriculture or services (Adhikari *et al.*, 2004). The portion derived from forests is referred to as 'forest dependence' (Coomes and Barham, 1997; Takasaki *et al.*, 2001; Angelsen and Wunder, 2003; Pyhälä *et al.*, 2006) and is expressed as the proportion of total income. Both absolute and relative income from forest resources vary among households within a given community, and is often related to total household income (Cavendish, 2003). For instance, Cavendish (1999), Quang and Ahn (2006) and Pyhälä *et al.* (2006) observed that the poorest forest dwellers tend to have a higher forest dependence, but their absolute income from forest resources is lower than that of people with a lower forest dependence. Promoting forest income among forest dwellers as policies for poverty alleviation have been widely assumed relevant to enhance livelihoods in forests communities (Belcher *et al.*, 2005, p. 82). However, such promotion is likely to benefit people who have a larger absolute income from forests, whereas people that are more dependent on forests will benefit less from such efforts. Forest income also depends on other livelihood activities. There is a need to understand how livelihood assets relate to a household's income composition and how they influence forest incomes and forest dependence (Robinson and Fuller, 2011). Therefore, it is a relevant concern how asset endowments can promote conservation of forests and improve local livelihoods.

Growing food needs have added stress to the environment leading to degradation while overexploitation, encroachment and unscientific mining techniques have particularly affected rural dwellers. In parts of India overexploitation of forest

resources by outsiders have had a detrimental effect on the environment; however, the indigenous people are unable to influence the direction of changes occurring due to broader changes in society. Since independence the government of India and state government have initiated policies for development of indigenous people's livelihood.

The rural economies and societies are changing rapidly and constantly driven by the rate of technological innovation and social reform and also characterized by totality and interconnectivity. At the dawn of the new millennium urban development is characterized by fading structural boundaries and the outward shifting of urban gravitational centres incorporating a growing area of rural landscape; agriculture once the predominant space consuming and economic factor within rural-urban fringe is largely losing this position and today it mainly functions as reserve potential for urban expansion

In Indian scenario, "the Urban-Rural Fringe (URF) is an area of mixed urban and rural population and land use, which begins at the point where agricultural land use appear near the city and extend to the point where villages have distinct urban land uses or where some persons, at least from village community commute to city daily for work or other purposes" (Husain, 2007) There is constant change in the land use. Land shifts from primary (agriculture) to secondary and tertiary economic activities. Therefore, these areas provide good opportunities of employment for both rural and urban population (Asif, 2010).

Some sociologists treat rural-urban as dichotomous categories differentiating the two at various levels which differs in many ways- occupational structure, environment, size of communities, density of population, social mobility and direction of migration, social stratification, and in the systems of social interaction. Urbanization is the result of the migration of people from village to city which has a great impact on the livelihood of the migrants and their families. MacIver (1931) remarks that, though the communities are normally divided into rural and urban, the line of demarcation is not always clear cut between these two. There is no distinct boundary where the city ends and countryside begins. Each village possesses some elements of the city and every city carries some characteristic features of the village.

Regarding rural and urban communities Pocock and Hudson (1978) believes that, both village and city are the elements of the same civilization and hence neither rural-urban dichotomy nor continuum is meaningful. There are certain specific institutional forms and organizational ways that distinguish social and cultural life in towns from that of villages.

Naga society is absolutely a land-based farming society but it is unable to produce for its self-sustenance. Nagas in the rural areas are, in general, unable to give up the primitive system of agriculture, and their sum total inputs, their muscle and physical force, etc., have become outmoded to compete with the modern farming system. Lanusosang (2002), in his study on the dimension of development in Nagaland deals with the dimension of development in Nagaland through themes and cases. These include development in Nagaland, constraints of agricultural and livestock development in Nagaland, women's status and constraints in the development and customary laws of the Nagas. Particularly in South Asia, rural women face discrimination in access to agricultural production resources as well as opportunities for developing livelihoods skills. The increasingly assertive civil society and political campaign for gender equity across the region together with commitments by most countries to global gender equity commitments is making an impact.

The Nagas remained outside the influence of modern civilization for a very long time. They lived a simple life completely isolated even from their immediate neighbors mainly due to the practice of head hunting. Their needs were few and they could manage to be self-sufficient of their basic requirements in their own way within their limited resources (Thong 1997). The Nagas have deep rooted attachment to the value of action-oriented way of living (Vashum 2000). In recent years, land-based livelihoods of small and marginal farmers are increasingly becoming unsustainable, since their land has not been able to support the family's food requirements and fodder for their cattle. As a result, rural households are forced to look at alternative means for supplementing their livelihoods.

The means for livelihoods adopted by poor households are different and complex in nature. In rural areas, for fulfilling the various livelihoods needs, these

households rely on varied and multiple livelihood sources (such as land, forest, water and so on). Various livelihood needs (such as water, food, fodder, shelter and so on) are fulfilled through multiple livelihood activities (such as forest collection, fishing, wage labour, cultivation). For example, the food for a rural family may come from farm produce; its cash income for buying goods (clothes, oil etc.) may be earned through wage labour, and fuel wood and food-items like forest vegetables, fruits and berries may be obtained through forest collection activity. Thus, different livelihood needs of the majority of the rural households are fulfilled through various activities and using different resources (Resources and Livelihoods Group, Prayas, 2005)

The concept of sustainable development at the core of tribal development is a reflection of paradigm shift in development thinking worldwide. The concept of livelihood enables the understanding of factors that affect people lives hence a livelihood is considered sustainable when it recovers from stress and shocks and maintain or enhance its capacities and assets even in the future (Carney, 1998).

The first step to attain a sustainable livelihood would be to fulfil all minimum basic needs on a regular basis by a marginalized household. These households in the rural areas continuously face various economic, political, social, natural, and familial difficulties and threats which have adverse effects on their livelihoods, which directly affect fulfilment of their needs and further result into making their livelihoods vulnerable. Threats to the livelihoods include sudden shocks (e.g., floods, draughts, earthquake, storm or sudden change etc.) as well as long-term stresses (for e.g. chronic illness, addiction, debt, seasonal shortages, food deprivation etc.). Shocks are sudden, unpredictable and have dramatic impacts, while stresses are pressures, which are typically continuous and cumulative, predictable, and distressing.

Therefore, the main objective should be to ensure security of livelihoods against these threats. This would mean creating a situation in which the deprived households will be able to successfully deal with these threats and fulfil livelihood needs on a continuous basis. Here, the term ‘security’ means freedom from the negative impact of the shocks, stresses, and threats to the livelihood.

While considering livelihood security, taking cognizance of environmental sustainability becomes necessary, as majority of rural households heavily rely on their surrounding natural resources for their livelihoods. Thus, livelihood security of rural households is closely linked with the environmental sustainability. It is seen in the most of the literature that 'security' is often considered in the concept of sustainability and also expressed as 'social sustainability,' implying sustainability against shocks and stresses.

Understanding the livelihood system can by and large help in implementation policies to reduce poverty particularly among the rural population. In India the rural urban divide in accessing infrastructure services has to a large extent contributed to slow growth of livelihood among the rural population, hence the need to initiate agricultural technology for higher production, diversification of activities, institutionalized support system for ensuring capacity building measures and development of skills aided by active participation of stakeholders would eventually promote better resource management and a stronger rural section, in short a sustainable economy. The study attempts to gain an in-depth understanding of the conditions of the tribal communities by practically applying the various concepts of livelihoods.

1.9. Scheme of Chapters

Having followed the methodology systematically and reviewed several literatures the entire material of the study is organized and placed under a different scheme of chapters, dealing minutely with all aspects to achieve the aims and objectives and to prove a hypothesis.

The first chapter deals with the introduction, statement of problem, study area, objectives, hypothesis, database, methodology, detailed review of literature and limitations on the study.

The second chapter is arranged in three sections, the first section highlight the geographical profile of Nagaland which includes the physiographic division, drainage, climate and soil. The second section deals with the demographic profile of Nagaland and the third section brief the socio-economic pattern of Nagaland.

In the third chapter, the first section explains about the rural-urban dynamics in shaping the livelihood pattern in Nagaland. The second section of chapter two studies the traditional livelihood pattern in the rural areas of Nagaland. The third section highlights the emerging livelihood pattern.

Chapter four presents a detail general analysis of the rural livelihood pattern of the six villages under study, i.e., Eralibill and Aoyimkum under Dimapur district, Sungratsu and Salulamang under Mokokchung district and Yaongyimchen and Yongam under Longleng district.

First section of Chapter five identifies the different factors influencing the rural livelihood pattern in Nagaland with special reference to the sample villages. The second section brings to light the findings through qualitative and quantitative assessment in the rural livelihood pattern and an attempt has been made to present the major outcome of the present research work. Positive as well as negative impacts have been discussed in detail

The sixth chapter deals with the concluding remarks and some important suggestions have been highlighted for the betterment of the state in general and study

areas in particular and the scope for further research has been discussed and finally the concluding remarks.

1.10. Limitation on the study:

1. Availability of data was a constraint in some of the villages and even the interviewee refused to come forward thinking that it will be another bogus developmental project work which in their name will benefit some households in power. In such cases trainings on livelihood skills and awareness seminars were conducted taking the initiative of the church.
2. In one of the sample areas the villagers were waiting with their readymade answers which they have been narrating for every interview conducted by governmental or NGOs and at the end of the day very surprisingly every interviewee were to be paid a lump sum amount for their time spend. It is found to be a very shocking practice which has been made a regular practice by the NGO and governmental agencies to make their work easier. This also made the researcher more aware and careful of acquiring fake data but there was huge financial involvement and was time consuming since time was spent with interest groups as well as detail interview in the selected households to get genuine the information.
3. In one of the sample villages due to huge economic disparity among the household constraints was encountered for household survey. Since the rich households lives inside high raised fences and gates many a times the researcher ended interviewing the gate keeper, and sometimes took days to get an appointment for the interview.

CHAPTER 2

An Overview of Nagaland

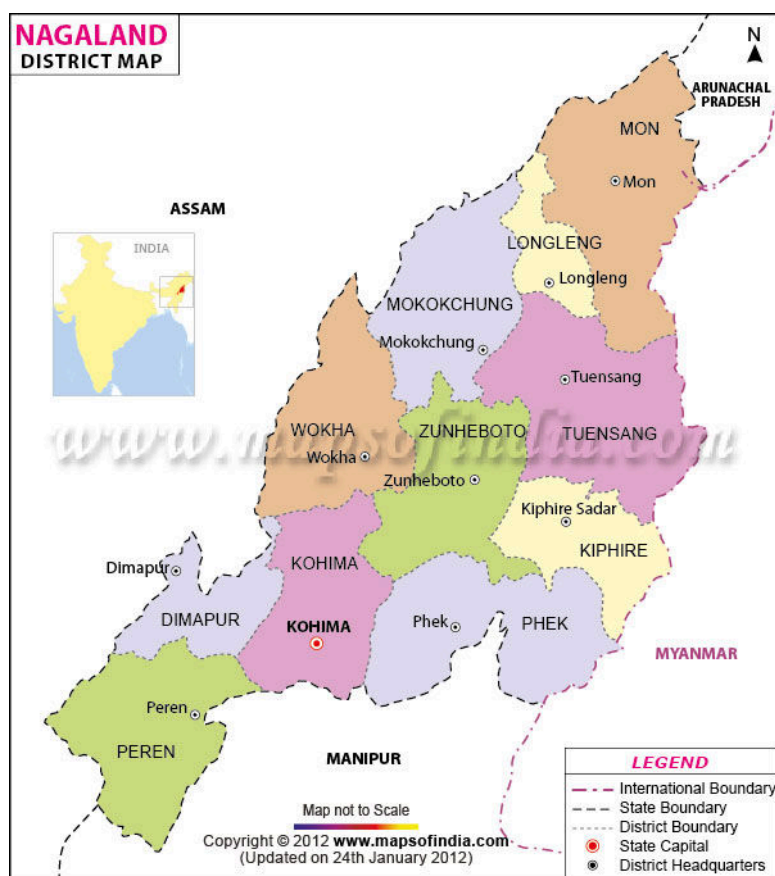
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2.1. Geographic Profile of Nagaland

Physiographic Division of Nagaland

Located in the North Eastern region of India the state of Nagaland shares the international border with the country of Myanmar. The state lies between the geographical coordinates of 25° 6'N and 27° 4'N latitude and 93° 20'E and 95° 15'E longitude. The state is home to 16 different tribes, each of whom has their distinct customs, attires, language and dialects.

Figure 2.1. Nagaland: District Map



Source: Maps of India.

Nagaland location shows the geographical and the strategic position of the state in the country. On the eastern boundary of Nagaland lies the International border that India shares with Myanmar. The southern end of the state is bordered by the state of Manipur on the western and the northern western states bordered by Assam and in the North by Arunachal Pradesh. The location of Nagaland reveals the political and geographical significance of the state which is marked by the international border on one side.

Nagaland is a hilly terrain which consists of a series of awe-inspiring hill ranges separated by deep narrow valleys. The topographical features of Nagaland are characterized by rugged terrain and the serrated ranges are separated from one another by narrow valleys with torrential streams running from north to south. Mountain peaks rarely stand alone; usually they are connected by mountain ranges. Physiographically Nagaland can be divided into the following four divisions:

1. **The Naga ranges:** The Eastern part of the state is occupied by Naga range which is the extension of Patkai range. It forms the international boundary and watershed between India and Myanmar. The highest peak of this range is Saramati with 3840 meters. This range has been cut by the Tizu River which flows towards the east to merge the Chindwin river of Myanmar. This mountain system is the thickest and the biggest forested area in Nagaland and forms the Shilloi Game range and other protected pass through which the Japanese entered Nagaland during the World War II. At the foot of the Molhe pass is the Lachin Lake. This mountain range is also rich in mineral resources.
2. **Barial range:** A part of the Barial range enters into Nagaland south west to attain a height of 2995 meters at the Japfu under Kohima district. At this point the Barial range is merged with an extension of Arakan Yoma and from here the main range runs in a north easterly and northern direction. The general morphology of the main range is that of a gigantic 'L' in reverse position, the junction of the two arms forming an obtuse angle with minor ridges branching out on either side towards the east and west. The Dzuko valley in the easternmost part of the Barial mountain system is almost a table land located

more than 2400 meters high and is a unique natural ecosystem and is the only place where elephants are found at an altitude of more than 2400 meters.

3. **Mid hill ranges:** this is the most dominant mountain system in Nagaland and runs from north to South. This Mid hill Ranges runs through the middle of the state from north east to south west like a spinal column. The hills are marked by ridges separated from one another by deep valleys. The important mountain ranges are as follows: Kohima - Tsumenyu – Mokokchung – Changtongya - Merangkong range, Mao - Pfutsero – Chozuba – Sataka-Zunheboto – Suruhoto – Longkhim – Tuensang range, Kiphire— Sahmator – Chandang range.
4. The most prominent range is the Mao – Pfutsero – Chozuba – Sataka – Zunheboto – Suruhoto – Longkhim – Tuensang range as it divides the watersheds of Brahmaputra in India and watershed of the Chindwin in Myanmar. All the water that falls on the east of this mountain range flows into the Chindwin River and on the west of the mountain range flows into Brahmaputra.
5. The middle mountain system has peaks which are higher than 1800 meters and has thick forest rich in flora and fauna. The Zanibou – Satoi range forms the eastern most and highest range of the mid mountain system of Nagaland. This mountain range is covered with thick forest and forms the source of many perennial streams and rivers of Nagaland. The range generally slopes down steeply to the western side and merges with the outer foot hills.
6. **The outer foot Hills:** The outer foot hills runs along the Assam Nagaland border and is comprised of rather low hills of altitude less than 100 meters and merges with the plains of Assam. This plain starts from Jalukie in Peren district and runs in a northerly direction. The areas in the extreme western part are dotted with plain area where the town of Dimapur is located. Another plain starts with a surface area with about 580 sq km is found around Naginimora in the mid-west of the state. It commences from the foothills of the Longon Village in Mon district and stretches up to the lower course of

Dikhu River. The third important plain skirting Tizit area is in the northwest side of the state. It has a total surface area of about 75 sq km.

Nagaland being formed by young hills is devoid of any plateau or table land like in adjacent areas of Arunachal Pradesh and Burma. However, on the outline hills of the western side there are a number of valleys located at an average of 300 meters, the rich agricultural valleys of Nagaland. The valleys are: Jalukie valley, Medziphema, Bhandari valley, Merapani Valley, Tzurang Valley, Tiru valley. Jalukie valley is situated in Peren district adjoining Dimapur district, Medziphema is situated in the south western part of the state and it is in Kohima district while Bhandari and Merapani are in Wokha district. On the north of Merapani valley lies the Tzurang valley, under Mokokchung district, which joins the plains of Assam. The northern most valleys is the Tiru valley commonly known as Tirupathar, it is covered by thick forest and is under Mon district.

The hilly nature characterized by rugged terrain and lofty ranges has a great bearing on population distribution and the human landscape of Nagaland. Definitely it is the extreme eastern part adjoining Myanmar which is less developed and accessible mainly because of the constraints imposed by the comparatively formidable physical terrain. The intervening valleys in the state are generally steep and narrow.

Drainage System and River Basins

Nagaland is dissected by a number of seasonal and perennial rivers and rivulets. The major rivers of Nagaland are Doyang, Dikhu, Dhansiri, Tizu, Tsurong, Nanung, Tsurang or Disai, Tsumok, Menung, Dzu, Langlong, Zunki, Likimro, Lanye, Dzuza and Manglu. All these rivers are dendritic in nature. Of the rivers, Dhansiri, Doyang and Dikhu flow westward into the Brahmaputra. The Tizu river, on the other hand, flows towards east and joins the Chindwin River in Burma.

Climate

The climate of Nagaland is very pleasant and moderate. The winters and summers are both tolerable. The minimum temperature in the winters is 9 degree to 20 degree whereas the maximum not increasing above 30 degree. The temperature varies between 20°C and 30°C during summers and between 11°C and 21°C in winters.

The climate of the region is characterized by warm summers and cold winters with seasonal dry spells extending from November to April. The length of growing period ranges from 180 to 200 days and moisture index ranges from 40 to 60%. Nagaland enjoys south-east monsoon with average annual rainfall in between 1500mm to 1800mm occurring over about 6 months from May to October and the potential evapo-transpiration is 1219 mm. This clearly indicates that there is a shortage of water for a considerable period from November to April.

Table.2.1: Details of average rainfall and altitude

Sl. No.	Name of the District	Average rainfall in mm (preceding 5 years average)	Altitude m, msl
1	Kohima	1762.5	1444.12
2	Dimapur	1224.7	260.00
3	Peren	1339.4	1445.36
4	Wokha	2161.6	1313.69
5	Mokokchung	1930.5	1325.08
6	Phek	1527.7	1524.00
7	Kiphire	810.0	896.42
8	Tuensang	1395.1	1371.60
9	Zunheboto	1462.1	1874.22
10	Mon	1871.4	897.64
11	Longleng	1395.1	1066.30

Total Rainfall 1534.6

Source: Directorate Soil & Water Conservation, Kohima

Rainy season starts from June and continues till the end of August. The rainfall is evenly distributed throughout the state. Nagaland state gets an annual average rainfall of about 3,000 mm.

It has extravagant natural beauty and an endless array of landscape and it is rich in fauna and flora. Almost all types of tropical trees, plants thrive in Nagaland. The hills are amazingly green, and the climate on the hilltop is much better and healthier than in the valleys, which are more humid and hotter. Depending on the variation in temperature and general weather conditions, three different types of seasons are observed In the state, such as (i) the cold or winter season, which starts from November and lasts till February; (ii) the warm season or spring, which begins from March and lasts till first part of May; and merges with rainy season, (ill) The rainy season or summer, which starts from second part of May till late October, it is the longest season in the state

Agro-Climatic Zones

The topographical features control the climate of Nagaland to a large extent. It is hot to warm sub-tropical in area with elevation of 1000-1200m above MSL. The foothill plains, sheltered valleys and the ranges are marked with climatic contrasts. The year is divided into four seasons viz., winter (December-February), Pre-monsoon (March-April), Monsoon (May-September) and retreating monsoon (October-November). The beginning of winter is marked by a steep fall in temperature during December. January is the coldest month. In February the temperature starts rising gradually. The winter winds are generally weak and variable. The average annual temperature ranges from 18°C-20°C to 23°C-25°C respectively in the higher and lower elevation. The monsoon lasts for five months from May to September with June, July and August being the wettest months. The following agro-climatic zones in Nagaland are divided into four zones:

- | | | | |
|------|-----------------------|-----|-----------------------------|
| I. | Hot per-humid climate | II. | Hot moist sub-humid climate |
| III. | Warm humid climate | IV. | Warm per-humid climate |

Soil

The soils of Nagaland are derived from tertiary rocks belonging to Barail and Disang series. Though the state is small, due to large variation in topography and climate, the following kinds of soils occur in the state:

- (i). Alluvial soils- a) Recent alluvium (Entisol), b) Old alluvium (Oxizols and Ultisol) and c) Mountain valley soil (Entisol)
- (ii) Residual soils- a) Laterite soils (Oxizols and Ultisol) b) Brown forest soils (Mollisols and Inceptisols) and c) Podzolic soils (Spodosols).

(i) **Alluvial soils:** Recent alluvium which is also known as Entisol occurs mostly in the western and south western part of the state whereas old alluvium is chiefly found in the north western part of Nagaland bordering Sibsagar District of Assam. Mountain valley soil (Entisol) with pH 4.4 - 4.6 covering about 224.8 sq. kms occurs mostly in the valleys of the central and eastern part of the State. Though alluvial soils are more fertile, their formations are mostly confined to the low-lying areas in the west and to the banks of the rivers.

(ii) Residual soils:

Residual soils which are generally porous and have light textures dominate a major landscape of Nagaland. Laterite soil (Oxizol) is the most widespread and occurs in the mid-southern part and the eastern part of the state. It has pH 4.2 -4.5 and covers 4,495.8 sq.kms of the total area of the State. Brown forest soil (Mollisol), with a pH content of 5.3-5.8 is found mainly in the intermediate high hill ranges covering a total area of 4,952.7 sq.kms. Podzolic soil (Spodosol) with pH 5.4 -6.0 covers an area of about 4,835.0 sq.kms and occurs at high altitude with humid and temperate climate in the central, southern and eastern part of the state. Major part of the Tuensang District is occupied by this type of soil.

Soils are generally fertile and responsive to application of fertilizer. Nagaland soils are acidic, very rich in organic carbon but poor in available phosphate and potash content. The pH value ranges between 4.80-6.80, while the organic carbon content may

be as high as 2.943%. The average available phosphate and potash contents are 20 Kg/Ha and 120 Kg/Ha respectively.

The major crops in Nagaland are rice, corn, millets, pulses, oilseeds, sugarcane, potato, banana, pineapple, orange, litchi, ginger, yams, cucumber and areca nut. Rice is the dominant crop and also the staple diet of the people. Oil seeds like rapeseed, mustard, and soya bean are grown in wide areas. Rubber, Coffee, cardamom and tea are grown as plantation crops in Nagaland. The important vegetables are gourds, spinach leaf, squash, mustard, onion, chillies, garlic, spring onion, beans, carrots, tomatoes, brinjal etc., Cash crops like sugarcane; passion fruit and potato are also becoming popular.

2.2: Demographic Profile

Table 2.2: Nagaland Demographic Profile

Geographic Area (in Sq. km)	16,579
Total population (Census 2011)	1,980,602
Male Population	1,025,707
Female Population	954,895
Rural Population	1,406,861
Urban Population	573,741
Population density per Sq.Km	119
Decadal Growth Rate	-0.47%
Population (0-6 yrs) –	Total 285,981
Population (0-6 yrs) –	Male 147,111
Literacy rate Total	80.11%
Males Literacy	83.29%
Females Literacy	76.69%
Sex Ratio - Total females/1000 males	931

Source: Census 2011

As per the Census 2011, the total Population of Nagaland is 19.8 Lacs. Thus, the population of Nagaland forms 0.16 percent of India in 2011. Nagaland has total population of 1,978,502 in which males were 1,024,649 while females were 953,853. Total area of Nagaland is 16,579 square km. Thus, the population Density of Nagaland is 119 per square km which is lower than national average 382 per square km. According to Census 2011, out of a population of 1978502 in Nagaland, 1407536 live in Rural areas which account for 71.5% of the total population. Similarly, at 277491, Rural households make up 70.8% of the total household in the State.

The average sex ratio is the number of females per 1000 males. As per the Census 2011, the Average Sex Ratio of Nagaland is 931 which is above the national average of 943 females per 1000 males. Also, the child sex ratio (age less than 6 years) of Nagaland is at 943 which is higher than 918 of India.

Table 2.3: District Wise Demographic Profile of Nagaland

Sl no	District	Sub-districts	Population	Literacy	Sex Ratio
1	Dimapur	Circles	378,811	84.79%	919
2	Kohima	Circles	267,988	85.23%	928
3	Mon	Circles	250,260	56.99%	899
4	Tuensang	Circles	196,596	73.08%	929
5	Mokokchung	Circles	194,622	91.62%	925
6	Wokha	Circles	166,343	87.69%	968
7	Phek	Circles	163,418	78.05%	951
8	Zunheboto	Circles	140,757	85.26%	976
9	Peren	Circles	95,219	77.95%	915
10	Kiphire	Circles	74,004	69.54%	956
11	Longleng	Circles	50,484	72.17%	905

Source: Census 2011

Nagaland is divided into 11 districts and Dimapur is the densest populated district accounting for 378,811 persons and Longleng accounts for the least populated district with 50,484 persons. As per the census 2011, there are 1428 recognized villages in the state and 26 towns.

Literacy Rate

The total literacy rate of Nagaland is 79.55% which is greater than average literacy rate 72.98% of India. Also, the male literacy rate is 82.75% and the female literacy rate is 76.11% in Nagaland.

Table 2.4: Percentage of Literacy Rate in Nagaland

	Nagaland	India
Female	76.11%	64.63%
Male	82.75%	80.88%
Total	79.55%	72.98%

Source: Census 2011

Urban/Rural Population-

As per the census 2011 out of the total population of Nagaland, 28.86% people lived in urban areas while 71.14% in rural areas. Total male population in urban areas constitute of 299,177 and 271,789 female and in rural areas 725,472 males and 682,064 females.

The average sex ratio in urban regions of Nagaland was 908 females per 1000 males. The child (0-6 age) sex ratio of urban area in Nagaland was 973 girls per 1000 boys. Thus, the total children living in urban areas of Nagaland were 73,589 which is 12.89% of total urban population. Similarly, the average sex ratio in rural areas of Nagaland was 940 females per 1000 males. The child sex ratio of rural areas was 940 females per 1000 males. The child sex ratio of rural areas was 933 girls per 1000 boys.

The total literate population of Nagaland was 1,342,434 and the average literacy rate for urban areas was 89.62 % in which males were 91.62% literates while female literacy stood at 87.4%. Similarly, the total literates in rural areas were 896,663 and the average literacy rate was 75.35%, out of which both males and females accounts for 78.96% and 71.51% respectively.

Table 2.5: Rural Urban Population

	Rural	Urban
Population %	71.14%	28.86%
Total population	1,407,536	570,966
Male population	725,472	299,177
Female population	682,064	271,789
Sex ratio	940	908
Child sex ratio (0-6 age)	933	973
Child population	217,482	73,589
Literates	896,663	445,771
Average literacy	75.35%	89.62%
Male literacy	78.96%	91.62%
Female literacy	71.51%	87.4%

Source: Census 2011

Religion

The most dominant religion in Nagaland is Christianity which accounts for 87.93 % of the state population. Hinduism ranks the second in the state with 8.75 %. Islam accounts for 2.47 %, Jainism 0.13 %, Buddhism 0.34 % and Sikhism 0.10 %. Around 0.16 % stated 'Other Religion'; approximately 0.12 % stated 'No Particular Religion'.

Table 2.6: Religion of Nagaland

Description	Population	Percentage
Christian	1,739,651	87.93 %
Hindu	173,054	8.75 %
Muslim	48,963	2.47 %
Buddhist	6,759	0.34 %
Other Religion	3,214	0.16 %
Jain	2,655	0.13 %
Not Available	2,316	0.12 %
Sikh	1,890	0.10 %

Source: Census 2011

Working Population

In Nagaland out of the total population, 974,122 were engaged in work activities. 76.1% of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 23.9% were involved in Marginal activity providing livelihood for less than 6 months. Of 974,122 workers engaged in Main Work, 420,379 were cultivators (owner or co-owner) while 22,571 were Agricultural labourers.

Table 2.7: Working Population in Nagaland

Activity	Total	Male	Female
Main Workers	741,179	442,204	298,975
Cultivators	420,379	208,221	212,158
Agriculture Labourer	22,571	12,899	9,672
Household Industries	9,525	4,731	4,794
Other Workers	288,704	216,353	72,351
Marginal Workers	232,943	105,153	127,790
Non-Working	1,004,380	477,292	527,088

Source: Census 2011

2.3: Socio-Economic Pattern of Nagaland

The socio-economic systems of the tribes in Nagaland are basically linked with local knowledge system and ecology which has been developed with their practical experiences and traditional wisdom tested for centuries and adapted in their cultural practices and ecological systems sustaining their livelihood over centuries. They had the knowledge on what varieties of crop to plant on which part of the territory, when to sow, weed and harvest. The treasure of wisdom is stored in memories, daily activities which is expressed in the form of stories, folk songs, folk lore, proverbs, dances, myths, cultural values, beliefs, rituals, agricultural practices, traditional laws, weapons and equipments, plant species and animal breeds.

The Nagas remained outside the influence of modern civilization for a very long time. They lived a simple life completely isolated even from their immediate neighbours mainly due to the practice of head hunting. Their needs were few and they

could manage to be self-sufficient of their basic requirements in their own way within their limited resources (Thong 1997). The Nagas have deep rooted attachment to the value of action-oriented way of living (Vashum 2000).

Like any other primitive tribes in the world, the tribes of Nagaland were animists. They also believed in the presence or existence of other supernatural beings who are thought of as good spirits. Since the advent of Christianity, the tribal people embraced the Christian faith zealously; and the traditional religious beliefs have become more or less obsolete and outmoded now.

One of the most important and significant places of the village was the *Morung* where all the young bachelors of the village gathered and slept at night. *Morung* was the training ground and indeed, the institution wherein the Naga youth was drilled and shaped into a responsible member of the society. In fact, the *Morung* is the centre of the village life, and is the most effective and productive institution of the traditional Naga society. The younger generations are under discipline in the same way as in the boarding house in modern public school; the young men use it as a club and a dormitory; travellers can put up in it for the night; and the chief avails of it as a meeting place where he can announce his decisions and orders. In fact, *Morung* is used as a meeting place and all-important decisions concerning the village wellbeing were taken up, and disseminated to all the members of the village. As all the young men are gathered there, they are always available and ready for unexpected emergency or for any kind of urgent work. Discipline is strictly imposed and no interference and opposition from outside is permitted and hardly tolerated.

Socio-economic condition of the rural people of Nagaland was a distinctive feature to that of other North-eastern States as well Indian States. Socially, from time immemorial, the society of the Nagas is a rural backbone with strong exceptional Naga customary law. Villages were situated at hills tops and slopes because of their tradition of head-hunting and inter-village feuds. Economically, Naga people survived aged long through hard earned labour engaged in the primitive system of shifting and terrace cultivation on one hand and 'barter' transaction with people in the nearby Assam and Myanmar on the other hand. Attainment of Nagaland Statehood on

1st December 1963 marks a significant event with developmental activities followed with long term objectives and proper planning mechanism executed from post Statehood period onwards; prior to statehood, both urban and rural lives were covered by the developmental schemes and programmes bringing about changes in the lives of the rural people. Recently the introduction of MGNREGA, SGSY and IAY programmes have benefited the rural poor people to a large extent.

An important characteristic of the Naga village is the land rights and ownership pattern. The land rights and ownership pattern in Nagaland revolves around the concept of village as a republic. Ownership of land is divided into different types namely, village community land, clan land and individual land. Individuals acquire citizenship of a particular village or town through and get use rights to the village community and clan land. Thus, any individual has use rights to all three types of land, which makes Nagaland virtually free of landless people.

Further, ownership does not allow individuals to sell land without consent of the clan, tribe and village from which they belong. Mostly, sale is restricted only among clan members or inhabitants of the village. Therefore, it is found that besides exclusive usage individual land is also controlled by the community. Ownership of homestead or non-agricultural land is bestowed by the village to an individual during the time of settling down in a village and accepting its citizenship. Ownership of land thus acquired is transferred to the heirs in the family.

The community declares a family as landless, if the land owned by them is sold and is solely dependent on the availability of community land or leased land for agriculture and other needs. It was observed that sale of own land is undertaken to meet financial exigencies mostly related to meet treatment cost for illness and in some cases due to gambling and other vices. The border between the lands is maintained by erecting stone pillars or it is demarcated by physical features and natural formations like streams, cliffs, gullies, hills, plains etc. and often through stones placed by the owners. Further, each tribe, clan and village have some unique traditional practices related to land rights.

About 82.26 per cent of the population in Nagaland still lives in rural areas and agriculture is their main economic activity with more than 70% of the population

employed in agriculture. Principal crops include rice, maize, pulses, oilseeds, sugarcane, potatoes and ginger etc. The traditional economic systems have been sustaining for so many years without affecting the ecological parameters. It was possible due to their in-depth ecological knowledge and innovative local knowledge system and which also strengthened in conservational measures.

In order to support the increasing population and improve their economy the people living in rural areas are constantly looking for additional land to expand their fields to support the increasing population as well as to improve their economy. In this process, people have been extending cultivation even to the steep hill slopes and clearing forest, raising tendency of soil erosion and affecting the environment.

Scope of agriculture production to a commercial level is of high potentiality but hilly terrain and topography of the state gives limitations. Being basically an agricultural State, the economy of Nagaland is dependent on development of agriculture. In order to bring agriculture development in the fore front, it is necessary to utilize all the available resources as well as application of the modernization technology in the field of agriculture to achieve the maximum level of development in the sector to meet the goal of food security.

Shifting cultivation (Jhum) is a traditional agricultural practice in the state. In old days the Jhum was not so detrimental because of long periodicity of Jhum cycle because the soil regains its lost fertility. But due to increased population pressure the Jhum cycle has been reduced to 3-5 years and as a result soil is becoming unproductive (Report of the Task Force on Agriculture Development Nagaland 2015.) A very small proportion of the rural population is engaged in the rearing of livestock, weaving, black smithy and handicrafts.

Nagaland produces a number of crops including several fruits, vegetables, pulses etc. Agriculture is a major source of income for rural masses constituting 70% of the State's population. It is a major contributor to State's economy. The state of Nagaland has enormous potential for producing season and off-season agricultural crops, fruits and vegetables which are having high demand and prices not only in the state. However, there has been an ever-increasing trend in cost of production of all

crops but stagnation in prices for farm produce. There is a high level of post-harvest losses and an uncertainty of market price due to market glut. These factors have reduced the farm income to a great extent. In these circumstances, the farmers of Nagaland, like rest of the country have very few options but to improve their post-harvest management practices. And secondly, they have to add value through processing to their farm produce for better remunerative prices. These steps can lead to better returns with increased market demand for agricultural produce and better chances of marketing. Therefore, priority should be given to post harvest management, food and agro processing, agri-business and agriculture marketing etc. Agricultural Produce Marketing Committees (APMC) can play a vital role in marketing of agricultural produces.

Agricultural operation in the state is still labour intensive. Use of farm machinery, equipment and implements are still limited to a few progressive farmers because of low purchasing power of the resource poor farmer, geographical remoteness and inaccessibility, hilly terrain, lack of infrastructure, population composition, and scarce resource base, etc.

One of the biggest concerns of the State now is the burgeoning numbers of educated unemployed youth which, if not tackled effectively, could lead to a vitiating of the whole developmental environment. In recent years, there has also been a noticeable rise in under-employment and disguised unemployment. Two of the measures taken at the political level have been the declaration of 2004 as the Year of Youth Empowerment and the setting up of the Chief Minister's Corpus Fund to generate self-employment for unemployed youth. The majority of the workforce of the State is either in the rural areas or in the unorganized urban sector. Naga society was and continues to be predominantly agrarian. Agriculture (27.48%), construction (15.43%), transport and communication (18.14%) and public administration (12.73%) comprise three-fourths of the State's NSDP. The near absence of contribution from manufacturing (0.74%) and banking and insurance (1.32%) reflects the lack of industrial activity in Nagaland and the weak supporting environment (Nagaland State Human Development Report 2004).

As a hilly State, there are so many constraints, but the State is making efforts to exploit its natural resources and tap into other potential areas. Some of these strengths are mentioned below:

1. Rich mineral resources, including oil and natural gas, limestone, marble, as well as metals like nickel, cobalt and chromium.
2. Rich forest resources
3. Fertile soil and pleasant climate favourable for organic production/farming. Naturally the State is richly endowed with wild fruits, variety of wildlife, herbal medicines and aromatic plants, bamboo, etc.
4. Cultural diversity of the tribes
5. Hot spot for eco- and community-based tourism present great potential. However, for long term success of the venture, and protection of the heritage of the people, research and documentation are urgently needed, etc.

The state of Nagaland continues to be confronted with many inadequacies in the areas of physical and social infrastructure. For the development of such essential and critical areas, the state is constantly faced with acute financial and resource problems. One of the reasons for this state of affairs is the almost non-existent Tax base of the state. The tribal traditions and customs of the inhabitants have also been protected by special provisions in the constitution of India as a result of which, the state does not own any land unless purchased from the people for specific purposes by the government.

Nagaland economy is still facing many developmental challenges; this is mainly due to the relative isolation, the difficult terrain, and inaccessibility to the rest of the world and continued insurgency. This hinders the State's endeavours towards industrial and entrepreneurial development, private sector partnership in spearheading development initiatives and all-round regional planning.

In near future the State can compete with others in conventional areas of development if the areas of strength and available resources are identified, planned intelligently, strategizing its efforts and judiciously managed. The state is undergoing a socio-economic transition where the changes are felt maximum in rural areas

experiencing the shifting of society and economy to a new situation involving multiple steps and processes. Massive developmental activities are taking place that will affect people directly, if planned and managed judiciously it will bring about changes in the field of education, health, income, family livelihood, employment, and sound environment.

CHAPTER 3

Livelihood Pattern in Nagaland

3.1. RURAL URBAN DYNAMICS

For decades scholars have been interested in rural-urban relations, rural-urban interactions, and rural-urban dynamics. Work on themes such as urban peasants, the role of intermediate urban centres, and urban biases in development are all 'old' concerns. There is a strong case, however, that these old themes need to be re-examined in the light of new and intensifying processes. Lives and livelihoods are being profoundly re-worked as processes of globalization, market integration, modernization and industrializations are brought to bear in new and more intense ways.

Settlements located within the frontier regions provide an ideal location in which to explore the role of rural-urban links within livelihood strategies, both from the perspective of the 'winners' and 'losers' in society. Over time the origins of rural-urban linkages have been shaped by individuals and institutions and have gained historical understanding.

The rural urban fringe is the area lying between the city and rural area which is the most dynamic area. The rural area near the urban centre undergoes rapid changes depicting a clear dynamic nature. With the expansion of urban centre, the periphery is dynamically converted into a rural urban fringe and then merges with the parent urban centre which has both urban and rural characteristics. Urban encroachment is one of main problem prevailing in the environment of rural urban fringe.

The urban impact has not only changed the socio-economic and demographic profile of the rural urban fringe but also the land use pattern of the area especially affecting the rural villages bordering the urban centres. Farmers are exiting the farm, livelihoods are becoming increasingly delocalized, interlocking livelihood and occupational diversity are displacing more singular ways of making a living. Due attention has not been given towards the villagers which have compelled them to surrender land to the expanding cities and also bringing about rapid changes in their socio-economic and demographic characters, occupational possibilities and land use. Through the establishment of new commercial activities changing livelihood opportunities and high immigration rates has become a typical characteristic of these

frontier region and also new activities are replacing the stagnating economic activities. New settlement processes and patterns emerge with the influx of migrants into these areas.

Sharma (1983) in this context Sharma opined that villages around the city are undergoing rapid change in demographic structure. Changes are visible in the field of vital rate of births, deaths, longevity as well as of marriage and family size, occupational and internal migration". Urbanization brings change in land use pattern from farm to non-farm uses.

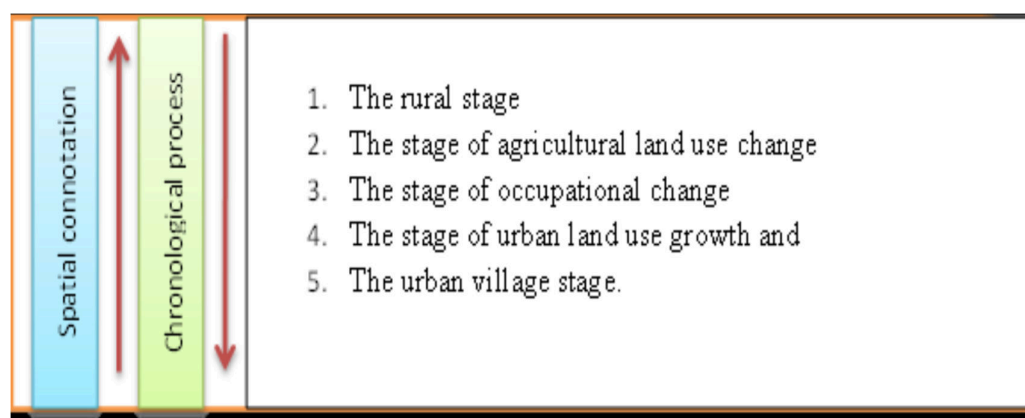
In some cases, migration patterns also change with the establishment of new settlements to house the migrants. Some of the villages have overgrown, some over populated and some are spontaneously expanding without developing the physical and functional infrastructure or organizational capacity linked to urbanization. The villages on the frontier also experiences social and economic fluidity due to new livelihood opportunities.

One of the keys to stimulate rural economies is the modernization. It raises the living standard of rural people, reducing inequalities with urban areas, introduces infrastructure development programmes, such as electrification, road constructions, and renovation of rural housing. Such programmes will not only bring remarkable changes on the rural landscape but also create opportunities for rural population to participate in the new consumer society and be a beneficiary, as a result bring about changes in their way of life.

The extension of the town or city area does not only affect the town or city itself but also the surrounding area also, in this context Rajbala (1985), in his paper of, "Extension of Town Boundary in India and its Implication" he opined that urbanization leads to the extension of town boundary, which effects the social, political, and economic life of the people residing around the town, land value also gets effected. Land use characteristic along the rural urban fringe has a mixture of both the farm and non-farm land use patterns. Salter (1940), in his study of Land use classification along the Rural Urban Fringe has called it as mixture of land use. Both the farm and non-farm land use patterns are found in it.

Ramachandran (1989), one of the prominent authors on fringe areas in India, his model clearly presents the gradual development and transformation process of rural-urban fringe phase wise. He assumed that the villages beyond the limit of a rapidly growing city like Indian cities undergo a process of gradual transformation resulting in the complete absorption within the physical city. This shows that the mechanism of change involves primarily a land use change and then the socio-economic setup of the community. The nature and magnitude of the change, in fact, depends on the interaction between the surrounding villages and the city. Ramachandran has identified five distinct stages in the process of fringe development and maturity.

Figure 3.1: Stages of Urbanization of villages in the urban fringe



Source: Adopted from J.V. Bentineck (2000) quoting R. Ramachandran (1989)

The distinction between rural and urban is probably inevitable for descriptive purposes; however, it often implies a dichotomy which encompasses both spatial and sectoral dimensions (Tacoli, 1998). Rural and urban populations are usually defined by a certain size of residence in settlements for all practical purposes such as censuses and other similar statistical exercises. The principal occupation of rural population is assumed to be agriculture whereas for the urban the industrial production and services are the main occupation. A large number of households in urban areas tend to rely on rural resources, and rural populations are increasingly engaged in non-agricultural activities. In Asia, agricultural and non-agricultural activities are spatially integrated in

metropolitan extension areas. Therefore, the distinction between rural and urban has become problematic (Anbumozhi, 2007)

In some cases, the rural economies and societies are changing rapidly and constantly driven by the rate of technological innovation and social reform. The change is also characterized by totality and interconnectivity. In the case of a village located on the periphery of a city, one piece of land after another gets sold to individuals, business firms, property agents, institutions, government establishments, and others in the city. When most of the agricultural fields in a village are acquired by the urban people, they demand urban facilities: paved roads, underground drainage, piped water, regular electricity supply, security, etc. Pressures build up on the municipal corporation and on the state's politicians and bureaucrats to include the village within the city. Often the government, anticipating this development, works out a town planning scheme (Shah 2012).

The sprawling extension of rural settlements, new roads and power lines leads to restructuring of farm patterns, new forms of agricultural and industrial buildings, afforestation and deforestation. It is not only the physical appearance of the rural space that has changed but also the changes in intangible qualities e.g., increase in population structure that includes the in-migration of new residents, household amenities, the rural way of life, rural policy, decline of stable industry.

The road construction paved way for the rural people for easy accessibility to the neighbouring urban markets. Meanwhile with the increase in living standard, the growth of private car ownership increased as a result commuting became possible and there is an increase in the mobility of rural people and loosened ties to rural communities. Tourism, too, was also introduced which rejuvenated the economies of some of the rural regions but also bringing environmental consequences. It brings structural changes in their local economies and also a loss of power by rural communities as the way their rurality is represented.

The impact of modernization on rural areas has not been restricted to technological innovation. The development of telecommunication technology plays a vital role in bringing about changes in many rural areas which alleviated the problems

of distance and peripherality. Through television, radio and internet facilities the rural people are experiencing the same social commodities that are experiencing by the urban residents. Free education by the government has meanwhile altered the life courses of rural young people.

The movement of rural people has been made easier by globalization, during the course of their life they migrate in and out of their original home several times and they are no longer tied to a particular place. The mobility involves both the rich and the poor. On the one hand there are the wealthy urban dwellers who purchases and constructs holiday homes and move in permanently for a peaceful and new start of life. On the other hand, the movement of migrant workers due to dependency of many labour-intensive forms of agriculture.

Livelihood strategies can be analyzed in terms of three key parameters: locality, activity and mobility. At a certain point in time, the impact of an individual's activities and mobility pattern centred on a specific locality can be conceptualized as their 'multi-spatial livelihood footprint'. A sequence of an individual's 'livelihood footprints' can be identified in order to explore the historical dimension of changing livelihood strategies. By mapping the livelihood footprints of settlement dwellers over time, it can be shown how poverty or prosperity are produced and reproduced within the context of the rural-urban continuum.

These developments reveal the fluidity and dynamism of the division between rural and urban, creating indefinite interstitial spaces and networks through which new forms of labor arise. They are entangled with transformations in the regimes of production and land use, as well as with changes in the organization of kinship relations. In turn, they give rise to new subjectivities and aspirations.

Cities absorb large numbers of rural migrants who aspires to join the position of the urban middle classes. Illegal practices combine with legal forms of work, while private corporations and land-holding entities blur the boundary between public and private domains. The in formalization of work and flexible labor practices facilitates the world's growing demand for low-wage labor at the cost of unmaking former working-class communities already facing the retrenchment of state-sponsored benefits

and social services. The weakening of traditional labor unions and the limited integration of migrants into public service provision means that migrants have to rely on their capacity to secure support networks through kinship and bottom-up labor organizations. Insecure employment also pushes migrants to experiment with new entrepreneurial practices: individuals need to become capable self-starters with flexible skills and business expertise.

These processes not only transform the livelihoods of individual migrants but also the conditions of local communities in the wider sending and receiving areas. Emerging peri-urban areas take many shapes. In mega-cities, former urban cores expand and shrink, thereby cultivating dynamic spaces which serve as gateways for migrant workers in search of affordable housing and employment.

The urban encroachment on the rural land is directly proportional to the growth of urban area. The villages do not abruptly get converted into urban area but it is a stage wise process. The urban growth has also its impact on occupational structure of the people of the surrounding areas in this connection an interesting work done by Swaminathan (1980), opined that, “the theoretical importance of small towns is that they provide a vital connection between dispersed rural population and medium and large urban centres. The small towns connect surrounding population by providing goods and services. The small towns form a major component in the National settlement System”. Phadke and Sita (1981) conclude that it is accessibility rather than geographical distance as a major factor responsible for spread of urban attributes.

3:2 TRADITIONAL LIVELIHOOD PATTERN

The Nagas live in one of the most biodiversity-rich areas of the world, where they are engaged in a range of occupations for livelihood. While there is enormous diversity among the Naga communities, common to all are a strong cultural attachment to the land and the dependence of their traditional livelihoods on the land, forests, and the natural resources found therein. The Nagas have well-defined institutions and live in their respective territory in self-sufficient village systems having their own territories, lands and forests. Traditional occupations, which is the chief sources of livelihood of most of the rural people in Nagaland include farming, livestock raising, fishing, hunting and gathering, making of handicrafts and food items, sale of local products, small scale mining, among others.

Traditionally the livelihood options were not much diversified. A farmer holds on to one job and worked in that throughout his life, worked in the same community in which he had been born, a manual labour, a job mainly done outside in the field and in all types of weather, with no formal qualification or training but particularly specialized knowledge and skill that was passed down between generations in rural areas. The job was secure, stable and sustainable that largely evolved around farming, it was work that was valued. (Michael Woods, 2005)

For fulfilling the various livelihoods needs such as water, food, fodder, shelter and etc., a particular household practices multiple livelihood activity such as farming, handy craft and basketry, gathering from forest, hunting, fishing, wage labour etc., and to fulfil those activities they rely on varied and multiple livelihood sources such as land, forest, water, etc. For example, the basic food for a rural family may be obtained from farm produce, its cash income for buying necessary items for daily use may be earned through wage labour, and firewood and food-items like wild vegetables, fruits and berries may be obtained from forest. Thus, different livelihood needs of the majority of the rural households are fulfilled by practicing various activities utilizing different resources. Each community or even household of a particular community may have its own way of securing their livelihood. Different ways and means, practices, methods and approaches are adopted in order to achieve a sustainable livelihood. It is impossible

to have a proper understanding of the current and future trends in the livelihood pattern without having at least a basic understanding of the past traditional livelihood of any particular community. Traditional occupations are those occupations that are rooted in customs and practices and have been followed by successive generations of rural peoples and their communities, traditional occupational practices were largely subsistence-oriented.

Traditional occupations were almost always practiced as a series of activities (farming, hunting, fishing, gathering and craft production) that together met the subsistence needs of the community in question. It is therefore the range of activities and their inter-relationship that is first part of what is 'traditional, not only the specific occupations themselves, Today, this 'occupational pluralism is increasingly coming under threat from a modern economy based on 'specialized' labour and skills, and reduced access to the resources (land, forests and products derived from the forests) that were the basis for the traditional production of crafts, medicines and food, among other things (International Labour Organization 2000).

The rural life is community based, and natural resource management practices follow common resource management policy governed by traditional mechanisms of customary laws and norms. These societies have deep sentimental attachment and socio-cultural orientation to their land and territories in which their identity and culture is rooted. This relationship is often expressed through folk songs and dances, beautifully designed hand-woven ethnic attires and woodcarvings, among others (Thingreiphi Franthang 2010).

Agriculture

The main occupation of Nagas since time immemorial is agriculture, which is the most important source of livelihood. 70 percent of the population derives their livelihood from agriculture which is an extremely complex system. It is practiced both for subsistence and for the market. Farming families, in order to sustain their livelihood, adopt and maintain diverse forms of agricultural practices, mainly terraced rice cultivation (TRC), shifting cultivation, home garden, and firewood reserve forests,

simultaneously. The locations of these varied sites compel the farmers to adopt and adapt practices that suit the site factors. The prominent site factors, particularly the altitude, temperature, precipitation, soil and biotic and a biotic factor play important roles in management of traditional cultural practices and also in conserving agro-biodiversity. As a result of these adoptions and adaptations, traditional farming systems have a high degree of agro-biodiversity which is one of its prominent features. These traditional farming systems have emerged over centuries of cultural and biological evolution and represent accumulated experiences of indigenous farmers interacting with the environment without access to external inputs, capital, or modern scientific knowledge (Chang, 1977; Grigg, 1974).

Paddy is the staple food crop in Nagaland and the agriculture system has developed centring this crop. Other crops including food grains, vegetables, beans and spices are grown as mixed crop in paddy fields. Dominant paddy based cropping systems as classified by the Directorate of Agriculture, Government of Nagaland is presented in Table 3.1.

Table 3.1. Prevalent Cropping System in Nagaland

Agro climatic zone	Cropping system
High hills	<ul style="list-style-type: none"> • Rice-Potato/vegetable • Rice/maize-mustard • Rice + wheat
Lower hills	<ul style="list-style-type: none"> • Rice-wheat +mustard • Rice+ potato
Foot hills	<ul style="list-style-type: none"> • Rice- potato • Rice- vegetable
Plain area	<ul style="list-style-type: none"> • Rice-groundnut, rice-rice- cowpea, • Rice-wheat-rice, • Rice-pulses, rice-linseed.

Source: Livelihood based Agri Business and Market Study in Nagaland, 2011.

Jhum is the most important traditional agriculture system practiced on the hill slopes and steep terrain, terrace and plain cultivation is practiced on gentle slopes (valley) and plains, respectively. However, it was found that households practicing terrace or plain land cultivation also did *jhum* as a complementary practice. Agriculture practices of the Nagas are organic in nature and farmers do not use fertilizers or pesticides. The farmers use decomposed leaves which is collected while weeding in place of artificial fertilizers and farm yard manure. In many of the *jhum* fields mechanized agriculture cannot be undertaken due to steep slopes. Agricultural activities are mostly carried out through handheld implements and harvested produce is carried in baskets as head loads to the nearest motor able road.

“Shifting cultivation can be defined as a community way of farming system in the upland areas characterized by short ‘cultivation phase’ followed by relatively long ‘forestry phase’ referred to as ‘fallow period’. It is a system that is dynamic over time and space and is based on the most efficient and ecologically viable system” (Thingreiphi Franthing, 2010). It is an environmental-friendly, integrated farming system and is practiced in the hill slopes and forested lands for cultivation of rice, vegetables and other crops which contributes to regenerate forests and soil fertility, conservation of biodiversity and watershed and protects the environment. This system also includes agriculture, forestry, fish culture, domestic and wild life rearing.

The vegetation on the *Jhum* field is cut and dried which has a ritualistic and social importance. While slashing/ clearing the forest for cultivation, they do not cut down or uproot the trees completely. If the trees are very big, they lobbed off the branches only and the rest of the trees are cut 8 cm above the ground and the coppices are allowed to grow again. These tree stumps and poles helps in controlling soil erosion and its re-growth helps in the regeneration of forest in the surrounding areas.

Proper fire line is maintained and the fire is set generally in the month of January or February. Burning of the *jhum* field adds nutrients like potassium and phosphorous, directly to the soil in the form of ashes. No manure or pesticides are used apart from ashes and the residue from the burned forest. The burned soils are spread uniformly

throughout the field so that the nutrients are evenly distributed. Burning of jungle also control potential weed re-growth, fungus and insect infestations and the high temperature during burning also enhances the release of other native soil nutrient elements (Hormila. G. Zingkhai, 2015).

“Shifting cultivation enhances biodiversity in forests. It is a mother of diverse seeds and plants” (Waralak, 1998). We can say that rotational farming does not destroy the forest, but generally improves it creates biodiversity of seeds and plants through the in-situ process. Various types of crops and vegetables are dibbled into the ground with the April showers.

Almost 70 percent of the rural people of Nagaland are dependent on shifting cultivation which is popularly known as jhum cultivation. It is a predominant livelihood activity and can be defined as community farming system in the upland areas. It is a system that is dynamic over time and space and is well-organized and a system which is ecologically viable. “Jhum cultivation is deeply rooted in the Naga psyche, having evolved through the years and being rooted in the customs, beliefs and folklore. Traditional jhum influences the Naga mindset. It influences the cultural ethos of its agrarian society and social fabric. For the Naga farmers, jhum is much more than a form of sustenance, it reflects the “reasons” for their existence” (NEPED 1999)

Agricultural system practiced by the Nagas is multifunctional; they produce not only crops, but also environmental services, landscape maintenance and traditional knowledge. Likewise, it is supported by multifunctional landscapes, providing a stream of ecological goods and services to the agricultural sector, which include land, water, flora and fauna, microbes and air quality.

The land use system is well defined in shifting cultivation where the tribal economy and knowledge system revolve around the land and forest. The system is designed in such a way that it meets their needs including the catchment areas for water source, livestock rearing areas, settlement areas, kitchen garden, community burial ground, forest reserve for fuel, timber and fodder, forest reserved for wild life sanctuary, reserved for bamboo grooves, agricultural area, etc. this traditional knowledge system

of land use are meant to nurture and manage the resource at its most efficient but sustainable way without disturbing the ecological settings.

With the jhum land each community follows a systematic cycle. In this type of land use major portion of the village territory are reserved for jhum cultivation and the activity involved is communal in nature. In this system jhum lands have been demarcated for centuries and the areas are divided into blocks. The blocks are further divided into jhum plots which are allotted to each household within the village. Accordingly, all the villagers cultivate in the same block of land and no individual cultivator is allowed to cultivate even in his own land except on the selected plot unless the Village Council gives consent for that purpose. Such practice sustains the land and forest, and maintains the forest and ecology of the village.

The farmers have started maintaining the agro-biodiversity in jhum fields by sowing crops in between naturally regenerated plants in *jhum* cycle (*Mongmong, umrem, mushroom, aochisang*). The practice of maintaining the agro-biodiversity has been an important factor in sustaining village life through a wide range of food, medicine fibre and fuel crops over many decades. The crops grown are mainly rice, maize, soybean, millets, etc. Root crops such as ginger, tapioca, yam, etc are grown which serves as a vegetative barrier for soil conservation followed by short duration crops like beans and mustards are grown. Creeper crops like cucumber, pumpkin are cultivated on the boundaries to demarcate the boundaries with the neighbouring farm. Such agricultural bio-diversity practice in Nagaland makes the farmer self –dependent. The only item that was bought from outside was salt which was bought from the money they got from the vegetables sold in the market. The farmers maintain and preserve the ecosystem ensuring the availability of food, fuel, medicine plants for immediate local use, etc. Bamboos and logs and lay against the slope to ensure proper support lasting for at least three years. The soil is thus checked from erosion and speed of the runoff water and as a result conserves the moisture in the soil which increases the crop yield.

Different seasons produce different types of vegetables and other plant foods from rotational farming. Most importantly, we have found that the food produced from

this system is valuable for people's health. It is extremely healthy food, clean and natural, and organic

There are many good practices associated with shifting cultivation. The methods of farming which have been acquired from the elders are passed down from parents to children through the daily activities. As the children become older, they are given greater levels of responsibility. These systems maintain or improve biodiversity, soil fertility and water use. While the sustainability of the practice is under question, there are techniques within it that support crop diversification and resource conservation, and thereby resilience. It is important to understand and build on the positive aspects of the practice, rather than condemning it outright.

Shifting cultivation facilitates animal and wild life rearing. "Shifting cultivation produces different crops and maintains trees and roots, which provide food for both domestic animals and wild life. The jhum fields are a magnet for birds and wild animals throughout the jhumming cycle. Right after cultivation, different seeds, i.e., paddy, root crops and fruits, attract birds and wild animals including chickens and boar. During the rice harvest in particular, many bird species and wild boar come to the fields. In the second year of jhum cultivation (after rice harvest), birds and wild chickens eat the remaining paddy rice in the field. Once jhum field starts to be covered with green vegetation, wild deer and elephants come for grazing, which continues until the start of the next round of jhum cultivation.

In the traditional process of shifting cultivation, big trees are left and bushes and forests on down slopes are retained, which shelter birds and animals. This practice helps to prevent conflict between man and wild animals, and provides the latter safe sanctuary, corridor and food (Goutam Kumar Chakma, 2010). Shifting cultivation contributes to biodiversity conservation and the system with its complex multi-cropping system creates agro-biodiversity. It also creates diverse landscape elements and host innumerable flora and fauna which are not known and acknowledged

Social security through collective efforts, sharing and exchange or contribution of labour among the farmers promotes social cohesiveness and sense of belonging to the community. Besides reducing labour, the collective efforts make the work enjoyable

and productive, transforming the work place a platform for sharing knowledge and innovative work. There is community participation in fire line/firebreak clearing and keeping vigilance when fire is set in the dried jhum fields, it is a collective responsibility. This activity is synchronized with other neighbouring villages as well to fix a day for the whole community to burn their field so that even if the fire spreads beyond the fire line, it can be easily controlled with the help of people in the adjacent area. Penalties are imposed on those people who carelessly cause forest fires.

Norms and practices associated with shifting cultivation are strictly observed and followed since it is the mainstay of the community. For instance, in the fallow lands no one is allowed to cut timber or set fire; during breeding season killing or hunting of animals is strictly prohibited.

Land resources are managed by traditional institutions in such a way that every family has access to resources required to meet their needs. Economic activity is dictated by needs and not by commercial interests or greed. Land resource allocation is done according to equitable identification of factors such as the needs of a family/individual and their ability to utilize their allocated land. Redistribution of land among those who need more and who require less is a common practice. This is an efficient system in handling poverty and food security in villages where the community is left alone with no support services. Jhum products are organic in nature. If given proper knowledge and market linkages, the organic nature of jhum products makes it highly marketable and safe for consumption. Thingreiphi Franthang, 2010.

Crop rotation is mostly practiced in the highlands where different type of crop is cultivated in the same field every year, extracting different nutrients from the soil by different crops like maize, legumes, root crops, etc. this type of farming is practiced when household increases giving pressure on land which results in shortening of fallow period. Agricultural production was largely for consumption and was sustainable when life was simple. Small scale barter or trade of agricultural products was also done in order to acquire other products or commodities not available in the village.

Short duration crops, especially vegetables, are required to be cultivated so as to meet the immediate needs of the household. Major crops are normally of good quality that is harvested and preserved in granaries for the family's sustenance for the year. They are normally the staple food like paddy, maize, millets, *kholar*, pulses and oilseeds. There are some crops that continue to stand in the field even after the main crops are harvested. They are sown late and can stand in the field for longer duration e.g., Job's tears, or late sown like soybean, chilli, brinjal, ginger, tapioca and yam are some examples of biennials and perennials plants. These crops are grown for sale and also for food security during the lean period.

Home garden: To a Naga family home garden can be defined as 'land surrounding a house or easily accessible within minutes on which a mixture of annual and perennial plants is grown, together with or without animals, and largely managed by the (women) household members for their own use or commercial purposes'. Home gardens are as old as the village itself located either in the backyard, retaining walls of the house, outskirts of the village, vacant plot of abandoned house and sidewalk of footpaths and roads" Nakro, Vengota. 2009.

During the lean months the number of crop species available is least and most of them are collected from home gardens and nearby forest. Most of the vegetables from home gardens are produced for home consumption and also for sale. These home gardens are normally located near the homestead or at the outskirts of the village and since it is located nearby utmost care is given to the crops cultivated in the home garden. In these home gardens a mixture of trees, creepers, climbers and annual crops are cultivated. The cultivated vegetables from the jhum fields and home gardens that are being sold by the women vendors within their village or from sales counters put up along the major or arterial roads near their village.

Most Naga households are subsistence farmers and grow food for internal consumption only. Sales of agricultural produce are mostly to meet their immediate cash needs rather than a systemic income generation. Therefore, extent of marketable surplus for each product is low at the village level.

Hunting and fishing: Hunting and fishing is one of the most important activities of the Nagas which is incorporated within the social systems. It is a highly symbolic activity and has always been a major source of livelihood for many traditional discourses of rurality. It represents a rural way of life that is closely entwined with nature, in which humans exert their power to bring nature under their control to compete against nature for survival. Hunting and trapping was usually considered as a secondary or a tertiary occupation done traditionally using traps and spears. Hunting of wild animals like deer, wild boar, birds, etc. was a major source of food.

Fishing is a significant traditional occupation especially for those people whose villages are located near water bodies like rivers, ponds, lakes. Use of chemicals and explosives during fishing is prohibited and the Village Council imposes fine on anyone caught using it. Instead, they make use of natural products like leaves, seeds and roots of plants and creepers to trap the fishes. Such traditional methods of fishing are still being followed nowadays and it has helped in maintaining the water source, the aquatic flora and fauna and prevents it from the hazardous effects of explosives and chemicals (Hormila. G. Zingkhai, 2015).

Extraction from forest: Forests have been the most dependable companions of the rural population from the ancient times. Forests have, from time immemorial, contributed significantly to the sustainability of a wide range of rural societies and their livelihoods. Forests contribute to societies in several ways. Rural communities derive a wide range of direct and indirect benefits from forests. Not only the poor but all the sections of the society depend on forests to some extent or the other. Dependence of rural poor on forests for sustenance of their livelihoods is implicitly larger than the non-poor rural population, especially in the mountain economies. Rural poor largely depend on the forests for extracting fuel wood out of them. Any ban on extraction of fuel wood from the forests is going to affect the livelihood of the poor adversely.

Nagas depend on their forests to meet their day-to-day requirements. The most prominent dependence is for food, shelter, water, fuel, fodder, and medicines. Forests are abundant and provide for timber and fuel wood for the villagers. They also collect varieties of non-timber forest produce (NTFP) from forests. These NTFP are available

almost all round the year and meet a major part of a villager's food. It is also a source of cash for the rural households. It was found that forest produces are mostly gathered for self-consumption. Sales are considered only if an opportunity exists to sell the items in addition to other agricultural items. Many times, crabs, fish and small animals are also sold after hunting them from the forests. The harvest for most of the NTFPs is possible all throughout the year.

Over centuries gathering of materials or products from the forest like wild vegetables, fruits, herbal medicines, tubers, honey, ferns, *etc.* and other non-timber forest products has been an integral part of the Naga society and still form an important part of the daily lives. Gathering is usually done by women, although this is not always the case, and men and children are also engaged in gathering items of food from the forested areas. These forest products are both for local consumption and for sale in the market. The households depend on these collected forest products as a means of livelihood. Some of the commonly gathered food items sold in the market are bamboo shoots, mushrooms, banana flower, fig, wild walnut, peach, plum, pears, goose berry, banana, rasp berry, jackfruit, wild apple, ferns, leek, leaves of passion fruits, and spices like Cinnamon, honey, betel leaves and vines, cane fibres, wild flowers, orchids, broom grass, game meat, fish, edible insects, firewood, honey, *etc.*

Fire wood and bamboo reserves:

The main source of energy for both lighting and cooking in the households of rural areas is firewood. Knowing this, the villagers maintain firewood reserves in the immediate surroundings of the village boundary. The products from these reserves ease the pressure on the primary forests and at the same time, meet the household energy needs. With increasing demand for firewood, both in the village and towns, the reserves are diminishing in some villages while in others the farmers are taking advantage of the demand and increasing its areas.

In the daily village life in Nagaland where there are no alternative sources of energy, fuel wood is one of the most important needs of a family's existence. The villagers used to collect firewood from dead trees which die naturally or dried branches, old and mature trees are selectively harvested without affecting the regeneration of the

forest. For many villages, firewood is a major source of livelihood. “In fact, it is next only to rice in importance. Firewood is used for a host of other utilities like cooking, heating homes, etc. Next to food security, firewood is the most important resource in the life of a farming family in the village. Firewood reserve forest is an area just at the outer margin of the village boundary where a farming family had planted, preserved naturally sprouting useful species and maintained trees including bamboo for domestic use. This forest type is a replica of main forest except for the size of trees which is smaller in this area and that it normally surrounds the village” (Nakro, Vengota, 2009).

The villagers also plant trees in their fields, barren areas of land and in and around the village surroundings. Here, actually planting of native species of trees and those which are adaptable to the local conditions is encouraged as they are prone to grow faster and survive longer without hampering the fertility of the soil. They also keep in mind the utility of the trees, and prefer to plant those trees which are economically viable as well as ecologically suitable to the climate and soil of their land (Hormila. G. Zingkhai, 2015).

Logging: Logging is a very profitable business and many of the Naga villagers engage in logging trade to earn their livelihood. For instance, in some villages, cutting and transporting the timbers is allowed within a specific time period only, i.e., from the month of October to the following month of March whereas in some village the Village Council in order to protect the village’s environment imposed a total ban on export of firewood and logging for commercial purpose and they fell the trees for household firewood use and for construction purposes only but on the other hand, many villages are taking advantage of its demand in the market and generating income from the sale of firewood.

Livestock Rearing: Livestock is an important source of supplementary income for livelihood. Mixed farming has been serving as an insurance against natural calamities, while supporting food security and nutrient recycling (Sundaram, K.V. et al. 2004).

Rearing of domesticated animals such as pigs, cows, chicken, ducks, goats, etc has been a secondary means of livelihood, an important source of supplementary

income. Cattle rearing are rare in Nagaland. The animals were allowed to roam freely around the house and in the forests and not stall fed like the way it is reared at present. Cattles are reared mostly for meat and slaughter takes place mostly during festivals and occasions like marriage, funeral etc.

Pork is a meat of choice among the Nagas. Almost all rural households undertake piggery in small scale rearing 1-2 pigs. Pig rearing is done by rural households to meet their own consumption especially during the festive seasons and excess pork is sold within the village. There is hardly any commercial motive among the common farmers for pig rearing. The importance of pig assumes greater significance due to its association with ceremonial sacrifices and done mostly to meet immediate financial needs. The age of slaughter is generally 1 year or above when they attain body weight of 70-100 kg. Pig rearing is a short gestation activity and generates good returns in short term and there is a clear preference for locally bred pigs. Mostly mixed local breeds are reared by these households as pure breeds are very hard to come by.

Rearing of domesticated animals was usually practiced to provide a source of protein in the diet, a ready source of cash for emergency situation to meet the common household and family expenses. It serves as a supplementary income as well as an insurance against natural calamities, while supporting food security and nutrient recycling. Rural families maintain 2-3 animals which are mostly uneconomical due to low genetic base and poor management. Larger and more expensive animals were sold to make larger investments like buying of private land. Animals were also reared to provide needed animals to perform traditional rituals.

Traditional crafts:

Weaving: The production of traditional handicrafts is a skill passed down throughout generation. Traditionally, all clothes and many of the different implements used in the home were handmade and this tradition survives in many communities. Weaving has always been an important traditional occupation of the Naga people, especially women. The Nagas are well known for their beautiful hand-woven attires worn by both male

and female. Loom weaving is an indigenous craft that is passed on from mother to daughter. Weaving is done using traditional looms bringing out different designs to produce skirts, belts, blankets and other items with indigenous motif and design. Beadwork was done on both the male and female clothes and necklaces which is worn not only around the neck but also worn diagonally over the shoulder.

Cotton which is used for weaving the clothes were often grown in the fields they were spun and dyed with products derived from wild and cultivated plants, the clothes themselves are woven and sewn by the women and decorated with collected shells, stones, seed husks and embroidery. Although most men nowadays wear modern designed clothes purchased from the market, women in the rural areas still wear home-made *mekhelas* and shawls. Many women from rural areas weave cloth to sell in the urban and semi-urban markets. There is still a good local market for traditional costumes which are used locally or purchased by visitors.

Basketry: The making of baskets is an age-old craft of leisure which was practised by the male elders of the family in the traditional rural economy of Nagaland. It was never a profession in the old context, and hence the dwindling of this skill in present times. Bamboo and cane basketry is not art in tribal economies like Nagaland, but an intrinsic part of daily life and activity that produced essential household items like baskets to carry firewood, or bamboo tubes of water, for food and grain storage, vessels, plates, furniture, containers, spoons, and fishing and hunting traps. Before the advent of modern storage containers, baskets were used both to store household goods and valuables, and for transporting goods. Large baskets were also made for granaries to store rice. Today, baskets are still used to carry fruits and vegetables to and from the marketplace, but modern suitcases, cupboards and other containers have largely replaced the use of baskets. Baskets for everyday use in the fields, smaller baskets for fetching firewood and bamboo vessels for water were usually made by the householders themselves - both men and women - but the more artistically designed baskets that were used for storing valuables or for carrying wedding gifts were usually made by expert craftspeople, mostly men.

Traditional handicrafts have become a valuable source of additional cash for local producers. Most villagers are engaged in the production and sale of traditional handicrafts like basketry, weaving, mat making, metal smiting, beadwork and others. Some are also engaged in carpentry, wood or stone carving or sculpting. Traditionally, handicrafts were produced to supply local needs for clothing, cooking utensils, and other household needs. However, the intricate designs and superior handiwork have made them attractive for sale to travellers and other consumers. This traditional knowledge is fast disappearing, only a few elders in the villages have retained this knowledge, initiative should be taken to retain and regain this traditional knowledge. Today basketry in Nagaland is a declining skill. It was the craft of the elderly and was honed and perfected over generations. It is a craft that needs instruction, expertise and a great deal of practice. A craft that could disappear within a few years because all that sustained it and brought it to the level that it has reached is now gone. As a hand skill, it is irreplaceable, and with changes in lifestyle, the need to adapt and preserve this skill becomes of utmost relevance.

Other common traditional occupations are wine and beer making and other local food production and processing systems.

Herbal healing: The Nagas has a vast knowledge of herbal medicine. In many villages, there are persons who earn their living as traditional specialists in healing, mediation with the ancestors and nature spirits. “Herbal Knowledge has saved the community from extinction due to sickness and disease before the advent of modern medicine. This knowledge has been passed down from generations to generations, and healers in the past received payment for curing illness and were always held a respected place in the society. However, due to the opening of land as a result of modern development and the influence of religious, much of this knowledge is fast disappearing” (Anne Lasimbang ,2010).

Naga households display high levels of self-sufficiency in their day-to-day life. This necessitates that members of the household are able to take care of the varied activities requiring diverse skills. Thus it is common to find a person in Nagaland with wide ranging skills covering, cultivation, hunting, cooking, knitting, carpentry, basket

weaving, etc. However, all these skills are mostly used for meeting their daily needs and are seldom put to business use and earn livelihoods. These skills are traditional in nature and reflect the Naga heritage. There is disconnect among the existing skill sets and the larger market outside Nagaland as there are very few opportunities for interaction. Further, these artisans are more attuned to working with traditional machineries and equipment that are low on productivity.

Women as the backbone of the rural economy:

In Nagaland, women play the most important role as producers and marketers. This presents a challenge in form of allocation of time and resources by women to livelihood and domestic activities. Women, as a general rule, are excluded from traditional institutions within the tribal groups. However, women are widely respected for spearheading roles in social reforms, conflict prevention and peace building, and superior management skills. They are also the mainstay/backbone of the rural economy which revolves significantly around agricultural activities; women are the main labour force, especially in jhum cultivation. Unfortunately, they lag behind men in critical areas including access to education and health care, and control and power over property. While women have negligible roles in village affairs, they play central roles in decision making of household affairs especially in relation to agricultural activities such as deciding crop mix, sowing time, seed selection, labour management, marketing and retaining control over income earned and in developing strategies to cope with unforeseen risks.

Women are involved in each stage of the production cycle from ploughing and cleaning to transplanting, weeding, cleaning, harvesting and drying of the rice. They also spend many hours maintaining irrigation canals and the regular repair of terraced slopes of rice fields. Harvesting usually involves men, women and even children. Most of the seeds and planting materials are preserved and stored by the family, especially women. Before the harvest, a woman first selects matured and healthy rice stalks and stores in the rice granary for use as seeds for the next planting season.

Today, society readily welcomes this additional contribution from the women to support their families. However, the Naga society is still reluctant to bring about reforms in the traditionally established norms to elevate women's status.

3.3 Emerging Livelihood Pattern:

Rural areas have always been spaces of change, shaped by economic cycles, trade fluctuations, new technologies, migration flows, political upheavals and environment conditions. In the late 20th century- and the early 21st century – however, rural areas across the developed world have experienced a period of change distinguished by its intensity, persistence and totality. Driven by the twin forces of technology and social modernization and globalization, contemporary rural change has affected all area of rural life – from the domestic routines of rural families to the investment decisions of global agri-food corporations; from the ownership of rural property to the management of rural environment. It is in this way that the countryside can be described as undergoing 'restructuring'. (Michael Woods, 2005)

The traditional society had small size of population; the land-man ratio was sufficient to sustain the family throughout the year. The forested tract surrounding the village was able to fulfil their needs. There was feeling of oneness, equality and collectivity, they were bounded by the custom and tradition having indigenous knowledge how to use nature and never went against the law of nature. There was harmony between community and environment because of the sustainable use of nature by the community. Culture, domestic and wild life protection has contributed to regeneration of forests and soil fertility, conservation of biodiversity and watersheds and protection of environment.

Agriculture:

Agriculture in the state is also undergoing rapid transformation, the agricultural science is developing day by day and farming system is rapidly modifying to produce maximum with the limited land resource. Agriculture is one of the most potent and enduring emblems of rurality. For centuries, agriculture was in most rural regions not only the overwhelmingly dominant source of employment, but also the driving force of

rural economy and a pervasive influence in the organization of rural society and culture (Michael Woods, 2005). The cropping pattern in Nagaland is mainly based on tradition, culture, geographical setting and socio-economic factors. Most of the agricultural areas under food grains in Nagaland is moving from coarse food grains to pulses and seeds. This is mainly because of short duration taken for gestation to harvest and also its adaptability to a wide range of soils and climatic conditions and high yield per hectare as compared to other food grains.

According to Kumar (1990) agricultural mechanization has made a radical improvement in the production and productivity of Indian agriculture. In Nagaland the agricultural operation is still labour intensive, the effect of mechanization is not realized due to the hilly terrain and socio-economic constraints. Use of farm machinery, equipment and implements are still limited to a few progressive farmers because of low purchasing power of the resource poor farmer.

In many rural areas of the state Agricultural Link Roads have been constructed connecting potential areas from the village and from village to highways and then to markets boosts the economy of the rural farmers. Rural roads facilitate timely agricultural inputs as well as marketable surplus produce to reach the market outlets. This also provides access for agricultural produce area to reach the market centres and also facilitate increase and easy availability of agricultural inputs. Hence construction of rural roads has changed rural economy to a large extent having long term socio-economic development, improving economy and living standard of rural farming community

The Horticulture sector encompasses a wide range of crops e.g., fruit crops, vegetable crops, potato and tuber crops, ornamental crops, medicinal and aromatic crops, spices and plantation crops. Over the years, horticulture has emerged as one of the potential agricultural enterprise in accelerating the growth of the State's economy. Its role in the State's nutritional security, poverty alleviation and employment generation programmes is becoming increasingly important. It offers not only a wide range of option to the farmers for crop diversification, but also provides ample scope

for sustaining a large number of Agro industries which generate huge employment opportunities.

Tremendous changes is observed in the agricultural sector through various agencies which initiated to give further impetus to a sustainable source of livelihood, income and employment for the people of the State to name a few - Agricultural Development Activities under Department of Land Resources, Sericulture Department, Agriculture Development through Animal Husbandry, with special focus on Piggery development, Fisheries Sector On Agriculture Development Of The State, Irrigation & Flood Control Department, Cooperative Societies, Role of Forests on Land use by Forest Department, The Nagaland Bamboo Development Agency, Nagaland Bio Resource Mission

The poor rural households rely on the productive use of land since most of the households depend on agriculture as the main source of their livelihoods. However, livelihood sources have now become diverse across and within countries in which rural households engage in farming, agricultural wage labour, employment in rural non-farm economy and migration. People require a range of assets to achieve positive livelihood outcomes.

Non-Agricultural Occupation:

Today many farmers are becoming dependent on non-agricultural occupation, although a very significant number of households dependent upon the cultivation for their livelihoods. Jhum fields have decreased on account of a number of factors including demarcation of reserved forests, creation of community protected forest, population increase, changes in land use pattern, migration, etc. This has led to many livelihood challenges for the villagers, particularly in relation to food security because of decreasing yields from jhum cultivation and lack of alternative skills to enable them to diversify their livelihood options.

Salaried employees:

Maximum households come under the category of salaried employee in government as well as private sector, one of the main reasons is to move away from the

urban congestion, they have taken the decision to come and settle in rural areas. There is also an increase in the household of pensioner; on being interviewed the respondents admitted that they have moved in to rural areas because they preferred a clean and peaceful environment away from the urban pollution and congestion, the high traffic congestion prevailing on the city streets force the city residents to migrate to peaceful rural areas. Improvement in infrastructure and road connectivity have increased the daily commuters from the villages to the work places and making their life more comfortable and accessible.

Increase in business, small traders and shops:

With the increase in households and number of populations the shops have also increased and the types of shops have also been diversified due to the demand. Many people are engaged in activities such as small business and trading of local products to generate cash to meet their basic needs.

Non-Timber Food Products as a means of livelihood:

Forests contributes many direct and indirect benefits to rural communities viz, timber, fuel wood, wild foods, medicinal plants, other NTFPs, grazing for animals, forest-based agriculture, nutrient subsidies for agriculture. The rural communities depend on forest foods when crops fail to meet seasonal needs and it also provides dietary supplements. People, who live near forests, usually involve in agriculture outside the forest, partly for their survival and partly for income generation. The value and importance of NTFPs had been recognized in recent years and their role in supporting the livelihoods of many rural people.

The value of NTFPs to subsistence livelihoods is important and there is considerable potential to generate income through NTFPs. They are also important to rural households in terms of their contribution to health, food energy and other aspects of rural welfare (Cavendish, 2003). Using NTFPs to increase income generation does not necessarily reduce pressure on the resource. On the contrary it may often increase local demand and thus increase pressure. The potential for NTFPs to contribute to

conservation lies in the possibility that people will replace dependence on destructive uses (logging, shifting cultivation) with dependence on less destructive uses.

Ecotourism:

In recent years, land-based livelihoods of small and marginal farmers are increasingly becoming unsustainable, since their land has not been able to support the family's food requirements and fodder for their cattle. As a result, rural households are forced to look at alternative means for supplementing their livelihoods. However, new livelihoods have emerged due to ecotourism, such as jungle trekking guides that require traditional knowledge. And it has also opened a market niche for traditional crafts and culture and helped create pride and interest in tribal communities to revive their traditional knowledge as well as to see the value of environment conservation.

There many biodiversity hotspots in the state that serves as "safety net" for the communities in times of need, the participation of communities to conserve biodiversity not only protect the biodiversity but also is transformed to an important eco-tourism destination and in turn plays significant role in the livelihood security of the local communities creating opportunities for ecotourism as an alternative source of livelihood.

Other traditional livelihoods have been revived, among these craft making and traditional healing as an alternative to western medicine. The rural community has a vast knowledge of herbal medicine. Herbal knowledge has saved the community from extinction due to sickness and disease before the advent of modern medicine. This knowledge had been passed down from generation to generation. However, due to the opening of land as a result of modern development and the influence of religions, much of this knowledge is fast disappearing. Further, the use of modern medicine is increasing, with the introduction of Primary Health Centres in almost all the villages and government hospitals located in district headquarters. Young people in the village have been spending less time with their elders as they need to be in school for long periods.

Forestry:

Forestry sector in the State has been providing many direct and indirect benefits to rural communities, the main source of providing livelihood and revenue. However, of late rapid increase in population, diversion of forest area for developmental activities, inadequate public awareness about forest functions and its administrations have led to deforestation. At present forest plantation is taken up mostly as a micro project. The Forest Development Agency (FDA) has been set up so as to integrate forest development and rural employment. Many central schemes have been operational through FDA by forming the Village Forest Committees. Funds received from the National Afforestation and Eco-Development Board by FDA is directly given to the Village Forest Committees for implementation of the afforestation schemes.

Logging and commercial plantation:

Logging and commercial plantation in Nagaland is a recent introduction. Commercial logging, both legal and illegal, is a major factor in the interaction between people and forests. This is encouraged by the availability of transportation facilities and Commercial logging is one activity leading to over extraction of forest resources. There is rampant commercial cropping in the community land.

The major drivers of deforestation and forest degradation in Nagaland is mostly due to conversion of forests into other land uses especially agriculture, development of infrastructure and construction of Government aided developmental works, high population growth, resettlement, migration and poverty, inappropriate forest management and harvesting methods especially continuing excessive illegal timber logging.

Aggressive hunting and fishing activities:

Traditionally, hunting and fishing is one socially important activity of the Nagas. These activities are incorporated within their social systems. Recently, the region is experiencing aggressive hunting and fishing activities. Mode of hunting and hunting patterns has changed significantly with the introduction of guns and indiscriminate hunting activity had replaced the community hunting system. Area of

the forests is gradually diminishing which ultimately leads to decrease in the number of animal species and even to the extent of extinction of some species. All these changes have made hunting and trapping a very marginal occupation today.

The community hunting system slowly becomes inactive in many villages and instead individual hunting becomes more prominent. In fact, the individual hunting is not based on season but anytime the hunter wishes to hunt. The seasonal hunting protects and ensures that the animals are not hunted during their mating season.

Commercial forms of production:

As the demand for cash grows, more and more indigenous peoples move away from subsistence production to more commercial forms of production. In this process, many have lost precious resources such as agricultural lands to loan schemes and contract farming schemes. Access to market is still limited, and communities that want to market their goods very often have to operate through third parties who in turn reap most of the benefits. Indigenous producers have very little control over the pricing of their goods as their bargaining power is limited, and they are subjected to the fluctuations of market prices. To compete in the open market, many indigenous farmers are forced to use chemicals, while others such as craft producers and fisher folks have overexploited their environment in order to increase production and in many cases, in an attempt to maintain an increasingly (Concept Note, Siem Reap.2010).

Mineral extraction:

Agriculture and mineral extraction are seen as playing a critical role in rural livelihood improvement thereby helping to alleviate rural poverty. Even though agriculture remains the key strategy for rural poverty reduction, access to agricultural land remains a major challenge to the majority of the rural poor. It is estimated that about 45 per cent of the world's population are landless (Fellmann et al., 2005). This has compelled over 500 million people in developing countries to engage in occupations such as small-scale surface mining and quarrying for survival (Wang et al, 2010).

In most cases it has been noted that dependence on agricultural output could no longer provide year-round security in terms of finance due to continuous decline in farm yields. This is not surprising since most of the rural farmers are subject to varying degrees of uncertainty due to climate variability and post-production loss. It is for this reason that diversification of rural income has become common among those who wish to live, at least, an average life. Since non-agricultural activities in many instances yield as much returns as subsistence farming the only option for those without access to productive farmlands is to subject the natural environment to other activities such as sandblasting, stone extraction and small-scale mining (Wells, 2000). Small-scale stone extraction in rural areas is a major source of livelihood in spite of the dangers it poses to the environment and other livelihood activities such as farming it has become an attractive alternative for achieving livelihood needs.

Wage labour:

Wage labour consists of both farm and nonfarm wage labour and is an important component of livelihood for rural people. Nonfarm wage labour consists of various activities such as building construction work, road construction, quarrying, masonry, porters, etc., in case of women domestic works in homes, babysitting, tea plucking in tea gardens. Farm labour activity consists of working on farms as agricultural daily wage labourers during specific seasons for activities such as clearing the forest, rice seedlings, weeding, harvesting and threshing.

Many people from the rural areas still maintain their traditional way of life, while many others have gone into business, civil services, politics, etc. For the few who have retained their traditional way of life, faces many challenges due to deteriorating and degraded natural resources, and in addition many areas have been declared as protected areas. Traditional livelihoods like hunting and gathering have thus been on the decline. Other traditional livelihoods such as craft making that require natural materials are also affected by this development

Changes in the Role of women:

Women play essential roles in agriculture – providing inputs, managing production, stewarding natural resources and generating off-farm income – but often

benefit less than men. High-value agricultural production chains are usually run by male-dominated institutions, while women are often limited to local markets where they sell low-quality and residual products. All landscape-level interventions therefore need to attend to this imbalance through gender mainstreaming, in order to maximize the benefits of agriculture to women farmers, providing incentives to increase their productivity (AIRCA . 2013).

Majority of Naga women are engaged in agriculture and allied sectors, such as minor forest produce and cultivating cereals, vegetables, etc. In recent times, in the wake of education and exposure, women have started entering other sectors, such as trading, cottage industries, floriculture, restaurants, etc.

Women are made to involve as leaders in the community projects because they have the capability to manage the activities well. With this in mind, they are elected into village working committees to implement the activities. When women hold important posts in the village working committees, it automatically provides opportunities for building the capacity of women at the grassroots. They may lack confidence in the beginning but given support, motivation and encouragement, they are willing to get involved and are committed to the various activities. In many villages, rural development agencies have implemented specific strategies to increase employment opportunities for women (SHG). The working lives of rural women are highly complex and frequently involve a mixture of formal and informal, paid and unpaid activity. The rural women of today have established themselves as independent earners. The villagers also try to sell a part of their surplus produce through roadside outlets on the nearest arterial road. These outlets are mostly semi-permanent, constructed with financial aid under various Govt. schemes like SGSY, RBH of NABARD and MGNREGS etc. The sales outlet operates as a common facility for all households of the village. Each household is allotted space by the village council on a rotational basis. The distance between the sales outlet and the villages vary between 1 km to 7 km and takes around one-and-a-half hours to cover on foot. Majority of the customers at these outlets are travellers using private transport. The product pricing is relatively on the higher side and helps the villagers earn cash.

Chapter 4

General Analysis of the Rural Livelihood Pattern

4.1. Dimapur District

4.1.1: General Introduction

Dimapur is the eighth district of Nagaland, with a population of 379,769 (District Census Handbook: Dimapur, 2011). The district is bounded by Kohima District on the east; Peren District on the south; the Karbi Anglong and the DAB (Disputed Area Belt) stretch of Golaghat District of Assam, in the west and the north (Statistical handbook of Nagaland, 2009). It is located between longitude 93° 30' E and 94° E and latitude of 25° 40' N and 26° N with a geographic area of 927 sq. km (Source- Dept. of Land Record & Survey).

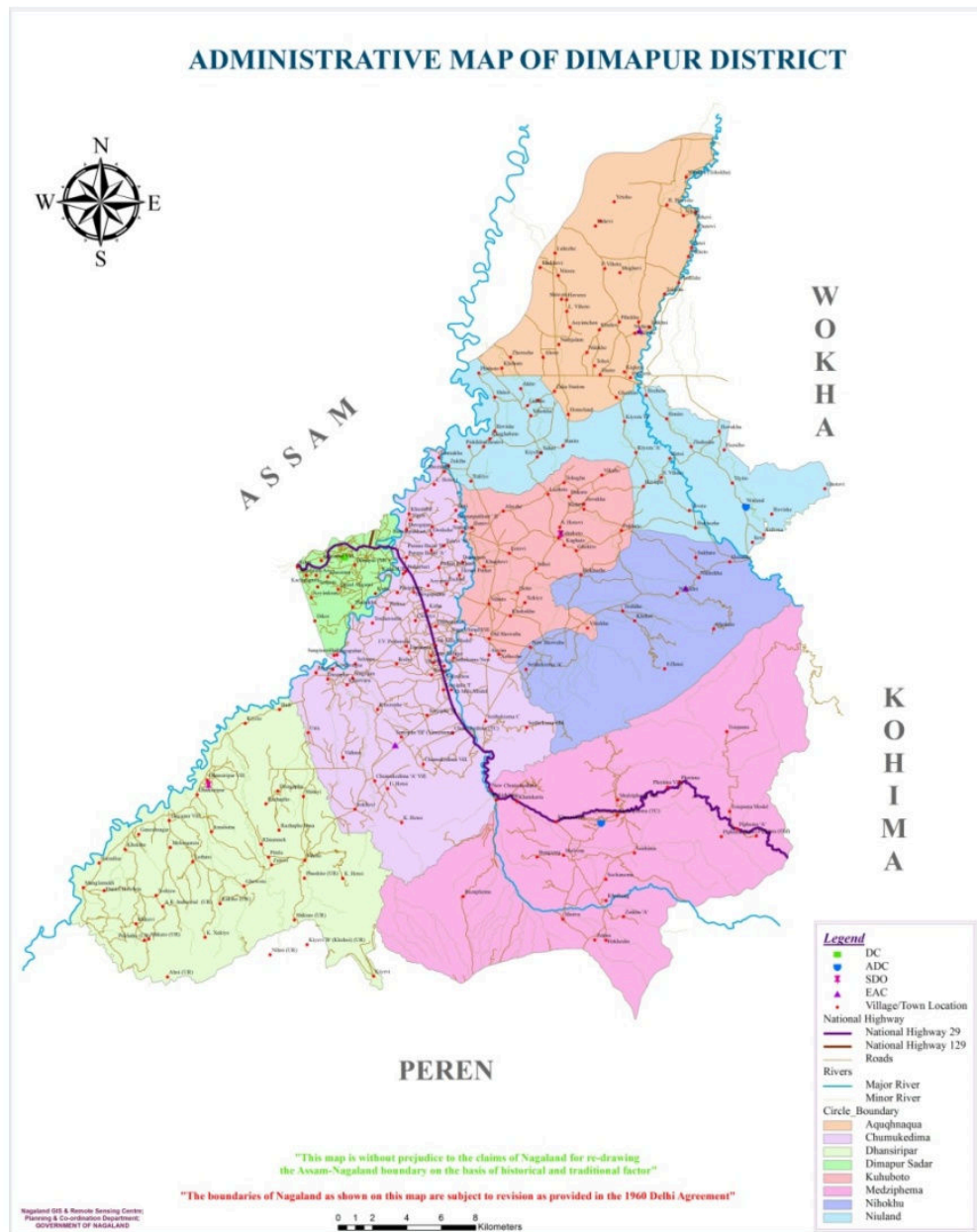
The climate in Dimapur district is hot and humid in the plains during summer reaching a maximum of 36 °C, with humidity up to 93% while the winter is cool and pleasant (Census of India 2011). The average annual rainfall is 1504.7mm. Dimapur is the most populous district of Nagaland and a large area of the district is in the plains with an average elevation of 260m above sea level except Medziphema sub-division and a few villages of Niuland sub-division, which are located in the foothills.

Dimapur district is the only district in Nagaland to be connected by both airways and railways and is considered the commercial capital of Nagaland. Besides being referred to as a gateway of Nagaland and Manipur, main commercial activities of the State, is centered around Dimapur.

Vital Statistics:

With an area of 927 sq. km, the district represents 5.59 % of the total area of the state of Nagaland, it occupies the tenth place among the eleven districts of the state in terms of area. In terms of population, however it was placed 1st at 3, 78,811 persons with density of population at 409 persons per sq. km. Dimapur enjoys a high literacy rate of 84.79 percent which is higher than the state average of 79.55 percent and the national average of 74.04 percent as of 2011 and over the years, it has become a coveted educational destination (District Census Handbook: Dimapur, 2011).

Figure 4.1 Administrative Map of Dimapur District



Source : Nagaland GIS & Remote Sensing Centre, 2019.

History and people:

The district has a diverse population with majority comprising of Naga tribes from all over the Nagaland. According to the District Human Development Report (DHDR, 2013) Dimapur, along with the earlier settlers like the Kacharis and the Garos, the district has a very unique feature of having hamlets and settlements of almost all the other tribes of Nagaland. Besides the dominant Naga tribe who comprises about 50% of the city's population, other prominent groups include Bengalis, Assamese, Garos, Nepalese, Biharis, Marwaris, Punjabis and also Tamils and Keralites. In the last two decades, Tibetan traders have also settled in the city, according to 2011 census. As a commercial hub, it attracts number of migrants from different places adding to its cosmopolitan feature. Due to its diversity of people from all over India, it is also known as "mini-India". According to DHDR Dimapur (2013), Dimapur is derived from the Dimasa Kachari dialect – 'Dima' meaning Great River, and 'PUR' means city. Dimapur was the ancient capital of the erstwhile Kachari Kingdom.

Till the second half of 1990s, Dimapur was a sub-Division under Kohima District but it became the 8th district of the State through a Government of Nagaland, Home Department notification on December 2, 1997. The district was created by carving out Niuland, Nihokhu, Dimapur Sadar, Chumukedima, Dhansiripar and Medziphema circles out of the district of Kohima. Census 2001 was therefore the first census in Dimapur as a separate district.

Flora and Fauna:

As a highly populated district, the forest cover of Dimapur district is 55 percent of the total area with no dense forest but only moderate open forest. It is mostly Northern Tropical semi-Evergreen Forest. The pattern of land ownership is unique which is why forests are concentrated in the hands of private, community or village and only 25.02 sq.km (approx) is government purchased forest according to DHDR , Dimapur (2013). Dimapur Forest division covers the whole of Dimapur district administrative jurisdiction and Thekrejuma village of Kohima district for administrative conveniences. The total area under legal forest is 75.0838 sq.km.

Dimapur also boasts of the only Zoological Park in Nagaland with an area of 176 hectares inaugurated August 28, 2008. The Park has been bifurcated into two major areas, one for the variety of different animals to be housed in enclosures and another for Deer safari as an open area to harbor herbivores like spotted deer, Blackbuck, etc. The district has 4 major rivers namely – Dhansiri, Diphu, Chathe, and Zubza.

Administration:

The Deputy Commissioner is the head of the district under whom there are 8 administrative revenue circles each headed by either an Addl. Deputy Commissioner / Sub-Divisional Officer (Civil) or an Extra Assistant Commissioner. The present names of the administrative circles are Niuland, Aquqhnaqua, Kuhoboto, Nihokhu, Dimapur Sadar, Chumukedima, Dhansiripar and Medziphema. The district has four rural development blocks (R.D. Block) namely – Dhansiripar, Medziphema, Kuhoboto and Niuland. The district headquarters, namely, Dimapur is situated in Dimapur town under Dimapur Sadar. The district has 222 villages in 2011 out of which 219 villages were inhabited and 3 villages uninhabited. The district has three statutory towns, namely, Dimapur MC, Chumukedima TC and Medziphema TC and four Census Town. Village having highest population Chekiye Village at 7250 persons under Chumukedima Circle while lowest population populated village was Aghunaqa at 46 persons under Aquqhnaqua Circle.

Rural economies and societies are changing constantly and rapidly, affected by the developmental schemes and modernization. It is not just the physical appearance of rural space that has changed like the transformation of rural settlements, new roads and power lines, redesigned land use pattern, etc. there is also changes in intangible qualities like the sense of community, solidarity, social disorder, tranquillity.

Dynamic activities are taking place in the villages located outside the boundaries of the city. It is characterized by mixed land uses, rapid demographic growth and transformation taking place due to technical and social innovation. The population is constituted by the early settlers, economically successful middle class, mainly traders and pensioners, entrepreneurs, politicians and bureaucrats who turned their weekend

cottage in the rural villages surrounding the cities in to permanent residences commuted each day in to the city. It is an area of transition with complex pattern of land use and landscape. Land as well as occupational and social structure is going through rapid transformation, transforming traditional Naga villages into suburbia.

The villages surrounding Dimapur represents very much complex landscapes because of its proximity and mutual dependence with the city. An uncontrolled development of urban sprawl and land use changes determine negative impacts on all natural, economic and social components. The villages suffer from urban pressures, but also gain from proximity to city, markets and culture.

The villages located in the periphery of major cities are affected in two ways-

1. Permanent migrants or the temporary commuting labour force caters to the needs of the city,
2. The ideas and innovations flowing from the city are imprinted on the residents of these central zones.

In fact, one of the positive sides in peri-urban interactions has been flow of resources from urban to peri-urban areas, where the resources have been a major means in construction of livelihoods. It is thought that a flow of resources has positive impact in creation of non-farm. It was found that owing to the expansion of the city to the lands of the households in the study area, there is a significant change in the livelihood and household income.

The proximity of the villages to the city and the physical expansion of the city over times have a great impact on the change of livelihood pattern. This zone, thus, is something between neither urban nor rural. Farmers are becoming post-farmers; livelihoods are becoming delocalized with interlocking livelihood and occupational multiplicity is displacing more singular ways of making a living.

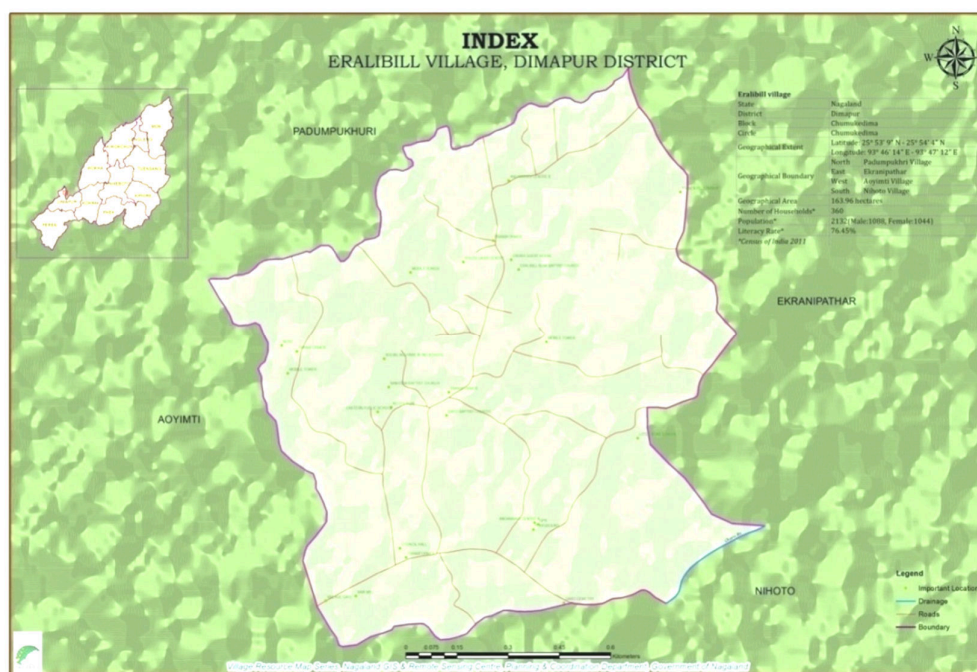
It is a long-drawn process for a village to merge with a city. Most of the village lying on the fringes of a city is made of, first, a residential settlement where houses and huts are huddled together, and second, agricultural fields, pasture land, wasteland, cart tracks, and an open forested tract where the villagers gather wild vegetables and fruits. The two together constitute a territorial unit. (Shah 2012)

Because of the slow growth of Indian cities in the period before independence the occurrence of rural-urban fringe is a recent phenomenon in India compared to the western cities. It was only with accelerated rural-urban migration after independence that rural-urban fringe became a common feature of big cities in India. The physical expansion on the rural-urban fringes has been brought about mainly by the private developers, industrial entrepreneurs and businessmen. Apart from close proximity to these cities, the surrounding rural areas were passive witnesses to transformation in various angles. The villagers find better employment opportunities under condition of urban expansion. In course of time the villages acquire a semi-urban way of life leading to a transitional phase between urban and rural societies.

4.1.2. Eralibill Village, Dimapur District

The area under study i.e., Eralibill Village lies in the North West of Dimapur district, Nagaland under Chumukedima Block. It is bounded by Padumpukhuri village in the North, *Ekrani pathar* village in the Eastern side, Nihoto Village lies in South, *Aoyimti* Village and Dimapur Airport lies on the west. The village is located between 25°53'9" N- 25°54'4"N Latitude and 93°46'14"E to 93°47'12"E Longitude covering the geographical area of 163.96 hectares.

Figure 4.2: Index Map of Eralibill Village



Source : Nagaland GIS & Remote Sensing Centre, 2019.

Historical, Economic and Social Evolution of Eralibill : Dimapur town was a deserted place until 2nd World War, at the time of attaining township in 1961 there were only 5,753 persons (Garo Baptist Church Eralibill Dimapur: Nagaland 2010). The households were mostly Garos and Kacharis, major portion of the population was constituted by the Garos. The serenity of the dwellers of Dimapur was disturbed by the 2nd World War, the settlement on the foothills being ideally located for airport the

British government made a decision to construct an airport to support the advancing British troops to Burma. In 1942 an immediate relocation of the settlers was ordered by the higher authority which was a shock to the inhabitants of that particular area. The indigenous settlers were relocated to nearby areas called Ekranipathar and Ekranigaon who were mostly in habitat by the Garos and the Kacharis. The relocated villagers underwent a lot of hardships taking shelter in makeshift huts, some seeking shelter beneath the trees and some had the open sky above their head for a roof. In the process of adapting to the new environment the villagers came across a group of occupants nearby who belonged to the same community. In due course of time the villagers build a church in the outskirts of the former village and named it Eralibill, 'erali' meaning grass and 'bill' means swamp. The village was named so because it was located in a swampy area with overgrowth grasses (Garo Baptist Church Eralibill Dimapur: Nagaland 2010). According to 1956 electoral roll, there were 49 households with a population of 114, out of which 47 were male and 67 females. The first settlers comprised of the Garo tribe of Nagaland, Kacharis, Nepalis and the Aos who have been living in Nagaland prior to the British reign in India (Changkakati, 1956).

Eralibill Village has a total population of 2132 which comprises of 1088 male and 1044 female, with a total household of 360 (District Census Handbook: Dimapur, 2011). At present the major tribes that constitute the village are the Aos, Semas, Sangtam, Garos, and Kacharis etc. Except for the Garos and the Kacharis the populations from the other communities are the migrants from the nearby Dimapur urban centre who migrated in search of peaceful and spacious environment. 100% of the households are Christians and they worship in their respective churches. There are four churches, namely, Ao church, Sumi church, Sangtam church and Garo church. The Garo church is the oldest church and has attained 100 years in 2011. There are two educational institutions, a private school and a government primary school one of the oldest schools in Nagaland. The villagers lamented that in spite of repeated proposal for up gradation of the Primary school it has been neglected by the government for a very long, the school children from the village have to walk long distances outside the village for their education.

The early settlers were mostly from Garo community, they were humble and hardworking people and agriculture was the predominant mode of occupation. When they were relocated to this present village the land was a stretch of fertile land with luxurious forested tract. There was no community land or clan land, there was only individual and family-owned land since it was a no man's land bordering Assam. Every household occupied the areas according to their needs; there were no boundaries or limitations. Traditionally being tribal from the hills they practiced dry farming which was the main source of livelihood and additional source from gathering forest products. For two consecutive years they cultivated rice which is the major crop on the cleared patches and in between the paddy different types of crops like yam, beans, sorso, maize, etc. were cultivated. On the third year since the soil become infertile, they irrigate the field and convert it to wet paddy field. Prior to the attainment of Nagaland statehood around early 1950s agricultural department came from Assam and introduced the production of cash crops like potato, jute, sorso, etc. farmers were given training on the cultivation of various crops and then on they started cultivating the new crops side by side with the paddy which was an additional income to their livelihood. The produced were consumed locally and the surplus was sold in the urban markets. The villagers, especially women collected forest products like ferns, varieties of edible leaves, berries, etc. and were sold in the nearby market. The life of the villagers revolved around their farm lands and the forest that surrounded them.

From the early 1980s the peaceful and harmonic environment was disrupted by the sudden intrusion of people from the nearby urban centre. Since the land they occupied was not legally owned they had no choice but to surrender their occupied land receiving a meagre amount in return. Gradually the farmers started to give up the farming since their farmlands were slowly occupied transforming the paddy fields and the forested tracts to high raised buildings and mansions. Some of the early settlers left the village after selling off their lands for the reasons not known migrating to Karbianglong and Goalpara districts of Assam and to Meghalaya, mostly the Kacharis and Garos. In due course of time a group of middle men emerged and started a new business by buying the land from the early settlers paying a lump sum amount and sell

it off at higher rates. One piece of land after another got sold to individuals, business firms and others who are mostly from the city. The meagre incomes generated from the sale of lands are invested mostly in construction of houses and children's education.

The population is constituted by the early settlers, economically successful middle class, mainly traders and pensioners, entrepreneurs, politicians and bureaucrats who turned their weekend cottage in the rural villages surrounding the cities in to permanent residences commuted each day in to the city. The village is characterized by rapid changes in demographic structure, occupational possibilities and land use and is typically experiencing high immigration rates and changing livelihood opportunities.

Livelihood strategies in the study area:

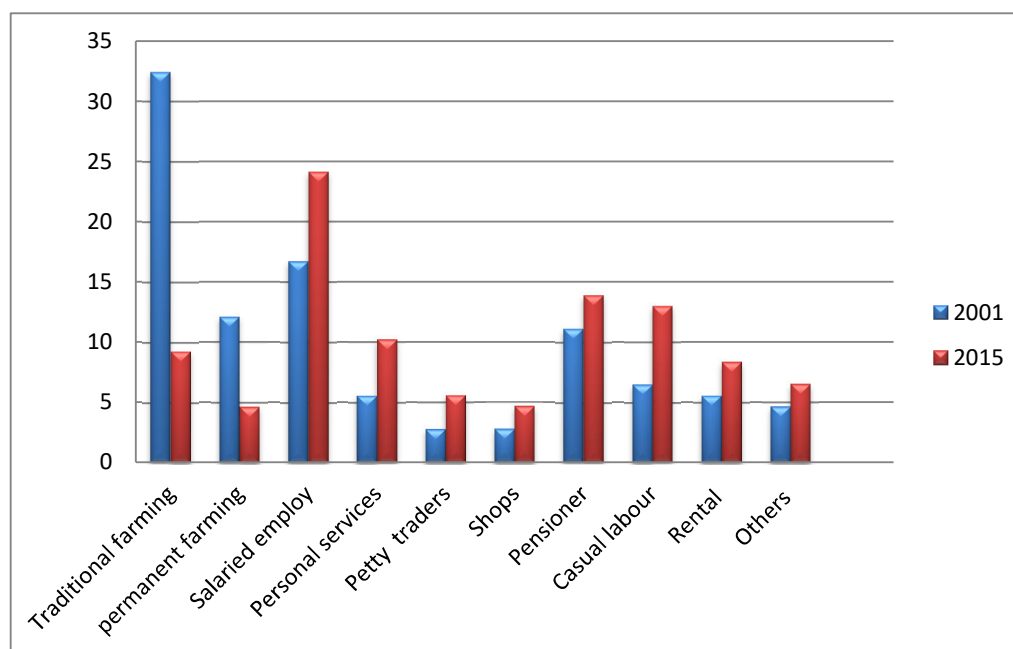
For fulfilling the various livelihoods needs such as water, food, fodder, shelter and etc., a particular household practices multiple livelihood activity such as farming, handy craft and basketry, gathering from forest, hunting, fishing, wage labour, etc. and to fulfil those activities they rely on varied and multiple livelihood sources such as land, forest, water, etc. For example, the basic food for a rural family may be obtained from farm produce, its cash income for buying necessary items for daily use may be earned through wage labour, and firewood and food-items like wild vegetables, fruits and berries may be obtained from forest. Thus, different livelihood needs of the majority of the rural households are fulfilled by practicing various activities utilizing different resources (State Resources and Livelihoods Group, 2005). Each community or even household of a particular community may have its own way of securing their livelihood. Different ways and means, practices, methods and approaches are adopted in order to achieve a sustainable livelihood. Table.4.1. Clearly shows the major sources of livelihood of Eralibill village in 2001 and 2015.

Table 4.1. Diversified livelihood strategies

Major Sources of livelihood	Household in %	
	2001	2015
Traditional farming	32.40	9.26
permanent farming	12.03	4.63
Salaried employ(govt)	16.67	24.07
Personal/private services	5.56	10.19
Petty business/ traders	2.78	5.56
Shops	2.78	4.63
Pensioner	11.11	13.89
Casual labour	6.48	12.96
Rental	5.56	8.33
Others	4.63	6.48
Total	100	100

Source: Field survey, 2015-17.

Figure 4.3: Diversified Livelihood strategies during 2001 - 2015



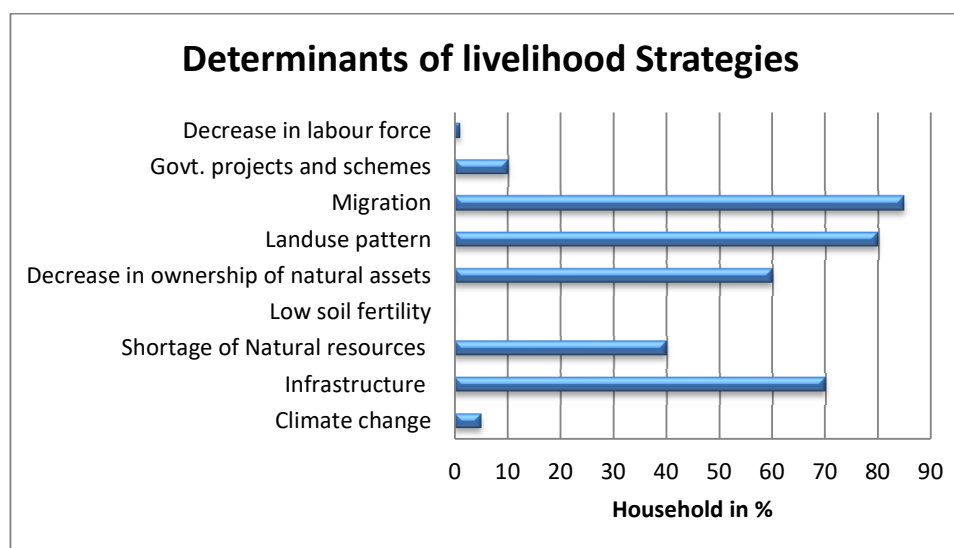
Source: Field survey, 2015-2017.

Table 4.2 Determinants of livelihood strategies

Determinants of livelihood strategies		Household response in %)
1	Climate change	5
2	Infrastructure	70
3	Shortage of Natural resources	40
4	Low soil fertility	0
5	Decrease in ownership of natural assets	60
6	Landuse pattern	80
7	Migration	85
8	Govt. projects and schemes	10
9	Decrease in labour force	1

Source: Field survey, 2015-17.

Figure 4.4. Determinants of livelihood strategies



Source: Field survey, 2015-17.

The main source of livelihood for 24.07% of the household comes under government servant, they are state as well as central employees serving under different departments like education, public health, PWD, Medical, IRP, NAP, Army personals, banks, etc. 10.19% of the households are engaged in different private establishment. Private establishments include private companies, schools, institutions, etc. employed

as managers, ministerial staff, teachers, instructors, etc; most of them work outside the village and commute everyday from the village. Business includes all the shops and petty traders, auto drivers and contractors of different classes. Pensioner in the sample village constitute 13.89% of the total households drawing pension benefit from different sectors like, education department, Medical, police department, PWD, PHED, army pensioners, etc. There are 9.26% of the households who still practice the traditional livelihood i.e., cultivation of paddy.

12.96% of the total households depend on wage as the main source of livelihood. Wage labour consists of both farm and nonfarm and is an important component of livelihood for the people of Eralibill. Nonfarm wage labour consists of various activities such as building construction work, road construction, quarrying, masonry, porters, etc. both skilled and unskilled labourers, 5 households work as wage labourers in the Dimapur District Co-operative producer Union Limited which is located in 7th Mile. Farm labour activity consists of working on farms as agricultural daily wage labourers during specific seasons for activities such as ploughing the field, rice seedlings, weeding, harvesting and threshing.

The main occupation of the households of the sample village since time immemorial is agriculture, which was the most important source of livelihood. Farming families, in order to sustain their livelihood, adopt and maintain wet rice cultivation in between residential areas and along of the bank of the *Bakala Nadi*. The locations of these varied sites compel the farmers to adopt and adapt practices that suit the site factors. The *Bakala Nadi* flowing on the eastern part of the village gets flooded during the monsoon and some years the flood destroys the crop. But the cultivators revealed that the surplus crop which is saved every year in the granary can sustain the household during the year of crop failure. Others which constitute 6.48% comprising of 16 households include politicians, contractors of different classes, church workers, etc.

Apart from the major sources of livelihood, the households also generate their income from sale of vegetables, bananas, beetle nut, coconut, etc. produced from the kitchen gardens. Some households supplement their livelihood income by rearing pigs and local chicken. Households who can afford rears higher breed of chicken like broiler

and kroiler. The Village Development Board had constructed a marketing shed in the middle of the village, since there is no buyers the village vendors directly dispose their products to the wholesalers and retailers who come from nearby market (Purana Bazar). Since most of the farmlands have been converted to settlements backyard kitchen garden is maintained by every household. The Agriculture and allied departments supply free saplings like beetle nut, banana, litchi, coconut, etc. which is planted along the borders of the paddy fields and also bordering residential areas.

Weaving has always been an important traditional occupation of the tribal people, especially women. Loom weaving is an indigenous craft that is passed on from mother to daughter. Weaving is done using traditional looms (Plate ...) bringing out different designs to produce skirts, belts, blankets and other items with indigenous motif and design. Some women in the village still retain the use of traditional loom for making *mekhelas* (loin cloth) which is rather expensive but valuable. In addition to that some women do traditional beadworks on the woven clothes, head gears and necklaces which is worn not only around the neck but also worn diagonally over the shoulder. During festivals like *Wangla* festivals of the Garos, *Tsungremmung* and *Moatsu* festival of the Aos, *Tuluni* festival of the Semas and the *Mongmong festival* of Sangtams the traditional attires, headgears, ornaments fetch handsome amount.

The village enjoys all the benefits of schemes and programmes introduced by the Government to improve life in the village through the Rural Development Department. Under the MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Act) which is executed through the Village Development Board has been creating number of assets like, village approach road, playground, etc. Table 4.3. Clearly shows the village access to various facilities through the developmental programme and it has also improved the standard of living up to a great extend

Table 4.3. Access to facilities

Access to facilities	Eralibill
<u>Housing</u>	
Owned	90
Rented	10
<u>Type of house</u>	
Katcha	25
Pucca	75
<u>Drinking water</u>	
Well	98
Rain water harvest tanks	2
<u>Sanitation</u>	
Toilet – septic tank	82
Other system	18
Electricity	95
LPG	85
Kerosene	4
Firewood	90
Electricity for cooking	55
Radio	80
Television	85
Newspaper	70
Refrigerator	65
Bicycle	20
Motorcycle/scooter	40
Rickshaw	3
Auto rickshaw	5
Car	25
Heavy vehicle	2
Fan	98
Heater	2
Telephone/mobile	98
Sewing machine	22
Washing machine	15

Source: Field survey, 2015-17.

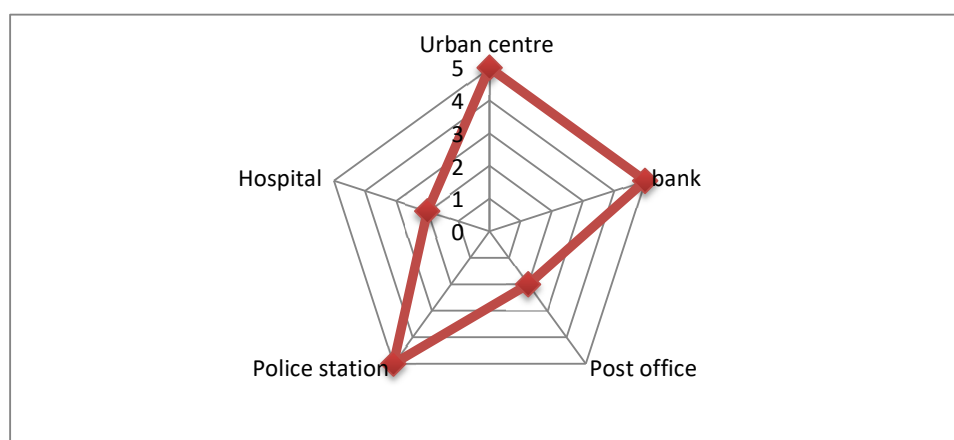
There is a Fair Price Shop (FPS) which is supervised and monitored by the Food and Civil Supplies Department, the department is responsible for identification of families covered under Below Poverty Line (BPL) and through the FPSs the beneficiaries are provided 5 kgs of rice per head per month and 2 kgs of sugar 4 times a year paying a minimum rate. The monthly allocation of Superior Kerosene Oil (SKO) is 2 litres of kerosene per household per month.

Table 4.4. Distance from the village to important destination (in km)

Origin	Urban centre	bank	Post office	Police station	Hospital
Eralibill	8	8	1	8	4

Source: Field survey, 2015-17.

Figure 4.5: Distance from Eralibill to important destination



Source : Field survey, 2015-2017.

There is no Primary Health Centre, the nearest is located in Aoyimti village which is 1 Km from the village. The villagers face unseen problems during emergencies because of the absence of a Primary Health Centre within the village. Inaccessibility to banking facility is also another major drawback of the village, the nearest being located in Purana Bazar, 8 kms away from the village. However, there are two Anganwadi centres, centre A and centre B where from time to time the ICDS (Integrated Child Development Service Scheme) provides supplementary nutritious food, health check-

up, immunization to the children in the age group of 0-6 years and to pregnant women and lactating mothers in the village.

In the sample village WATSAN Committee (Water and Sanitation Committee) formed through the Village Council as per the laid down rules and is empowered through the signing of MoU with the PHED to participate in planning, designing and subsequent takeover of the completed rural and sanitation schemes for operation and maintenance. 10 ring wells are constructed in every strategic location which is shared by that particular locality. The cleanliness and surroundings of the village is monitored by the Swachh Bharat Mission.

Findings and suggestions

Traditionally the livelihood options were not much diversified. A farmer holds on to one job and worked in that throughout his life, worked in the same community in which he had been born, a manual labour, a job mainly done outside in the field and in all types of weather, with no formal qualification or training but particularly specialized knowledge and skill that was passed down between generations in rural areas. The job was secure, stable and sustainable that largely evolved around farming, it was work that was valued (Michael Woods, 2005).

The villages surrounding Dimapur represents a complex landscape because of its proximity and mutual dependence with the city. An uncontrolled development of urban sprawl and land use changes determine negative impacts on all natural, economic and social components. The villages suffer from urban pressures, but also gain from proximity to city, markets and culture. It is an area of transition with complex patterns of land uses and landscape. Land as well as occupational and social structure is going through rapid transformation, transforming traditional Naga villages into suburbia due to technical and social innovation.

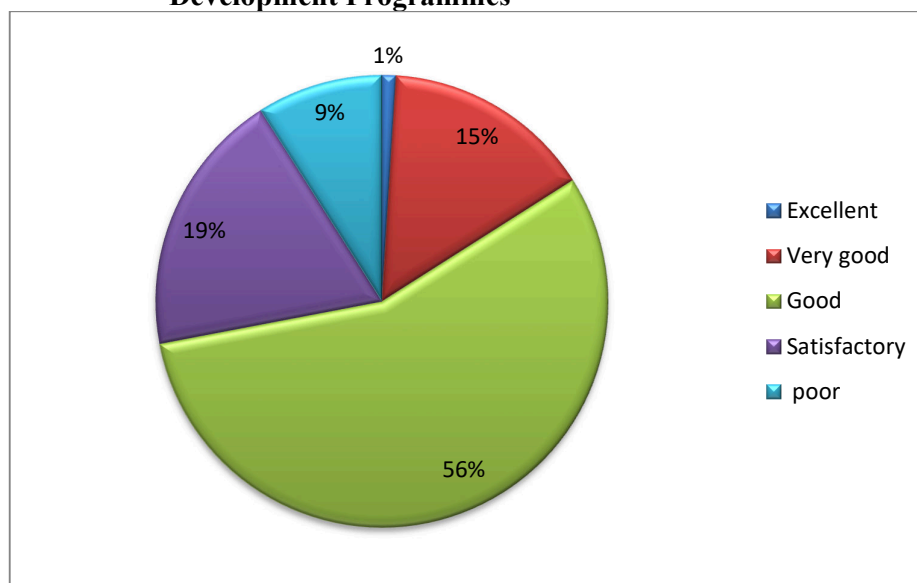
Eralibill, till the early 1980's was a forested tract dotted with paddy fields; it is now transformed to an urban setup with high raised buildings and mansions, there are patches of paddy fields scattered in between the settlements and a long stretch of paddy fields along the bank of Bakala Nadi. While the village lands get transformed, the residential settlement of the village still remains intact with narrow, dusty and muddy

lanes, small houses and huts, old church building, paddy fields behind the backyard, pasture land, etc.

The Kachari and Garo tribes though minority groups in Nagaland have not lost their identity and unique culture. They have not lost their touch with the common past of a culturally rich tradition. Both the groups have preserved their culture, language and identity in the state and are an integral part of the Naga society and are also recognized as an integral indigenous tribe of the state by the Government based on facts rather than myths.

Back then the villagers lived a very prosperous, peaceful and contented life, life was simple and self-sufficient and every household was treated equally with no class structure. The remaining few early settlers of the study area are economically oppressed when other Naga communities are progressing rapidly. Despite various shortcoming in order to preserve their culture every effort are being made to develop and bring their society at par with the other communities of Nagaland in every aspects of life such as social, economical, intellectual, etc.

Figure 4.6. Household Rating on Community Assets Creation through Development Programmes



Source: Field survey, 2015-17.

The introduction of various community development schemes and programmes were initiated to build the capabilities of the poor by the Government in the village. To some extent it has improved the living standard of the village in terms of consumption, created tangible assets, generated employment, and improved the income earning. However, most of the households in the sample village is unaware about the relevance of the programmes and also lost confidence in the programmes due to frequent failures. Unless there is peoples' participation these programmes will not succeed and therefore, it is necessary that before initiating any livelihood activities motivation, awareness and capacity campaigns should be organized. Moreover, it will prevent from creating gap between the rich and the poor within the community.

Sustainable livelihoods and a healthy landscape depend upon the integrated management of natural resources; this requires consideration of the social as well as the ecological dynamics of natural resource use (Gutierrez-Montes et al., 2012). Special focus for women on capacity building should be given priority, encouraging and empowering their entrepreneurial spirit. Skill development and livelihood support programmes should be planned and organized which will create both self-employments, wage employment opportunities and enable them to generate a livelihood from their skills.

With increasing population and limited rural economic diversity and employment opportunity, rural–urban migration and increasing demand for urban services is putting agricultural land under pressure; horizontal growth of cities is consuming prime agricultural lands in many developing countries. By reducing smallholder risks and increasing the sustainability of their farming practices, the creation of healthy landscapes can deliver improved livelihoods and increased food security, thereby helping to make farming an attractive alternative to migration into the cities (AIRCA, 2013). As majority of rural households heavily rely on their surrounding natural resources for their livelihoods environmental sustainability becomes necessary. Security of livelihoods should be ensured against difficulties and threats to the livelihoods.



Plate 4.1: Eralibill Village Gate

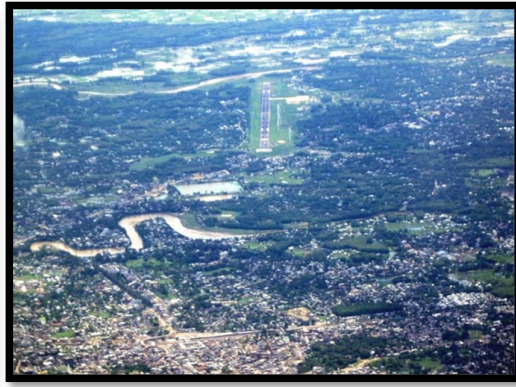


Plate 4.2: Aerial Photograph of Eralibill



Plate 4.3: Construction of brick wall across
Paddy field



Plate 4.4: Stretch of Paddy field



Plate 4.5 :Village hut



Plate 4.6: Traditional loom



Plate 4.7: Pig Sty



Plate 4.8 : Marketting Shed



Plate 4.9 : Village Council Hall



Plate 4.10 : Construction of High raised private houses.

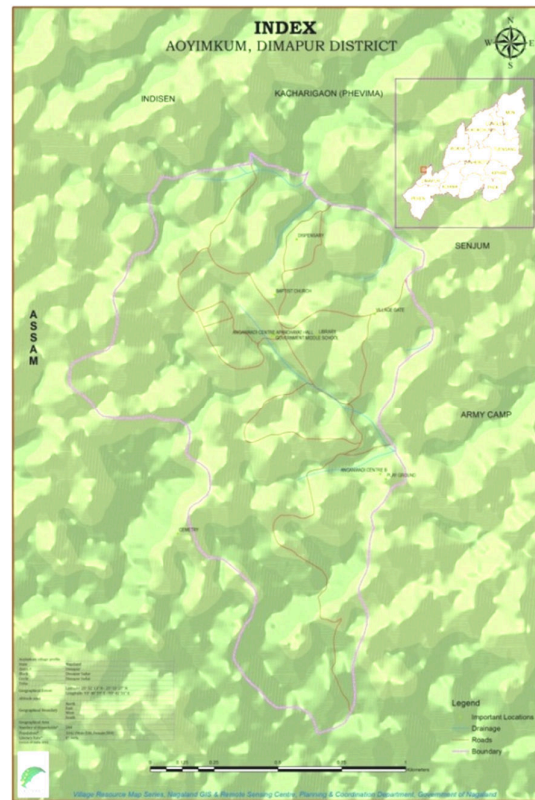


Plate 4.11 : Churches belonging to different communities.

4.1.3 Aoyimkum, Dimapur District

Aoyimkum is a village panchayat located in the western corner of Dimapur district, Nagaland. Lying between 25°52'13" N – 25°53'27" N latitude and 93°40'59" E - 93°41'51" E longitude. The village was founded on 18th February, 1970. Back then that particular area was known as Rangapahar forest. Only in 1976 on 4th September as per the resolution No. 5 dt 4/09/76 of the village *mungdang* the name Aoyimkum became the village official name. The populace of the Aoyimkum village consists of likeminded people from 37 different Ao villages of the six ranges who came to live together in the occupied forest. Aoyimkum became a bonafide village of Nagaland as per the Govt. of Nagaland notification dt 17/05/1988 and is bounded by Kashiram village in the North, Army cantonment in the South, Sungjem village in the east and Assam forest in the west.

Figure 4.7: Index Map of Aoyimkum



Source: Nagaland GIS & Remote Sensing Centre, 2019.

The virgin forest was cleared for settlement, largely due to the inflow of migrants from the nearby congested urban centre, business men started logging- found that it was a suitable area to start permanent settlement away from Dimapur congestion and urban pollution- main pull factor to that area was logging - altitude higher than Dimapur town with hillocks separated by small streams and low-lying areas where the early settlers practiced wet cultivation but now converted to fishery ponds.

After the formation of the village, the village went through a lot of physical and mental hardships. The majority of the population belongs to Ao Naga tribe with only a few non-tribal households. According to 2011 census there are 244 households in the village with a total population of 1042 which comprises of 538 male and 504 female population (Census 2011)

Frontier regions have traditionally been seen as areas which are opened up for agricultural or other economic activities by the clearing of virgin or semi-wild forests. Thus, Aoyimkum is situated in a frontier region bordering Assam. This village is characterized by rapid changes in demographic structure, occupation and land use. It is also experiencing high immigration rates and changing livelihood opportunities, such as through the establishment of new commercial activities. This particular village is not only advancing in a spatial sense but also is experiencing social and economic fluidity due to new opportunities.

Associated with the influx of new people into these frontier regions are new settlement processes and patterns. Existing settlements are being consolidated and are correspondingly becoming both increasingly densely populated and are expanding on their fringes.

Livelihood scenario of the village and its changing pattern:

The early settlers were mostly business men engaged in logging, farming and petty traders who depended on the forest products for their livelihood. The products collected from the forest were wild fruits and berries, wild edible leaves and ferns, mushrooms of different varieties, bananas, crabs and fishes from the streams, wild birds and animals etc. the villagers sold the surplus food outside the village mostly in the fringes of the village bordering Dimapur town. Development of the village

infrastructure started to take place with the recognition of the village by the Government of Nagaland. The first village approached road was constructed by the villagers in 1984 and later on followed by metal ling bringing about drastic change in the village scenario.

Naga society has a strong social security system that covers all inhabitants. However, the poor find it difficult to maintain an acceptable standard of living due to severe economic hardships. During the study, households were identified belonging to different levels of economic status to understand the degree of socio-economic struggles faced by different households. It was found that some of the households comprised of the aged, the widowed and the orphans who faced the severest struggles because of few able-bodied members to obtain their livelihood.

Changes in occupational pattern:

There have been significant changes in the occupational pattern in the study area. During the early nineties the village was a forested tract and there were only few permanent households who were mostly engaged in log business, few patches of paddy fields in between the hillocks. The major sources of livelihood of the early settlers were logging, gathering and hunting and gradually they started to cultivate the forested hillocks and the valleys cleared by logging which became one of the main sources of livelihood. Back then the livelihood of the villagers was totally self-sufficient and generated surplus income from the sales in the nearby urban area.

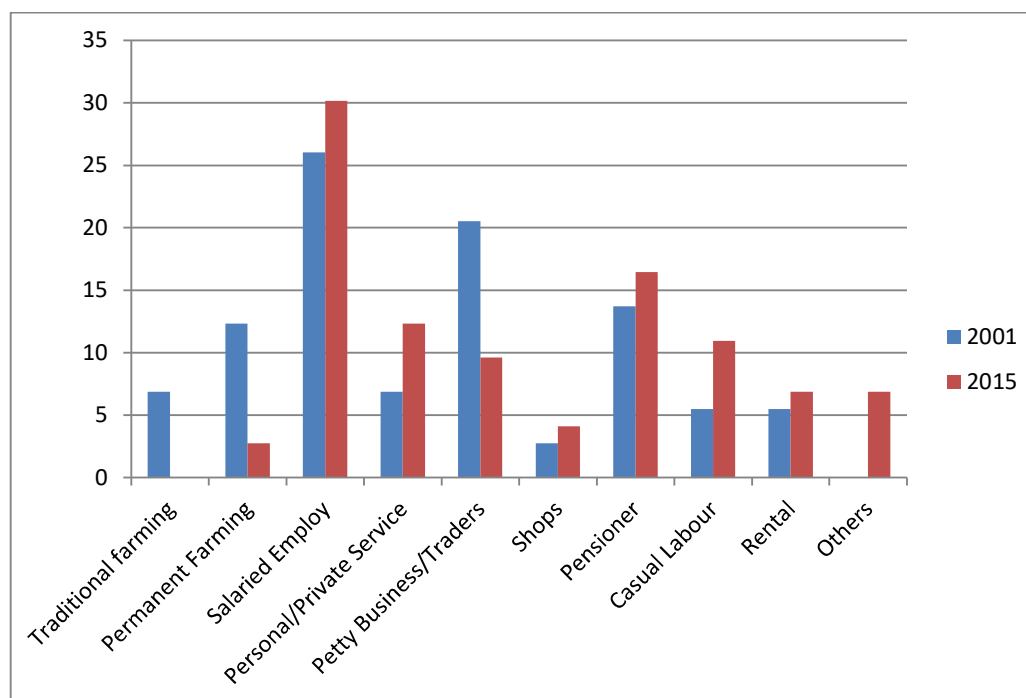
Within a span of nearly 15 years the change in land use pattern, from a forested tract to a settlement area, significantly changed the occupational pattern in the study area. Apart from the government salaried households the rest of the households are frequently engaged in one or the other income generating activity. They are engaged in multipurpose activities with ample scope of work throughout the year so that they do not have any nil income periods.

Table 4.5. Diversified Livelihood Strategies

Major Source	Household in Percentage	
	2001	2015
Traditional farming	6.85	-
permanent farming	12.33	2.74
Salaried employ(govt)	26.03	30.14
Personal/private services	6.85	12.33
Petty business/ traders	20.54	9.60
Shops	2.74	4.11
Pensioner	13.70	16.44
Casual labour	5.48	10.96
Rental	5.48	6.85
Others		6.85
	100	100

Source: Field survey, 2015-17.

Figure 4.8.: Diversified Livelihood Strategies during 2001-2015



Source: Field survey, 2015-17.

Table 4.5. clearly shows that within a decade and a half there has been a tremendous change in the household's livelihood strategies. In 2001, 6.85 % were practicing dry farming in the cleared hillocks and wet terrace cultivation along the valleys but in 2015 there is not even a small patch under cultivation. All the cultivable land is transformed to permanent and private settlements. The maximum households come under the category of salaried employee with 30.14 % of the total household, to move away from the urban congestion they have taken the decision to come and settle in the fringes of the urban centre and moreover, back then the cost of lands was cheaper affordable for a common man too. With the increase in household and number of populations the shops have also increased from 2.74% to 4.11% and the types of shops have also been diversified due to the demand. There is an increase in the household of pensioner from 13.70 % to 16.44%, on being interviewed the respondents admitted that they have moved in to this place because they preferred a clean and peaceful environment away from the urban pollution and congestion. It was observed that there had been a decline in the percentage of the permanent farming from 2001-2015 from 12.33% to 2.74. This is because of the increase in household and expansion of settlement towards farmlands, according to the household responses by 2011 land use pattern of the entire village have changed to permanent settlement.

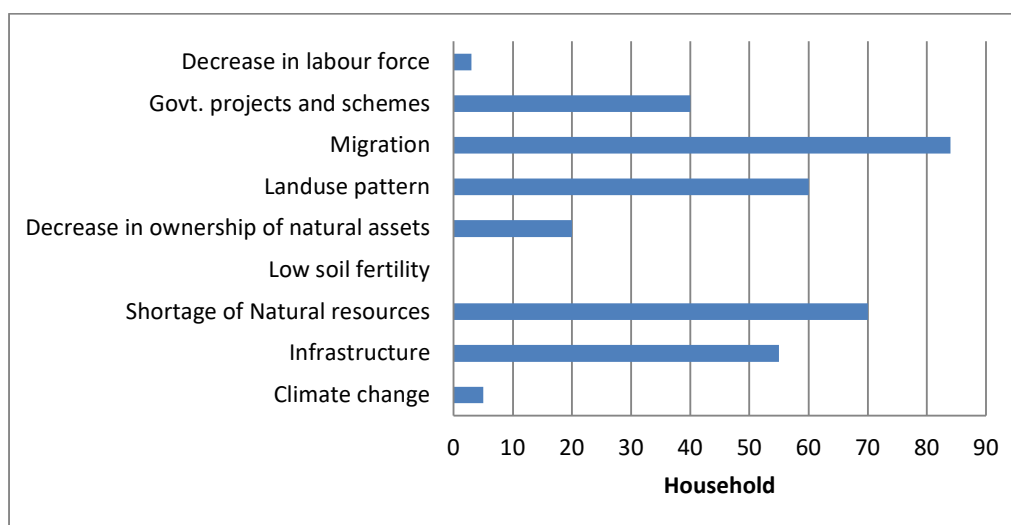
The study has identified various factors influencing the village such as the pressures from Dimapur urban area which quicker the transition from rural to urban, increase in the land cost within the city has created huge demand for land outside the city boundary effecting the rural areas in the city fringes such as Aoyimkum village which lie in the fringes of Dimapur city, congestion in urban areas and the high traffic congestion prevailing on the city streets force the city residents to migrate to peaceful rural areas, the desire to own land and exceptionally infrastructure related opportunities that the peri-urban areas provide.

Table.4. 6. Determinants of livelihood strategies

Factors	Household in percentage
Climate change	5
Infrastructure	55
Shortage of Natural resources	70
Low soil fertility	0
Decrease in ownership of natural assets	20
Landuse pattern	60
Migration	84
Govt. projects and schemes	40
Decrease in labour force	3

Source: Field survey, 2015-17.

Figure 4.9. Determinants of livelihood strategies



Source: Field survey, 2015-17.

Income

Income is one of the best indicators to measure the livelihood pattern of a community. Livelihood pattern of a community absolutely related to income. Income diversification is vital things to improve livelihood, there are no quick solutions that will be sustainable and growing over time (Thunberg, et al, 2003). Many people are

engaged in activities such as small business and trading of local products to generate cash to meet their basic needs. There are also few people who are employed in government or private institutions and earn a regular salary. Some cash income also comes in the form of pension from insurance institutions. Others are dependent on remittances of family members who are regularly employed in the nearby urban centre.

Livestock

Naga households are highly dependent on meat products and on seeing the large demand in nearby urban areas like Dimapur most of which is met through imports from Assam.

Table 4.7. Assessment of livestock practices in Aoyimkum

Village		Piggery	Poultry	Fishery	Cattle rearing
Aoyimkum	HH	146	171	10	5
	HH%	60	70	4	2

Source: Field survey, 2015-17.

Poultry is one of the easiest sources of meat for the rural households and every household engages in backyard poultry farming. 70% of the households have started backyard poultry on small scale for home consumption and also sell within the village to meet the expenses spend on the feeds. The advantages of backyard poultry are - Very low initial investment restricted to procurement of chicks & some feed.

Rearing of kroiler is easier due to faster growth compared to country fowl but lesser growth than the broiler, it takes almost 12 weeks to attain the saleable size but it is more suited than broilers to the high-altitude climate in Nagaland. It has better market value due to attractive body colour and meat quality; additional income can be attained from eggs if extra effort is given to keep for longer duration.

Commercial poultry rearing activity is common in village since it is located near the urban areas where they have direct linkage to market for export as well as import and also linkage with the marketing associations. Within 40-45 days the chicken attains saleable size which is sold at the rate of Rs 100 per kg to the wholesaler who comes

directly to the farm from Dimapur town (rate at the time of survey). In the sample village there are three families who are engaged in poultry and piggery farms at a large scale.

Table 4.8. Families engaged in poultry and piggery farms on large scale.

Name	Poultry (No. of chicken)	Piggery (No. of pigs)	Cattle (No. of cows)
Meren	1200	13	-
Chuba	700	30	-
Supong	650	70	7

Source: Field survey, 2015-17.

According to Table. 3.5. 60% of the household rear pigs. Poor household rear piglets to maturity and then sell them on attaining 6-7 months maturity, the poorest households sell almost all of their young pigs to meet immediate cash needs to purchase grain or household items. The profitability of rearing piglets and selling them at such young age is very low, whereas households who are able to keep piglets until they are ready for slaughter achieve a better return. The best return on pig keeping is made by the ‘not so poor’ and ‘well off’ households who buy piglets from the ‘poorest’ households and then fatten them up, as the households do not have to incur the cost of holding a breeding sow for the purchased piglets. In certain cases, pigs are reared on shared basis, the richer household buys the piglet at a rate of Rs. 2500 (rate at the time of survey) and supplies the feeds throughout the gestation period which is taken care by the not so well-off household. One household is involved financially and the other with physical labour, on maturity the pig is sold in the market and the amount will be shared equally between the two households. The income pattern of household in study area changes with the changes of land use. All households in the study area have influenced directly or indirectly by land use changes.

Social identity:

It is a very important concern that which identity ones prefer more in his society. The social identity of the household head changed with the changes of land use. According to the story narrated by one of the households who migrated to the village in 1990 there were about 30 households and the houses were scattered and isolated from each other. Back then the villager introduced himself to others as a farmer or a

businessman engaged in small scale logging but now with the changes in land use he gives his identity as a land lord or a pioneer of the village. Assessment on community feeling table reveals that 48% of the total household admitted that the village has a very good community feeling mainly because more than 90% the village populous consists of Ao tribe which brings them easily under a common platform.

Table 4.9. Assessment on Community feeling

Excellent	Very good	Good	Satisfactory	poor
6	48	31	14	1

Source: Field survey, 2015-17.

Figure 4.10: Assessment on Community feeling



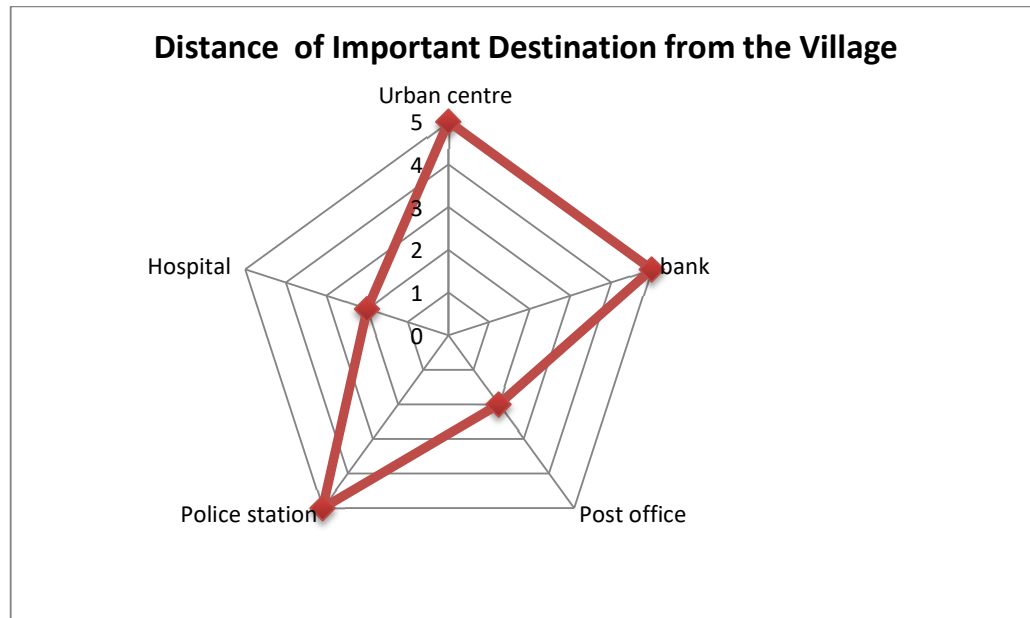
Source: Field survey, 2015-17.

Migration:

Among the most important factors that have contributed to the conversion of land to non-agricultural use is rural-urban migration, rapid economic growth, and increased investment in roads. the growing urbanization and the penetration of urban based economy has started changing the overall livelihood pattern in the villages with the effect of market forces the traditional societies started looking for opportunities to improve their livelihood. 70 % of the household says that the change in the livelihood pattern in the village is mainly due to migration in any form- in and out migration for

short term or long term or it can be daily commuters. Distance from the village to the urban centre as well as important destination also is an important factor that changes the pattern.

Figure 4.11: Distance of important destination from the village (in Km)



Source: Field survey, 2015-17.

According to Lal (1987) an important development in the urban settlement during the past few decades has been the rapid growth of population and expansion of built-up areas in to the unincorporated suburbs and to the areas surrounding larger towns and cities. Gradually the addition of population and related developments generates a zone of transition between the main urban settlement and the deep rural landscape. This zone which enjoys continuous change due to the centrifugal forces from the city proper and in – migration from other places to the area is usually an amorphous territory around the larger cities



Plate 4.12: Aoyimkum Village Gate



Plate 4.13: Panchayat Hall



Plate 4.14: Govt. Middle School



Plate 4.15: Village Street



Plate 4.16: Primary Health Centre



Plate 4.17: Traditional Lock up



Plate 4.18: A village hut



Plate 4.19: RCC buildings



Plate 4.20: Fishery pond



Plate 4. 21: Piggery farm



Plate 4.22: Chicken Rearing shed ready for a new batch



Plate 4.23: Permanent Plantation



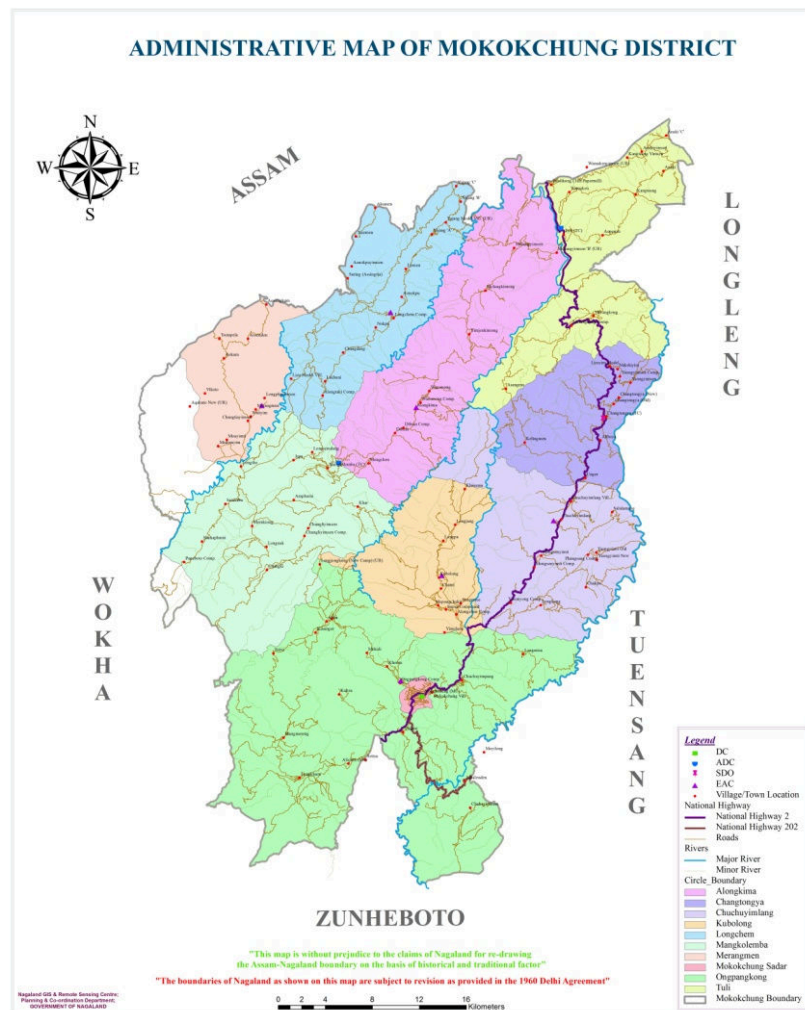
Plate 4.2: Church

4.2. Mokokchung District

4.2.1. General Introduction

Bounded by the State of Assam in the north, Tuensang in the east, Zunheboto in the south and by Wokha and Assam in the west, Mokokchung District lies between $25^{\circ} 56'$ to $27^{\circ} 40'$ north latitude and $93^{\circ} 53'$ to $94^{\circ} 53'$ east longitude. The district is hilly and most of the settlement areas are located on the hill top with various village falls into different circles.

Figure 4.12. Administrative Map of Mokokchung District



Source: Nagaland GIS & Remote Sensing Centre, 2019.

The climatic conditions prevailing in the district is moderate and pleasant throughout the year with the minimum temperature of 10°-15° C in winter and a maximum of 28°-30°C in summer. The average rainfall of the district ranges about 1600mm- 2500 mm. with a total area of 1,615 sq. km., representing 9.74 percent of the total area of the state of Nagaland (16,579 sq.km.).

The District of Mokokchung is sub-divided into six ranges namely – Tzurangkong Range adjoining the plains of Assam; Japukong Range is the outermost Range stretching from North-east to South-west lying to the interior south of Tzurangkong Range; Jangpetkong Range (formerly Changkikong) is a parallel Range east of Japukong Range; Asetkong Range – a Central Range running from east to west lies between Melak and Menung rivers, and therefore, it resembles an island and hence the name *Asetkong* (Island); Langpangkong Range – the easternmost range skirting along the course of Dikhu river which forms a natural boundary line of Mokokchung with Tuensang and Mon districts. This range is spread like a bed or table (*Langpang*) and so the name has been suitably given to this range; and Ongpangkong Range – the southernmost range forming an irregular boundary of the Ao area with that of the Lothas and Semas to the south and with the Sangtams to the east. It is called as it is higher (*Ongpang*) and cooler than the other ranges (District Human Development Report: Mokokchung, 2013).

The main town is located in Ongpangkong range which is the main district Headquarter. The district headquarters Mokokchung, situated 1,325 m above sea level, is 152 kms away from State Capital Kohima and 254 kms (approx) from Commercial capital Dimapur.

Table: 4.10. Rural- Urban Population of Mokokchung District

2001		2011	
Rural	Urban	Rural	Urban
196,026	31,204	137,517	55,654

Source: Statistical Handbook of Nagaland, 2004 & 2012, Directorate of Economic & Statistics, Government of Nagaland, Kohima.

Mokokchung district is predominately a rural region and rural settlement is a common feature. According to Table 3.10. Rural population in 2011 constitutes 137,517 while urban population is 55,654. It is revealed that the concentration of rural –urban settlement population is more in rural areas. About 71 percent of its population lives in rural areas and still major population is dependent on agriculture for earning their livelihoods.

The change in rural – urban ratio is primarily due to commercialization and urbanization which has led to migration from the rural to urban sectors. The district is pre-dominantly a rural region with a maximum settlement population below 1500 persons. The town of Mokokchung is the only urban area though there are five-sub town considered as rural settlement. The patterns of settlement on the rugged terrain caused lots of constraints for the development of an area. Most of the rural settlements are of compact type with rectangular and linear shapes except some newly recognized village characterized by dispersed settlement. The main reason of continuous increase in urban population is through jobs opportunities and better educational facilities also by inflows of the new migrants and directly by the natural increase of the migrants.

The livelihood strategies being followed by the people of the district are highly vulnerable to the suffering resulting from tough mountainous terrain, highly fragile environment and erratic behaviour of the weather, especially in high hills. Difficult climatic conditions, geographical conditions and small market size make large scale application of production technology difficult. High cost of creating and maintaining physical infrastructure act as constraints which result in high transportation costs and prolonged transit period in movement of various goods.

However, availability of a wide variety of resources locally gives an inherent advantage in producing local resource-based commodities. Locally available resources can be utilized through appropriate interventions aimed at application of large-scale production technology and providing appropriate market linkages.

History and the People

During the British period, Kohima Sadar and Mokokchung were the only subdivisions of the Naga Hills district according to 2011 Census. After Independence, in 1948, Tuensang was created as a separate administrative centre and became a subdivision of NEFA under a separate Assistant Political Officer in 1952. Later, in 1957, Tuensang subdivision was bifurcated from the North-East Frontier Agency (NEFA) and merged into the Naga Hills-Tuensang Area (NHTA) along with three districts of Kohima, Mokokchung and Tuensang. The area under the erstwhile Mokokchung district came under the British administration for the first time in 1876 when the headquarters of the Naga Hills District were set up at Wokha. Mokokchung was created as a subdivision in 1889 and remain so till 1956. It was upgraded as a district in 1957 out of the erstwhile NHTA, then under Central Government. The district came into existence when Nagaland attained its statehood on December 1, 1963.

The nomenclature of the district originated from the name of Mokokchung village. According to 2011 Census Handbook, the name literally means going away (*chung*) in defiance (*mokok*) of the wishes – a group of early Ao people who had scattered to different places away from their original settlement in defiance of the wishes of their parent village, namely Koridang, came to a new place and established a new village which they named as Mokokchung.

According to Mokokchung District Human Development Report (MDHDR, 2014), the Ao tradition gives an account of their origin from '*Longtrok*' (six stones), from which emerged six persons, who came to be the progenitors of the Aos. The first settlement known to the tribe is 'Chungliyimti village'. As the village became overcrowded in due course of time, a large number of them migrated across Dikhu River and settled in the present territory of Ao. Thus, these people were called as 'Aor' or 'Ao' meaning 'going ones or gone'. There are two divisions of Ao tribe, the Mongsen and the Chungli, who not only speak dialects which differ but also have minor differences in their customs and like all other Nagas, the Aos have Mongoloid features. The villages are generally built on the highest hills and fortified for defence. Ao

villages, according to A.W. Davis (Census of India, 1891, Assam Vol. I) are a small republic.

Traditionally, the Ao celebrated two premier festivals in a year related to agriculture – one was the sowing festival called *Moatsü* and the harvest festival called *Tsüngremmung*. *Moatsü* is celebrated in the first week of May every year after the sowing is done. The festival provides them a period of recreation and entertainment after the stressful work of clearing fields, burning jungles, sowing seeds, cleaning up the *Tsübu* (wells) and repairs and construction of houses by elders of the *Putu Menden*, stretching over a week. The *Moatsü* festival is also marked by songs and dances. *Tsüngremmung* celebrated in the first week of August every year, when the fields are ripe and ready for harvest. *Tsüngremmung* is also a time for thanksgiving to God for an abundant blessing in the lush fields. The essence of *Tsüngremmung* is sanctification of the self and society for obtaining blessings from God.

FLORA AND FAUNA

Mokokchung district is a hub for biodiversity. A variety of animals, herbs and plant species is found to co-habit in this region. *Milak*, which is the longest river, starts right at the Deputy Commissioner's residence at Mokokchung town runs through the hills of the district in northward direction then turns westward to the plains above Amguri, where it is known as *Jhanzi* in Assam. *Dikhu* (*Tsüla* in Ao) is the biggest river in the district that rises from Sema area, flows westward into Ao area (west of Longsa village) then turns northward forming the boundary between Ao on one side, and the Sangtam, the Phom and the Konyak on the other, finally draining into Brahmaputra in Assam. *Tsurang* River is another tributary of the Brahmaputra that flows from the lower ranges of *Tsurang* valley. Other River includes *Menung*, *Tzüvi* river (mother water), *Tzüza* (baby water); *Tsürong*, *Nanung*, *Tsümok* etc.

Among other, birds like Kaliji Pheasant, Red Jungle Fowl, Common hill Partridge, Green and Royal Pigeon, Common Jungle Fowl, Emerald Dove etc are found in the District while wild animals like Flying, five striped Pam and Himalayan squirrel, Barking Deer, slow Lorries, Cape hare, Palm Civet Indian Fox, Stump Tailed and Rhesus macaque and hoolock Gibbon etc are common.

VITAL STATISTICS

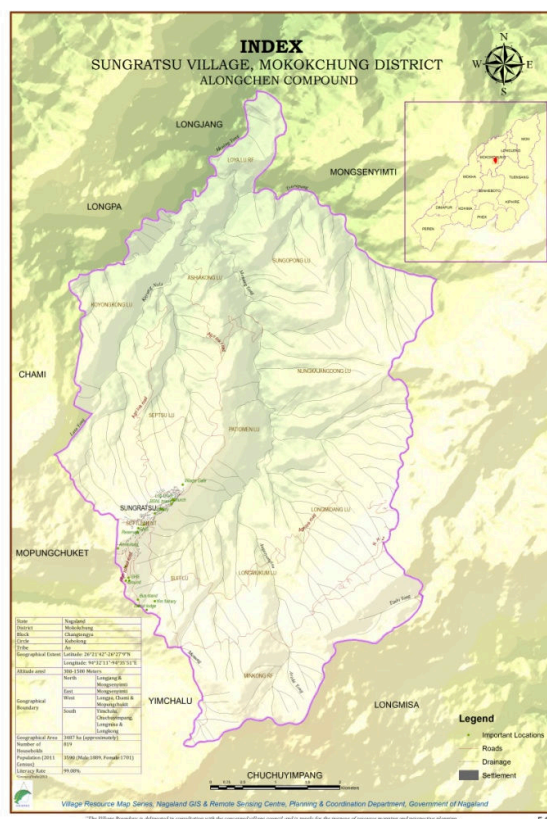
According to 2011 Census, the District had 108 villages out of which 107 villages are inhabited and 1 uninhabited. It has three statutory towns, namely, Mokokchung Town, Tuli Town and Changtongya Town and one Census Town namely Tsudikong under Tuli administrative circle. Mokokchung town became a statutory town during the time of 1961 Census while Changtongya and Tuli Towns were notified after Census 2001. The sex ratio in the district has increased from 919 (females per '000 males) to 927 during 2001 and 2011 respectively.

At 94,622 persons, the District was placed 5th Place in terms of population and 4th Place in terms of density of population (121 persons per sq. km). The village with highest population was Ungma at 9,443 persons while the lowest was Zunheboto Compound at 36 persons. The District had the distinction of being the most literate districts in Nagaland at 91.6%.

4.2.2. Sungratsu Village, Mokokchung District.

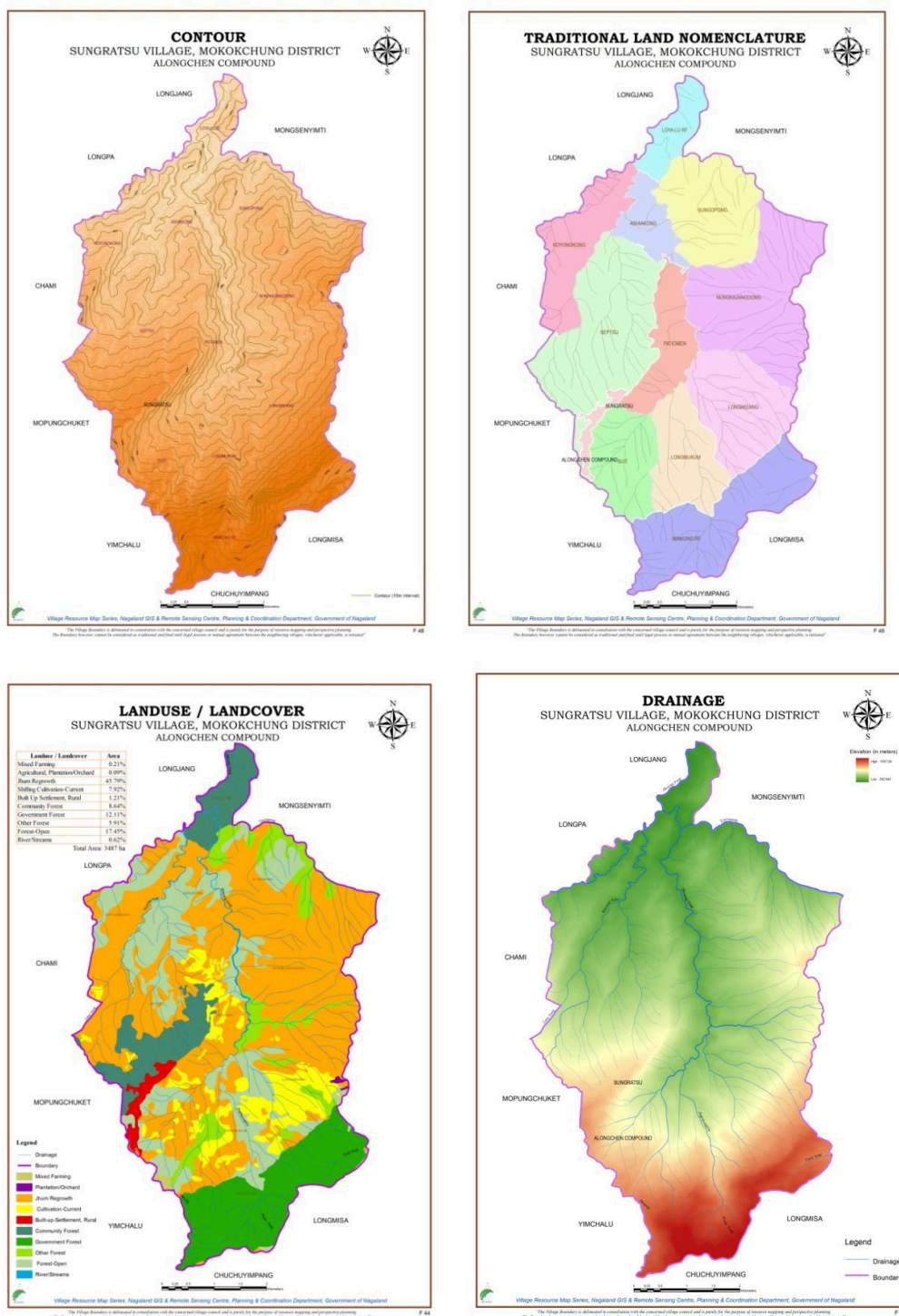
Sungratsu village is located in the southeast of Mokokchung district under *Asetkong* range. It lies between 26°21' 42" – 26°27'9" N Latitude and 94°32'11" to 94°35'51" E Longitude with an altitude ranging between 300 meters to 1500 meters above the mean sea level. The village is bounded by Longjang and Mongsenyimti villages in the north, Mongsenyimti village in the east, Longpa, Jami and Mopungchukit village in west and in the south, it is bounded by Yimchalu, Chuchuyimpang, Longmisa and Longkong. The village occupies an approximate geographical area of 3487 Ha (Nagaland GIS & Remote Sensing Centre, 2019). Some of the major rivers are *Menung*, *Tzusu*, *Tsurr*, *Angetyong*, *Akrushiyong*, *Longpakyong*, *Longmendang*, *Khuyong*, *Sungpongyong*, *Lasayong*, *Yongdangru*, and *Nanungyong*. There are numerous 1 streams which accumulates the village water sources.

Figure 4.13: Index Map of Sungratsu Village



Source: Nagaland GIS & Remote Sensing Centre, 2019.

Figure 4.14: Maps of Sungratsu Village



Source: Nagaland GIS & Remote Sensing Centre, 2019.

The village is one of the 10 villages under Kobulong circle of Mokokchung district in Nagaland. Sungratsu village qualifies as an average sized village of the Ao-Naga tribe, situated at a distance of 16 km from Mokokchung town. It has 819 households and a total population of 3,590 (Statistical Handbook of Nagaland, 2012) comprises of 671 male and 633 female and it has a literacy rate of 99.08%

The village has seven major clan groups who are also recognized as original settlers of the village viz; *Jamir, Lemtur, Ozukum, Longchar, Aier, Walling and Mollier*. The village is divided into 10 localities or *Mepu*, namely; *Jungli mepu, Alisumang mepu, Lenden mepu, Longsangya mepu, Walling mepu, Semchiyong mepu, Alempang mepu, Keyasa mepu, Alongchen mepu and Pongen Tenem mepu*. The forefathers of the village first came and settled at *Pongen Tenem*. It is said that they kept their load or baggage supported on the root (*sungra*) of a tree and hence, they named the village as *Sungratsu*.

The Sungratsu villagers were simple, co-operative, trustworthy, out spoken, adventurous type of people and led a well-organized social life. They were also renowned for their bravery and thus during head hunting days they were feared by other villagers and was never invaded by any other villagers. Community hunting and fishing was a common phenomenon for the villagers. A very popular hunting event in the history of the village can be traced back to the month of August 1926 during *Mejensanger putu* (era) is the capturing and slaughtering of a tiger by the whole community continuously chasing for nine days from *Suitlu* and finally killed at *Suptsulu* on the ninth day by using only spears and machetes.

Numerous rivers, streams and springs abound in the village territory. *Minkong* is one natural forest from where numerous springs supply abundant water, not only to the village but also to the neighbouring villages and Mokokchung town, the district head quarter as well.

The village is endowed with some natural historical and scenic places like *Ansulong* natural park, *Minkong* and *Loyalu* natural sanctuary, *Asaba Longpak*,

Menungtzuin, Keyi meta, etc. out of the 12 jhum blocks *Loyalu* and another two blocks in *Meinkonglu* had been reserved for wild life and biodiversity conservation.

It is impossible to have a proper understanding of the current and future trends in the livelihood pattern without having at least a basic understanding of the past, the traditional livelihood of any particular community. When we say traditional livelihood, it is those occupations that are deeply rooted in customs and practices and have been followed by successive generations of rural peoples and their communities, traditional occupational practices were largely subsistence-oriented.

Rural life is community based, and natural resource management practices are governed by traditional mechanisms of customary laws and norms. These societies have deep sentimental attachment and socio-cultural orientation to their land and territories in which their identity and culture is rooted. This relationship is often expressed through folk songs and dances, beautifully designed hand-woven ethnic attires and woodcarvings, among others (Thingreiphi Franthang, 2010).

Livelihood options in the study area

Agriculture constitutes the central economic activity of the people within the study area, which is also the most important source of livelihood. Majority of the people are engaged in agriculture which is an extremely complex system and practiced both for subsistence and for the market.

99% of the household in the study area are totally dependent on shifting (jhum) cultivation with a variety of crops being cultivated and rice the major crop. It is a system that is dynamic over time and space and is a well-organized system which is ecologically viable. The cultivable areas are divided into 12 jhum blocks also known as *Alu puok* or *Aluyimdak likum* in local dialect, viz; *Lemchalu/yimchalu*, *Suethlu*, *Longmekumlu*, *Longmidanglu*, *Nungkajangdonglu* /*Ningkamenlu*, *Sungskoponglu* /*Jangkoklalu*, *Loyalu/Lizalu*, *Ashiakonglu*, *Salolu/Septsulu*, *Shititsuyonglu*, *Khoyongkongmanglu* and *Meinkonglu*.

The vegetation on the Jhum field is cut and dried which has a ritualistic and social importance. While slashing/ clearing the forest for cultivation, they do not cut down or uproot some trees completely. For example, if the trees are very big only the

branches are lopped off; other trees are cut 8 cm above the ground and the coppices are allowed to grow again. These tree stumps and poles help in controlling soil erosion and their re-growth helps in the regeneration of forest. Fire is set generally in the month of January or February with proper fire line. No manure or pesticides are used apart from ashes and the residue from the burned forest which adds nutrients like potassium and phosphorous, directly to the soil. The burned soil is spread uniformly throughout the field so that the nutrients are evenly distributed. Burning of jungle also control potential weed re-growth, fungus and insect infestations and the high temperature during burning also enhances the release of other native soil nutrient elements (Hormila. G. Zingkhai, 2015)

Agricultural production was largely for consumption and was sustainable when life was simple. Small scale barter or trade of agricultural products was also done in order to acquire other products or commodities not available in the village. Now due to population increase and shortening of fallow period different types of crops are cultivated in the same field every year, extracting different nutrients from the soil by different crops like Yam, peas, maize, legumes, root crops, etc.

Home garden: Home garden to a Naga family can be defined as ‘land surrounding a house or easily accessible within minutes on which a mixture of annual and perennial plants are grown, together with or without animals, and largely managed by the household members (women) for their own use or commercial purposes’. (Nakro, Vengota, 2009)

Gathering: Over centuries gathering of materials or products from the forest like wild vegetables, fruits, herbal medicines, tubers, honey, ferns, *etc.*, and other non-timber forest products has been an integral part of the Naga society and still form an important part of the daily lives. Gathering is usually done by women, although this is not always the case, and men, and children of either sex, also engage in gathering items of food from the forested areas. These forest products are both for local consumption and for sale in the market. The households depend on these collected forest products as a means of livelihood. Some of the commonly gathered food items sold in the market are bamboo shoots, mushrooms, banana flower, fig, wild walnut, peach, plum, pears, goose

berry, banana, rasp berry, jackfruit, wild apple, ferns, leek, leaves of passion fruits, and spices like Cinnamon, honey, betel leaves and vines, cane fibres, ginseng, wild flowers, orchids, broom grass, game meat, fish, edible insects, firewood, *etc.*

Fire wood and bamboo reserves:

Fuel wood is one of the most important needs of a family's existence and the villagers collect firewood from dead trees which die naturally, or, dried branches and old and mature trees are selectively harvested without affecting the regeneration of the forest. For many villages, firewood is a major source of livelihood, being next only to rice in importance. It is used for a host of other utilities like cooking, heating homes, *etc.* Firewood reserved forest is an area just at the outer margin of the village boundary where naturally sprouting useful species of trees including bamboo are maintained for domestic use. This forest type is a replica of main forest except for the size of trees which is smaller in this area and that it normally surrounds the village (Nakro, Vengota, 2009)

Livestock is an important source of supplementary income for livelihood. Rearing of domesticated animals such as pigs, cows, chicken, ducks, goats, has been an important source of supplementary income. It is usually practiced to provide a source of protein in the diet, a ready source of cash for emergency situations and to meet common household and family expenses. (The pigs, cows, goats, chicken, etc were reared in open spaces, they were even fed in a shed just next to the kitchen known as *tyong*).

Traditional handicraft

Weaving: The Nagas are well known for their beautiful hand-woven attires worn by both male and female. Weaving is one of the traditional skills of the Sungratsu village which is a skill passed down throughout generation. Traditionally, in the study area, all clothes and many of the different implements used in the home are handmade and this tradition still survives in many homes. Weaving is done using traditional looms bringing out different designs to produce skirts, belts, shawl, scarf, blankets and other items with indigenous motifs and design. Beadwork is another skill very much alive.

Cotton was grown in the fields, harvested, spun and dyed with products derived from wild and cultivated plants. Although most men nowadays wear modern designed clothes purchased from the market, many women in the village still wear home-made *mekhelas* and shawls.

Basketry: Before the advent of modern storage containers, baskets were used both for storage of household goods and valuables, and for transporting goods. Large baskets were also made for granaries to store rice. Today, baskets are still used to carry fruits and vegetables to and from the marketplace, but modern suitcases, cupboards and other containers have largely replaced the use of traditional baskets. Baskets for everyday use in the fields, smaller baskets for fetching firewood and bamboo vessels for water are usually made by the householders themselves - both men and women - but the more artistically designed baskets that are used for storing valuables or for carrying wedding gifts are usually made by expert craftspeople, mostly men.

Stone quarrying and masonry: The Sungratsu villagers have mastered the skill of stone quarrying and masonry and are renowned all over the Ao areas. They are hired for construction of buildings, retaining walls, by both private as well as for governmental works.

Changing Pattern:

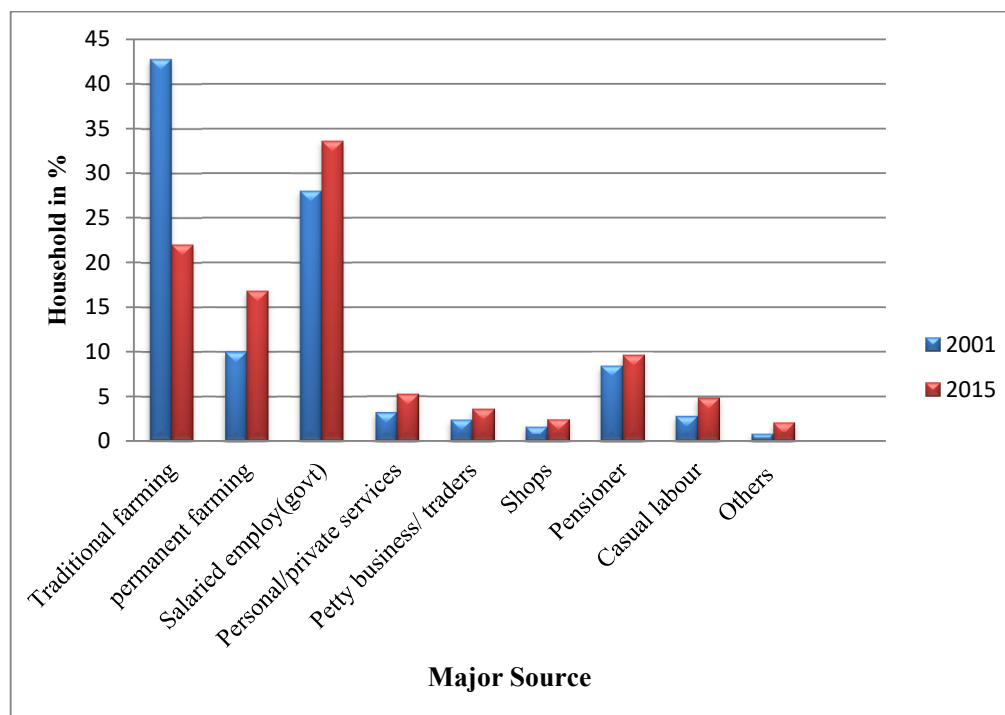
Traditionally the livelihood options were not much diversified. A farmer held on to one job throughout his life, worked in the same community in which he had been born, with no formal qualification or training but particularly specialized knowledge and skill that was passed down between generations in rural areas. The job was secure, stable and sustainable that largely evolved around farming, it was work that was valued (Michael Woods, 2005)

Table 4.11. Diversified livelihood strategies of Sungratsu village

Major Source	Household in %	
	2001	2015
Traditional farming	42.8	22
permanent farming	10	16.8
Salaried employ(govt)	28	33.6
Personal/private services	3.2	5.2
Petty business/ traders	2.4	3.6
Shops	1.6	2.4
Pensioner	8.4	9.6
Casual labour	2.8	4.8
Others	.8	2
Total	100	100

Source: Field survey, 2015-17.

Figure 4.15: Diversified Livelihood Strategies during 2001-2015



Source: Field survey, 2015-17.

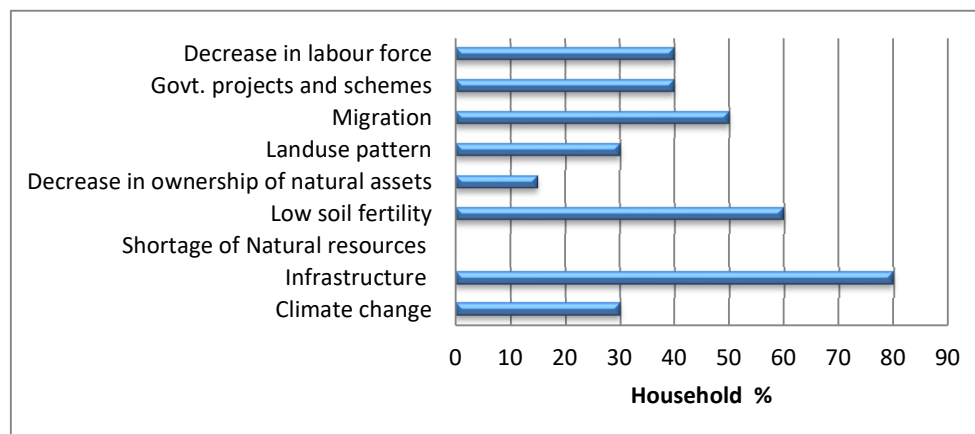
Growing population pressure on land and gradual change in climate has necessitated change in the traditional economy, particularly in agriculture to ensure food security. In addition, the need to keep pace with the competitive global market has necessitated diversification of economic activities thus bringing change in the traditional pattern of livelihood. Transition from traditional lifestyle to modern and developmental induced activities have affected rural areas in various ways ultimately changing their lifestyle often resulting in undefined living pattern requiring keen research and analysis of the changing pattern in the state.

Table.4. 12. Determinants of Livelihood Strategies

Factors	Household percentage
Climate change	30
Infrastructure	80
Shortage of Natural resources	0
Low soil fertility	60
Decrease in ownership of natural assets	15
Landuse pattern	30
Migration	50
Govt. projects and schemes	40
Decrease in labour force	40

Source: Field survey, 2015-17.

Figure 4. 16. Determinants of Livelihood Strategies in Sungratsu Village



Source: Field survey, 2015-17.

In recent years, land-based livelihoods of small and marginal farmers are increasingly becoming unsustainable, since their land has not been able to support the family's food requirements and fodder for their animals. As a result, rural households are forced to look at alternative means for supplementing their livelihoods. As employment in primary sectors such as agriculture, forestry, fishing, hunting and gathering and other traditional rural industries has declined and that in the service sector increased, so the livelihood pattern have been redefined.

Agriculture: Dependence on agricultural output could no longer provide year-round security in terms of finance due to continuous decline in farm yields. This is not surprising since most of the rural farmers are subject to varying degrees of uncertainty due to climate variability and post-production loss. It is for this reason that diversification of rural income has become common among those who wish to live, at least, an average life. Since non-agricultural activities in many instances yield as much returns as subsistence farming the only option for those without access to productive farmlands is to subject the natural environment to other activities such as sandblasting, stone extraction and small-scale mining (Nancy M. Wells, 2000).

At present the average annual yield of rice in jhum fields is 40-50 tins, the highest yield is 100 tins whereas 3 decades back, every household produced an average of 500-600 tons per year, which was sufficient to sustain the whole family for the whole year. Many households have given up rice cultivation in the jhum fields and given more importance to other crops, especially yam leaves out of which the famous dish of the Ao Nagas known as *anishi* is made.

The farmers cultivate yam on the outer rim of the paddy fields and in the bordering areas, at present the 50% of the farmers had given up rice production and switch on to yam cultivation in their jhum fields. *Anishi*, the ethnic food item of the Ao Naga community under Mokokchung district and the study area, Sungratsu village being specialized in its preparation, the increase in market demand is one of the major factors that has led the farmers in commercializing the product. For preparation, a large amount of yam (*colocasia*) leaves is collected from the field and are kept properly covered for two to three days till it become yellowish, it is pounded into a paste in the

traditional mortar with a wooden pestle, wrap properly with banana leaves, place it on top of a metal plate, cover it with hot ashes and place it near the fire baking it overnight, let it cool down and pound it again to make it into a finer paste. The paste is made to a biscuit form with a diameter of 2 inches and is dried over the fire within a day which will give a tastier result. This ethnic food product has a good market value of Rs. 500 per Kg. In the study area almost all the household prepares *anishi* mainly for home consumption. It is the major source of livelihood for nearly 70% of the household and the sale of *anishi* varies from household to household ranging between 10 kgs to 400 kgs per year.

Recently some volunteers from the urban area have popularized and provided financial support for packaging and marketing and it is done on commercial scale. Pounding of the fermented yam leaves is made easier after the introduction of a pounding machine in the village, the owner of the machine charges Rs. 2 per Kg but most of the farmers prefer using the traditional wooden mortar and pestle though it is labour intensive. It has been observed that some male farmers before going to the field earn some extra income from pounding the yam leaves during the season. However, jhum fields have decreased on account of a number of factors including demarcation of reserved forests, creation of community protected forests, population increase, changes in land use pattern, migration, introduction of Agricultural and Rural Development Schemes aided by the Govt.*etc.* At present there is road connectivity to at least 10 jhum blocks which gives the villagers easy access to their fields.

Out of the 12 jhum blocks, *Loyalu* and another two blocks in *Meinkonglu* had been reserved for wild life and biodiversity conservation. In 2007 *Lemchalu/yimchalu* was again converted independently to a new farming village. In its initial stage *Yimchalu* was taken up as a model village under the Horticulture Technology Mission (HTM), under which orange and passion fruit were planted in an area of approximately 2 sq km. The productions for few years have been good and many farmers have profited immensely, however within a span of 7-8 years the production levels have plummeted. At present the production of oranges and passion fruit is very low. Being discouraged,

the farmers have started planting other plants like pomegranate, litchi, *Yongjak* (tree beans) and varieties of bananas, which has positively added income to their livelihood.

The Nagaland State Department of Horticulture and Agriculture on perceiving the potentiality and suitability with the climatic type, and soil assisted the villagers to start cultivation of vegetables like sweet pea, cabbage, beans, onion, beet root, carrot *etc* on a large scale.

On the economic dimension, the village is largely characterized by jhum cultivation, although of late, secondary occupations of trade and commerce and other cash generating activities like developmental contract works significantly adds to their income. Other cash earning activities within the village are also contributed by the salaried staff of Governmental departments.

Logging: Logging and commercial plantation in Sungratsu is a recent introduction. It is a very profitable means of livelihood and 15% of the household is engaged in the logging trade to earn their livelihood. This is encouraged by the availability of transportation facilities and taking advantage of its demand in the market. Commercial logging is one activity leading to over extraction of forest resources. With a significant increase in population pressure and human greed, pressure is also created on the forest resources, soil quality is degraded severely and natural forests are converted for food production and other purposes. Hundreds of species of flora and fauna have disappeared, while many others are threatened by habitat loss and numerous degraded land areas.

Vegetable vendors: Sales from farm products, animal products, forest collection, and kitchen garden offer sources of cash income for many households. Out of the data collected 10-15 households draw their income from the sale of food products either collected from the forest or produced on homesteads. This is augmented by sale of fish, crabs, frogs etc., during monsoon season. In 2015 some concerned villagers volunteered to construct marketing shed in the National Highway 2 known as the *Meinkong* marketing shed, where agricultural and forest produce are sold by the women folk. Discussion with the women vendors revealed that the *Meinkong* marketing shed had benefited them in many ways.

Back then the villagers were compelled to sell agricultural and forest produce in towns for which they may undertake travel over long distances to attend daily/weekly market in Mokokchung town. They carry goods valued between Rs. 2000 and Rs. 3000 and travel by buses carrying their merchandise on the bus roof and paying higher rates in local taxis, minimum Rs.50 per head and extra charges for the goods. At the end of the day, many sellers are forced to offload the unsold produce to the local traders at a discount of 40% – 60% of their sale price as they can't afford to carry back the goods or stay back in to sell them the next day.

Assessment of total cash income generated by the women vendors is significant to the village because there are virtually no off-farm employment opportunities available in the village. The main regular source of cash income circulating in the village is through the monthly pay of Government employees who are mostly Primary School Teachers residing in the village. But then, much of the pay of these school teachers is spent outside the village.

Quarrying as means of livelihood: Some households seek livelihood alternatives from small-scale stone extraction because they find the occupation as the only livelihood alternative. They depend on day-to-day small-scale stone extraction, gathering and breaking of stones for sale as a major source of livelihood in spite of the dangers it poses to the environment and the other livelihood activities such as farming. Quarrying is also a source of raw material (chippings and other stone aggregates) for building and road construction projects.

Quarrying provides direct and indirect employment to residents of Sungratsu. Direct employment comes in the form of those who are employed in the quarry as labourers, drivers, and those involved in rock blasting and breaking operations. It also includes self-employed individuals who operate small-scale quarrying. They buy rocks of various aggregates for resale purposes. The quarrying industry also provides indirect employment to ancillary sectors like drivers, wayside hotels and caterers.

There is however the concern that the establishment and operations of numerous small-scale quarries pose a serious threat to farming. The rich topsoil, which supports small-scale subsistence arable farming, is cleared to make way for quarrying.

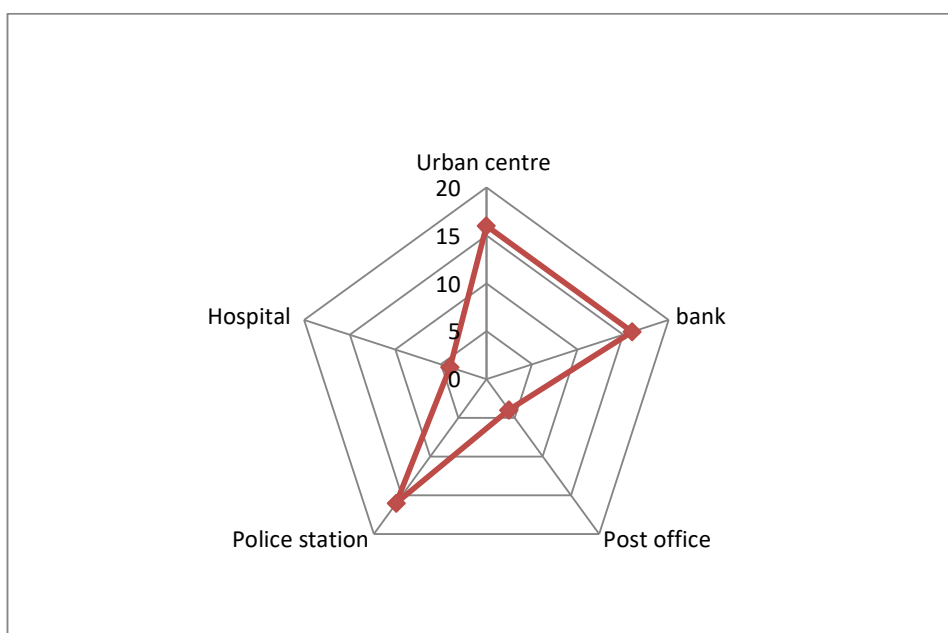
Moreover, a health concern due to quarrying is another problem. About 78 per cent of the respondents had a history of an ailment, which according to them is related to quarry activities. Of those who had suffered some ill health related to quarrying the main health problems complained about include respiratory diseases, eye problems, muscle pains and malaria, with upper respiratory diseases dominating.

Table 4.13. Distance from Sungratsu to important Destination

Urban centre	bank	Post office	Police station	Hospital
16	16	4	16	4

Source: Field survey, 2015-17.

Figure 4.17: Distance from Sungratsu to important Destination



Source: Field survey, 2015-2017.

The village is 16 kilometres from Mokokchung town, the district headquarters, and owing to its proximity to the town it is conveniently accessible by taxi and bus services, which takes an estimated time of only 40-45 minutes. The village enjoys all the benefits that the town can provide. It is also subject to much urban influences that

give it the appearance of having lost its rural and traditional characteristics. Despite that appearance, it has managed successfully to retain its traditional roots, which is evident by the active and effective function of its village council, which is guided by tradition, customs and convention. In fact, it is described as a very dynamic village, drawing the benefits of change from the urban milieu and yet still drawing its sustenance as a social entity from tradition.

Table 4.14: Daily commuters from the village

Sl no	Occupation	No of commuters in 2001	No of commuters in 2015
1	Students (college, university, school, training institutes, etc)	14	105
2	Govt. and private teachers	6	27
3	Govt and private employees in other departments	6	31
4	Wage labourers	7	84
5	Vegetable vendors	5	13
6	Business	5	67
7	others	3	13

Source: Field survey, 2015-2017.

There is a decrease of long-term migration but there is tremendous increase in short term daily commuters like the students in different schools, colleges, university, training institute, coaching centres, daily wage labourers, government employees, private employees, moving to and fro from the village to nearby villages and towns. According to Table 4.14 in 2001 there were only 14 students who commutes every day to their destination, the rest of the students either stay in the homes of their relatives or rented a house and come to the village only during holidays. The number of commuters has drastically increased to 105 commuters daily in 2015. This is all because of its proximity to the National Highway and the availability of means of transportation. A reverse in migration i.e., from urban to rural is observed in the sample village and as a result there is also reduce in household expenses.

The traditional knowledge and skill of weaving using traditional looms, basketry, wood carving, carpentry, handicrafts, is passed down through generations is fast disappearing, with only a few elders in the villages retaining this knowledge. Therefore, initiative should be taken to regain and retain this traditional knowledge.

With limited job opportunities and the desire for money seeming to override the need for environmental protection, stone quarrying not only contributes to rural livelihood but also has negative repercussions on the health of the quarry workers, severe damage to the natural environment and environmental sustainability. The land is stripped of its vegetative cover making it more vulnerable to agents of denudation. Pockets of small and large gaping holes associated with quarrying activities not only destroys the aesthetic beauty of the landscape but it will also reduce the natural aquifers or water reservoirs which feeds the neighbouring villages. Even during the lean period, seasonal water suppliers from the nearby Mokokchung town fetch water from the perennial rivulets that originate from the reserved forest.

In order to control and reduce the extent of environmental damage caused by the quarry industry, the Environmental Protection Agency must enforce its environmental regulations. It must see to it that all those involved in quarrying operations have, as a matter of priority, the protection of the integrity of the environment (Felix et al., 2014). Awareness programmes should be organized by the village councils and also the other stake holders. Rehabilitation and awareness programmes should be initiated by the concerned departments and the village council to protect the forest, in the long run it will not only benefit the village but the whole district in particular and the state in general.

One can witness the positive economic impact, though in a small way, through the sale of organic local products from the farm and homestead, at the marketing shed. It is said that their family kitchen expenses is being covered through the sale of the products, which is certainly laudable. Effective collaboration among stakeholders should lead to conscious efforts at capacity building and financial support for small-scale enterprises and individuals seeking to diversify their livelihood incomes in order to cope with poverty in the community. The agricultural and allied practices are

changing with the change in the location of the villages making it more akin to standard agricultural practices.

This study explores the livelihood patterns of small and marginal farmers of Sungratsu village in Mokokchung district, Nagaland, who have been living in a symbiotic relationship with the environment. The explosive growth of population and the onslaught of modernity have put a tremendous strain on the sustainability of traditional methods of livelihood, thus forcing the people to adapt alternative means. Therefore, there is need for a concerted effort from all stake holders for creating awareness on environmental issues and capacity building programmes.

The introduction of different Governmental schemes and programmes in the village have benefited the rural people to a large extend. Table 4.15 highlights the assets creation through developmental programmes.

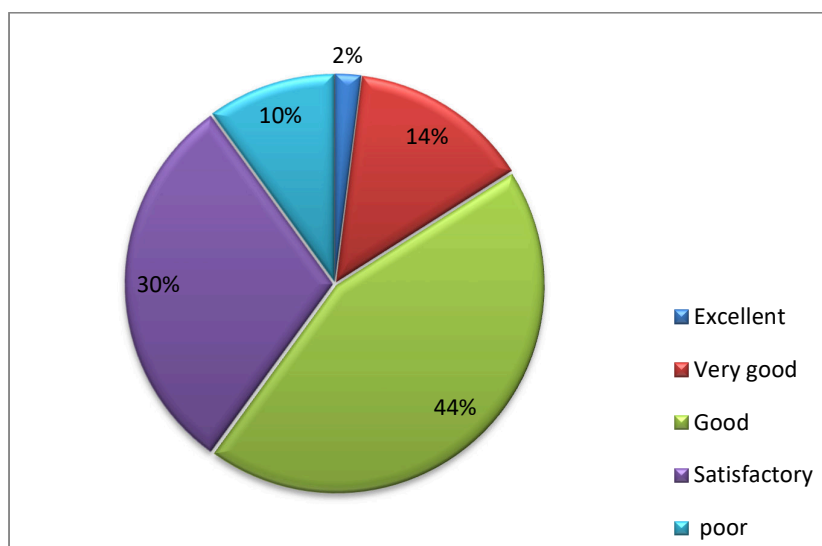
Various developments have taken place in assets creation through MGNREGA, SGSY and Indira Awaas Yojana (IAY). Some of the very important assets created in the village are as follows- road connectivity to the village, construction of footsteps, micro irrigation canals, renovation of age-old traditional village ponds. SGSY scheme also brought about a new scenario on sanitation like construction of proper marketing sheds, waiting sheds, public toilets and construction of community dustbin on strategic locations. The Indira Awaas Yojana has also provided housing shelter to Below Poverty Line (BPL) sections in the village, 99.3% of the thatched roofs houses in the village have been replaced by CGI sheets.

Table 4.15: Assets creation through Development programmes

Assets created in the Sungratsu village	
Water conservation and harvesting	√
Flood control and protection	√
Land development	√
Micro irrigation Works	√
Renovation of Traditional Water Bodies	√
Provision of irrigation facility	√
Water conservation and harvesting	√
Rural connectivity	√

Source: Field survey, 2015-2017.

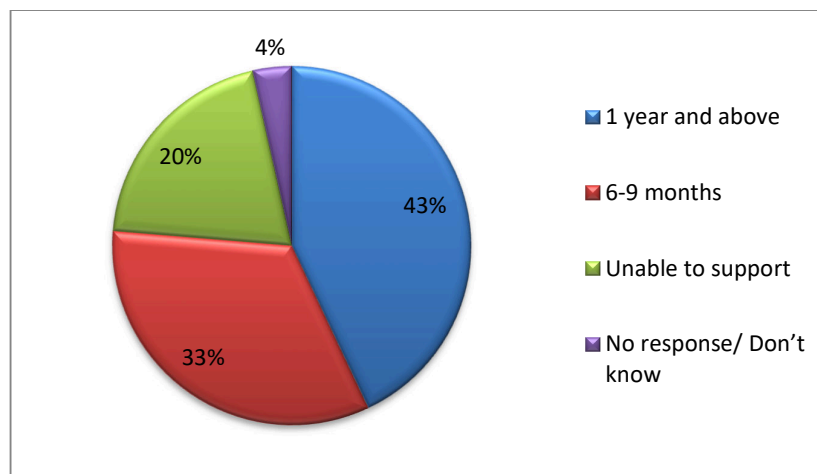
Figure 4.18. Rating on Community Assets Creation



Source: Field survey, 2015-2017.

Construction of agri link roads in the sample village have made the farmers easy accessibility to their fields, empowering women in the village through trainings on capacity building, formation of 20 SHGs (Self Help Groups) funded by different agencies and it has enhanced family income.

Figure 4.19: Home grown Food sufficiency status



Source: Field survey, 2015-2017.

Figure 4.19 clearly depicts that only 43% of the total household can support 1 year and above from the food grains produced from the jhum field, the rest of the

household is depended on the Targeted Public Distribution System (TPDS). Targeted Public Distribution System (TPDS) provides and ensure food security to the people at the minimum support price, storage and distribution to the targeted beneficiaries through Fair Price Shops (FPS).

The intervention of the Horticulture Department through the Horticulture Mission for North East and Himalayan States (HMNEH, now sub-summed into MIDH) Programme, has been the driving force behind the Development of Horticulture in the village. *Yimchalu*, a jhum plot in Sungratsu village was taken up as a model village under the Horticulture Technology Mission (HTM), under which orange and passion fruit were planted in an area of approximately 2 sq km. The productions for few years have been good and many farmers have profited immensely, however within a span of 7-8 years the production levels have plummeted

The common man's speculation for the plummeting production level in government aided programmes in the field of agriculture was mainly due to the failure of proper guidance and follow up by the departments concerned and the farmers' total dependence on the department.



Plate 4.25: Sungratsu Main Village Gate



Plate 4.26: Village Gate II



Plate 4.27: Front view of the Village



Plate 4.28: Peace monolith



Plate 4.29: Community Hall



Plate 4.30: Morung



Plate 4.31: Panchayat hall



Plate 4.32: Sungratsu Church



Plate 4.33: Students Library cum Museum



Plate 4.34: Public Toilet



Plate 4.35: Primary Health Centre



Plate 4.36: Foot path and retaining wall



Plate 4.37: CGI sheet Roofing



Plate 4.38: Permanent Farm houses

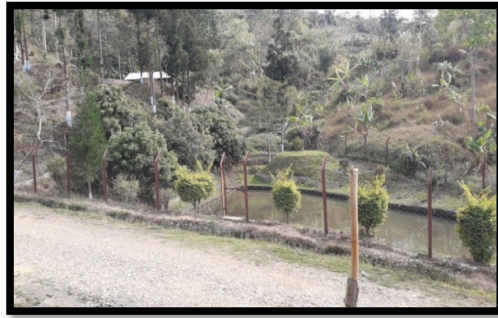


Plate 4.39: Fishery pond



Plate 4.40: weeding, using modern machine



Plate 4.41: Minkong Marketing Shed



Plate 4.42: Stone crusher



Plate 4.43: Saw mill



Plate 4.44: Stone quarry



Plate 4.45: Stone carving &

Tomb plates



Plate 4.46: Jhum plots



Plate 4.47: Yam cultivation in Jhum fields &
Processing anishi



Plate 4.48: Mixed cropping in Jhum fields

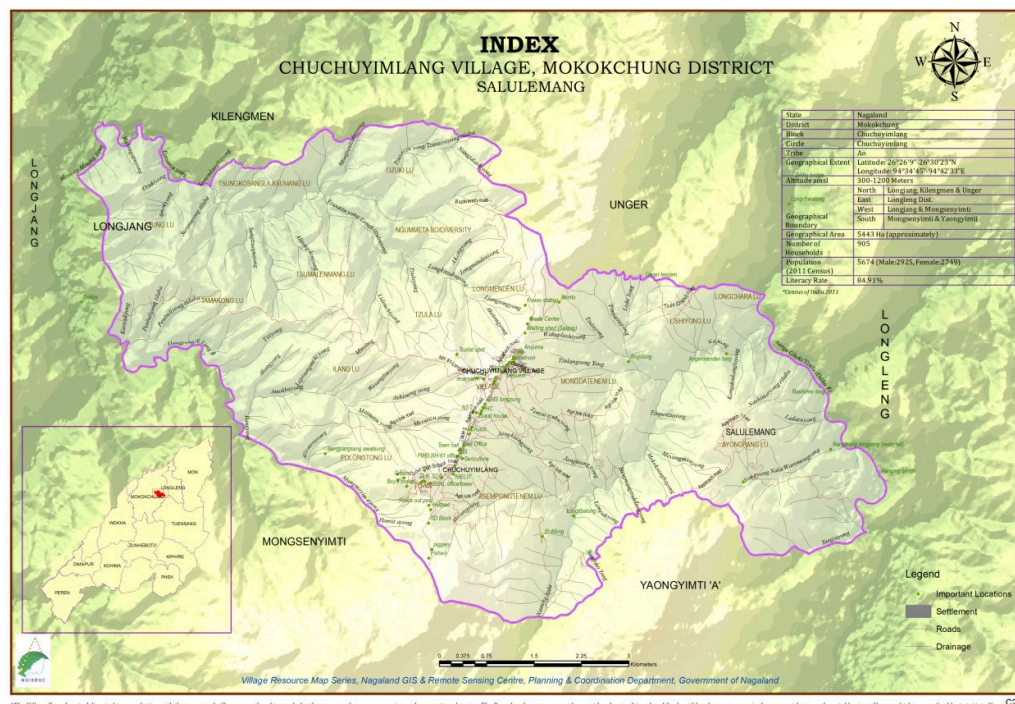


Plate 4.49: Sign of Modernity

4.2.3. Salulamang, Mokokchung District.

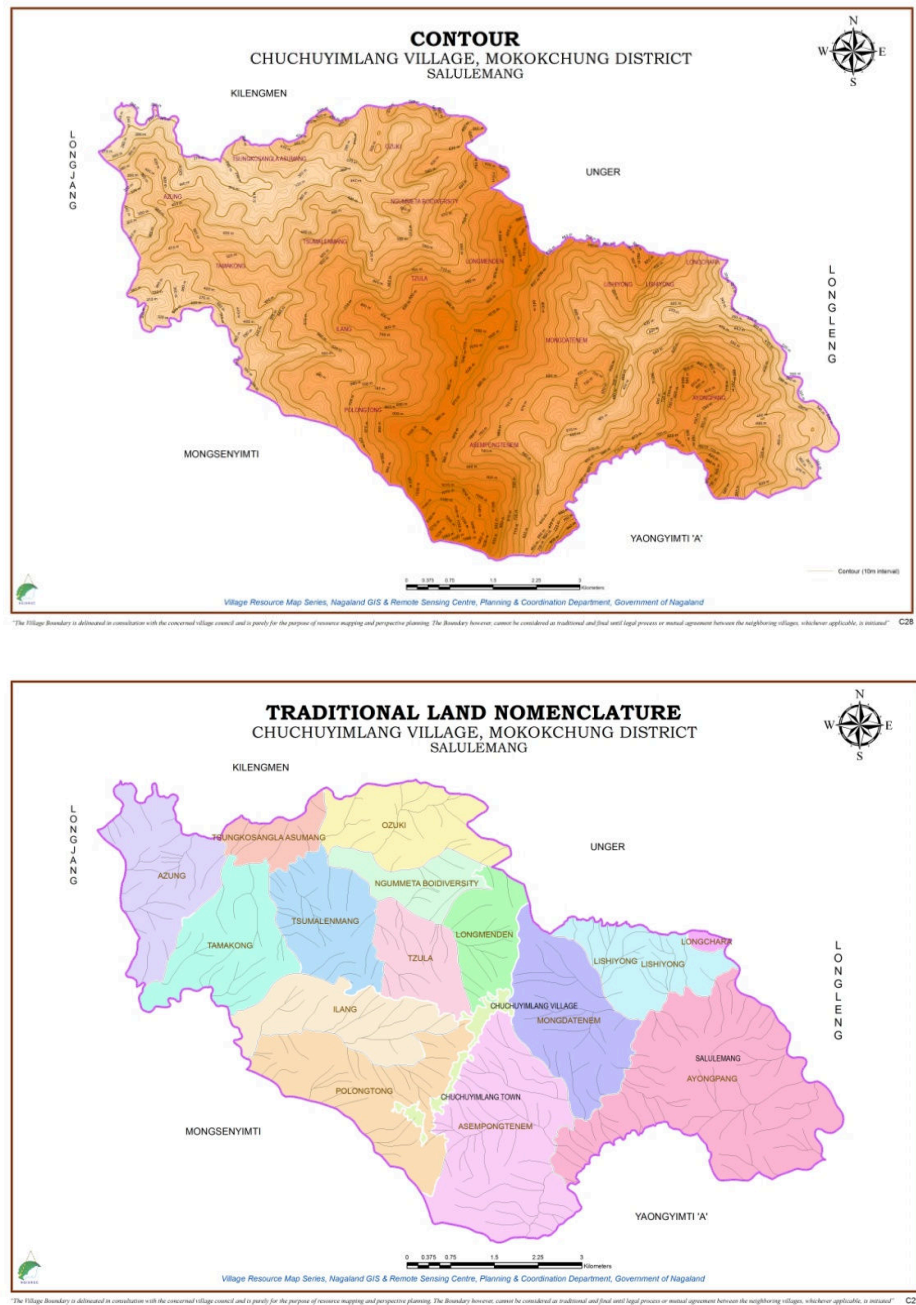
Salulamang is an Ao-Naga village that falls under Chuchuyimlang block Mokokchung District Nagaland. It is a small village which provides a good opportunity to see the daily lifestyle of Ao Nagas. Villages are given names based on typical features of the village site, the memory of an ancient settlement that once stood where the village now stands, particular events or folk tales in the history of the village. Literally, the name Salulamang is derived from two words, “*Salula*” is the name of a girl who was murdered by her lover and “*mang*” means dead body. According to the folk tale narrated by the villagers, *Rangtsung*, the lover of *Salula* murdered her and her dead body was kept in that particular place where the present village is located.

Figure 4.20: Index Map of Salulamang Village

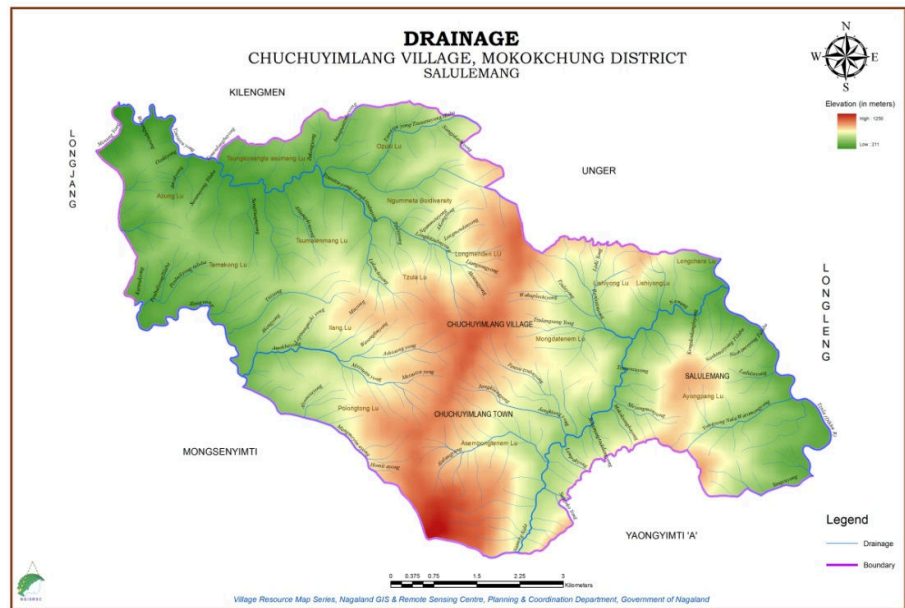


Source: Nagaland GIS & Remote Sensing Centre, 2019.

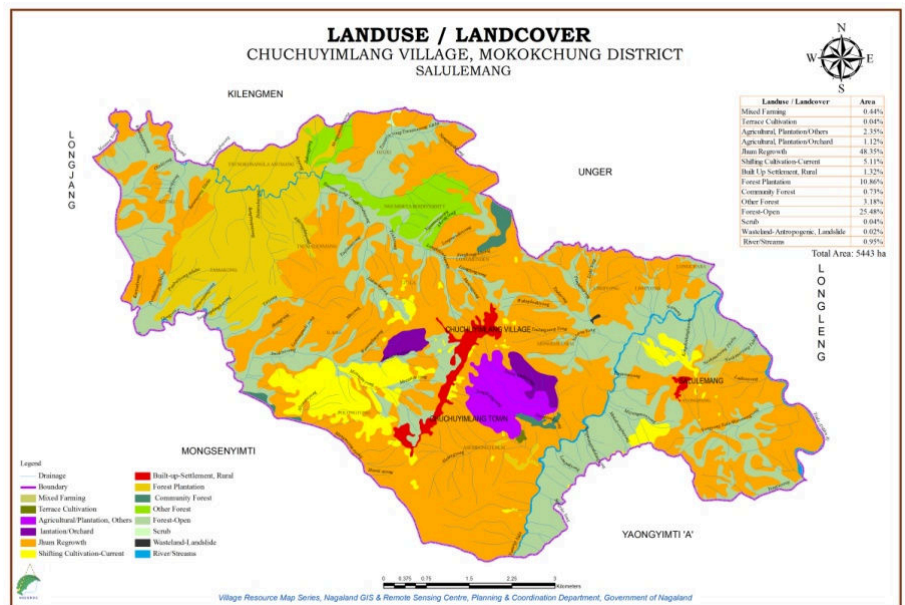
Figure 4.21: Maps of Salulamang Village



Source: Nagaland GIS & Remote Sensing Centre, 2019.



*The Village Boundary is delineated in consultation with the concerned village council and is purely for the purpose of resource mapping and perspective planning. The Boundary however, cannot be considered as traditional and final until legal process or mutual agreement between the neighboring villages, whichever applicable, is initiated.



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Source: Nagaland GIS & Remote Sensing Centre, 2019.

The village is located in a strategic location, sharing boundaries with Longleng and Tuensang districts. It is bounded by the Dikhu river in the east, south by Yaongyimti village (Tuensang), north and west by Chuchuyimlang village. The average elevation of the villages is between 200 and 900 meters above the mean sea level. The village is divided into five khels namely, *Sungkum, Rangtsung, Setlenden, Penzu and Jemben*. The houses are arranged in a linear pattern along the roads that passes through the village. There are foot paths and an agri link road leading from the village to the homesteads, farms and *jhum* fields.

The nearest town from the village is the Chuchuyimlang town, which is 12 kilometres from the village and 41 kms from the district headquarter, Mokokchung town. The village is connected by a kuccha road which is not maintained properly, during summer it becomes deplorable due to landslides and increase in potholes. The total population of the village is 953 with 150 households (District Census Handbook 2011) out of which 5 households constitute the employees of different governmental department who had migrated from outside the village.

The perimeter of the village is one of the smallest villages in Mokokchung district but the village has witnessed drastic changes towards its socio-economy. Infrastructure becomes more crucial when the geographical locations are remote and terrain is difficult. The only route that links the village with the rest of the civilization is the *Nanung* bridge, which was constructed under the MLCP scheme in 2008. The bridge was constructed under the supervision of PWD, volunteers from the village carried the materials on foot all the way from the National Highway 61. After the construction of the *Nanung* bridge the road was further extended connecting the 3 districts viz, Tuensang, Longleng and Mokokchung, Tuensang district in the northeast, another towards the southeast that leads to Longleng district and from the village towards west is the road to Mokokchung district. During monsoon season the roads to Longleng and Tuensang districts remains completely disconnected because of the absence of bridges across Dikhu river.

The village is devoid of public transport which makes the poor villagers difficult to access. The inadequate presence of public transport is mainly due to the thinly

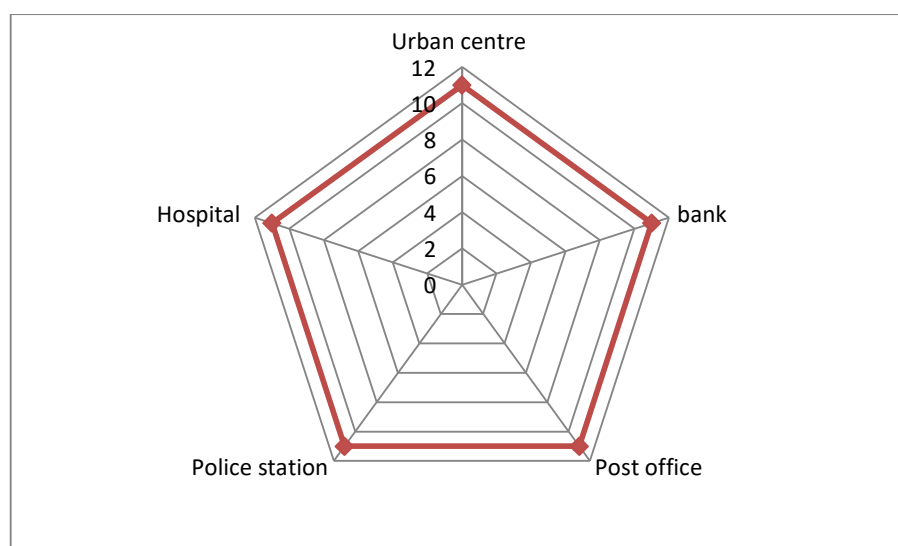
dispersed population providing a smaller number of travellers in the route resulting in sub-optimal utilization of vehicles. 50% of the households have two wheelers and 15 % owns their private cars. There is one government middle school, 1 dispensary and 1 anganwadi centre. There are 4 groceries and a saw mill which caters to the basic needs of the villagers.

Table 4.16. Distance from Salulamang to important destination

Urban centre	bank	Post office	Police station	Hospital
11	11	11	11	11

Source: Field survey, 2015-2017.

Figure 4.22: Distance from Salulamang to important destination



Source: Field survey, 2015-2017.

The construction of road and the bridge connecting the village with the nearest National Highway have a great impact on the changing nature of livelihood and improvement in the standard of living. With the construction of the bridge the economy of the village also improved, there is change in the living standard of the people with buying of vehicles, usage of modern electronic gadgets, educational development, easy accessibility, etc.

Table 4.17. Access to facilities

Access to facilities	No of Household in %
<u>Housing</u>	
Owned	96
Rented	4
<u>Type of house</u>	
Katcha	3
Pucca	97
<u>Drinking water</u>	
Tap/govt. supply	99
Village pond	1
<u>Sanitation</u>	
Toilet – septic tank	86
Other system	14
Electricity	98
LPG	65
Firewood	100
Electricity for cooking	55
Radio	75
Television	90
Newspaper	10
Refrigerator	15
Motorcycle/scooter	15
Car	30
Heavy vehicle	2
Fan	80
Heater	15
Telephone/mobile	68
Sewing machine	25
Washing machine	3

Source: Field survey, 2015-17.

The primary source of livelihood in *Salulamang* is agriculture. However, despite being employed or engaged in various other non-agricultural vocations, these households in some way or the other are also engaged in forest related economic activities such as collection of non-timber forest products, hunting, fishing, animal husbandry, orange farms, etc.

The methods of farming which have been practicing since the origin of the village adopted and maintained diverse forms of agricultural practices, mainly shifting cultivation, home garden, a small strip of wet terrace cultivation along the valley and firewood reserve forests, simultaneously in order to sustain their livelihood. The locations of these varied sites compel the farmers to adopt and adapt practices that suit the site factors. The village's jhum plots are divided into 11 blocks viz; *Chunar menden*, *Ankichiba*, *Shitiyangi*, *Sunghangzu*, *Anulu*, *Moklong*, *Artonglu*, *Yaonglemang*, *Yimpenzu*, *Nashimerlu* and *Longtsunglu*.

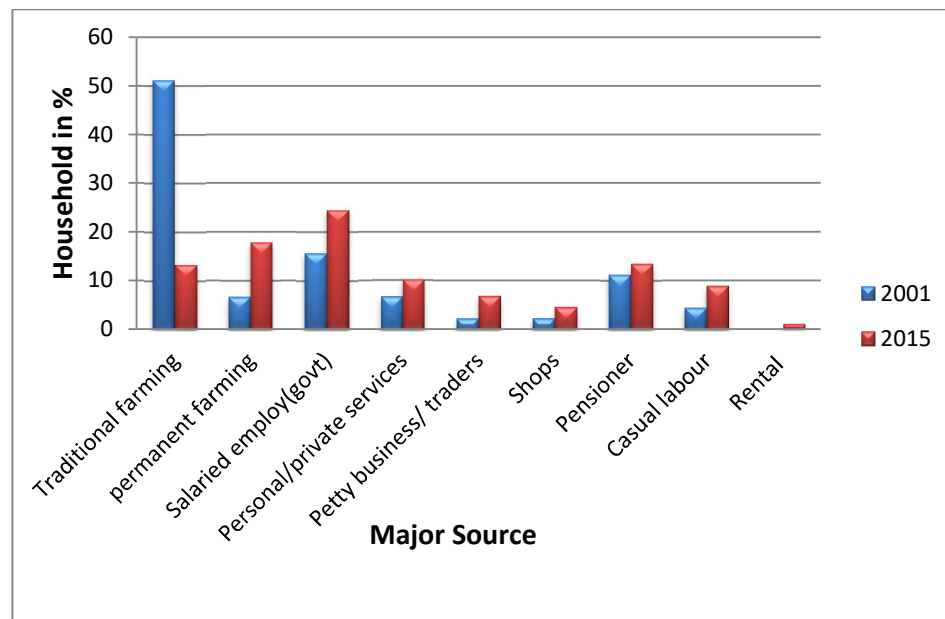
Rural poor households practice diverse means of livelihoods to supplement their income apart from rice cultivation which is primarily for self-sustenance. The means for livelihoods adopted in the village are different and complex in nature. For fulfilling the various livelihoods needs and for sustenance, they rely on varied and multiple livelihood sources such as land, forest, water and so on and which are fulfilled through multiple livelihood activities such as forest collection, fishing, wage labour, cultivation. The food for a particular household may come from farm produce, its cash income for buying goods (clothes, oil etc.) may be earned through wage labour, and fuel wood and food-items like forest vegetables, fruits and berries may be obtained through forest collection activity or maybe from some professional activities like tailoring and barber.

Table 4.18 Diversified livelihood strategies of Salulamang village

Major Source	Household in percentage	
	2001	2015
Traditional farming	51.11	13.33
permanent farming	6.67	17.77
Salaried employ(govt)	15.56	24.44
Personal/private services	6.67	10.08
Petty business/ traders	2.22	6.66
Shops	2.22	4.44
Pensioner	11.11	13.37
Casual labour	4.44	8.88
Rental	-	1.03
Total	100	100

Source: Field survey, 2015-17.

Figure 4.23: Diversified Livelihood strategies during 2001-2015



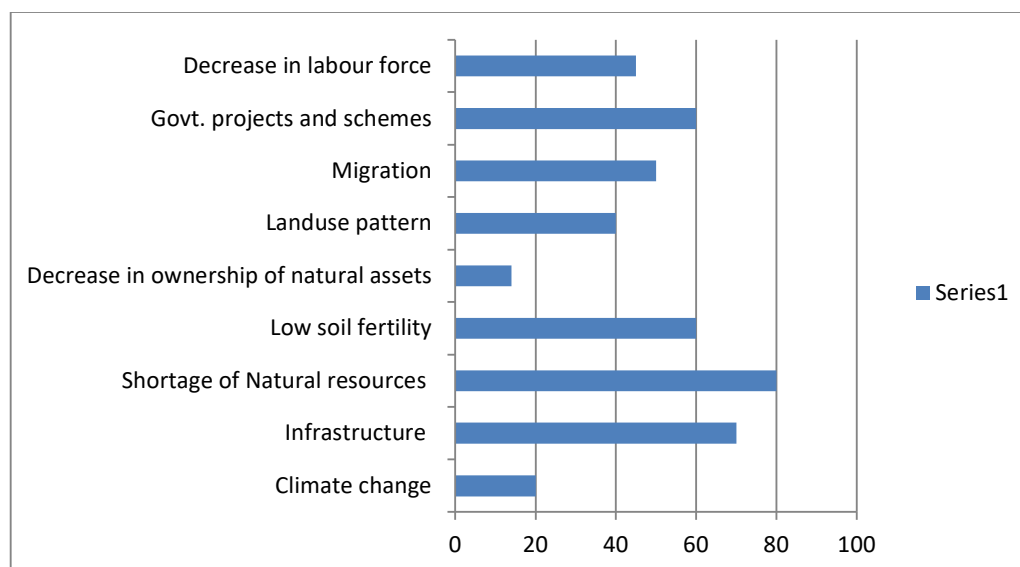
Source: Field survey, 2015-17.

Table 4.19: Determinants of Livelihood Strategies.

Factors	No of H/H
Climate change	20
Infrastructure	70
Shortage of Natural resources	80
Low soil fertility	60
Decrease in ownership of natural assets	14
Land use pattern	40
Migration	50
Govt. projects and schemes	60
Decrease in labour force	45

Source: Field survey, 2015-2017.

Figure 4.24: Determinants of Livelihood Strategies



Source: Field survey, 2015-2017

Young people get the opportunity to go outside the village to procure short term training courses under various skill development programmes and agencies. A barber during Sunday morning and before going off to the field tends to 40-45 clients at an average per month at the rate of Rs 20 per head. Thus, different livelihood needs of the majority of the households are fulfilled through various activities and using different resources.

The majority of the rural people depend on a single productive activity, mainly farming. Nearly 60% of rural respondents in the sample area relies on a combination of farming and other income earning activities. Access to land and capital are important in determining which groups are more likely to engage in farming, non-farm activities, migration, or multiple activities. The rich and elderly with access to land involve only in crop production, while the rich and the young landless and young landowners derive their incomes from more than one activity, which produces high returns. However, landless poor men and women engage only in less remunerative non-farm activities.

Changes in the Land use:

Most of the land in the village is used for agricultural purpose. Cultivable land use pattern has been changing in last few decades very drastically. These changes have great impact on livelihood pattern of the people who are directly or indirectly dependent on land. The pattern of land use changes in the study area was analyzed and the following major land use categories are identified. In general, the area under settlements, area under plantation and commercial crops has increased. On the other hand, lands under jhum cultivation have decreased during the same period and most of the jhum plots have been converted to permanent plantation farms, the reason and nature of conversion of the jhum plots are given below:

- Chunar: The terrace cultivation which was practiced in *Chunar menden*, the most fertile plot has already been abandoned due to labour shortage and drying up of water source. 30% of the plot is now under Rubber plantation and 70% under orange

- *Ankichiba*: 80% of the area is under rubber plantation sponsored by the Integrated Rural Watershed Developmental Programme (IRWDP) and 20% of the plot is under orange plantation.
- *Shitiyangi*: In this plot shifting cultivation is still in practice, only 20% of the area is under tree plantation.
- *Yimpenzu*: The jhum plot is converted to plantation of *elaichi* (cardamom), yongjak, banana, etc
- *Nashimerlu* is completely abandoned due to rugged terrain the top soil had been eroded and there is hardly any vegetation, there is only some patches of shrubs and the soil is unsuitable for agriculture.

It has been observed that where there is no road connectivity the farmers tend to give less priority to that particular jhum plot. Few of the families who still practice jhumming are mostly the ones who cannot effort to maintain plantation farming and orange farming and also there are few who are still strongly tied to the traditional farming system though not enough to last the year long. When asked about their experiences, farmers often emphasized the pain and struggle involved in the new economic situations. The loss of a farm or an inability to farm land to its full potential often produced feelings of disappointment, failure and guilt. Due to the shortage of labour in the household a subsistence farmer cannot cultivate a large area in order to sustain the yearlong. They also cannot hire labour since they fail to pay for the services in cash.

Vegetables are grown side by side for self-consumption and surplus is sold to the retailers who comes to the village once a week from outside the village and sometimes sold on the roadside stall to passerby since there is no rural marketing shed initiated by the village. The topography and terrain of the hilly areas of the village coupled with inefficient and poor transport and communication, results in the lack of poor market linkages for selling surplus products. In the same cases the middle man or the commercial traders' cheats and exploits the simplicity of the villagers by controlling the price and marketing of products produced in the fields.

Orchard:

The farmers of Salulamang earn substantially through orange farming since the soil type and climatic condition is favourable for the growth of oranges. Before the advent of the introduction of the plantation programmes by the Government departments the villagers have been maintaining orange farms by nearly 50% of the households along the lower valleys where the climate is warmer. Back then the oranges were sold within the village and were not valued as of now due to absence of transportation. At present, the average annual income of the farmers from the orange farms is Rs. 50,000. For some farmers the annual return raises up to Rs.2.5 to 3 lacs. Some of the orange trees are more than 100 years and still bear fruits. The farmers carry the oranges to the nearest markets either as head load, private transport or by collectively hiring a vehicle depending upon location and individual financial capacity. Business man from nearby urban areas also comes straight to the farm where the oranges are bought at wholesale rates. During winter the road that crosses *Salulamang* towards Longleng district is usable, the two parties with mutual understanding construct the temporary bridge across Dikhu River with bamboos and boulders. The farmers taking advantage of the opportunity sell oranges on the roadside which is a great relief to the farmers.

There are 4-5 households who do not have their private farmlands. Generally, most of landed farmers lease out lands to the landless to cultivate crops. They pay a certain amount to the land owner and keep aside the harvest to cover their own sustenance, and in certain cases a percentage of the harvest is paid to the land owner, and thus these farmers live on little margins in order to sustain their livelihood.

Land ownership is highly unequal and complex. 60 % of the household owns their individual farm lands otherwise the landless farmers who had started permanent plantation farming, share the farm lands with Chuchuyimlang villagers and some even cultivate in land that belongs to the neighbouring Yaongyimti village (Chang tribe). Government policies and subsidized credit institutions tend to benefit the privileged urban elites and large farmers. When inputs and services for agricultural development are locally available, those small farmers who cannot afford to buy them tend to lose their land to large farmers.

There is mutual understanding between the villagers and the neighbouring tribes, in the buffer zone towards the east some of the farmers have started orange plantation which gives an average annual amount of Rs. 80,000.

Common noticeable change in the land use pattern is the conversion of traditional jhum areas into permanent forest or settled farming and cash crop plantation. This is the direct outcome of the emerging trend of changing land ownership to individual ownership. Almost all recently developed settled-farming or cash-crop plantations are owned by affluent and rich individuals who have either purchased the community land or developed in his own private land or in his clans/lineage land thereby compelling other members to also select a portion of their own share from the clan/ lineage land. This has resulted in fragmentation of the community, clan and lineage land into individual/private land (Lanusashi and Toshimenla, 2012).

In the name of forest conservation and new methods of farming which aims at reducing deforestation and forest degradation, the minority or the landless farmers are targeted in such programmes which will have a severe impact on their way of life and livelihood security.

Non-agricultural forest products:

Those households employed in various non-agricultural vocations, engage in some or the other form of agricultural practice as a subordinate means of livelihood. In addition, the villagers with much difficulty tries to make a living from the available natural resources like Non-Timber Forest Products, logging, hunting and fishing etc. Collecting and selling of forest resources is the one of the means livelihood income. The collected forest resources and products such as cane baskets, bamboo baskets and mats, brooms, etc., are sold in the nearby local markets. The villagers from Salulamang either go to Chuchuyimlang town to sell their goods or give it in wholesale basis to middlemen. The villagers also earn from selling of fire wood, unlike other villages the Salulamang villagers do not have firewood reserved forest but before setting the jhum fields on fire the woods collected are sold.

Table 4.20. Wage labour as a means of livelihood:

Sl no	Nature of work	Wages in Rs.	
		Male	Female
1	Agricultural activities	400	250
2	Construction activities (Skilled)	600	-
3	Construction activities (unskilled)	450	300
4	Cottage and small-scale industries	Depends on the nature of work	

Source: Field survey, 2015-2017.

From the data collected there are 4 households who solely depend on the wages earned daily. Apart from that nearly 20% of the total population is engaged in wage labour which is a part time activity to enhance their livelihood income. The nature of work varies according to season and is mostly unskilled. The wages paid varies according to the nature of work, gender, skilled and unskilled Wage labour in the village consists of both farm and nonfarm and is an important component of livelihood. Nonfarm wage labour consists of various activities such as building construction work, road construction, quarrying, masonry, porters, etc. Farm labour activity consists of working on farms as agricultural daily wage labourers during specific seasons for activities such as clearing the forest, rice seedlings, weeding, harvesting and threshing. In recent times there is an increase of outmigration from the villages to the nearby towns and even to neighbouring villages in search of higher wages.

Many rural women are migrating to urban areas and even outside the region to become contract workers or domestic helpers due to the lack of livelihood opportunities in the village and the poverty they experience in their communities. They also work as domestic helpers, market vendors, weavers, and as wage labourers in construction sites, farms, nearby sugarcane factory in Longra village of Tuensang district.

Agricultural production and other economic activities are not sufficient to meet the needs of the villagers for the whole year. In order to meet the basic needs, the

villagers especially those living in the interior areas are forced to leave the village seeking for employment outside their village to earn some cash.

Self-help group of the present study area are able to organized the poor and the marginalized to come together to work for the development of the rural areas. Following are some of the roles played by the SHGs in the rural areas of the study area.

Firstly, SHGs provide self-employment to the rural poor to have sustained income to meet their urgent needs. As far as the educational level is concerned, 90% of the SHGs beneficiaries were below class x, 8% under secondary level and only 2% were under graduate level. Low level of literacy makes it difficult for the poor to find an employment but SHGs gives them an opportunity to employ themselves in order to earn a living.

Secondly, 95% of the SHGs beneficiaries were found to be house-wives without any income before joining the SHGs. But SHGs provides them an opportunity to engage themselves in various occupations to improve their earning capacity. Now these house wives are able to help their families financially at the time of need and they are also able to get prestige in the family as well as in the society.

Thirdly, SHGs have been able to improve the skills of women to do various things by managing the available natural resources. As a group they can help each other to learn so many things along with the money management because most of the women in the rural areas have a very little knowledge for the management of money.

Fourthly, SHGs helps the poor people in the village to save huge amount more quickly by pulling their saving in a common fund which can then be used by the group or member of the group for productive investment. As the poor can save only small amount individually, which are usually not enough for investment.

Lastly, SHGs increases the level of social empowerment of the women through participation and decision making in the group level. All the members of the SHGs are made to take part in the meeting and income generating activities. It gives them confidence and understanding to actively participate at household level as well as external environment in the process of development.

Table 4.21 Asset Creation through Developmental Programmes

Asset creation through developmental programmes	Response
Water conservation and harvesting	√
Flood control and protection	√
Land development	√
Micro irrigation Works	√
Renovation of Traditional Water Bodies	√
Provision of irrigation facility	√
Water conservation and harvesting	√
Rural connectivity	√

Source: Field survey, 2015-2017.

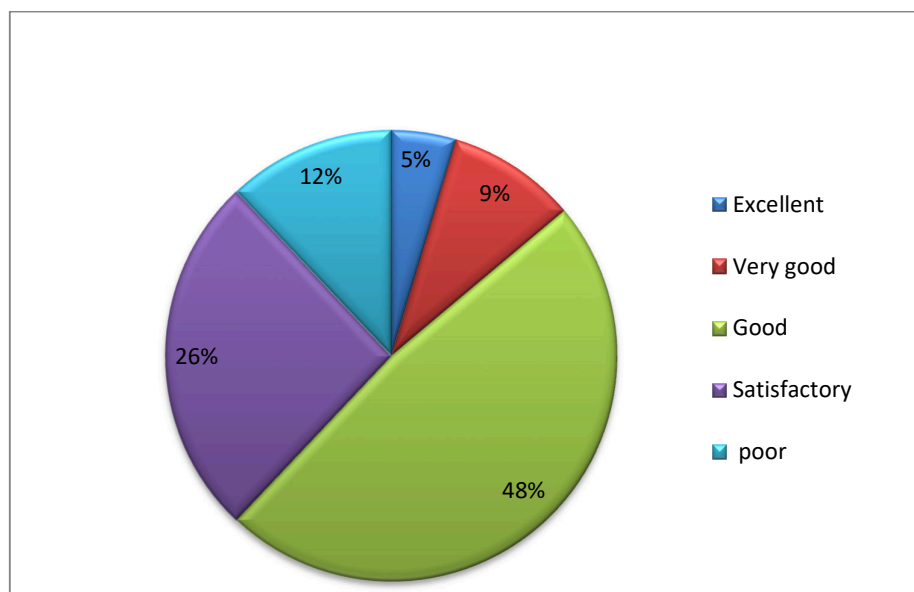
The implementation of different Governmental Schemes and programmes has changed the life of villagers over the years. The following are some of the infrastructure's availability in the sample village:

- a) Metalled Road
- b) Primary School and Middle school
- c) Primary Health centre/ dispensary
- d) Anganwadi centre
- e) Rice Mill
- f) Saw Mill
- g) Drinking water
- h) Community building/ Panchayat Hall
- i) Village ground
- j) Village Gate

The rural conditions have been enriched by the employment opportunity and income generating activities initiated by the government agencies under MGNREGS. Now better education can be provided to the children as well as providing better medical facilities. Majority of households already owns the modern kitchen utensils and other gadgets. Electrification and water supply reached every door of the households.

The improvement of village circular road, approach road, footsteps, canals and street light facilities have enhanced the outlook of the rural area and the people.

Figure 4.25. Rating on community assets creation through Development Programmes



Source: Field survey, 2015-2017.

With the introduction of IAY (Indira Awaas Yojana) which is a centrally sponsored scheme, the villagers belonging to BPL category have been benefitted. Through the Village Development Board, the villagers have been provided with permanent shelter by replacing the thatched roofing by CGI sheets. The poor villagers now need not worry to repair the roofs before the onset of harsh weather.

Climate change is definitely pushing farmers to go towards alternative cropping. Understanding the adverse effects of Global Warming on the environment through choices of land use, the department of Land Resources has integrated strategies for better utilisation of natural resources. It has also taken up activities that focused on reclaiming degraded lands and increasing productivity, restoring ecological balance as well as increase rural income. This has created employment opportunities and promoted over-all economic development on a sustained basis, besides providing an alternative to jhum farmers for permanent economic settlement. Through implementation of the

schemes by the land resource department, it is not encouraged to consider it as an alternative or sustainable livelihood source to the rural people. It is more to show the way to the people for better utilization of the natural resources and take up activities which can reclaim degraded lands, increase productivity and restoring the ecological balance. 80% of the *Ankichiba jhum* plot has been converted to rubber plantation.

Since the inception of Communitization Programme for Rural Water Supply and Sanitation System, the PHED has adopted the Communitization policy by way of handing over the completed Rural Water and Sanitation schemes to the Water and Sanitation (WATSAN) A WATSAN Committee is the beneficiaries 'legal agency' and are constituted by the Village Councils. The WATSAN Committees are formed through the Village Councils and is formally recognized and empowered by the PHED, to participate in planning, design, implementation and subsequent take-over, on completion, of the scheme for Operation and Maintenance (O&M) of the scheme. The main goal of the Department is for enabling and empowering the rural community to involve, have greater sense of belonging and to take more active role in shouldering the responsibility of managing effectively the water and sanitation systems in the village

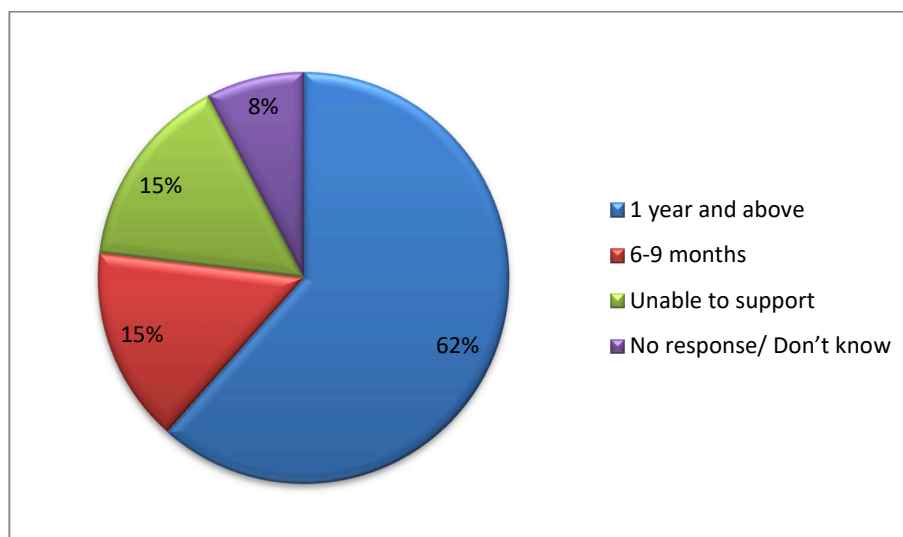
The committee is also responsible for all the micro-level planning and implementation such as the procurement of raw materials and engaging labour to construct and maintain water and sanitation infrastructure and triggers positive behavioural changes among stakeholders with respect to hygiene, use of safe drinking water and sanitation facilities.

The WATSAN programme was well received by the villagers and the assessment indicates that there has been a clear improvement in the performance of socio-economic conditions, hygienic activities, and women's empowerment in the region after following the WATSAN programme. There is water connectivity through pipeline to households with four households sharing one pipeline, construction of toilets in each household, renovation of traditional water bodies, providing dustbins along the road, etc.

There are 3 village ponds from where the villagers drew water for the household consumption. The village ponds are not in use anymore with the introduction of proper

pipe connectivity but with the initiative of the committee, the traditional ponds have been renovated.

Figure 4.26. Food sufficiency status of Home-Grown Food Grains



Source: Field survey, 2015-2017.

Fair Price Shop: The Department of Food and Civil Supplies provides subsidized food grains to consumer primarily through the network of the Fair Price Shops and simultaneously it is also an instrument of food policy that influences the price mechanism and means to promote food grains production. Through the various schemes of PDS (Public Distribution System) as per policy of the Central Government there is a fair price shop from where the villagers are provided food security by making food grains and other essential commodities like rice, sugar, kerosene, etc. available to them at a subsidized rate through which the villagers are benefitted immensely.

Though only 13.33% of the household practice traditional farming, due to their simple way of living they have had strong food security for generations. More than 90% of the household food consumption comes from what they grow and gather, and less than 10% is bought from outside. Figure 4.26. clearly depicts the food sufficiency status of the farmers and it has been observed that unlike other villages under study Salulamang farmers who depend on home grown food grains have stronger food

security, 62% of the farmers who practice traditional farming can support the family for one year and above.

Though the farmers are putting a lot of effort for sustainable livelihood the village is still confronted with numerous challenges and problems. One of the major challenges the farmers in Salulamang village faces is that there is no proper market support and linkages which make it difficult for the farmers to sell off their produce. The absence of a regulated market makes the marketing of the vegetables a demanding task for the farmers. The farmers sell their produce at a cheaper rate or wholesale rates because the perishable vegetables cannot be disposed on time this will ultimately lead to losing their every chances of a better earning.

The lack of proper means of transportation makes it hard for the villagers to transport their produce to the urban markets. It may be noted, there is not even a single public transport that plies from the village to the nearest urban centre.

Permanent farms being a very recent start and development in the village, there is an absence of proper management and planning of the produced and its returns from the farming. Farm maintenance and cultivation is done using traditional methods which sometimes are unfavourable for the crops. The farmers also do not maintain records of their crop yields in a season therefore for many farmers annual return of a family remain unaccounted hence difficult to say of their better off or worse.

Proper guidance and training programmes for SHGs strengthen the local governing body, there is a lot of potential for development and improvement in the standard of living but due to poor infrastructure and connectivity the villagers are stagnating in all walks of life.

Productivity enhancement and collectivization for sale are the major areas to intervene. Productivity enhancement is the most important under the current situation whereby rural households would have marketable surplus. The cultivators have to be trained on suitable advances in agricultural practices and provided input support for achieving higher productivity. Ways & means of irrigation need to be identified for

cultivation on *jhum* lands so that the production can be ensured even during the dry season (Final Report Nagaland. 2011).

It is also observed that rural people are looking forward to diverse opportunities to increase and stabilize their income as determined by their portfolio of assets - social, human, financial, natural and physical capital (Ellis, 1998). The availability of key-assets (such as savings, land, labour, education and/or access to market or employment opportunities, access to Common Property Resources (CPRs) and other public goods) is an evident requisite for making rural households and individuals capable of diversification. Additionally, the decreased availability of arable land, increased producer/consumer ratio in agriculture, credit delinquency and environmental deterioration can indeed be important drivers towards diversification. However, the ownership of assets, such as land and livestock, helps reduce vulnerability of households and allows them to exploit income-generating opportunities. Indeed, a diverse body of literature provides evidence that poor people in developing countries use social networks and connections as insurance to manage risk.



Plate 4.50: Salulamang Village Gate



Plate 4.51: Village Play Ground



Plate 4.52: Panchayat Hall



Plate 4.53: Govt. Middle School



Plate 4.54: Anganwadi Centre Plate 4.55: Infrastructural development in the village



Plate 4.56: Waste bins in strategic locations Plate 4.57: water filled bamboo vessels kept for emergency



Plate 4.58: Agri Link Road passing through Jhum Fields



Plate 4.59: Orange Farm- New

Plate 4.60: Century Old orange plantation



Plate 4.61: Rubber Plantation



Plate 4.62: Granaries



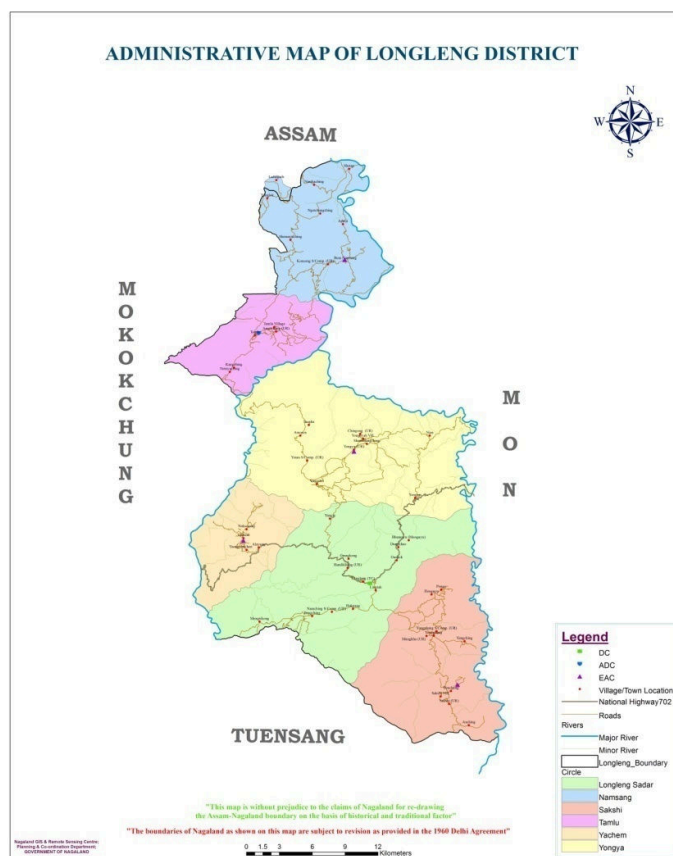
Plate 4.63: Salulamang Oranges in the Market

4.3. Longleng District

4.3.1. General introduction

Longleng District is a strip of mountainous territory located between 94°E - 95°E longitude and 26°N - 27°N latitude, it has a total area of 1066.80 sq. km. According to 2011 census, the total population of the district is 50,593. *Longleng* district have one state and 3 district boundaries, on the East it is bounded by Mon district of Nagaland, Mokokchung on the west, on the South it shares boundary with Tuensang and on North it has Nagaland's Inter-State boundary with Assam (Statistical handbook of Nagaland, 2009).

Figure 4.27: Administrative map of Longleng District



Source: Nagaland GIS & Remote Sensing Centre, 2019.

The physiography of *Longleng* district is characterised by rugged terrain and serrated ranges separated from one another by narrow valleys. The altitude ranges between 150 to 200 meters above the sea level. These mountain ranges are covered with thick forest and form the source of many perennial streams and rivers of the district. *Dikhu* and *Yongmon* are the two principal rivers that flow through the district.

The district is divided into two administrative units, Longleng and Tamlu and there are 38 recognized villages divided into 6 blocks namely, Sakshi; Longleng; Yongnyah; Tamlu; Yachem; and Yonglok, each block having distinctive languages and cultural features.

Longleng district enjoys monsoon type of climate with a minimum temperature of 10 ° C in winter and a maximum of 28 ° C in summer. The district has a fairly moderate climate where days are warm and nights are cool. Rainy season sets in during the month of May and lasts till October. From November to April, the District has dry weather relatively cool and days are bright and sunny. The average rainfall is between 2000mm and 3000mm (District Human Development Report: Longleng, 2013).

Longleng district is very rich in natural resources upon which the economy of the state in general and the district in particular is largely dependent. The type of vegetation is characterized by sub-tropical mixed forest with broad- leafed evergreen trees and deciduous trees. The dominant species found in the high altitude are bonsum, gogra, alder, oak, wild cherries, apples, lemon, banana, walnut, fig and edible plants and leaves are also found in abundant. At the foothill, Gomari, Hollock, Koro, Mesua, Tita-Chapa, Neem, Wild Mango, Amla and Bamboo species are the dominant species. Varieties of shrubs, herbs -many with medicinal values, climbers, ferns and grasses are found in patches throughout the District. The forest resource is one of the main sources of livelihood for the people.

Longleng is also a home to a variety of fauna and it is a paradise for the lovers of animals and birds, a treasure house for researchers and a perfect destination for tourists. Stag, Bear, Mithun, Sloth, Barking Deer, Mountain Deer, Wild Hog, the rare Pangolin, varieties of Monkeys, varieties of wild cats, varieties of Porcupine, Flying Fox, Flying Squirrel, Himalayan Giant Squirrel and other different varieties of

squirrels, Civet Cats, snakes, Python, Otter are the dominant wild life found. Trout is a rare species found in the rivulets and rivers teemed with different varieties of fishes and other water creatures. Dominant birds include Hornbill, varieties of pigeons including royal pigeon, parrot, mama, mountain peacock, the rare and elusive Blythe's Tragopan, varieties of jungle fowls, and other varieties of smaller birds.

Possessing traditional ecological knowledge of the resource, users themselves and local institutions can help in ecosystem management. It can contribute to the enhancement of livelihood and provision of ecosystem services.

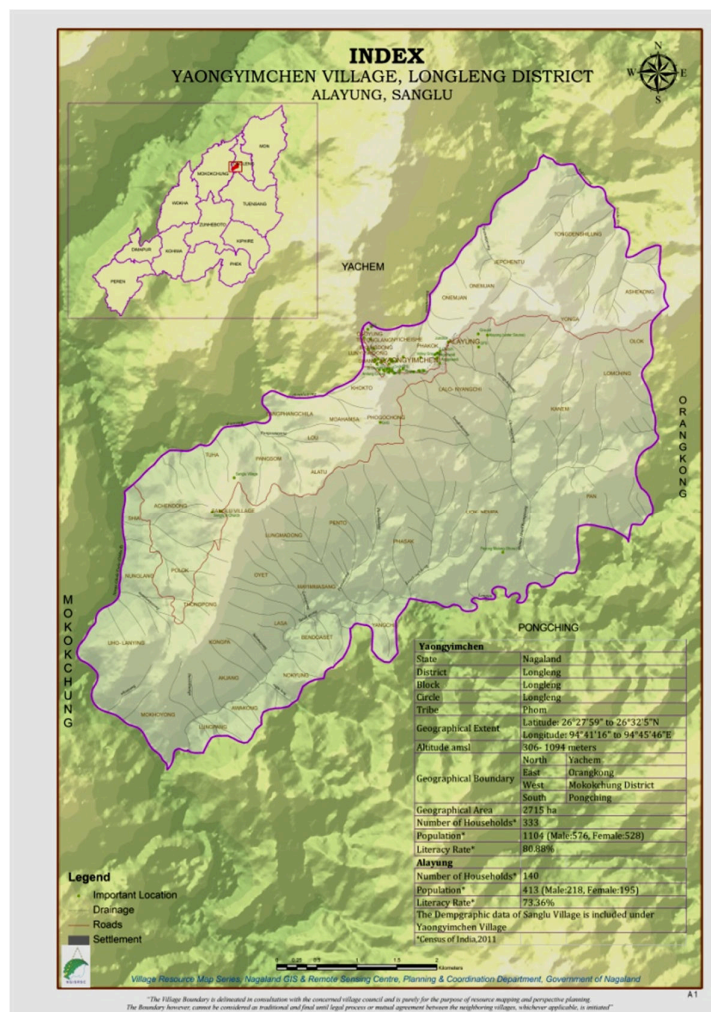
During the past few decades there has been excessive pressure on these resources through overexploitation, misuse and overuse either for sustenance or for developmental purposes. Such activities have not only depleted the natural resources but also have led to considerable deterioration in the quality of the environment. The destruction of natural habitats and biodiversity loss has assumed alarming proportion. The protection of natural habitats and wildlife has now drawn the attention of the world. The awareness of biodiversity conservation is gradually gaining its importance amongst the community.

The villagers manage these forests through traditional institutions or local administrative units, they oversee the effective implementation of the customary laws, manages and controls their territory according to local customs and traditions. The local administrative units also lay down certain terms and conditions regarding the utilization of resources.

4.3.2. Yaongyimchen Village, Longleng District.

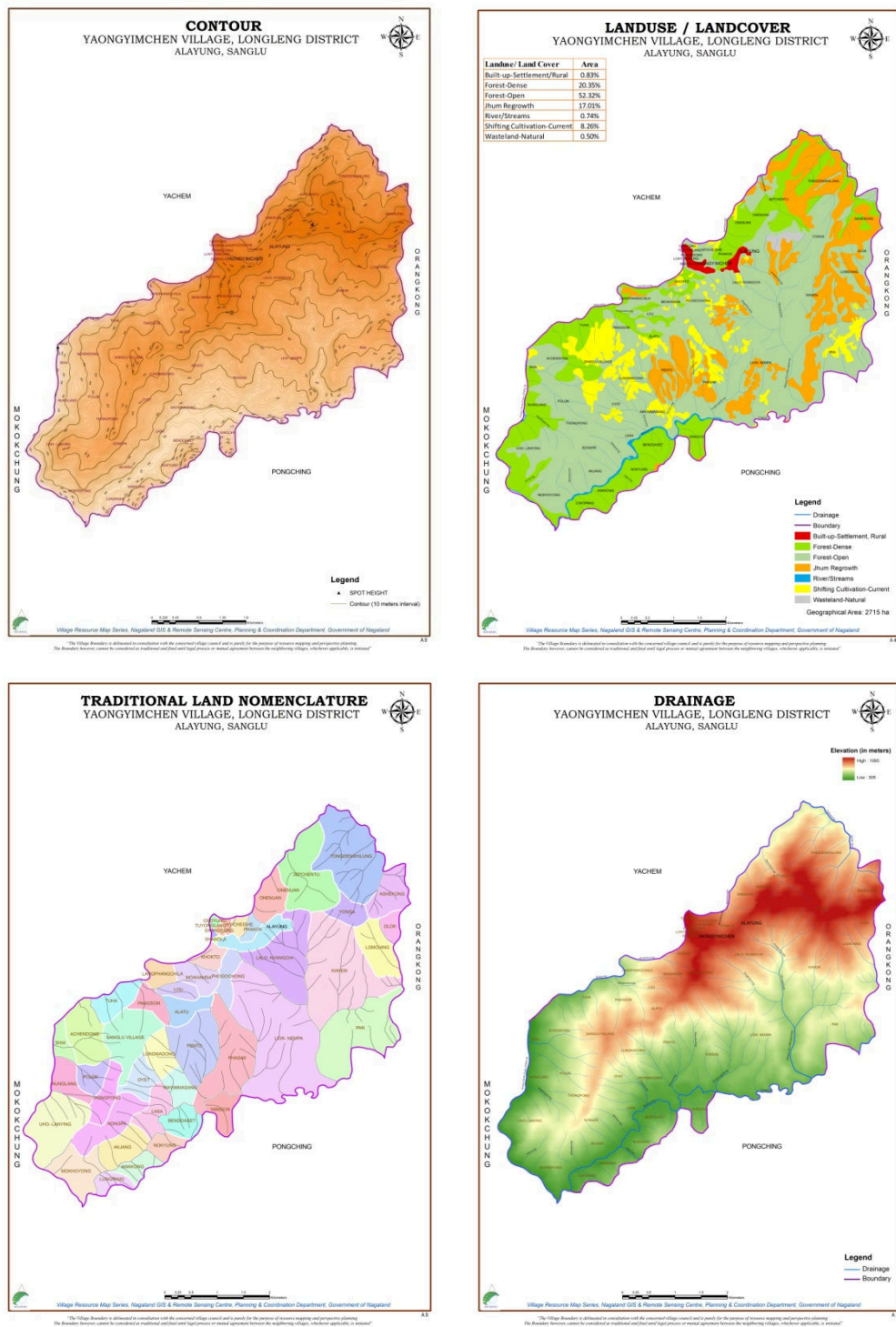
Yaongyimchen is a Phom Naga village which falls under Longleng block, Longleng district, it is bounded by Yachem village in the north, in the east by Orangkong village, to the west by Mokokchung district and in the south by Pongching village. The village lies between 26°27'59" to 26°32'5" N Latitude to 94°41'16" to 94°45' 46" E Longitude. It is situated on a hill top with an altitude of 1094 m amsl. The geographical area the village occupies is approximately 2715 Ha and lies between an altitude of 306 m-1094 m (Nagaland GIS & Remote Sensing Centre, 2019).

Figure 4.28: Index Map of Yaongyimchen Village



Source: Nagaland GIS & Remote Sensing Centre, 2019.

Figure 4.29: Maps of Yaongyimchen village



Source: Nagaland GIS & Remote Sensing Centre, 2019.

The village is 13 kms from the nearest urban centre connected by an unmetalled road, when one enters the village gate the condition of the road changes to a smooth and metalled road, well maintained by the village development board. The village has a population of 1104, 576 male and 528 females, with a total of 333 household (As per population census 2011). The village is divided into 2 residential units called khels. Agriculture is the primary occupation of the village.

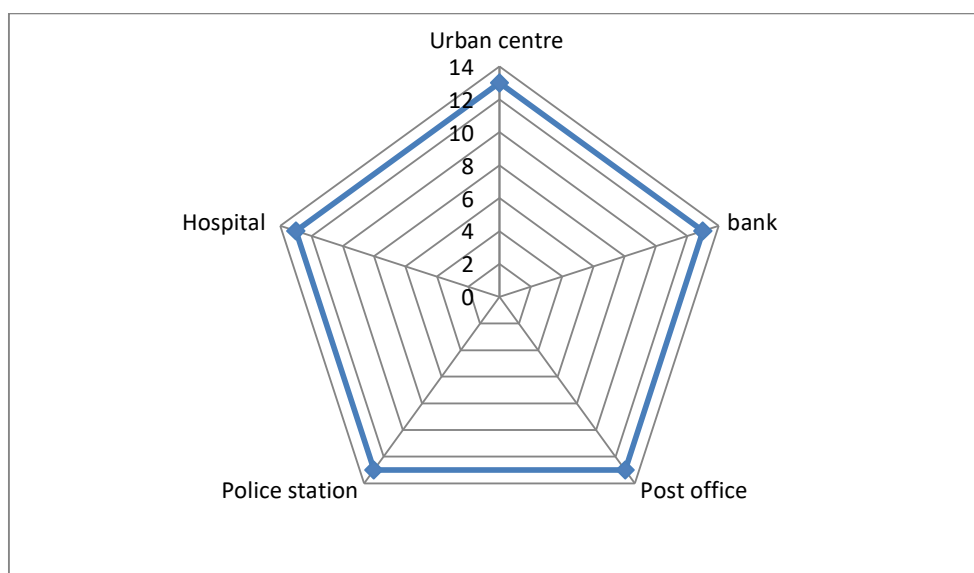
Yaongyimchen village is one of the cleanest and the most advanced village in Longleng district owing to its vicinity; it is nested on a hilltop through which the main state highway passes through. The village is well electrified and solar street lights have been installed in strategic location with the initiative of the VDB.

Table 4.22 Distance from Yaongyimchen to important destination (in km)

Origin	Urban centre	Bank	Post office	Police station	Hospital
Yaongyimchen	13	13	13	13	13

Source: Field survey, 2015-2017.

Figure 4.30. Distance from Yaongyimchen to important destination (in km)



Source: Field survey, 2015-17.

The serene environment attracts hundreds of tourists; the village has a number of cultural attractions, traditional wooden carvings of Phom history, log drums. The main attractions in the village include an old, long drum which is used by the locals during festivals and ceremonies. This drum was earlier also used to warn the villagers about the attacking invaders.

Major livelihood:

Agriculture and its allied activities are the major contributors to the village economy, as such, the villagers depend on agriculture and its produce for their livelihood. Shifting cultivation, a slash and burn cultivation in which traditionally rice was the main crop was practiced by the people of Yaongyimchen village since time immemorial. These traditional farming systems have emerged over centuries of cultural and biological evolution and represent accumulated experiences of indigenous farmers interacting with the environment without access to external inputs, capital, or modern scientific knowledge (Chang, 1977; Grigg, 1974).

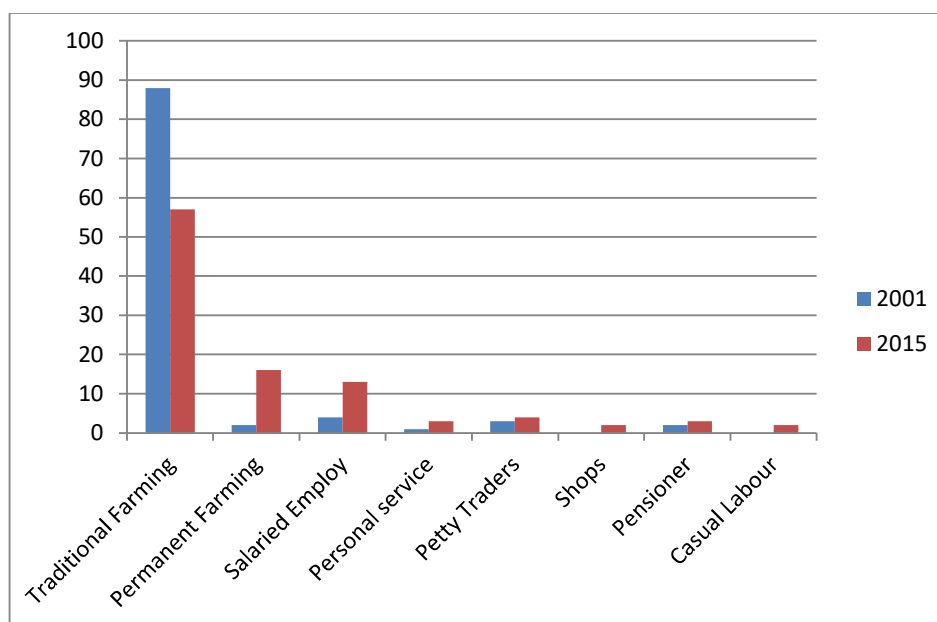
Jhumming is still practiced by 57% of the total households in the village and partially practiced by 16% of the total households who have also started permanent plantation like orange, cardamom, rubber, etc. multiple cropping system has been adopted, where 20 to 40 or more items of crops are grown on the same plot of land as intercropping. Tapioca is also grown around the field demarcating the boundary. In order to conserve soil and water colocassia and ginger are grown in rows as contour vegetative hedges. Maize, sesamum, vegetables and leguminous crops like beans are also sown in line as the filter strips. These systems are practiced for higher production and economic return.

Table 4.23. Diversified livelihood strategies

Major Source	Household in %	
	2001	2015
Traditional farming	88	57
permanent farming	2	16
Salaried employ(govt)	4	13
Personal/private services	1	3
Petty business/ traders	3	4
Shops	-	2
Pensioner	2	3
Casual labour	-	2
Total	100	100

Source: Field survey, 2015-2017.

Figure 4.31. Diversified Livelihood strategies during 2001-2015



Source: Field survey, 2015-2017.

Seasonal activities:

Logging business is carried out on private lands but the Village Council in order to protect the village's environment monitors the log contractors by surveying the area and is consented to proceed with the business. The village council keeps a strict vigilance in order to protect the environment and is managed for sustainable use.

The main source of energy for both lighting and cooking in the households of rural areas is firewood. During dry season the allotted jhum plots are cleared and burned, before burning the tree trunks and branches are uniformly cut and stacked for sale. 10-15 families are involved in such business, they buy from the farmers at a lower rate and sold in the urban markets at a higher rate. Their annual earning is approximately Rs. 10,000-15,000.

Scarcity of Water is one of the major problems in Longleng Districts since there is no water pipeline connectivity. People carry water from a very far stream, an adult can hardly carry 10-15 litres in one fetch, which is insufficient for the family. The perennial streams near the village have all dried up since then the villagers have been depending on rainwater for household use. There are 4 traditional village ponds which are maintained by the village WATSAN committee. Recently the Land Resource Department has constructed one reservoir to harvest rainwater during monsoon. The PBCA initiated in the construction of concrete water reservoirs (40/60 ft) in the village to harvest rain water during monsoon. The association also suggested the villagers to construct temporary tanks with plastic sheets reinforced by bamboo walls. During the lean period there are 2- 3 water tankers carrying a capacity of 2000 litres and is sold at a rate of 1500 per load.

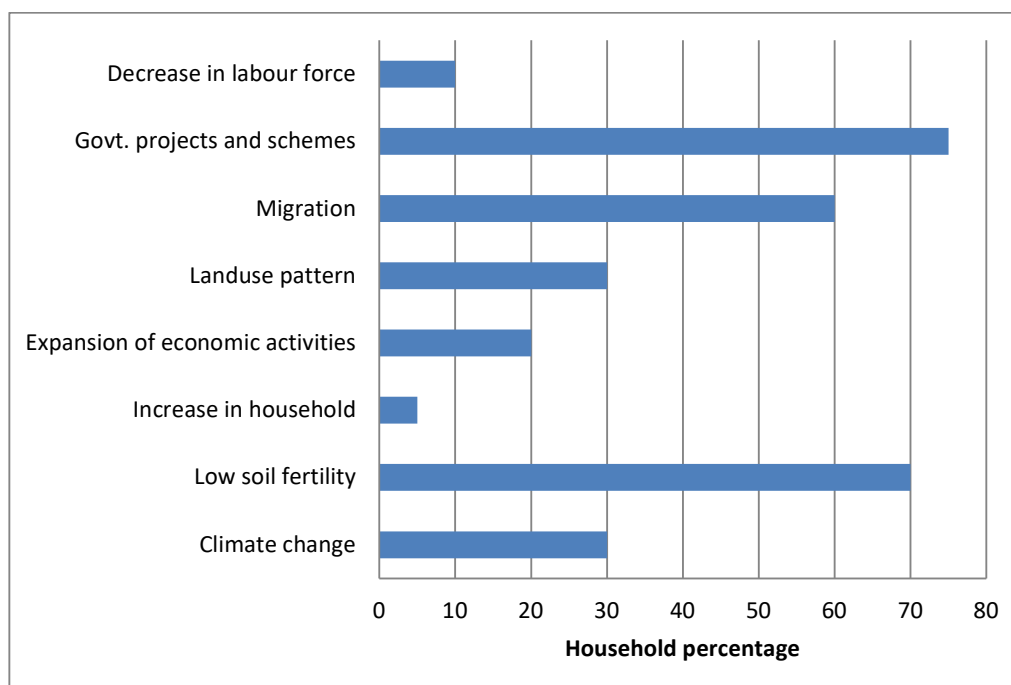
With the introduction of the two-lane road that passes through the sample village the villagers installed 2 stone crushers but could not be utilized properly due to decrease in demand.

Table 4. 24 Determinants of Livelihood Strategies

Factors	No of Household respondents
Climate change	30
Low soil fertility	70
Increase in household	5
Expansion of economic activities	20
Land use pattern	30
Migration	60
Govt. projects and schemes	75
Decrease in labour force	10

Source: Field survey, 2015-2017.

Figure 4.32. Determinants of Livelihood Strategies



Source: Field survey, 2015-2017.

The land is not productive as it is hilly with steep slopes. Erosion of the top soil due to rain and the strain of drawing water from valley to the hilltop make conventional cultivation impossible. Owing to the destruction caused by jhum, forest products have also decreased. Environmentally speaking, the jhum practice of the villagers is a grave threat to the flora and their hunting practices is even a greater threat to their fauna as well. Under such circumstances, the only opportunity left for the farming families today is to find an alternate way to food security, livelihood and economic development.

In a Naga Village System social and Religious Organisations plays a vital role in the smooth functioning of the village's administration. The important organisations in the Yaongyimchen village are (i) Village Authority (ii) Clan Organisation (iii) Church Administration (iv) Women Organisation (v) Youth/Students Organisation

The church is one powerful organization in the village that helps the villagers in coping with the changing pattern of livelihood. Comparatively, the people are more obliged towards adhering to the norms and values that a believer is expected to follow than conforming to the certain codes and structure as laid down by the village authority. The village authority in collaboration with the church organization is carrying out various activities in order to improve the economy of the village.

The Phom community, for the last many decades has been neglected in giving its rightful place in almost all the areas of development. As such Socio-Economic, Education and other developments has taken a snail pace. Having substantially lower livelihood indicators than other areas of Nagaland and limited market access worsens their poverty. Thus, Phom Baptist Christian Association (PBCA) has been in the forefront supporting the Socio-economic developmental activities in the Phom areas.

During the last two decades or more the Phom Baptist Christian Association has worked for the rural people of Phom in collaboration with different organizations. PBCA has also taken up Horticulture, agriculture and other related activities such as fishery and livestock, establishment of grain banks, improved techniques of crop cultivation and construction of water channels for irrigation. As the association got more deeply involved in the socio-economic upliftment of the people in different capacities, the challenges were enormous. In spite of their best efforts the Phom

Community could not reach the stage of generating income through alternative means of livelihood as they depend on the age-old traditional agriculture system and forest products. Therefore, looking at the plights and needs of the community, PBCA started a livelihood project that would improve the lives of the people in Phom area in general and in the Yaongyimchen village in particular.

The goal of the non-farm and agriculturally based livelihood programmes were introduced to create opportunities for income generation, reduce rural poverty, a sustainable livelihood, leading to improved standard of living.

With the decline in agricultural products, Phom Baptist Christian Association has developed alternative method of farming for the farmers in the village. In collaboration with the Department of Horticulture a programme was instituted on scientific technique of orange plantation, intercropped with banana, soya & kidney bean, ginger and naga king chilly.

The association also took initiative to impart knowledge on the basic concept of SHG and its formation, business knowledge and entrepreneurial skills to equip them for income generating activities and running small enterprises. Studies have shown that because of the fast-depleting forest and decline in fertility of soil, the grain produced by average farmers lasts only five to six months. The rest of the months prior to the next harvest are solely dependent on other crops and other off farm livelihood activities. The poor farmers take the crop loan from rich farmers and most of the time the poor end up repaying their entire harvest to the rich farmers and at times end up mortgaging their individual land.

One of the most prominent changes in the village has been the shifting gender balance of the workforce. Women have been at the forefront of adaptation strategies to agricultural restructuring through involvement in on-farm and off- farm diversification. On- farm, women have frequently been responsible for developing new initiatives and in off-farm, income earned by women from full time or part time employment in a diverse range of occupations has provided an important addition to farm finances at a time when income from agricultural production has been under pressure. Off-farm

employment also gives women an identity and role that is independent of their association with the farm.

Overall, the jobs commonly taken by rural women reflect the full range of occupations, from professional positions, notably in teaching and health care, to clerical work, manufacturing production lines, cleaning and child minding. (Little, 1997)

There are 18 SHGs (Self Help Groups) introduced by the PBCA and the Village council. Each SHG received an amount of 5000-10,000 from the project management in order to manage themselves for various activities. After utilizing the received amount for six months, every SHG returned the money to the office with an interest of 1.5%. The SHGs meet twice a month in order to discuss various plans and activities to be implemented by the group. In every meeting the members of the SHGs collect a certain amount of money minimum Rs. 10 in order to raise their income. The SHGs are introduced to the cultivation of ginger and different vegetables. Every SHG collects a share of vegetables and ginger that are produced in their fields and are sold in the market. The income from the sales is invested for buying tea leaves and tomatoes from the market at a whole sale rate and sells it in the village with a little higher rate. A percentage of the amount from the income is shared among each member half yearly. NGOs and VOs are active in promoting SHGs to address the issues related to credit availability. However, most SHGs have a healthy financial base with 6 SHGs having over Rs 1.5 lakh balance.

Grain Bank: PBCA have also introduced Grain Bank in the village where Grains were bought and distributed to poor families with a minimum rate of interest. This was monitored by women groups and SHGs, the monitoring committee is encouraged to multiply it and lend it to the poor families. This was introduced with an intention to subsidize the traditional method of Grain loan where the rich would exploit the poorer section of people. The introduction of Grain Bank has benefitted many women groups. They are now able to support the family and send their children to schools. Many of them who were engaged in this program still have a lot of grain/paddy in stock which generates income for the family.

Conservation of biodiversity: A source of livelihood

Rural areas are mostly valued as place of nature but we often do not treat the nature very well. The destruction of natural habitats of wildlife and biodiversity has alarmingly increased and has drawn the attention of the world. When the forest area is large enough and population density is low, rotational farming at certain levels does not destroy forest resources but rather creates diversity of fauna and flora in forests. In addition, various plants, animals and their gene pool are preserved for future use. Land and forest resources are often collectively owned and utilized to meet individual and collective needs in this area. The biodiversity conservation produces many kinds of foods, maintains collective efforts and ensures social security, observation of traditional norms and practices, addresses equity in resource allocation.

The awareness of biodiversity conservation is gradually gaining its importance amongst the rural communities. A group of likeminded intellectuals from the village known as *Lemsachenlok*, which means a group of people gathered to share their thoughts, on surveying the vast and thick forested tract of land with rich flora and fauna owned by the village approached the village community.

The biodiversity conservation for sustainable use initiated by the Yaongyimchen village is one of the best examples of community coming together, working together towards a common goal with a vision. While there is a huge market demand for high quality timber in the state Yaongyimchen still has large tracts of dense and virgin forest protected by the community. The villagers have been carrying out preservation and conservation initiatives for more than 6 years without any help and assistance from any quarters. *Sanglu* and *Alayung* have come together with the *Yaongyimchen* village to conserve and protect the natural resources under their jurisdiction. Not only the neighbouring villages who were motivated and inspired by the successful conservation story but the whole *Phom* community came forward to try conserving the forest under their village jurisdiction. The conservation effort made by this community is not only a contribution to the district alone but to the state and to the whole country and to the whole world and also helps to control the climate change.

Lemsachenlok is a society where a group of concerned young minds have come together to work for the socio-economic development of the community. The society was in the news on 29th October 2016 when Hungarian Scientist Peter Fehervari along with his team visited the reserved forest on the invitation of the WII to satellite tag the Amur falcons. The traditional ecological knowledge systems and institutions of the communities have not only contributed towards sustainable resource utilization and management but have also sheltered millions of Amur falcon, the raptors that travel one of the longest migration routes among all birds travel half way across the globe each year covering up to 22,000 km from Mongolia to South Africa. This is another unique attraction for ecotourism and yet a responsibility to welcome, provide shelter and protection and in return unity among communities in preserving our environment.

Three wild life watch towers is erected which is constructed by eco-friendly materials such as bamboo and wood. The community keeps strict vigilance on the activities of men in and around the reserved area like picnicking, fishing, hunting, vehicular movement etc. They also restrict construction of any kind of structure to distract the wildlife and the natural settings. The initiative taken by the Yaongyimchen villagers to conserve and protect the nature is an example of social forestry and retention of tribal identity which had always been a part of the Naga tribal life and culture.

The district is predominantly rural and its economy is built on the natural resource base with rain-fed agriculture being the predominant livelihood strategy for most people. Wildlife use is part of local culture, and depriving local right of access will only result in the preservation of ecological islands from which people are excluded, as opposed to a more holistic form of resource management. The resources in areas adjacent to the preserved forest are managed by the Committee according to the local needs.

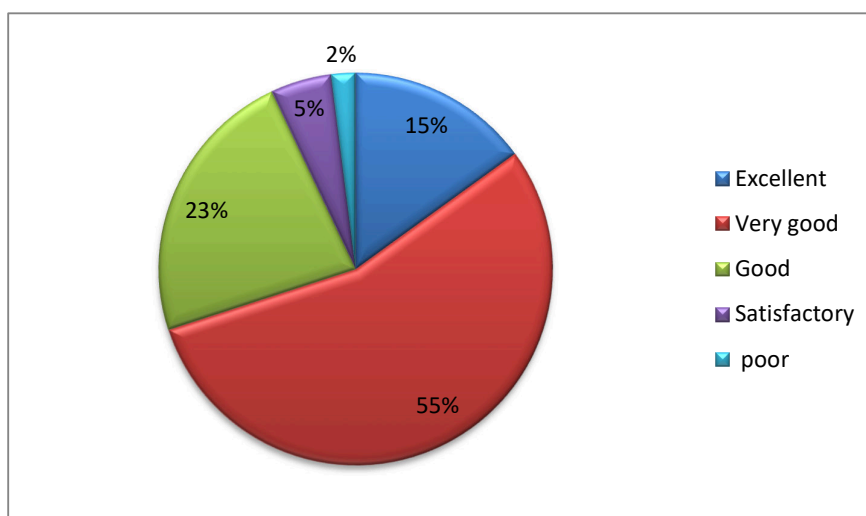
Within 20-30 years from now Longleng district is expected to become the biodiversity hotspot of the region. It is found that the traditional management practices not only help in conserving the resource as evident from the presence of large patches of well protected forests and ensuring its sustainable use, but at the same time serve as a common good and ‘safety net’ for the communities as seen in the village.

This system was developed from active participation of the people. It is hoped that by improving the income and livelihood of village people, the values of ecosystem services will get predominance over the forest products and the traditional management systems will gain added strength. The participation of communities to conserve the biodiversity will not only protect the biodiversity but in near future becomes an important eco-tourism destination and in turn can play a significant role in the livelihood security of the local communities creating opportunities for ecotourism as an alternative source of livelihood.

Tourism increases community employment opportunities, community income, and community livelihood assets and reduces poverty, governments and non – governmental organizations such as the Village Development Board who executes under the Village Council, the church organization and the *Lemsachenlok* committee actively encourage the community to participate in tourism through policy support and project support. These organizations also help villages diversify livelihoods and create sustainable livelihood opportunities for local residents while community residents also strongly support the community to develop tourism because of its economic benefits.

In figure 4.33, 55% of the household grades a very good rating on the assets created by the Government programmes. The reason behind this is that the policy is structured at all levels with community participation and involvement for the long-term protection of the goods and services providing access to markets, financial support and partnership with private sectors, appropriate policy framework and effective delivery machinery and above all people participation.

Figure 4.33. Rating on assets Creation through Development Programmes



Source: Field survey, 2015-17.

All levels of community come together and participate through different organizations like VDB, churches, NGOs, etc. to motivate and mobilize the villagers and in facilitating the implementation of the activity. The transfer of traditional knowledge is an entry point to organize the community to come together and act on something that they felt important to the community and success and power is achieved when people unite and work under one umbrella.



Plate 4.64: Yaongyimchen village gate



Plate 4.65 : Traditional Lock up



Plate 4.66: Different types of Morung

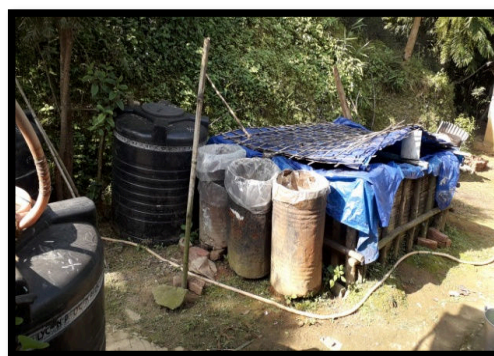


Plate 4.67: Rainwater harvesting



Plate 4.68: Village hut



Plate 4.69: Jhum field under paddy



Plate 4.70: Community Reserve Forest

Government Aided Development Activities under PBCA



Plate 4.71: piggery



Plate 4.72: Construction of low cost water tanks



Plate 4.73: Steps of Orange plantation



Plate 4.74: Preparation of Vermi compost pit and farm yard manure



Plate 4.75: Farmers purchasing
Kidney beans

Plate 4.76 : Carpenter with
modern tools

Plate 4.77: Revival of
traditional bead work



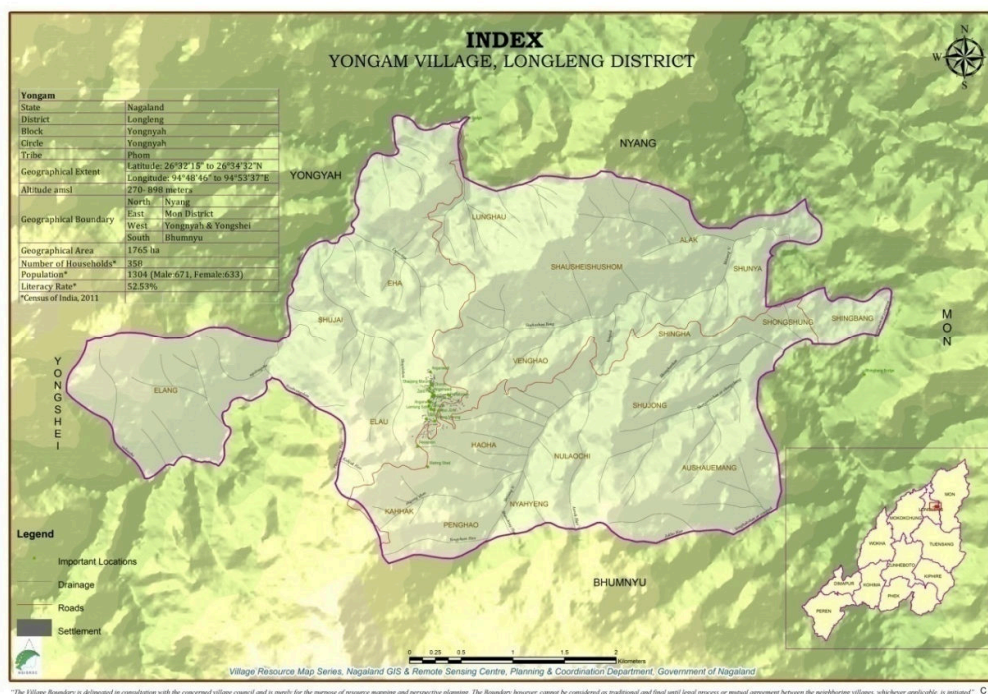
Plate 4.78: Revival of traditional skills and skill development programmes

4.3.3. Yongam Village

Yongam village falls under Yongnyah Block under Longleng district and is inhabited by the Phom tribe. The Village is located 12 Km towards the west from the district HQ Longleng lies between an altitude of 270-898 meters amsl Latitude 26°32'15"N to 26°34'32"N and Longitude 94°48'46"E to 94°53'37"E. The village jurisdiction occupies an approximate area of 1765 Ha, bounded by Nyang village in the North, Mon district in the east, Yongnyah and Yongshei villages in the west and Bhumnyu in the south (Nagaland GIS & Remote Sensing Centre, 2019).

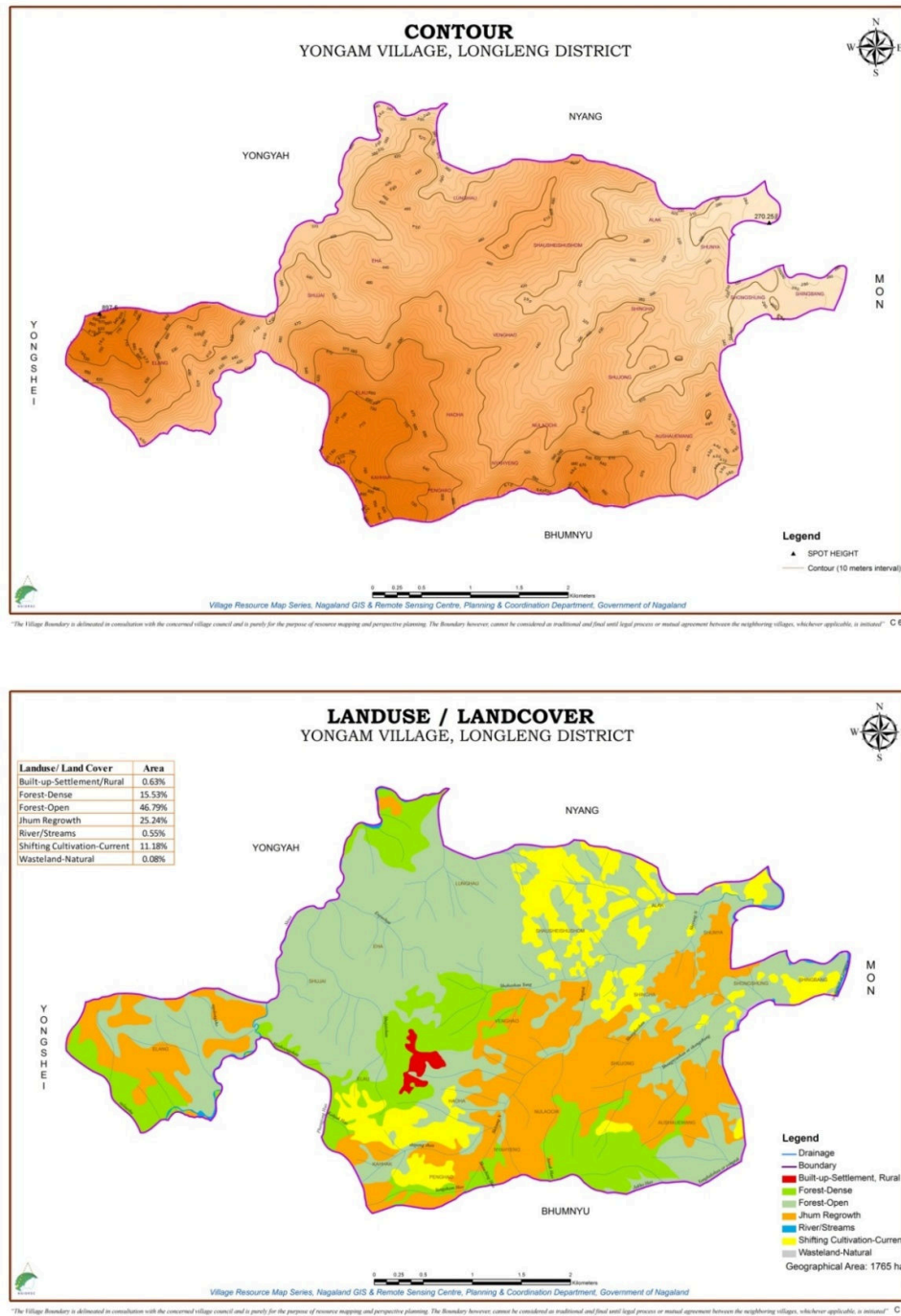
Climate and temperature have a major effect on the soil, generally the soil is acidic dominated by red loam soil with clay loam, sandy loam and sandy clay loam character. The village is endowed with perennial streams viz- Makshu, Sumang and Nanyu which drains to Dikhu river.

Figure 4.34. Index Map of Yongam Village



Source: Nagaland GIS & Remote Sensing Centre, 2019.

Figure 4.35: Maps of Yongam Village



Source: Nagaland GIS & Remote Sensing Centre, 2019.

The village has 358 household (District Census Handbook 2011) spread over 4 khel christened as Moiji, Yimshe, Netnyu and Khonglong named after the warriors and valley and is mostly hilly with less gentle Slopes. The village is inhabited by 1304 people as per 2011 census, where male is 671 and female 633 and with a literacy rate of 52.53%

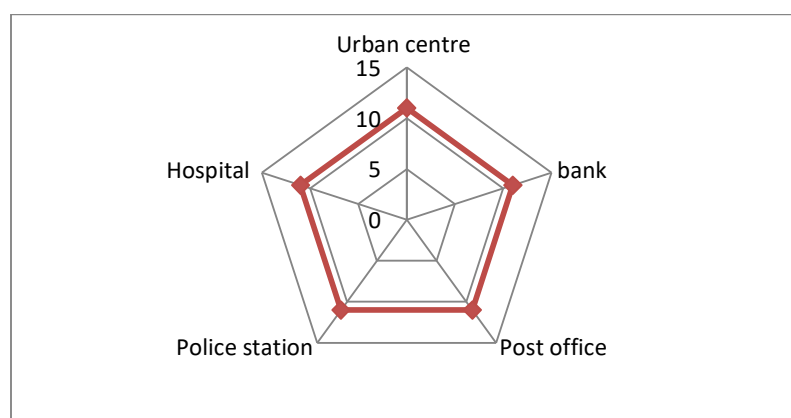
The village experiences sub-tropical climatic condition with maximum temperature of about 27° -32°C during summer and a minimum temperature of 3° -6°C during winter with an average annual rainfall of about 1450-2100mm. It receives maximum rainfall in the month of May to October. The vegetation of the village consists mainly of Sub-tropical semi- evergreen forests. Some of the common species found are Hollock (*Terminalia myriocarpa*), Khokon (*Duabanga grandiflora*), and Titachap (*Michelia* sp.) Naga neem (*Melia azadirachta*), Needle tree (*Schima wallichii*) and other Local species along with shrubs, herbs and orchids are found in the village area. Some indigenous plants known locally are Mechinga (*Zanthoxylum acanthopodium*), Atcha and bamboo species like Lung, Laksho, Longma, Longshu, Anumyu and Themusang, etc (District Human Development Report: Longleng, 2013).

Table 4.25. Distance from the village to important destination

Origin	Urban centre	bank	Post office	Police station	Hospital
Yongam	11	11	11	11	11

Source: Field survey, 2015-17.

Figure 4.36. Distance from Yongam to important destination (In Km)



Source: Field survey, 2015-2017.

The village is connected with metalled road which was constructed in the late 1970s. The village is 95% electrified and solar street lights are installed at strategic location. Since the village experiences humid and warm climate 75 % of the households uses electric table and ceiling fan. With the introduction of IAY scheme under Rural Development 96% of the houses which were made of straw and thatch has been replaced by CGI sheets.

Table 4.26. Access to Facilities

Access to facilities	Household in percentage
Housing - Owned	98
Rented	2
Type of house- Katcha	23
Pucca	77
Drinking water- River/Stream	68
Rain water harvest tanks	32
Sanitation- Toilet – septic tank	60
Other system	40
Electricity	95
LPG	15
Firewood	100
Electricity for cooking	35
Radio	46
Television	90
Newspaper	3
Refrigerator	7
Bicycle	1
Motorcycle/scooter	8
Car	5
Heavy vehicle	2
Fan	75
Heater	6
Telephone/mobile	80
Sewing machine	8
Washing machine	1.5

Source: Field survey, 2015-2017.

Drinking water is generally supplied from the common reservoir, there is only a small source from where spring water is drawn otherwise maximum water supply around the village is pumped from 3 deep bore well which was constructed by the geological department and another donated by the concern MLA . The Village Council sees that each household gets enough water and maintains the functioning of the water supply in the village.

Yongam is a one of the advanced and cleanest villages under Longleng district. In the year 1996 a seminar on Education and Health was organized by the Village Council in collaboration with the church organization, since then rearing of livestock in open, defecation in the open, and cleanliness in the village was controlled and looked after by the village council and Student leaders. At present, Sanitation and cleanliness in the village is looked after by the WATSAN committee. Each household keeps its own dustbin and the WATSAN Committee and the students' leader takes initiative in keeping the village clean.

The main source of livelihood since time immemorial was agriculture (Jhumming) and gathering. The entire village is engaged in Jhum cultivation which is the main source of income. There are 7 jhum plots with an average cycle of 7-8 years. The paddy fields are slowly replaced by vegetables like sorso seeds, soya beans, and tubers like yam, tapioca, etc. a plot of land where a tin of rice sown produced 200 tins of rice, at present produces 50 tins of rice approximately. This is due to infertility of soil which is mainly caused by the excessive use of salt. With the decrease in workforce in the field the farmer is compelled to use salt as weedicides and in the long run makes the soil unsuitable for the growth of rice.

Major crops like cereals viz-rice (*Oryza sativa*), maize (*Zea mays*) and millet (*Setaria italica*), pulses viz-soybean (*Glycine max*), rajmah (*Phaseolus vulgaris*) and pea(*Pisum sativum*), tubercrops viz- Yam (*Dioscorea spp*), taro (*Colocossia esculenta*) and cassava (*Manihot esculenta*) and Horticultural crops viz- Banana (*Musa paradisiaca*), citrus, pineapple (*Ananus comosus*), Jackfruit (*Artocarpus heterophyllus*), litchi (*Litch chinensis*) mango (*Mangifera indica*), guava (*Psidium guajava*), pear (*Pyrus communis*), peach (*Prunus persica*) are cultivated. The Biennials and perennials

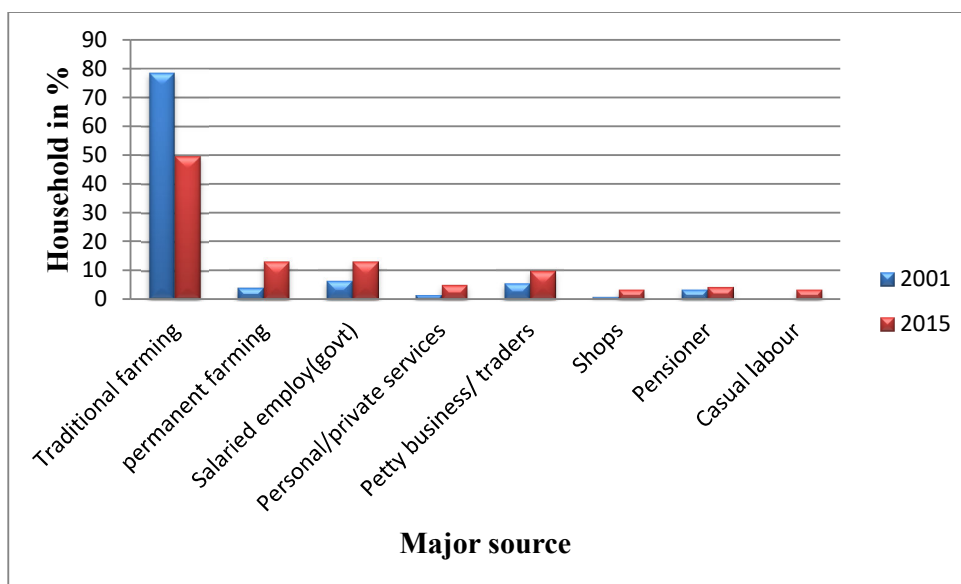
hibiscus crops like chilli, brinjal, ginger, and yam are grown for sale and also for food security during the lean period. The production from agriculture does not meet the needs of the household for the whole year therefore the villagers are compelled to engage in other livelihood activities.

Table 4.27 Diversified livelihood strategies of Yongam village

Major Source	Household in %	
	2001	2015
Traditional farming	78.4	49.6
permanent farming	4	12.8
Salaried employ(govt)	6.4	12.8
Personal/private services	1.6	4.8
Petty business/ traders	5.6	9.6
Shops	0.8	3.2
Pensioner	3.2	4
Casual labour	0	3.2
	100	100

Source: Field survey, 2015-2017.

Figure 4.37. Diversified Livelihood strategies during 2001-2015



Source: Field survey, 2015-2017.

Vegetable vendors: Home-garden is an extension of the traditional house. The family is able to obtain a perennial supply of fresh vegetables for the household consumption by harvesting the crops. There are indications that the areas under home-garden is increasing due to demand. In the past, home gardens were the domains of the women but with the income generated from the home-gardens, men have started to get involved, resulting in an increase in area as well as production. Now home-gardens are no more only a traditional agriculture system for subsistence but also a source of income generation for the household (A Thematic Report, 2009).

A large number of women in the village are cultivators, and are also engaged in informal trading activities. They comprise the majority of the market vendors selling vegetables and indigenous produce. These women are not only independent of their male counterparts, but they are also the major source of support to their families. Few women have accessed to the government schemes, economic credits and opportunities provided to women to improve their economic status.

The street along the Longleng main town is dominated by the Yongam women vegetable vendors. Phom Baptist Christian Association (PBCA) Nyengching, Longleng has been committed towards Community development and extending support for strengthening the livelihood sustainability of the rural people under Longleng District. PBCA in collaboration with National Bank for Agriculture and Rural Development (NABARD) constructed a rural haat which protects the vegetables vendors from harsh weathers. At present due to the availability of public transport (1 mini bus, 1 pickup truck and a sumo) nearly 25-30 women goes to Longleng daily town to sell their products. Their average earning per day is Rs.700, some vendors who bring vegetables in great bulk their earnings per day even goes up to Rs. 2000. The earnings by the women can be a response to a need for households to have a dual income in order to afford high rural prices.

Before the construction of road there was only a foot path leading to the district head quarter, except on Sundays and Thursdays the women folk carry the vegetables gathered from the forest and fields to Longleng market. Domestication of erstwhile wild vegetables has become common. Farmers have begun to preserve wild edible plants

that are found growing in the jhum fields, which in the past, would have been weeded out. Yongam village experiences a tropical climate which is favourable for the growth of betel leaves, it is learned that the villagers pluck the tender betel leaves on very large and tall trees in the deep woods, neatly stack them in baskets carry as head loads and walked on foot and sold it in the neighbouring state, Assam. Plucking of betel leaves is a very risky job, it is a type of climber which climbs on very tall trees in the forest, nearly 40 metres tall. The villagers knowing the value of the leaves started cultivating the leaves in the fields otherwise it was collected from the forest. Some farmers who own 20- 30 trees, their income rises to 20,000 – 30,000 in one season, (i.e., during monsoon season).

Integrated cash -crop plantations: The farmers of Yongam village practice a suitable cultivation an alternative to shifting cultivation for higher return by growing a few cash crops on the same plot of land as an integrated cash crop plantation. Here the farmers have selected cardamoms as their main crop and they grow tapioca on the boundary. The main purpose of this practice is to maximize income and also to reduce the practice of shifting cultivation.

It has been observed that the jhum plots are also decreasing due to the introduction of various livelihood programmes by the government. Before 2003 the value of oranges, bananas, pineapples, betel nut leaves were not known but with the intervention of the Land Resource Department in the village brought a lot of changes in the livelihood pattern. The village council adopted a resolution and distributed Rs.2000 to every household and introduced to the cultivation of cardamom, orange, etc. in the year 2009, 10 farmers from the village were sent to the Ministry of Commerce and Industry, Department of Commerce, Rubber Board Jorhat for training on rubber plantation. Since then, the trained farmers started rubber plantation in small scale in parts of the jhum fields. They have started harvesting and the raw product is sold in Changtongya Town which is 27 Kms away from the village, it is sold at the rate of Rs. 90 per Kg. one of the farmers profits from the rubber was 1.5 lakhs(approx)

Beside Agriculture, about 15 household are engaged in handlooms, carpentry. Bamboo craft are also taken up in the village in a small scale as an alternative way of livelihood. Nearly 90% of the household rear domestic animals, viz; Pig, Poultry bird,

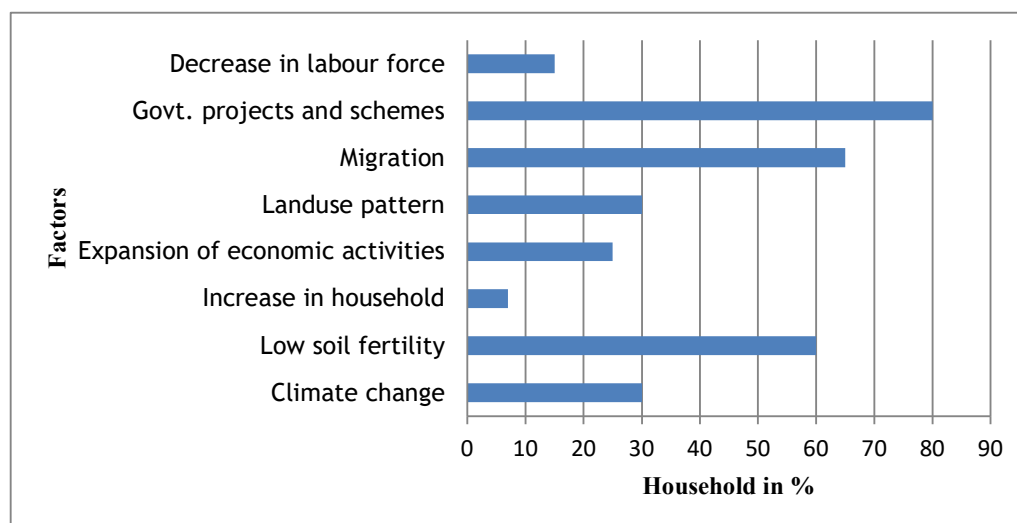
Cow, fisheries etc., for domestic consumption, which are not confined and is reared in traditional manner making standard of living unhygienic.

Table 4.28: Determinants of livelihood strategies

Factors	No of household response in %
Climate change	30
Low soil fertility	60
Increase in household	7
Expansion of economic activities	25
Land use pattern	30
Migration	65
Govt. projects and schemes	80
Decrease in labour force	15

Source: Field survey, 2015-2017.

Figure 4.38. Determinants of livelihood strategies



Source: Field survey, 2015-2017.

Livestock:

Small-scale pig production is the basis of livelihoods of many poor people living in the village. Pigs provide a pathway out of poverty for many households transforming their subsistence production into market-oriented systems. For *Nagas* pork is the most preferred meat, some 80% of the households keep at least 2 to 3 pigs. 95% of the households rear local chicken which is in great demand in the urban market. Apart from rearing local fowls, 4 households' rear chicken (Kroiler). The female kroiler lay eggs and the eggs are sold @ Rs 200 per set. The kroiler after attaining 2.5-3 kg is sold within the village at @ of Rs.200 per kg. Not all the households can effort to rear the Kroiler because it involves a lot of care and financial involvement. Selling of livestock during festival and special events generates livelihood income for the farmers.

Broom cultivation:

The broom plant is a major forest-based resource for the farmers. It is commonly found on the hills, damp steep banks along ravines and on the banks of the rivers. It is the flowery inflorescence of *Thysanolaena maxima* plant, known simply as Broom grass. Though it is largely unorganized it grows almost wild on the hillsides across the state, the plant serves as a big cash crop for local farmers. Broom grass prevents soil erosion, even though the grass is reed - like, the rhizome and its fibrous roots hold the soil together on the steep slopes.

The village undulating landscape provides the ideal ground for the tall grass. Broom grass grows at altitudes of up to 5,600 ft; the hills here aren't too high. Moreover, the plant is remarkably well adapted to all kinds of soil and grows on practically all soil surfaces found in Nagaland - even broken rock surfaces. But its abundance is probably one reason why people didn't see the broom's potential as a revenue earner. The locals didn't even know that broomsticks could earn them a neat sum.

The cultivation of broom-grass is easy and requires less financial investment. The broom grass can be grown even on marginal lands, wastelands and jhum fallow. Its cultivation can promote the sustainable use of fragile and degraded lands. It grows well on a wide range of soils varying from sandy loam to clay loam. Usually, traders purchase the produce only between February-April. A bundle of 1 kilogram of

broomsticks contains about 20 - 25 sticks and costs Rs.20-25. In the off season, the same is sold for Rs.30-40. To the small and marginalized farmers broom cultivation is an economic activity that sustains their seasonal livelihoods.

Marketing broom grass is easy in the village, in the months of February, March and the middlemen who are the potential buyers comes to the village collecting the already bundled brooms. This fetches the average household Rs 6,000-7,000 a year in additional income. Some families have even earned as much as the double of that amount. Attractive returns since the plant requires very little care - just occasional weeding - and is perennial in nature. The hard work only comes at the time of the harvest when the plant has to be cut and dried.

The income from brooms gives the cultivators something to fall back on during the idle winter months. The farmers depend mainly on summer crops. The cold months are usually spent preparing for the next round of *jhumming* (clearing the forest by burning, which is the traditional mode of cultivation in the Northeast), collecting firewood and hunting. It is difficult at this time of the year to earn even Rs 100 a week, say locals, unless there is some road construction going on.

Programmes for broom processing and broom-making in addition to other trades like candle-making, tailoring, jam & pickle making, jute & handicraft, bamboo basket weaving, etc., have benefited the SHGs and individual participants which provides self-employment.

The beneficiaries were of opinion that involvement in the Scheme resulted in increased savings and increased social involvement, increase in family income, household assets, expenditure on children's education, health care, savings and social involvement as a result of involvement in Mahatma Gandhi NREGA Scheme. The beneficiaries were of the opinion that they could spend more on the education of their children after joining the Scheme.

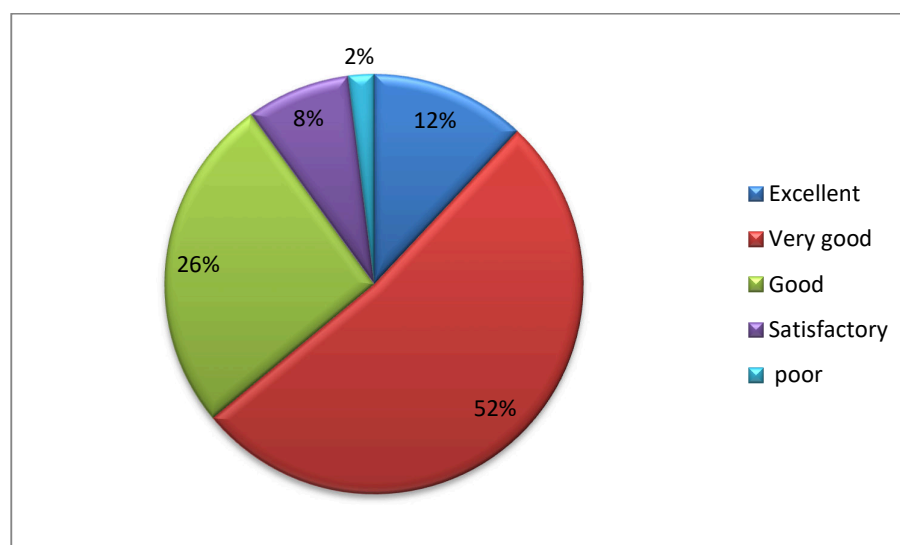
Women Empowerment through the Scheme:

The women beneficiaries strongly feel that, after joining the Scheme, they have been recognized as earning members in their family. They confirm that the Scheme helped them in getting more involvement in decisions regarding creation of household assets. The opportunity to work in groups has brought in a collective spirit to work and this exposure has given them the ability to stand on their own feet and to have better involvement in social activities. It has encouraged the beneficiaries in involving in political affairs, other decision-making bodies and involvement in decision regarding day-to-day family affairs at home.

In the village there are 14 Self Help Groups (SHG), each group consists of 10 members and is all involved in various income generating activities. The self-help groups in the study area are funded and supported by the North-East Rural Livelihood Project (NERLP). In order to manage the self-help group a sum of 20,000/- was given to each SHGs as one time grant. Thereafter, a sum of 120,000/- was given as inter-loaning amount to each SHGs. A total of 140,000/- has been given to each SHGs for a period of five years. The inter-loaning amount is regulating among the SHGs beneficiaries with an interest rate of 2% per month. This process helps women to carry out various income generating activities in the rural areas. Without support, millions of people will increasingly suffer poverty, conflicts, and the loss of dignity that goes with forced migration to cities. However, with help, they can maintain the traditional livelihoods that sustain communities and generate prosperity.

The Phom Baptist Christian Association has been engaged in creating Self Help Groups from the mid-1980s. Poorer members of the society who do not have allegiance to any secured income generating means and ways forms the members of the SHG. The main aim in establishing SHGs in each clustered village of the Phom area is to uplift the economic conditions of the people and to cope with the persisting problems like negligence by the Government, limitation in employment scope, Unreached by developmental activities, lack of quality education and other facilities.

Figure 4.39 Rating on assets creation through Development Programmes



Source: Field survey, 2015-2017.

Today there are more than 320 Self Help Groups (SHGs) under Longleng District initiated by the PBCA. The association is the mediator between the sponsoring agent and the beneficiaries (the villagers). Every SHGs are given seed money as a loan for their capital investment. Some have started small groceries, some engaged in pig rearing, some engaged in Grain banking etc. With the assistance from NABARD the Association helped in forming SHGs among the unemployed households (Government or private) for self-sustenance.

In the village there are 6 SHGs sponsored by the PBCA, unlike the Govt. sponsored SHGs they are imparted trainings on piggery and poultry farming, mobilization programmes on cultivation of ginger, yam, maize, *Kolar* (kidney beans), maintenance of grain bank. A loan ranging from Rs. 1500-2500 is distributed among each SHGs with a minimum interest of 1.5% to the association. They meet twice a month and during each meeting there is a compulsory collection of Rs. 10 from each member in order to generate income.



Plate 4.79: Yongam village gate



Plate 4.80: Cleared Jhum field ready for sowing



Plate 4.81: Bridge connecting the neighbouring villages



Plate 4.82 : Banana plantation in between paddy field



Plate 4.83: Elaichi (Cardamom) Plantation in Jhum fields



Plate 4.84: Firewood for sale
in the market

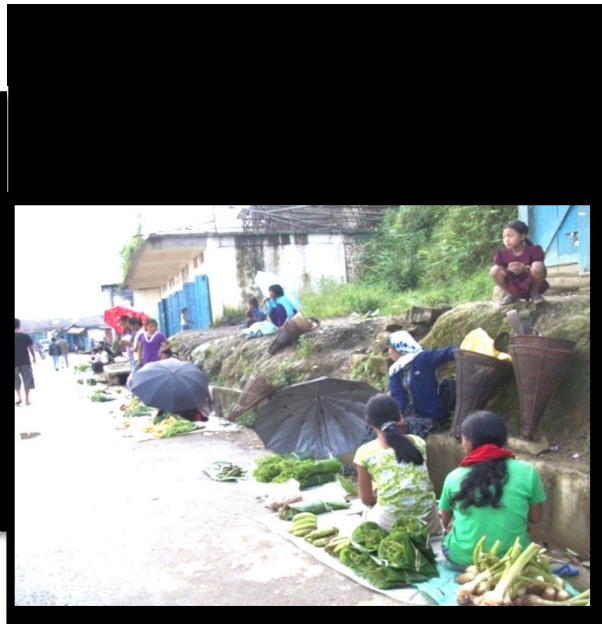


Plate 4.85: Yongam vegetable vendors
in Longleng Daily Market



Plate 4.86: Vegetables from Jhum fields for sale in the market



Plate 4.87: Broom sticks dried and ready
for market



Plate 4.88: Piglets for distribution
under livelihood programme

Chapter 5

Socio-Economic Impact

5.1. Factors influencing the rural livelihood pattern in Nagaland

5.1.1. Introduction: The restructuring of the rural economy not only changed the economic sectors in which rural people worked, but also the nature of work itself. Most farm workers tended to hold to one job for life, the work itself was hard, manual labour, mainly done outside and in all weathers, it did not require any formal qualifications or training, but it did involve particular specialist knowledge that was either picked up on the job or passed down between generations in the rural community. It was secure and stable, in a society that largely revolved around farming, it was work that was valued (Michael Woods).

Rural areas are distinguished by different landscapes and natural environments, with different historical background, difference in settlement patterns, density of population, and nearness to urban centres, different economic structure experiencing different economic change. Modernization and globalization are the two over-arching processes of transformation that have impacted recent rural change.

The process of restructuring that involves a concept of modernization is the change in farming practices. In many parts of rural Nagaland farming has lost its place as the major source of livelihood. The problem of under production and environmental degradation is created. Modernization changed the pattern of everyday life in the rural areas, particularly through developments of transport and communication enabling people to become more mobile.

Globalization is closely related to modernization, one of the effects of modernization being the compression of time and space (Michael Woods page 300) one of the impacts of globalization in the rural areas is the economic globalization, the agricultural products are increasingly traded in the global market, the flow of people in and out of rural space slowly eroding historic rural cultures and values. In several rural areas considerable immovable properties have been purchased by outsiders as permanent or second homes, particularly the rural villages bordering Dimapur city.

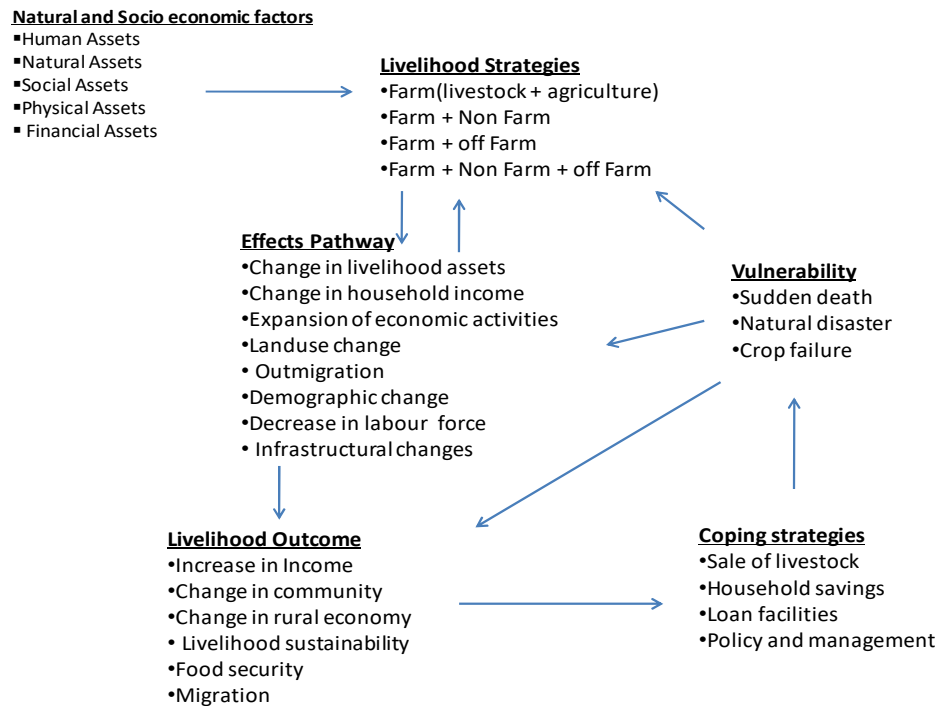
It is desirable to understand the reasons for the variations in the changing patterns of livelihood across regions. The study reveals that increase in population, migration, agricultural growth; education, change in infrastructure, etc are the important factors determining the change of rural livelihood. However, these factors are not universal and their influence differ from region to region.

Some of the key concepts were selected which were considered as essential in capturing the diverse and complex aspects of the livelihoods that shaped the reality of the rural people. In this study, the ‘sustainable livelihood approach’ as a framework of analysis was applied to obtain the widespread notion of the rural household’s livelihood strategy choice, and the asset-based socio-economic factors that influencing the strategy choice. The main objective livelihood approach is to focus on households’ entrance to different livelihood assets/capitals (natural, human, physical, social and financial) and the asset-based socioeconomic factors and their relationship on rural people’s livelihood strategy choice. A household may pursue various types of livelihood strategies depending on differential access to, or endowment of, resources and make the livelihood more sustainable. Therefore, a rural household may engage in farming activities as an economic choice based on its resource endowments, household socio-economic characteristics and some exogenous factors. Figure-5.1 presents the main framework of the livelihood strategies and their relationship with the livelihood assets-based factors:

1. Human assets are one of these assets, and refers to the skills, knowledge, ability to labour and physical wellbeing that enable people to achieve their desired livelihoods. Human assets are essential in order to use the other kinds of capitals that exist.
2. Social assets refer to the social resources that people can get help from in order to achieve their livelihoods – this could be through awareness, participation, affiliations, associations,
3. Natural assets are to be understood in a very broad manner, since it both covers tangible factors, like natural resources such as trees, land etc., and more intangible products such as the atmosphere and biodiversity.

4. Physical capital describes the basic infrastructure and producer goods that are needed to support the livelihoods that people seek.
5. Financial assets are the financial resources that people can use to achieve the livelihoods that they are striving for e.g., cash in hand, savings, production tools, etc.

Figure.5.1 Conceptual Framework of household livelihood strategies and outcome



Centre of the framework in the Figure-5.1 is the object of this study: a household's livelihood strategies. The framework indicates that a household's engagement in a particular activity or combinations of activities is mostly depends on its asset/capital holding or access to assets. These factors are resulting to livelihood outcomes. Besides this, natural disasters or vulnerability such as sudden death of household head, floods and over rainfall in turn can affect the livelihood outcomes and to overcome this situation household taken some coping strategies like selling off livestock, land and

tree, saving household expenditure and taken loan from friends and relatives. Sustainable livelihood approach mainly provides an intangible descriptive statistic on livelihood strategies and their relationship with the livelihood assets-based factors.

The study was based mainly on qualitative data obtained from interviews and discussions with the leaders as well as discussions with the members of the rural communities. The study tried to gain an understanding at a broader level about the relationship between the natural resources and the livelihoods of the local people. It sought to throw light on the nature and extent of impacts of intrusions on this relationship. The dynamic process of interaction of the different of assets determines a strategy to earn one's livelihood. In the study, the choice of household livelihood strategy was strongly related to Natural (e.g., geographical location, resource endowment, etc.) and socioeconomic (e.g., market fluctuations, education level, policy background, etc.) household structure, and ecological policies.

Livelihood's strategies are the way that people perform in order to achieve their desired livelihood. The access that people have to different kinds of assets affect the strategies that they utilize, and the ability for utilization, creation of possibilities and constraints depends on the structures and processes in a given society.

Finally, Livelihood outcomes are the attainments of people's livelihood strategies. However, outcomes are to be described by the local people themselves, since these include much more than income. This is often influenced by culture, local norms and values which can be difficult for an outsider to understand.

All persons have the knowledge, skills and mechanisms to confront hard times although the response capabilities are different. People's capabilities are the main source to set up, strengthen, diversify and protect their livelihood. However, this effort also requires proper institutional policies and processes. In complex emergency situation the farmers should be in a position to at least recover what they loss and can be on the road of renewing their lives. Livelihoods are the backbone of the person's dignity both during crisis and during an ordinary situation that is why it is shared responsibility to provide a necessary resource to guarantee a dignified life to the people in a situation of vulnerability so that they can develop their full potential.

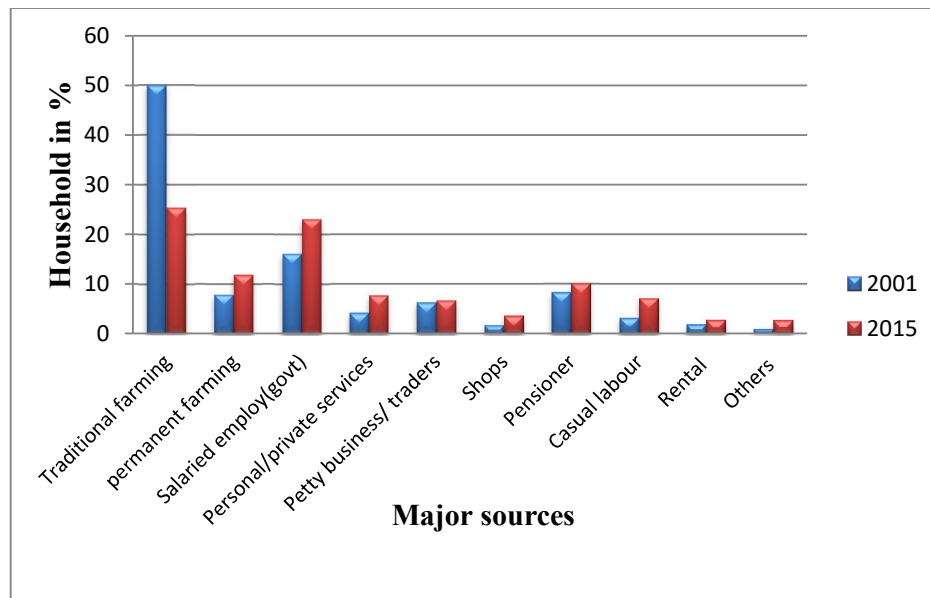
5.1.2. Observation on Livelihoods Strategies

Table.5.1. Average livelihood Strategies of the sample villages

Major Source s of livelihood	Household in %	
	2001	2015
Traditional farming	49.93	25.29
permanent farming	7.83	11.80
Salaried employ(govt)	16.11	23.01
Personal/private services	4.146	7.6
Petty business/ traders	6.09	6.50
Shops	1.69	3.46
Pensioner	8.26	10.05
Casual labour	3.2	7.13
Rental	1.84	2.70
Others	.90	2.56
	100	100

Source: Field survey, 2015-2017.

Figure.5.2. Average livelihood Strategies of the sample villages



Source: Field survey, 2015-2017.

The processes which occur and impact the livelihood strategies can be classified as social, cultural, ecological, political, institutional and demographic. The livelihood strategies are vulnerable not only to trends, seasonality or external shocks but also to the changes in asset ownership or processes which are endogenous in the sense that these changes are either a result of outcomes of the livelihood strategies or result in changes in these.

In the study areas, rural household livelihoods are gradually transitioning from traditional agriculture to more diversified strategies. Consequently, there have been changes observed in livelihood consequences, including dependence on natural resources, the ways in which land resources are utilized and the efficiency of their use, and household welfare, amongst other factors. Stratified sampling method was adopted; using data from a household survey based on participatory rural appraisal, then household livelihood strategies were identified and explained the influencing factors of different types of livelihood strategies and their livelihoods consequences. The analysis of shift in structure of economy is of little relevance if the changes in occupational pattern of working population are not taken into account and analyzed simultaneously.

In course of the survey and discussions with the targeted groups and local people it was observed that remarkable changes had taken place in the livelihood strategies adopted at present by people for their living. The facts were found that the numbers of people taking up non-agricultural professions and going out of the village for employment had significantly increased especially in the villages located near the urban fringes like Eralibill and Aoyimkum of Dimapur district and Sungratsu village in Mokokchung.

An overall analysis of the above-mentioned strategies of livelihoods shows that except in Dimapur district most of the livelihood strategies in Mokokchung and Longleng districts are based on natural resources, especially agriculture and forest. A hidden reality is that most of the agriculture-based strategies of farmers are simply subsistence-oriented. In other words, they have no savings for future from agriculture. An important source of employment has been the employment in Government sector. There has been a general tendency among the people to look forward to the Government

for providing employment because of the lack of employment opportunities in the manufacturing sector as also poor presence of private sector at large.

Listed below are some of the important livelihood strategies identified in the sample villages;

1. Agriculture/farming Cash crop, non-seasonal vegetable farming
2. Farming (Horticultural products)
3. Government employees and pensioners
4. Shop and small business
5. Unskilled wage and daily labor, farm labor in farms, stone quarries, saw mills, brick factory, etc.
6. Livestock and Poultry
7. Carpentry, masonry, stone carving (on semiskilled basis)
8. Fishing
9. Temporary employment in private establishments, small scale industry and trade
10. Community and socio-culture leadership, Politics, social service, local voluntary service
11. forest product farming, trade, and processing
12. Firewood collection and sale
13. logging
14. Stone quarrying

5.1.3. Factors affecting the livelihood pattern

Geographical location, natural capital, household structure, quality of labour force, and ecological policy were the main factors farmers' choices of livelihood strategies. Table 4:4 Show the factors that are associated with different livelihood strategies. Changes in the land use, shortage of land, development in infrastructure, migration, governmental schemes and programmes on livelihood, low soil fertility, were the main factors that promoted farmers to choose local off-farm livelihood strategies. Less natural capital and larger family size are the major contributors to making farmers migrate out for

work relative to farming strategies. In addition, it has been observed that the closer the villages to the market or urban centre, the higher the rate of off-farm employment opportunities.

Table 5.2. Determinants of Livelihood Strategies

Factors	Household Response (in percentage)					
	Eralibill	Aoyimkum	Sungratsu	Salulamang	Yaongyimchen	Yongam
Climate change	5	10	30	20	30	30
Infrastructure	70	80	80	70	60	70
Shortage of Natural resources	40	60		80		
Low soil fertility	-	-	60	60	70	60
Decrease in ownership of natural assets	60	20	15	14	5	7
Landuse pattern	80	75	30	40	30	30
Migration	85	70	50	50	60	65
Govt. projects and schemes	10	40	40	60	75	80
Decrease in labour force	1	3	40	45	10	15

Source: Field survey, 2015-2017.

The changes in the pattern of livelihood are both contributed by the endogenous and exogenous forces. The endogenous dynamism includes the socio-economic factors like increase of household numbers, large family size and expansion of economic activities, which in due course of time there is changes in the land use pattern and land tenure become complex bringing about certain changes in the traditional system of resource management.

5.1.3. (a) Demographic change

With the increase in population there is pressure on land and gradually there is emergence of private ownership of property on community land. The values of modern consumerism have started penetrating into the rural areas and social system bringing about changes from egalitarian social bases to economic stratified system.

The villagers are no longer isolated from the outside influences which have brought changes not only in the social system but also in the village morphological system. All these changes have had a telling effect on the natural resource bases and their management.

Table 5.3 Demography of sample villages

Sl no	Village name	Number of HH	Average per household	Population	Major Tribes
1	Eralibill	360	6	2132	Ao, Sumi, Sangtam, Garo
2	Aoyimkum	244	4	1042	Ao/ Non locals
3	Sungratsu	819	4	3590	Ao
4	Salulamang	150	6	953	Ao
5	Yaongyimchen	333	3	1104	Phom
6	Yongam	413	3	1304	Phom(5 n/locals)

Source: Field survey 2013-17

Household size is an important factor influencing the livelihood patterns of the tribal households. Data regarding household size obtained from the baseline survey shows the average number of members per household. Table 5.3 clearly shows that Yaongyimchen and Yongam villages have the lowest average number of members per household with 3 persons, according to the survey it has been found that the school going children and students seeking for higher studies leave the villages and migrate to urban areas for better education. In some households not only the children but even the mothers migrate along with the children and stay in rented houses to take care of the children and the husbands send remittances monthly from the village. The average percentage in Eralibill is high with 6 members per house hold, this is because of the

proximity to the urban centre where they can commute from their homes to the work places and moreover it has been observed that in some of the contractors and politician's household the members increase up to 20-25 members or even more. The average member in Salulamang is also high with 6 members; this is because of the high percentage in working population who are mostly engaged in their own permanent farms or as wage labourers in and outside the village commuting every day.

Age of the household head, an important demographic variable, is thought to have an important effect on livelihood transition. Because younger individuals are more likely to change occupations and they prefer non-farm work more than older individuals. Elderly people continue farming as long as they can contribute to the farm and there are also very few chances of off-farm employment and change of livelihood may not be a viable option for them since it is deeply rooted in their lifestyle.

Involvement of children in family farming is significant in poor rural agrarian providing support to their parents in a variety of productive activities (both farm and off-farm work), as well as enabling labor. Boys under 14 years of age perform activities such as farming, and collecting firewood and fodder. After age 14, they assume the full responsibility of adult males such as plowing, digging and chopping logs. Similarly, girls, in addition to aforementioned jobs, help in fetching water, cleaning, washing clothes, and caring for younger children. Therefore, the number of children in a household means there is a potential supply of child workers. Children take over farm responsibilities from their parents as successors (Glauben et al., 2006). Moreover, a household with many children may be relatively risk averse and would not risk leave their current occupation unless the expected income from an off-farm job is significantly higher compared to their current farm income.

The gender composition of family labour may also affect the decision to livelihood transition. Overall, it is hypothesized that a family unit with a larger number of working-age members (men, women, and children) and/or with elderly people is expected to continue farming.

5.1.3. (b) Education:

One of the most important exogenous forces is the spread of Christianity and introduction of education that had brought major developments and changes in the Naga society, especially structural change in the field of agriculture having an impact on the livelihood pattern. According to Stiglbauer and Weiss (2000), education can have two opposing effects on livelihood transition of farm households. Education increases access to information, which enhances farmers' ability to process information ultimately helping to increase their income. The increased income from farming will encourage an educated farmer's likelihood of continuing to farm.

Conversely, an increase in education also increases skill and the opportunity for employment outside agriculture. As the wages and returns from agriculture are rather seasonal, and relatively less rewarding than off-farm jobs, it is expected that educated individuals may be more likely to leave farming. This later explanation seems plausible for all the sample villages because educated individuals have a tendency to leave traditional agriculture and join the modern off-farm sector. It is believed that a job in off-farm sector is expected to have relatively higher return than farming, and educated individuals wanted to take up a job in off-farm sector rather than taking up agriculture as a profession (Watts, 2009).

5.1.3. (c). Decrease in labour force in the rural villages is also another factor where both children and economically productive age group are sending to school or work outside the village to nearby urban areas. The parents' labour in agricultural works and household activities are increased due to the non-availability of this age cohort.

5.1.3. (d). Migration:

Migration is an important element of livelihood strategies. In many cases, it is more useful to understand households as multi spatial rather than 'rural' or 'urban', and to encourage the positive linkages between spatially distant members, by recognizing urban-based members' claims on rural assets and facilitating their contribution to the rural economy, for example the bread earner of the household who are employed outside the village be it in governmental or in private sector, through the productive

investment of remittances. However, in some instances the household members who stay behind in the rural areas send their remittances outside for children's education and the like. Rural-urban linkages play an important role in the ways in which livelihoods are constructed, although the traditional dichotomy between 'rural' and 'urban' development theory and practice has underplayed their significance.

Migration as a livelihood strategy is also mediated by access to assets. Those who move tends to be young, physically fit and often better educated than average, and have access to urban-based social networks. The elderly and the poorest people do not usually migrate, and labour availability in peak agricultural seasons can become scarce.

It should not be assumed that reinforcing the physical infrastructure connecting rural and urban areas is necessarily beneficial (because it reinforces local interactions) or negative (because it extracts resources from the region, bypassing local centres in favour of larger cities). A low intensity of rural-urban linkages can be the result of specific socio-economic conditions in a given rural area, which may also affect different groups in different ways, as well as the result of poor transportation systems. This calls for a better understanding of socio-economic conditions before steps are taken to strengthen physical linkages (Cecilia Tacoli 1998)

Among the most important factors that have contributed to the conversion of land to non-agricultural use is rural-urban migration, rapid economic growth, and increased investment in roads. Singh (1994) notes that, "the growing urbanization, particularly at foothills/plain areas has provided an opportunity for number of Naga communities to go for jobs outside the village and for wage labour. There is evidence of extending market links in the village system, that is, introduction of money and cash crops, entry of government officials, traders, money lenders and shopkeepers." The penetration of urban based economy has started changing the overall livelihood pattern in the villages. With the effect of market forces the traditional societies started looking for opportunities to improve their livelihood

The study has identified various factors influencing the peri-urban areas such as the urban pressures which quicker the transition from rural to urban, increasing land cost within the city has created huge demand for land outside the city boundary

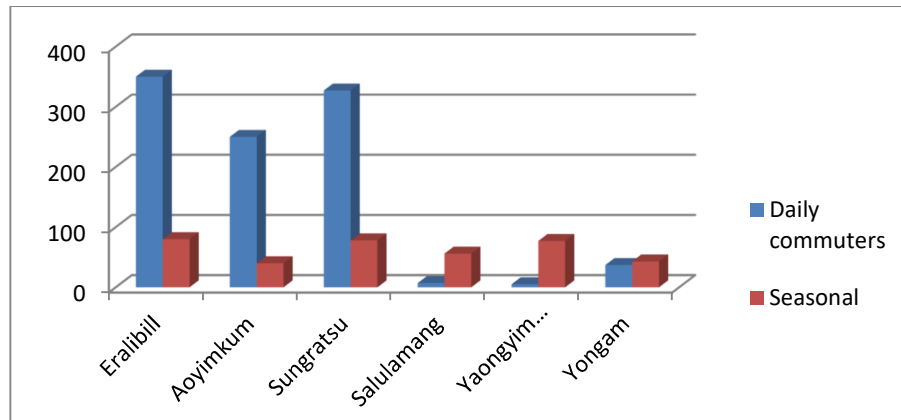
effecting the rural areas in the city fringes, congestion in urban areas and the high traffic congestion prevailing on the city streets force the city residents to migrate to peaceful rural areas, the desire to own land and exceptionally infrastructure related opportunities that the peri-urban areas provide.

Table 5.4. Migration Status

Village	Daily commuters	Seasonal
Eralibill	350(approx)	80 (approx)
Aoyimkum	250(approx)	40 (approx)
Sungratsu	327	78
Salulamang	7	56
Yaongyimchen	5	77
Yongam	37	43

Source: Field survey, 2015-2017.

Figure 5.3. Migration status



Source: Field survey, 2015-2017.

According to Lal (1987) an important development in the urban settlement during the past few decades has been the rapid growth of population and expansion of built-up areas in to the unincorporated suburbs and to the areas surrounding larger towns and cities. Gradually the addition of population and related developments generates a zone of transition between the main urban settlement and the deep rural

landscape. This zone which enjoys continuous change due to the centrifugal forces from the city proper and in – migration from other places to the area is usually an amorphous territory around the larger cities.

5.1.3.(e). Expansion of economic activities

The economic activities in the non-farm sector range from a simple wage labour to trading and producing traditional skill-based commodities at the household level. A large proportion of people earning their livelihoods from the non-farm sector are working in the form of wage labour. The nature of wage labour is largely confined to the employment opportunities which arise out of the development activities undertaken by the Government. In the higher reaches, the climatic conditions do not permit these development activities to be continued throughout the year and hence the people in these areas who work as wage labour have to remain jobless for a majority period of the year. The nature of migration to earn wages in non-farm or in farm sector is not the same in all the study areas. One of the patterns of migration observed in the villages of Mokokchung district is when civil work on the road being constructed starts, the labour from the nearby villages goes to work and may be stay there for a few days and come back to their families for a couple of days and go again to work.

Wage labour forms an important component of the livelihoods of the rural people. Wage labour consists of both farm and non-farm wage labour. Non-Farm wage labour consists of various activities such as working on trucks for loading and unloading of goods (especially building construction material), roads and building construction work, and quarrying (stone, and sand) and mining, saw mills, factories, etc. However, most of this work is insecure, hazardous, and involves working away from home, and in difficult working conditions. In case of women, from the village located close to urban-industrial centres, like in Eralibill village which is near to Dimapur urban centre, the non-farm work consists of domestic work in homes in the urban areas. Farm-labour activity consists of working on the farm of land-holding farmers as agricultural daily wage labourers during the peak season. These farmers may not be large landholders, but still employ the farm labourers during specific seasons, for agricultural operations such as transplanting rice seedlings, weeding, harvesting, and threshing. In almost all

the villages under survey it has been observed that women are more in demand to work in the fields as well as in the permanent farms though the wages paid to the women are lesser than men.

Livestock Rearing is another integral activity of farm household in most rural agrarian settings. Moreover, crop-livestock mixed farming is commonly adopted by the farmers as an important livelihood strategy.

Table 5.5. Assessment of livestock practices- village wise

Village		Piggery	Poultry	Fishery	Cattle rearing
Eralibill	HH	150	162	18	4
	HH%	41.66	45	5	1
Aoyimkum	HH	146	171	10	5
	HH%	60	70	4	2
Sungratsu	HH	450	731	16	9
	HH%	55	90	2	1
Salulamang	HH	82	129	5	3
	HH%	54.66	86	3.33	2
Yaongyimchen	HH	173	306	6	3
	HH%	52	92	2	1
Yongam	HH	223	388	4	4
	HH%	54	94	1	1

Source: Field survey, 2015-2017.

Animals provide food, employment, and income to farm families. Nevertheless, livestock and crop production are closely interlinked. While animals provide manure and draft power for crop production, crops provide food for animals, thus increasing the bond between crop production and livestock production. Moreover, animals are also used as economic capital. Farm households may sell animals and earn incomes. Therefore, the access to and ownership of natural/ economic capital such as land and livestock increases a household's capability to continue farming and thus, reduce the likelihood of farm exit.

Marketable surplus on livestock in the sample villages:

Piggery: Pigs found in villages are of mixed breed and pure breeds are almost impossible to locate and procure for rearing. In almost all the sample villages selling and cutting of pigs reared in villages happen only during festivals and special occasions or in times of emergencies.

Pigs require a lot of care and consume high volume of feed and water. Most households in the villages find it difficult to provide for more pigs due to these reasons and can afford to rear 1-2 pigs only. The households have a system of drying pork and preserving it for consumption later. Excess pork is sold at the rate of Rs. 200/Kg among the villagers by the households directly.

Some of the household's rear female pigs for piglets which are of great demand. The prices of the piglets vary from village to village but at an average it is sold at the rate of Rs. 3000 per piglet and it is only an additional income to the major income of the household. Some villagers have bought piglets on subsidized rate from different government agencies under livelihood programmes. However, such procurements are rare in the sample villages and only mixed breeds are reared but mostly for home consumption and for special occasions. In the sample village there are 3 piggery farms managed at large scale at an average of 50 pigs per household.

Poultry:

Poultry rearing is a supplementary livelihood rather than a planned economic activity in the villages. The local varieties of country bird are slow growing and don't put on much weight even after 6 months but the value of local chickens is higher than the broiler and kroiler though less in demand. It is found that rearing of broiler and kroiler in large scale in the sample villages are done by well off and salaried households because of the high financial involvement for construction of rearing shed, feeds and care.

During the period of study, it has been observed that in Sungratsu village an NGO distributed 20 chickens (Kroiler) each to 20 families (BPL category). At the onset the villagers were happy and excited on receiving free of cost without knowing the

consequences. Within 2 weeks the beneficiaries need to extend the rearing shed, increase the care and feeds to double and finally the market to sell off. Almost all of them ended selling at very low rates much lower than the wholesale rates in the market.

Fishery: the catches from the ponds are sold infrequently. Most of the households maintain the fishery pond for household consumption. Occasional sales occur in Eralibill village and Aoyinkum village but the returns are negligible.

Cattle rearing: in all the sample villages number of households that are involved in cattle rearing is very low. Generally, they rear for milk and for manure in the kitchen gardens, sales occur mostly during festivals and special occasions.

5.1.3. (f). Gender balance:

The different Schemes and programmes on the women empowerment in many rural villages have qualitative impact, women are recognized as earning member, involve in asset creation, family decision making, social activities and even in political activities. There is perception about increase in income, household assets, increase in savings, social involvement which gives confidence to spend more on children's education, health care, entertainment and ultimately the quality of life improves.

On- farm, women have frequently been responsible for developing new initiatives and in off-farm, income earned by women from full time or part time employment in a diverse range of occupations has provided an important addition to farm finances at a time when income from agricultural production has been under pressure. Off-farm employment also gives women an identity and role that is independent of their association with the farm.

In recent years, many women are engaged in traditional handicrafts and weaving using traditional looms and has become an important source of income for the women in response to the demand of the urban market and also tourist. Weaving is one of the economic activities which are being followed in most of the households who are engaged in traditional skill-based livelihood strategies. People possessing shawl weaving skills have been passing on these skills to the next generations in an informal way and most of this is confined to the family members only.

Especially in the rural areas of Longleng district young women are encouraged to use traditional looms to weave shawls and *mekelas*, a wraparound cloth mostly worn by Naga women. Since it is hand woven the cost per *mekela* ranges from Rs.2000 – 2500, the cost of the thread comes to Rs.1000-1200. In a month in between her household works an average weaver weaves 2 *mekelas*, which is an additional income to her family. Short term trainings are organized by different organizations to train the young women on using traditional looms and knitting. But not many people who have undertaken this economic activity have flourished over the years as this activity alone is not adequate to provide even subsistence to a household. All other villages responded to the query if this particular trade has become extinct over the years by saying that the trade is either static or stagnant or is in the process of dying. The reasons for becoming weaving a dying industry are: -

(i) Lack of market for finished products in the close proximity of the production centers; (ii) Non availability of necessary raw material locally (iii) Inadequate returns on the finished products because of low market demand. Those persons who have full time employment in this activity had to depend on some supplementary livelihood strategy as weaving was not profitable enough to sustain their families even at the subsistence level for the whole year.

5.1.3.(g). Impact of Climate Change:

Climate change is a global challenge to both sustainable livelihoods and economic development. Farming depends almost entirely on rainfall, a situation that makes agriculture and rural livelihoods vulnerable to climate change. This study analyses the impacts of climate change and variability on rural livelihoods with particular focus on agricultural production, food security and adaptive capacities in the sample villages. Results from the study indicate that communities understood climate change in terms of variability in rainfall patterns and amount, temperature patterns, wind, water availability, and decreased agricultural productivity.

Communities in the study area acknowledged that while rainfall amounts have decreased over the last thirty years, temperatures have increased. Such changes were claimed to have reduced agricultural productivity particularly due to prolonged

drought, inadequate and uneven distribution of rainfall as well as unpredictable onset and ending of rains. Stressors such as crop diseases and pests, low soil fertility and inadequate extension services were also reported to contribute to the decline in agricultural productivity and re-occurrence of food insecurity. In response, communities have developed multiple adaptation strategies, water harvesting for small-scale irrigation and livestock keeping. However, households with limited livelihood assets are more vulnerable to the impacts of climate change and food insecurity. The study argues that diversification of adaptive strategies, such as water harvesting for small-scale irrigation, integration of livestock and crop production are crucial to ensuring sustainable livelihood in a changing climate.

The effect of Climate Change has never been more severe than it is today making the search for livelihood tougher. The impact is felt more in the rural areas, where people still depend on local natural resources for living. People once blessed with nature's bounty are now resorting to desperate means for sustenance looking beyond their means to sustain their livelihood. Edible wild plants and fruits once in abundance has also been affected due to changing weather patterns, the women vegetable vendors now have to go deep into the jungle to gather the wild fruits and edible plants. Collection of animal fodder for the livestock which was available nearby in abundance is getting exhausted making them to walk longer distance deep into the woods.

When we look into the present scenario compared to three decades back there is not even a small patch of forest cover under Eralibill and Aoyimkum villages but the other sample villages still have forest cover but there is restriction of trespassing in the forest, gathering and hunting is totally prohibited.

Climate change is affecting not only environment but also on the economy and social aspect of the rural people who once depended on the natural resources for livelihood. The hard-hitting reality can be witnessed only when one observes the changes of environment that is taking place and hears the narrations of the rural folks.

5.1.3. (h). Impact of modernization and Globalization:

One of the key factors that bring about changes in rural economies is the modernization. It raises the living standard of rural people, reducing inequalities with

urban areas, introduces infrastructure development programmes, such as electrification, road constructions, and renovation of rural housing. Such programmes will not only bring remarkable changes on the rural landscape but also create opportunities for rural population to participate in the new consumer society and be a beneficiary, as a result bring about changes in their way of life.

The road construction paved way for the rural people for easy accessibility to the neighbouring urban markets. Meanwhile with the increase in living standard, the growth of private car ownership increased as a result commuting became possible and there is an increase in the mobility of rural people and loosened ties to rural communities.

The impact of modernization on rural areas has not been restricted to technological innovation. The development of telecommunication technology plays a vital role in bringing about changes in many rural areas which alleviated the problems of distance and peripherality. Through television, radio and internet facilities the rural people are experiencing the same social commodities that are experiencing by the urban residents. Free education by the government has altered the life courses of rural young people leaving their homes for colleges and universities restricting their opportunity to return home to the village and help their parents in the farm.

It has been observed that the mobility of rural people has been liberalized by globalization, they move in and out of their original home several times during the course of their life and no longer tied to a particular place. The mobility involves both the haves and have-nots. On the one hand are the wealthy urban dwellers migrating to the rural area, purchases and constructs holiday homes and move in permanently for a peaceful and new start of life. On the other hand, due to the changes in land use pattern the poor rural dwellers move out from the village for higher wages or for other means of livelihood income. Some people migrate for a short period of time, some move out for longer period of time and some move out permanently.

The technological innovations that have changed aspects of rural social and economic life are extensive. The development of motor vehicles has changed practices of both production and consumption. It has also changed the nature of farming and

reduced the demand of farm labour, contributing to the decline of agriculture as a source of employment in rural areas. Technology interventions can often impact the livelihood activities of either males or females with subsequent implications for the livelihood system of the household as a whole. For example, the introduction of a diesel-powered grinding mill that replaced women's hand pounding, ploughing machine, and land mower, etc.

5.1.3.(i). Livelihood assets as an impact:

Decrease in the ownership of natural resources: Natural assets include all-natural resource stocks such as land, flora and fauna, water, air and environmental services from which livelihoods are derived. In rural agrarian societies, the access to farm land and its ownership is crucial for sustaining livelihoods. These resources are also the economic capital because the access to land provides employment and income to farmers (De Janvry, 1981; Findley, 1987). In addition, the ownership of land is an important criterion in defining one's position in the socio-politico-economic class hierarchy (De Janvry, 1981; Findley, 1987; Blaikie, Cameron and Seddon, 2002; Sugden 2009). The ownership of this most vital resource increases control over other resources such as income earned from land, political power, and access to other institutions, for example, banks. Evidence suggests that an increase in the access to operational land reduces the tendency to close down farms. Large farms provide higher incomes to farmers and therefore, increase farm survival (Kimhi and Bollman, 1999).

Livelihood assets have a significant impact on the livelihood options and income of rural communities. Livelihood assets are the basis of community livelihoods and are prerequisite for sustainable community livelihood development; diversified livelihood assets also diversify the livelihoods of rural households. Moreover, the increase of certain livelihood assets diversifies community livelihood. Groenewald et al. and Goulden et al. believe that higher community social assets are able to diversify livelihoods. Mitra even argued that “without ‘social capital’ access to any source of livelihood is almost inconceivable”.

In traditional rural communities, natural assets and human assets are the main livelihood assets; consequently, agriculture is the most important livelihood of

traditional communities. Generally, the higher the natural and human assets, the more likely the farmers would choose agriculture as their livelihood, although they might work as temporary workers in other areas.

With the development of society, increases in farmers' physical assets, financial assets, and social assets prompt them to choose non-agricultural livelihoods and thus achieve diversified livelihoods or livelihood transformation; the higher the accumulated livelihood assets, the more likely the farmers will choose a livelihood with a higher income. The type and accumulation of farmers' livelihood assets also exert an influence on the farmers' choice of different agricultural livelihood activities. For example, Bakkegaard et al. found that families with high human assets and livelihoods assets would choose hunting in the jungle, whereas households with senior and female family members as the head of the family and rich in knowledge on the local surroundings would choose gathering.

Income is one of the key livelihood outcomes in the framework of sustainable livelihood; income level directly reflects the level of community livelihoods, whereas livelihood assets have a significant impact on community income. Social assets in particular are the most crucial factor affecting residents' income increase. Moreover, the lack of livelihood capital, e.g., social assets, information, etc, is the root cause of community residents having a low income and being mired in poverty. However, *Myroniuk* argues that social assets do not necessarily influence income. The natural community and human assets contribute to the increased income from agricultural livelihoods whereas financial and social assets contributes to income from non-farming livelihoods. Moreover, natural, social, and physical assets also contribute significantly to the income of villagers.

Table 5.6. Percentage of Household Annual Income

Village	No of HH	Below 1 Lack	1 to 2 lakhs	2 lakhs above	No response/ can't say
Eralibill	360	34.72	36.11	12.5	16.67
Aoyimkum	244	34.84	39.75	15.57	9.84
Sungratsu	819	17.95	70.08	4.52	7.45
Salulamang	150	34	43.33	6	16.67
Yaongyimchen	333	33.94	50.45	4.20	11.41
Yongam	413	35.59	47.22	2.9	14.29

Source: Field survey, 2015-2017.

The baseline survey data shows the annual cash income of the household. In this survey questions regarding each source of income for the past one year (based on yearly recall) were asked to the respondents. Based on these responses, the proportion of each source of income, in the total annual cash income was calculated. Data in the Table 5.6. shows the distribution of the households according to different income classes. The cash income annually ranged from a minimum of below Rs. 1 lakh to a maximum of Rs. 2 lakhs above.

There are remarkable spatial differences in effective utilization of livelihood assets. The deficiencies in the rural households' human assets, psychological assets, and social assets caused the ineffective use of physical assets, so the rural households chose low-risk livelihoods.

Selling assets as an option is highly vulnerable for livelihood as assets are not only a source of earning but it is an agent for 'adequate and decent living'. Loosing assets thus not only makes livelihood insecure but it also led to lose social status, as in the case of the Kachari and the Garo communities of Eralibill village.

5.1.3. (j). Impact of Governmental and Non-Governmental developmental schemes on livelihood diversification/ strategy

Rural development has great significance for a country like India where majority of the population, around 65% of the people, lives in rural areas. One of the most

important factors for the growth of the Indian economy is to develop the rural areas all over India; therefore, the Government has planned several programs pertaining to Rural Development in India. Rural development is the process of improving the quality of life and economic well-being of people living in rural areas. Education, entrepreneurship, physical infrastructure, and social infrastructure all play an important role in developing rural regions. Rural development is also characterized by its emphasis on locally produced economic development strategies.

Urban regions have many similarities whereas rural areas are highly distinctive from one another. For this reason, there is a large variety of rural development approaches used globally. Rural development aims at finding ways to improve rural lives with participation of rural people themselves, so as to meet the required needs of rural communities. The rural developmental programmes intend to reduce the poverty and unemployment, to improve the health and educational status and to fulfil the basic needs such as food, shelter and clothing of the rural population.

Governments take an interest in the economic development of rural area for a number of possible reasons. First there is the welfarist rationale that the state has a duty to support basic levels of social wellbeing and to promote equity between its citizens. The state therefore intervenes to improve the living conditions of people in the rural areas and invest in infrastructure to provide public services. Secondly, there is an economic rationale which involves in providing infrastructure for developing business and exploiting rural resources. Thirdly, there is a 'stewardship' rationale that the state acts in the interest of the society as a whole to ensure that rural land and resources and land are properly maintained and used wisely (Michael Woods).

In 1952-53 the Community Development Programmes was introduced which brought about drastic changes in the Socio-economic conditions of Nagaland, creating number of community development boards which was further enhanced on 1st Dec 1983. The state Government considering the great responsibility towards the development rural areas started the State Rural Development Department in 1978-1979 as a separate department.

The Ministry of Rural Development in India formulates policies, regulations and acts in relevance to the development of the rural sector. The vision and mission of the Ministry is sustainable and inclusive growth of rural India through a multipronged strategy for eradication of poverty by increasing livelihoods opportunities, providing social safety net and developing infrastructure for growth. This is expected to improve quality of life in rural India and to correct the developmental imbalances, aiming in the process, to reach out to most disadvantaged sections of the society.

The Ministry of Rural Development consists of two Departments, viz.,

- (i) Department of Rural Development,
- (ii) Department of Land Resources.

The Centrally & State sponsored schemes are launched by the Govt. of India & Nagaland to improve the conditions of rural people through the planning commission of India and implemented by the DRDAs/Blocks through the Village Development Boards (VDBs), as per guidelines prescribed by the Govt. of India & Nagaland

In Nagaland Village Development Board (VDBs) is the Development Institutions at the grass-root level, enjoy considerable autonomy and authority to adopt policies and takes the sole is responsibility for implementation of all programmes/schemes of both under State Plan and Centrally Sponsored Schemes under Rural Development Department.

Prior to the British rule in Nagaland, the Nagas as a whole or as various tribes had not been under one head. The villages were isolated from its closest neighbours and were in a constant state of hostility and feud. The villages were self-sufficient in nature, having enough cultivable land, a large forest area to practice hunting and gathering and to get building materials (Thong: 1997: 70). There was a fortified village boundary. The village was the largest unit and it was held together by social, political and religious bonds. Horam (1975: 75) states that Naga villages can be termed as petty republics in themselves; they were a politically organized association like the ancient Greek city-states. This village government was run without written laws. The traditional village system of Nagaland has passed through different phases and changed a lot and finally the system of the Village Council was evolved, a statutory body recognized under the

‘Nagaland Village and Area Council Act, 1978’ that brought together the varied structures, powers and functions of the traditional village government of different Naga tribes into a common whole. Village Council (VC) is the overall authority of the village administration headed by the Village Council Chairman (VCC). Hence, Village Council forms an important component of the modern governance system in Nagaland. The District Planning and Development Boards (DPDB) provide the needed flexibility to ensure a responsive and holistic approach towards development linking to the grassroots through the Village Development Boards.

All phases of developmental activities are executed by the VDBs (Village Development Board), it is a constitutional body which functions under the authority of Village Council and is responsible for the allocation of funds, selection of beneficiaries or schemes, monitors work progress and completion of schemes. The Board comprises of representatives from the whole village community, with a secretary, women representation, youth representation, etc. the board ensures that the entire village’s needs are met and looked after judiciously.

The Deptt. of Rural Development has been implementing 8 (eight) major programmes through the VDBs, namely;

- (i) IAY: Indira Awaas Yojana
- (ii) GIA: Grant-in –aid to VDBs
- (iii) MCG: Matching Cash Grant
- (iv) SGSY: Swarnajayanti Gram Swarozgar Yojana
- (v) NREGS: National Rural Employment Guarantee Scheme
- (vi) BRGF: Backward Region Grand Fund
- (vii) PMF: Promotion of Micro Financing
- (viii) NUM: National RURBAN Mission

(i) IAY (Indira Awaas Yojana): These are Centrally Sponsored Scheme for provision of housing to the rural poor. VDB –Wise allocation are made to the VDBs. Selection of beneficiaries are made by the VDBs on the criteria of BPL and poorest of the poor being given the preference. The beneficiaries undertake construction of houses with community assistance.

(ii)GIA: Grant-in –aid to VDBs: This is a State Sponsored Scheme wherein household allocations are provided for the VDBs develop infrastructure and implement income generation activities. Schemes are selected by the VDBs, based on the quantum of the village allocation.25% &20% of the total village allocation is earmarked for Women and Youth Programmes to ensure the benefits of the scheme benefit all the section of the village citizens.

(iii)MCG: Matching Cash Grant: This is a State Sponsored Scheme for mobilizing VDB resources through a matching funding mechanism wherein the amount that are being mobilized by the villagers are matched by the State. Each VDB is expected to mobilize Rs. 5.00 lakhs, which includes a State contribution amounting to Rs. 2.5 Lakhs.

(iv) SGSY: Swarnajayanti Gram Swarozgar Yojana: This is a Centrally Sponsored credit linked scheme to implement income generation Programmes in the villages. This scheme covers individual/Self Help Groups. The funding in the form of subsidy is linked to 50% of to project cost with loans through Financial Institution.

(v) NREGS: National Rural Employment Guarantee: This is a Centrally Sponsored Employment Generation Scheme implemented in consonance with the enforcement of the section 4 of the National Rural Employment Guarantee Act 2005 (NREGA). The scheme is funded on the basis of 90:10 between the Centre and the State. MGNREGS is a very important rural development programme in India as it helps the rural poor to earn their livelihood in order to improve the socio-economic status of the rural poor. It provides an alternative source of livelihood which will have an impact on reducing migration, restricting child labour, alleviating poverty, and making villages self-sustaining through productive assets creation such as road construction, cleaning up of water tanks, soil and water conservation work, etc. This programme has been considered as the largest anti-poverty programme in the world. Since the scheme is going to be in place for an undefined period of time, and is being enlarged in terms of scope and geographical coverage, there are many challenges like non- homogeneity in its effectiveness, region specific disparities and outcomes etc.

The objectives of this scheme is (i) to provide 100 days of guaranteed employment in financial year to every household in the rural areas notified by the Central Government under section 3(1) of the NREGS and whose adult member, by application, are willing to work (ii) to create durable assets in rural areas: (iii) to strengthen the livelihood security to the rural household as per the provision made in the guidelines.

The NREGS was launched in Mon district on 2nd Feb. '06 and currently all districts in the state are covered under the National Rural Employment Guarantee Scheme (MNREGS) from fiscal 2008-2009 onwards.

(vi) BRGF: Backward Region Grand Fund: The Programme of Backward Region Grant Fund (BRGF) has been implemented by the Directorate of Under Developed areas Till June '07 which however transferred to Rural Development Deptt. by the State Planning Board in its meeting held on 29-06-07. The Backward Region Grant Fund is a cent percent sponsored programme. It is designed to redress regional imbalances in development. The fund will provide financial resources for supplementing and coverage existing development inflows into identified District. This programme will be implemented in the selected District on the same line of the VDB Grant-in-Aid programme and thus the fund meant for Rural Development of rural areas will be allocated to the VDBs on the basis of household. This fund will be released to VDBs saving accounts by District Planning Committee (DPC/DRDA) A portion of the fund under the Programme will be allocated to the urban local bodies i.e., Municipal Town Councils. Fund allocation between VDB and Town Councils will be calculated on the basis of population as per 2001 Census.

(vii)PMF: Promotion of Micro Financing: To promote Micro Financing Activities during 2004-05, the Department has selected 25 VDBs as Financial Intermediaries as a pilot project. A Corpus Fund of Rs.1 lakh was created through the contribution of VDBs, State Govt., Central Govt. and NABARD at the rate of 40:20:20:20. By experiencing the successful implementations of the Pilot Project, the Department had selected 406 VDBs during 2006-07 & 2007-08 in the 21 unbanked Blocks. Under Micro Financing, the Corpus Fund of Rs. 2.40 lakhs had been created with the contribution of

VDBs Rs. 40,000/-, State Govt. Rs.1,00,000/- and Govt. of India Rs.1,00,000/- (yet to be released). This innovative venture will go a long way in providing credit facilities to the rural people.

(viii) The National Rurban Mission (NRuM) follows the vision of development of a cluster of villages that preserve and nurture the essence of rural community life with focus on equity and inclusiveness without compromising with the facilities perceived to be essentially urban in nature, thus creating a cluster of “Rurban Villages”. With an objective to stimulate local economic development and enhance basic services.

Apart from the above-mentioned programmes some of the schemes and programmes and funding agencies contributing significantly to the cause of agriculture and rural development are, Rastriya Sama Vikas Yojana (RSVY), Sampoorana Grameen Rozgar Yojana (SGRY), Integrated Tribal Development Project (ITDP), Pradhan Mantri Gram Sadak Yojana (PMGSY), Integrated Child Development Services (ICDS), Development of Women and Children in Rural Areas (DWCRA), etc. Chief Minister’s Corpus Fund, Nagaland Empowerment of People through Economic Development (NEPED), National Bank for Agriculture and Rural Development (NABARD)

These schemes aim to reduce the gap between rural and urban people, which would help to progress the development process and reduce imbalances between the rich and the poor. It not only constitutes the development of rural regions but also aims at improving the well-being and quality of life of the rural poor through collective process. The progress in the developmental programmes differ from place to place, it mainly depends on the concerned organizations or agencies (governmental or non-governmental), local governance, response of the people involved, etc.

The following processes are followed by the department of Rural Development for the implementation of different programmes at the local level:

- i. The Villagers are provided funds to the VDBs by the Deptt. on the basis of number of households of every recognized village.

- ii. The VDBs on the receipt of the Village allocation, select the scheme on priority requirements which are then submitted to the BDO through the PD, DRDA to the chairman VDBs for screening and approval by the DP & DB.
- iii. The DP & DB on scrutiny approves /rejects schemes. Approved schemes are intimated to the DRDA/Blocks.
- iv. BDOs issue work order to start to VDB and on completion of work, physical verification & issue completion certificate for fund release.
- v. Recommended payment release is made by CEO DRDA & Chairman VDBs.

The implementations of the activities such as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and Swarnajayanti Gram Swarozgar Yojana (SGSY) have improved the life of rural poor considerably; it is a positive factor in poverty reduction, employment generation and sustainable Socio-economic development in the state.

Nagaland has a rural population of 14, 06,861 which constitutes 71.03% and urban population of 5,73,741 which constitutes 28.97% of the total. The concerned department on visualizing the rural people across Nagaland had taken up the responsibility to educate, motivate and empower the rural population to make their lives more secure and prosperous through education, better health, improved skills, employment and supportive governance. Government aided developmental schemes have paved way to systematic improvement of communication, urbanization and market forces affecting village ecological setting and economic system.

5.2. Qualitative and Quantitative Change Assessment of the Rural Livelihood Pattern

There is substantial evidence of qualitative and quantitative change in the experience of life in the sample villages, with change often experienced as consequences of a number of interlocking processes, there is no one common experience of change for every village, situations and stories differs from one village to the other and every village has its own story to tell. Many people may assume the quality of rural life as safe, peaceful and prosperous in nature but there are also rural households whose lives are restricted or constraint by poverty, poor housing, ill health, prejudice and lack of opportunity.

The nature of work and the economic sectors in which rural people worked for their livelihood had undergone tremendous changes. As employment in primary sectors such as agriculture, forestry, fishing, hunting and gathering and other traditional rural industries has declined and that in the service sector has increased, so the livelihood pattern have been redefined.

By investigating the changing nature of rural livelihood, and by listening to people's personal narratives of those changes, evidences can be found for the qualitative aspects of rural restructuring to compliment the quantitative evidences. In the past the rural lifestyles were characterized by insularity and a lack of technological appliances but there was a strong social hierarchy and moral framework for community life, a deep involvement in agricultural work and connection to the natural world, considered farming as a tradition and a way of life and there was attachment to a particular rural place (Micheal Woods, 2005). Community spirit is declining; there is no longer any common purpose, no common goal which is needed to hold a place together. The loss of community spirit is an important feature of the villager's stories, the change from inward looking collective activity to more liberal outward looking and individualistic lifestyle.

According to the conceptual and theoretical foundations of this study, the household livelihood sustainability is analysed based on the sustainable rural livelihood framework. Households following different livelihood strategies hold widely different

asset endowments. People depend on different kind of assets available to them to help them achieve the livelihoods that they seek.

5.2. 1. Changing rural economy: More recently, investment has been attracted to rural area by factors such as lower land prices, taxation and wage levels, green field sites for development, and an aesthetically higher quality environment. These outside influences have caused changes in the livelihood pattern as well as economic systems of the rural peoples which are increasingly being integrated into the wider market economy in the whole country.

One of the most significant elements of rural restructuring has been the transition from economy based on production to an economy based on consumption. It has taken place not just at the level of the rural areas as a whole, but also in the business practices of individual households. In the case of Yaongyimchen village under Longleng district three jhum plots is under the biodiversity conservation project which is an attraction for researchers, scientists, tourists, etc. Many households have diversified their livelihood strategies from dependence on agriculture for livelihood to maintenance of home stay, guides for visitors, etc. There is a wide scope of introducing tourism which will rejuvenate the economy of the villagers but it will create environmental consequences. There will be structural changes in their local economy and also a loss of power by rural communities as the way their rurality is represented.

As stated on the Report of the Task Force on Agriculture Development, “in old days the Jhum was not so detrimental because of long periodicity of Jhum cycle because the soil regains its lost fertility. But due to increased population pressure the Jhum cycle has been reduced to 3-5 years and as a result soil is becoming unproductive”. However, the study reveals that increased population pressure for the shortening of the jhum cycle is not the sole factor that determines the decrease in the cycle. The farmers in Sungratsu, Yaongyimchen and Yongam villagers shared their views that the jhum cycle is rather increasing to 12-13 years even though many of the jhum plots have been transformed to permanent plantation and community reserved forest. In the sample villages average of only 25.84% practice the traditional agriculture. The reason is mainly because of the different developmental programmes the rural people are exposed to the outside, which

influences in diversifying their livelihood strategies. The whole jhum plot which was once cultivated by the entire village is now cultivated by a handful of households which gives them ample time to utilize the jhum plot.

5.2.2. Development in Infrastructure : Physical assets, according to livelihoods approach, includes the basic infrastructures and producer goods essential for supporting livelihoods such as transportation, road, market, water supply, schools, banks, cooperatives, employment centres, community development programs, communication, health and sanitation and many other nonfamily services (DFID, 1999; Bebbington, 1999; Allison and Muir, 2008). A rural household's access to these various neighbourhood services may influence the decision to farm continuation or discontinuation.

Villages like Eralibill, Aoyimkum, Sungratsu that are located closer to urban centres and markets, nearer transportation arteries, community services, including education and health facilities, and off-farm employment possibilities have a number of options open to them that are lacking in many other communities. Proximity to such services also has important implications on the decision to farm continuation or exit farming.

Similarly, the presence of non-farm households in the community may also affect farm exit decision, e.g., Aoyimkum Village, where most of the households are Government servants and pensioners. This implies that the proportion of non-farm households may influence farm exit decisions. Secondly, non-farm households in the community exert pressure for off-farm services, which may encourage farm households to engage in newly created off-farm jobs. Hence, households living in communities with large proportion of non-farm households are more likely to exit farming.

Construction of agricultural Link Roads connecting the village to the potential areas and agricultural plots has been observed in all the sample villages of Longleng and Mokokchung districts. In Sungratsu village there is road connectivity to at least 10 jhum blocks which gives the villagers easy access to their fields. The transfer of produce from the field to the village and market outlets in time is improved to some extent. There is maximum connectivity of agricultural link roads connecting all the jhum plots in the villages under study.

It is found that proper road connectivity to the farm lands, distance to market and urban centres, education, etc. had a significant positive effect on the local farmers' choice of a livelihood. Social assets affect not only community livelihoods but also community livelihood policies and systems, which is conducive to the optimization of spatial allocation of other resources. In the development of community assets, the lack of knowledge and skills of the household, the lack of access to information about developmental schemes and programmes by each household, poor infrastructure, and the lack of power of each individual are major factors that limit community residents' participation in the development of community assets. Therefore, livelihood assets also have a strong influence on community residents' livelihood choice.

5.2. 3. Revival of the age-old tradition

Today you can see the age-old traditions and festivals are again being revitalized. Though complete revival is not possible and be it art or culture this only remains symbolic than functional for which Naga culture was known for. Thus, major portion of their tradition is lost and symbolism remains only at theatrical and aesthetic levels.

The prime education institution in Naga society was the *morung* which is also the basis of modern education, it is also known as bachelors' dormitory to educate young men. The Naga cultures, its customs and tradition have been transmitted from generation to generation through the *morung* such as the art of warfare and the spirit of patriotism, values like dignity of labour, honesty, sincerity, discipline, respect for elders, morality etc., were imparted. *Skilled Based Education* like handicraft, woodcarving, spinning, weaving, embroidery works, stitching, sieving, cooking, rice-brewing etc., were taught, elders in the village also taught the *morung* boys of various medicinal plants sitting near fire place, the institution has taught the virtue of dignity of labour. The Nagas were best known for their hard work, sincerity and honesty in the past, *'those who refuse to work shall not be allowed to eat'*. However, dignity of labour seems to elude the younger Naga generation. As a result, there is a huge problem of educated unemployed youth in Nagaland (Mhonthung Yanthan 2016).

In Yaongyimchen Village the *Lemsachenlok* society took the initiative and in collaboration with the village council opened the *morung* for the boys who have attained puberty. The young boys in the village follow the same old traditional culture, after their works or classes are over, they help their parents in the household chores or in the fields, have their dinner and gather in the *morung* to stay the night over. At present the enrolment in the *morung* is 27 boys.

They get involved in various activities once they enter the *morung*, they learn the moral and social values through different resource persons, revival of traditional livelihood skills like basketry, wood carving, blacksmithing, pottery, etc. The *morung* plays vital role in preparing younger generations in the village council. *The morung* is the club, the public school, the military training centre, the hostel for boys and meeting place for village elders. It is as well the centre for social, religious and political activities.

Revival/ dying of Traditional skills: Other traditional skill-based activities like stone carving, wood craft, medical practice based on herbs were virtually found to be absent from most of the sample villages barring a few. In Sungratsu village there are three households who are engaged in stone carving, engravings on stones and making stone name plates using modern tools and equipment. They also employ skilled and unskilled labourers from the village.

The observations made during the survey indicate that these skills are either in the process of dying or have already become extinct due to inadequate returns from this trade and a relatively smaller duration during a year for which the persons possessing these skills get gainful employment. Overall, the jobs commonly taken by rural women reflect the full range of occupations, from professional positions, notably in teaching and health care, to clerical work, manufacturing production lines, cleaning and child minding. (Little, 1997)

5.2.4. Gender balance: One of the most prominent changes in the rural villages has been the shifting gender balance of the workforce. Women have been at the forefront of adaptation strategies to agricultural restructuring through involvement in on-farm and off- farm diversification.

We see women taking over male labour roles in farming which is a global trend and occurs mainly because of male out-migration to urban centres for higher wages. The women of Sungratsu village in Mokokchung district has a story to tell, most of their male counterparts are engaged in the nearby stone quarries and the highway construction side as wage labourers while the women folk tends the fields alone. Nearly 10.6% (87 household) have given up rice cultivation in the jhum fields and switched on to yam cultivation which is now the main source income for many of the households, the villagers had been cultivating yam since time immemorial but it was cultivated only along the rims and the borders of the field. The jhum fields once covered by rice is now dominated by yam leaves which is harvested from April to June and winter crops like mustard leaves, peas, broccoli, etc are sown after the yam leaves are harvested.

4.2.5. Social and demographic change: with the fluctuation in the population there are changes in the composition. The more peripheral rural area experiences greater depopulation than those closer to urban centres. People are more mobile physically and socially than in previous generations; individuals make decisions about what to do and where to live. **Social capital** refers to various “social resources upon which people draw in pursuit of their livelihood objectives” (DFID, 1999: Section 2.3.2). According to DFID, these resources are developed through (i) networks and connections that increase people's trust and ability to work together and expand their access to wider institutions; (ii) membership of formalized groups which is often a reflection of adherence to mutually-agreed or commonly accepted rules, norms and sanctions; and (iii) relationships of trust, reciprocity and exchanges that facilitate co-operation and may provide the basis for informal safety nets. The issue of socio-cultural disparity/discrimination in every sector of society and economy has received much attention recently.

The rural areas in Longleng district, for the last many decades have been neglected in almost all the areas of development. And as a result, socio economic, education and other developments has taken a snail pace. Having substantially lower livelihood indicators than other areas of Nagaland and limited infrastructure and access to market worsened their backwardness.

The church is one powerful organization that helps the villagers in coping with the socio-economic changes taking place in the rural areas. Comparatively, the people are more inclined towards holding on to the norms and values that a believer is expected to follow than conforming to the certain rules and regulations of the village authority. The village authority in collaboration with the church organization is carrying out various activities in order to improve the economy in villages. Thus, Phom Baptist Christian Association (PBCA) has been in the forefront supporting the socio-economic developmental activities in Longleng areas.

During the last two decades the Phom Baptist Christian Association has worked for the rural people of Longleng partnering with different organizations, both governmental and non-governmental agencies uplifting the socio-economic status of the people in different capacities though they faced a lot of challenges in the process of transition. In spite of their best efforts the Phom Community could not reach the stage of generating income through alternative means of livelihood as they depend on the age-old agriculture system and forest products. Therefore, on recognizing the needs of the community, PBCA started a livelihood project that would improve the lives of the people in Longleng district.

Judicious use of natural and physical assets has increased the income of community residents especially in the sample villages of Longleng district and reduced the poverty rate in the region. It was also found that the positive response to the modern livelihood schemes and programmes by the community had a significant effect on the household income. This is a success story of good governance and a healthy relationship between the secular and religious administration.

5.2. 6. Changing communities: In lay discourses, ‘community’ is often used to imply frequent, high quality social interaction between individuals, strong social networks and a shared sense of identity (Bell, 1994; Jones, O. 1997), one of the most powerful words to be associated with rurality is ‘community’. Liepins, R. (2000a) recognizes communities to be ‘social collectives of great diversity’ which can be conceived as a social phenomenon that unifies people in their ability to speak together even while located in many positions and holding a variety of contrasting identities’.

Rurality of a village is perceived to have a connection to a past way of life. Selling assets as an option is highly vulnerable for livelihood as assets are not only a source of earning but it is an agent for 'adequate and decent living'. Loosing assets thus not only makes livelihood insecure but it also led to lose social status.

Like any other communities, the villages under survey that lies on the fringes of Dimapur urban centre has undergone considerable changes socially as well as economically over the past 3 decades as new wealthier migrants have moved in. community spirit is declining, there is no longer any common purpose, no common goal which is needed to hold a place together. The loss of community spirit is an important feature of the villagers of Eralibill, the change from inward-looking, collective activity to more expansive, outward-looking and individualistic lifestyles. The perceived decline of community interaction was a result of the different lifestyle that migrants follow compared with traditional life styles. The changes in lifestyles were attributed to economic and social changes within the established village, notably the decline in agriculture manual labour and the weakening of a supportive class structure.

The contrast between the lifestyles of rural people today and those 3-4 decades ago is bleak. It was then characterized by insularity, a lack of technological appliances, a strong social hierarchy and moral framework for community life, and a deep involvement in agricultural work with a strong connection to nature. The farms were built up through hard work and therefore the livelihood, lifestyle, life history and location were entwined together.

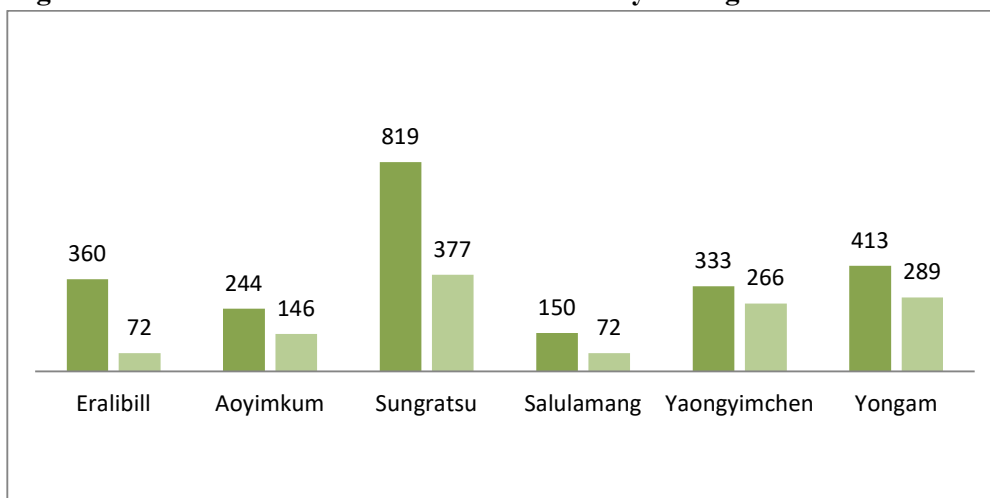
Some farmers went through painful experiences and struggled to get through the new economic circumstances. Responses to the new challenges differed from place to place and from family to family because of the unequal ability of farm families. 'Good farmers' prospered in the deregulated agricultural system, whilst 'bad farmers' floundered. (Michael Woods, 2005) Rural Geography, Processes, Responses and experiences in Rural Restructuring, Sage Publications London, thousand Oaks, New Delhi

Table 5.7. Assessment on Community feeling

Village	Eralibill	Aoyimkum	Sungratsu	Salulamang	Yaongyimchen	Yongam
No of HH	72	146	377	72	266	289
(HH in %)	20%	59.83%	46.03%	48%	79.87%	69.97%

Source: Field survey, 2015-2017.

Figure 5.4. Household Assessment on Community feeling



Source: Field survey, 2015-2017.

In contrast to the narratives of the early settlers of Eralibill village according to 79.87% of the respondents from Yaongyimchen and 69.97% from Yongam, 59.83% from Aoyimkum villages admitted that the change in the livelihood and the impact of the outside forces influencing the changes in the pattern has not affected the sense of rurality, sense of community still exists. In fact, it is much stronger now because in the past the poor farmers lived at the mercy of the rich farmers but now there's not much difference. Most of the respondents from Salulamang and Sungratsu villages admitted that the sense of community feeling is at the verge of declining, but it can be revived if there is a strong and a judicious local governance and participation of the people.

5.2. 7. Changing rural landscape: With limited job opportunities and the desire for money seems to override the need for environmental protection. The stone quarry in pockets along the National Highway 61 has become a threat to the *Meinkong* Reserved Forest of Sungratsu village. Judging by the operations of the quarrying, environmental

sustainability is put to serious question. It has been observed that the land is stripped off its vegetative cover making it more vulnerable to agents of denudation. Pockets of small and large gaping holes associated with quarrying activities not only destroys the aesthetic beauty of the landscape but it will also reduce the natural aquifers or water reservoirs which feeds the neighbouring villages like Mopungchukit and Longpha. Even during the lean period, seasonal water suppliers from the nearby Mokokchung town fetch water from the perennial rivulets that originate from the reserved forest.

The landscapes of Aoyimkum and Eralibill villages under Dimapur district had undergone drastic changes within a span of two decades. The villages have overgrown, over populated and are spontaneously expanding without developing the physical and functional infrastructure or organizational capacity linked to urbanization. The sample villages under Dimapur district which is situated on the frontier experiences social and economic fluidity due to new livelihood opportunities. The scattered settlement with only few households surrounded by green lusher of paddy fields and forested hillocks separated by small rivers and streams has now been transformed to a complete settlement area.

5.2. 8. The outcome of Governmental schemes and programmes: The introduction of different Governmental schemes and programmes has benefited the rural poor people to a large extent. Nagaland State socio-economic indicators on one hand and improvement of income earning, employment generation, assets creation and living standard in terms of consumption on the other hand in the grassroots level of Dimapur, Mokokchung and Longleng districts would determine the socio-economic transition of Naga people.

5.2. 8. (a) Impact on Assets creation:

Rural development is the main pillar of a nation's development and therefore it is to be considered as a strategy designed to improve the economic and social life of the rural poor (Mahaeshwari, 1995). A World Bank publication defines rural development as 'improving the living standards of the low-income population residing in rural areas and making the process of their development self-sustaining. There have been

magnificent developments in assets creation through MGNREGA, SGSY and Indira Awaas Yojana (IAY).

The creation of the vital assets are as follows- road connectivity to every village, construction of footsteps, micro irrigation canals, renovation of age-old traditional village wells. SGSY scheme also brought about a new scenario on sanitation like construction of proper marketing sheds, waiting sheds, public toilets and construction of community dustbin on strategic locations. The Indira Awaas Yojana has also provided housing shelter to numbers of Below Poverty Line (BPL) sections in the rural Nagaland.

In order to understand the importance of assets created in individual lands interview was conducted in the sample villages and 90% of the respondents that without MGNREGS it would be difficult to create assets in individual lands. It indicates that MGNREGS has helped in creating the assets which otherwise would have been very difficult for individuals to create. Because there is a need to develop assets in individual land which is very useful to the rural poor.

The MGNREG scheme creates durable assets that will ultimately lead to a reduced dependence of people on MGNREGs. Under the MGNREG scheme assets are created in community land as well as in individuals' land such as digging new tanks/ ponds, water harvesting structures and wells, afforestation, tree plantation, to control and protect flood proper drainage is constructed in water logged areas, construct and repair embankments, land development and land levelling, micro irrigation works and minor irrigation canals, renovation of traditional water bodies, provision of irrigation facility, rural connectivity, any other activity approved by ministry of rural development.

In order to understand the importance of assets created in individual lands interview was conducted in the sample villages and it was observed that MGNREGS has helped in creating the assets in individual lands which otherwise would have been very difficult for individuals to create. Because there is a need to develop assets in individual land which is very useful to the rural poor.

Table 5.8. Asset creation through developmental programmes

Asset creation	Eralibill	Aoyimkum	Sungratsu	Salulamang	Yaongyimchen	Yongam
Water conservation and harvesting	√	√	√	√	√	√
Flood control and protection	√	√	√	√	√	√
Land development	√	√	√	√	√	√
Micro irrigation Works			√	√	√	√
Renovation of Traditional Water Bodies			√	√	√	√
Provision of irrigation facility			√	√	√	√
Water conservation and harvesting	√	√	√	√	√	√
Rural connectivity	√	√	√	√	√	√

Source: Field survey, 2015-2017.

5.2. 8. (b) Impact on Community Assets:

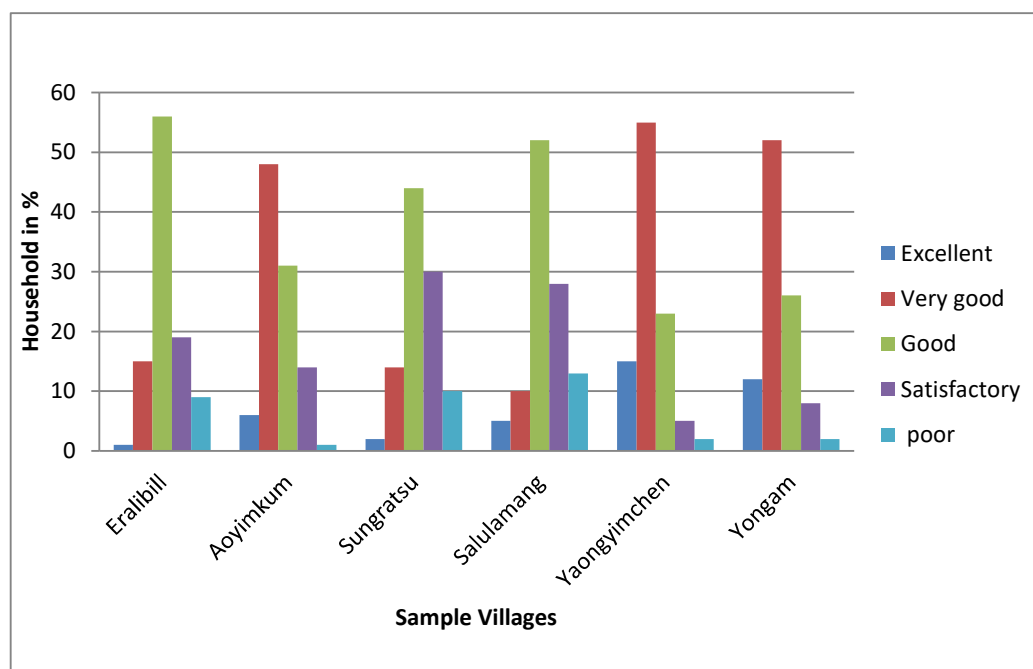
Apart from creating assets in individual land there is a merit in creating assets in community land. To know the quality of community assets created under the scheme, we asked the respondents at the worksite to rate the quality of assets created under MGNREGS on five-point scale: excellent, very good, good, poor, and very poor. About 80 percent of the respondents at an aggregate level rated the quality of work as good and above (see Figure 5.5) and was reported that without MGNREGS it would be difficult to create community assets at the village level.

Table 5.9: Rating on community assets creation through development programmes

Sl No	Village	Household rating in percentage				
		Excellent	Very good	Good	Satisfactory	Poor
1	Eralibill	1	15	56	19	9
2	Aoyimkum	6	48	31	14	1
3	Sungratsu	2	14	44	30	10
4	Salulamang	5	10	52	28	13
5	Yaongyimchen	15	55	23	5	2
6	Yongam	12	52	26	8	2

Source: Field survey, 2015-2017.

Figure 5.5: Rating on community assets creation through development programmes



Source: Field survey, 2015-2017.

5.2. 8. (c) Impact on rural Infrastructure:

Absence of adequate infrastructure is one of the major drawbacks of low level of development in rural areas. Constructions and renovation of basic infrastructure facilities such as roads had increased people's access to the external environment and thus play a crucial role in reduction of poverty and access to livelihood options. Construction of agri link roads in the sample villages of Longleng and Mokokchung districts have made the farmers easy accessibility to their fields. The only bridge that connects the village of Salulamang village under Mokokchung district to the nearest state highway and urban centre is maintained under this scheme, but the road along that stretch is still in a very pathetic condition which hampers the development of the village.

The basic earth work done under MGNREGA is also being used in many places to provide the base for firmer lasting roads in convergence with Pradhan Mantri Grameen Sadak Yojana (PMGSY) which is the larger rural network programmes connecting those hinterland areas and linking scattered villages with fair weather roads. It has been found that the conditions of the roads are far better and well maintained within the village jurisdiction which is a sign of judicious utilization of fund by the village authority, but the roads to the main urban areas is yet to be improved.

The increase in income, coupled with good roads and communication systems through various schemes have facilitated the movement of products and exchange with the urban centres and bringing rural people closer to the market economy.

Table 5.10. Impact of developmental programmes on rural Infrastructure

Development of Infrastructure	Sample villages					
	Eralibill	Aoyimkum	Sungratsu	Salulamang	Yaongyimchen	Yongam
Road – metalled/ unmetalled	√	√	√	√	√	√
Public Transportation	×	×	×	×	×	√
Govt.Primary/ high school	√	√	√	√	√	√
Primary Health centre/ dispensary	×	√	√	√	×	×
Anganwadi centre	√	√	√	√	√	√
Rice Mill	√	√	√	√	√	√
Saw Mill	√	√	√	√	√	√
Drinking water	√	√	√	√	√	√
Community/ panchayat Hall	√	√	√	√	√	√
Play ground	√	√	√	√	√	√
Village gate	√	√	√	√	√	√
Marketing shade	√	√	√	√	√	√

Source: Field survey, 2015-2017.

5.2. 8. (d) Impact on Living standard:

The structure of the houses built in the sample villages confirms that with the passage of time remarkable changes have taken place in the living standard of people. . Majority of households already owns the modern kitchen utensils and other gadgets. Electrification and water supply reached every door of the households. The improvement of village circular road, approach road, footsteps, canals and street light facilities have enhanced the outlook of the rural area and the people.

Among all the households in the sample villages more than 95% have reinforced concrete cement pillars, cemented walls and RCC buildings while 100% of the household in Salulamang and Yongam villages have generally replaced the kacha houses with thatched roofs to pucca and concrete, with RCC and CGI sheets roofing. Except in Salulamang and Yongam villages there are still few houses that are subsistent-level huts.

Table 5.11 Impact on Housing

Village	Roofing in %		Walls in %	
	Thatched	CGI Sheets	Kacha/Bamboo mats and wooden pillars	Pucca /cemented walls and pillars
Eralibill	4.72	95.28	45.83	54.17
Aoyinkum	2.86	97.14	24.18	75.82
Sungratsu	.97	99.3	59.10	40.90
Salulamang	0	100	65.33	34.67
Yaongyimchen	3.9%	96.1	86.19	13.81
Yongam	0	100	84	16

Source: Field survey, 2015-2017.

The nature of the sources of drinking water of almost all the households in the sample villages of Dimapur district is from own tube wells, ring wells and bore wells or their neighbours' drinking water sources while the source of drinking water for more than 90% of the household in Sungratsu and Salulamang under Mokokchung district is from Government water supply. In the sample villages under Longleng district there is no government water supply, the villagers draw water from the traditional village pond or fetch from the nearby streams and spring, majority of the household harvest

rainwater during rainy season and preserve in plastic tanks and in almost all the houses one can find the low-cost water tanks made of plastic sheets on wooden frames reinforced by split bamboos. Few households depend on water tankers; they buy water at the rate of Rs. 1500 per 2000 litres.

Table 5.12. Sources of drinking water

Source of drinking water	Household in Percentage					
	Eralibill	Aoyimkum	Sungratsu	Salulamang	Yaongyimchen	Yongam
Govt. water supply	-	-	94	95.33	-	-
Own Ring /Tube /bore well	82.5	87.29	-	-	-	-
Streams/spring	-	-	-		29.13	32.20
Traditional village pond / well	-	-	-	4.67	34.23	29.78
Rainwater harvest	-	-	6	-	34.53	35.84
Water Tankers	-	-	-	-	2.1	2.18
Others (depends on neighbor)	17.5	12.71	-	-	-	-

Source: Field survey, 2015-2017.

5.2. 8. (e) Impact on income generation and employment:

The NGOs plays a vital role in rural developmental programs. The major policy instruments used by NGOs are social mobilization, and formation of social capital through skill training and education, awareness and capacity building, group mobilization, microcredit and empowerment of poor especially the women. These organizations mostly follow the target- group strategy under which the poor with

similar socioeconomic interests are organized into groups and provided microcredit for micro entrepreneurship development.

One of the best channels of rural employment and income generation, income distribution and empowerment of rural women is formation of Self-Help Groups in rural areas. These groups are voluntary organizations formed by 10-20 members having a homogenous economic background, who come together in order to achieve a common goal. They are formed for different purposes, with wide ranging scopes from managing of common pool of resources to that of rendering public utility services, and establishing permanent bases for livelihood. They are one of the best sources of restructuring the rural live at grass root level providing the platform to the members to come together in times of needs especially during emergencies, disaster, social problems, and economic crisis.

In order to address the loop sided growth in the different sectors, rise of unemployment problems, improve the economic status of rural people, the Nagaland state government launched a special pilot initiative called the “Nagaland empowerment of people through economic development” (NEPED) through this the farmers were provided financial assistance, SHGs for women were organized and also imparted technical trainings to women.

The official launching of the SHGs in Nagaland was in 1999-2000 since then the contribution of the SHGs to different fields has been kept in the lime light. The SHGs programme with a very simple approach but multi- dimensional package perfectly suiting the less privileged and economically weaker sections of the society is nothing but a special gift to the state if it is functioned judiciously with proper planning and guidance.

Table 5.13. Number of SHGs

District/ Block Name	Dimapur		Mokokchung		Longleng	
Sample villages	Eralibill	Aoyimkum	Sungratsu	Salulamang	Yaongyimchen	Yongam
No of SHGs	5	8	20	6	18+1=19	12+6
No of beneficiaries	50	80	200	60	180+15=195	120+90=210

Source: Field survey, 2015-2017.

Table 5.14. Income generating activities of the SHGs

District	Village	Income generating activities
Dimapur	Eralibill	piggery, poultry, knitting, weaving and inter loaning with a minimum interest
	Aoyimkum	piggery, poultry, making of soap and detergent powder, liquid dish wash, candles, knitting, weaving, and knitting shoes and chappals, pickle making, etc.
Mokokchung	Sungratsu	Inter loaning with a minimum interest and small business
	Salulamang	Small scale poultry farming, Inter loaning with a minimum interest and small business
Longleng	Yaongyimchen	piggery and poultry farming, cultivation of ginger, yam, maize, <i>Kolar</i> (kidney beans), maintenance of grain bank, etc.
	Yongam	piggery and poultry farming, cultivation of ginger, yam, maize, <i>Kolar</i> (kidney beans), maintenance of grain bank, broom harvesting, etc

Source: Field survey, 2015-2017.

The Self-Help Groups movement among Women has transformed many Naga homes and families in rural areas, empowering women in various respects economically, socially, politically, and morally. They are involved in various activities such as piggery, poultry, making of soap and detergent powder, liquid dish wash, candles, knitting, weaving, and knitting shoes and chappals, pickle making, etc. In most of the villages such initiatives have provided alternative income generation to women and have not only improved the living condition of their families in areas of nutrition, health care, education and access to other services, but also empowered them to participate in larger community driven activities in their respective villages as well as outside their villages.

In the sample villages the members except in Aoyinkum village of Dimapur district the other sample villages are devoid of such activities. They are mostly involved in poultry and piggery in small scale, during festivals cloth items are brought from towns and cities and sold in the villages with minimum profit, occasional sale of second-hand clothes, revolving fund, etc. They have not set-up any kind of permanent sustainable activities confine to short term gains; the nature of activities is mostly short in duration. At the same time, income earning capacity from these kinds of activities are unstable, in the sense that it depends upon several other factors like weather conditions, market force, and government policies etc. which are external to the groups.

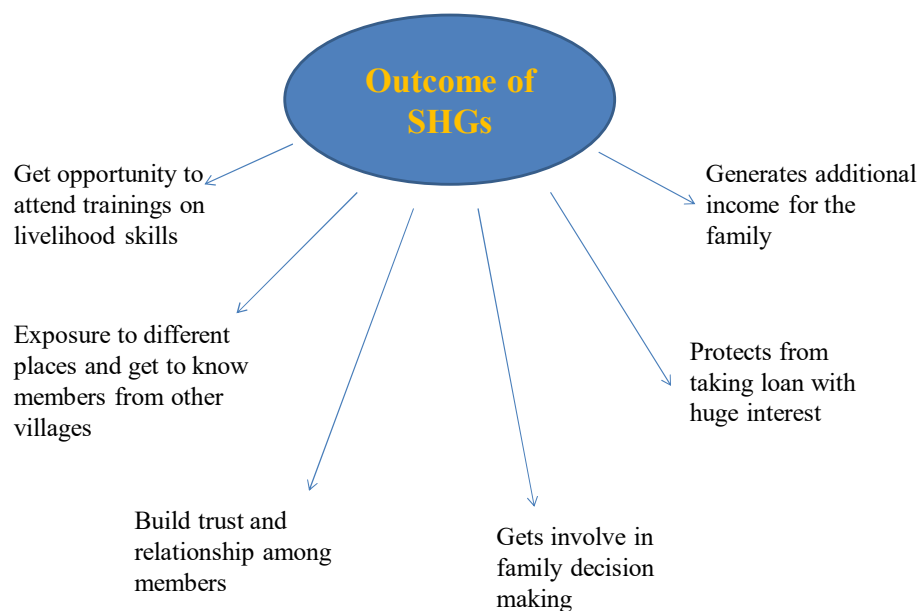
The 7 SHGs initiated by the PBCA (Phom Baptist Church Association) in Longleng district, 1 SHG in Yaongyimchen and 6 SHGs in Yongam village (Table 5.14), which is financially sponsored by the National Bank for Agriculture and Rural Development (NABARD) is successfully functioning. The judicious utilization of the amount has resulted in the progressive growth of the amount in the last ten years. The SHGs have been able to support the families, improve their living standard, sustain their economy, sent their children to private schools and get good education, their health status has improved which contributes towards the improvement of the society.

Grain Bank maintained by the SHGs which was also introduced by the PBCA with an intention to subsidize the traditional method of Grain loan where the rich would exploit the poorer section of people. After the harvest certain number of grains were collected from each member in a barn owned by the group and loan it to poor families with a minimum rate of interest during the lean period. The introduction of Grain Bank has benefitted many women groups and also can support the family. Many of them who are engaged in this program started the practice for their own household which generates an additional income for the family.

Generally, SHGs improve the socio- economic status of the women, changing the role of women from that of a housekeeper to an organizer, manager and decision- maker. The most important aspect of looking at the SHGs is that the SHGs are considered as the champions of poverty alleviation, because it generates employment opportunities. Most of the SHGs

have been able to help in village sanitation programmes, support the financially constrained families, and also help people for emergency medical treatment.

Figure 5.6. Outcome of Self-Help Groups



Source: Field survey, 2015-2017.

The self-help group movement is a fast-growing movement alleviating the down trodden women in rural areas mainly to empower women and address the issues related to women both in livelihood and social sector, but it still needs better guidelines, policies, and drastic sensitizing mechanism for its further growth.

The following findings were made in the process of the research work:

- a. The members of the SHGs are illiterate therefore there is lack of social mobilization and capacity building programmes, trainings organized on income generating activities according to the local needs and availability of resources.

- b. The SHGs are still in the process of creating a reliable sustainable income earning source. All the SHGs no doubt derived some kind of benefits out of their involvement in the SHGs; however, majority of the SHGs are still in the stage of experimentation with different activities without a permanent source of income generation.
- c. The SHGs which have set-up sustainable activities confine to short term gains by engaging in different activities, income earning capacity from such kinds of activities are unstable
- d. There is lack of support from the state government in promoting markets and assuring sales of the products is found to be neglected and very often they end up keeping the products for their own households which does not fetch any profit.
- e. Financial constraints are faced by almost all the SHGs, inadequate SHG-bank linkage programme to acquire bank loans because they are unable to follow the formalities the bank requires, lack of proper policies and strategies

5.2. 8. (f) Impact on Agriculture:

Nagaland is an agrarian state with more than 70% of its population depending on agriculture and its allied sectors. With the increase in population the state government has taken up various strategies to meet the demands and requirements of the population. It has adopted strategies to uplift crop productivity utilizing all the available resources as well as application of the modernization technology in the field of agriculture in order to achieve maximum level of development in the sector to meet the goal of food security.

The age old traditional agricultural practice which is practiced in the state was sustainable and productive when village life was simple and when all the members of the household revolved in the field from morning till evening. With the increase in livelihood diversification, mainly because of the exogenous forces the traditional agricultural practice is on a decline replacing it by the modern methods of agriculture.

In most parts of the state agricultural sector suffers from low productivity; it is highly unstable as it is subjected to fluctuations in rainfall and soil infertility. Due to the rugged and hilly terrain and in the reduction in jhum cycle the top soil is exposed to the different agents of erosion, an alternate method of cultivation should be adopted. Jhum cultivation has evolved through the years and deeply rooted in the customs, beliefs and folklore, therefore to do away with it is next to impossible.

The department of agriculture has adopted the following alternatives to jhum cultivation:

- a. Permanent farm land
- b. Permanent soil conservation
- c. Water conservation
- d. Permanent structuring of the land
- e. Establishment of perennial crops
- f. Multiple cropping
- g. Crop rotations
- h. Mulching and organic matter recycling

Research and development in the field of agriculture has become very important for the growth and development of villages in the state. Therefore, the department had taken keen interest on research and development in the state, emphasizing on helping individual farmers critically assessing their situations and promote local corporation and coordination of common resources. With the limited land resource agriculture in the state is undergoing rapid transformation, farming system is rapidly modified to maximize production. Keeping these challenges in hand the state has started one State Agricultural Research Station at Yisemyong, Mokokchung which was established with the intention to evolve the best practices which are within the reach of farmers of the state. The SARS is working closely in number of collaborated researches works with the agencies like NEPED research, TPS with international Potato centre, ICRISAT, ICAR, AICRIP, Spices Board of India, ICRAF etc.

Agricultural development of the state through horticultural activities:

The Horticulture sector encompasses a wide range of crops e.g., fruit crops, vegetable crops, potato and tuber crops, ornamental crops, medicinal and aromatic crops, spices and plantation crops.

For many small and marginal farmers in Nagaland, horticulture has become a sustainable and practicable venture. The intervention of the Horticulture Department through the Horticulture Mission for North East and Himalayan States (HMNEH, now sub-summed into MIDH) Programme, has been the driving force behind the Development of Horticulture in the State. Under the programme, large scale area expansion of potential focused crops like pineapple, banana, passion fruit, ginger, turmeric, large cardamom, Naga chilli, vegetables etc has been undertaken, which has greatly increased the coverage of horticultural crops in the state. With the successfully implementation of this program there is positive change in the economic status of the farmers thereby uplifting the socio-economic condition of the State.

Yimchalu, a jhum plot in Sungratsu village was taken up as a model village under the Horticulture Technology Mission (HTM), under which orange and passion fruit were planted in an area of approximately 2 sq km. The productions for few years have been good and many farmers have profited immensely, however within a span of 7-8 years the production levels have plummeted. At present the production of oranges and passion fruit is very low. Being discouraged, the farmers have started planting other plants like pomegranate, litchi, *Yongjak* (tree beans) and varieties of bananas, which has positively added income to their livelihood.

The Nagaland State Department of Horticulture and Agriculture on perceiving the potentiality and suitability with the climatic type, and soil assisted the villagers to start cultivation of vegetables like sweet pea, cabbage, beans, onion, beet root, carrot *etc* on a large scale.

In the initial years, the state government through the department of agriculture and horticulture assisted and sensitized the farmers on different types of vegetable cultivation. Seeds were also provided in the initial years. However, the aids and the support stopped after the initial years. The government no longer assists or supports the

farmers. They have to look for the hybrid seeds and also locate the markets by themselves

Agricultural Development Activities under Department of Land Resources

The main objective of the Department of Land Resources Department (LRD), Government of Nagaland is to evolve integrated strategies for better utilization of the natural resource base and take up activities aimed at reclaiming the degraded lands and increasing productivity, creating employment opportunities, raising rural incomes and living standard, restoring ecological balance and thereby promoting over-all economic development on a sustained basis.

To fulfil these objectives, 2 (two) major schemes are presently implemented by the Department under both Central and State sponsored scheme.

1. Integrated Watershed Management Programme (IWMP) centrally sponsored scheme:

The Department is the State Level Nodal Agency (SLNA) for implementation of Integrated Watershed Management Programme (IWMP) which is a flagship programme of the Government of India, under Ministry of Rural Development, Department of Land Resources.

IWMP works in building the rural community's capacity to meet future demands of maintaining the ecological balance and addressing challenges of climate change, while ensuring sustainable growth. 80% of the total area under *Ankichiba* jhum plot in Salulamang village is converted to rubber plantation and 20% orange plantation under this programme.

2. Rubber Plantation Development, a state sponsored scheme

Rubber plantation in Nagaland is becoming increasingly popular owing to the high success rate, associated with high economic returns and employment opportunity from the plantation. It is also attracting a good number of jhum farmers from rural areas as it provides permanent settled form of agriculture, thus rubber plantation is turning out to be a viable alternative to jhum practice.

Extensive plantations have been taken up in the recent past in Nagaland through the initiatives of the Land Resources Department and the Rubber Board, the area under rubber is rapidly expanding every year. According to the response of the Yongam villagers under Longleng village, before 2003 the value of oranges, bananas, pineapples, betel nut leaves were not known but the intervention of the Land Resource Department in the village brought a lot of changes in the livelihood pattern. The village council adopted a resolution and distributed Rs.2000 to every household and introduced to the cultivation of cardamom, orange, etc. In 2009, 10 farmers from the village were sent to the Ministry of Commerce and Industry, Department of Commerce, Rubber Board Jorhat for training on rubber plantation. Since then, the trained farmers started rubber plantation in small scale in parts of the jhum fields. They have started harvesting and the raw product is sold in Changtongya Town, it is sold at the rate of Rs. 90 per Kg., one of the respondents witnessed a profit 1.5 lakhs (approx) from the sale of the latex.

Table 5.15. Food sufficiency status

Status of home-grown food grains	Household Percentage
1 year and above	52.83
8-9 months	9.13
Unable to support	16.51
No response/ Don't know	4.70

Source: Field survey, 2015-2017.

In recent years, land-based livelihoods of small and marginal farmers are increasingly becoming unsustainable, since their land has not been able to support the family's food requirements and fodder for their cattle. The rural households are forced to look at alternative means for supplementing their livelihoods with the decrease in yields from jhum cultivation and lack of alternative skills they become dependent on non-agricultural occupation. Table.5.8. highlights the food sufficiency status of the sample villages.

Upon studying and analyzing the situation from the angle of home-grown food grains 52.83 % household can support themselves for one year and above with their produce from the field, 9.13% household can support themselves for at least 8-9 months while 16.15 % household were found unable to support with their own produce. To this question 4.70 % houses did not wish to reply. It is definitely worrisome that almost half of the households are at risk as far as food security is concerned and this fact indicates that their livelihood is at risk. The scheme and programme of Targeted Public Distribution System (TPDS) provides food security at subsidized prices to the household who are at risk and helps in coping the livelihood vulnerabilities.

Targeted Public Distribution System (TPDS) provides food security to the rural poor people. Food security entails procurement of food grains from the farmers at the minimum support price, storage and distribution to the targeted beneficiaries through Fair Price Shops (FPS). Procurement of food grains within the State serves the twin objectives of providing price security to the farmers and ensuring food security to the people. The Government of Nagaland is involved in operation of various food grains-based schemes introduced by the Government of India under the Targeted Public Distribution System (TPDS) launched in June 1997. Under this, three main schemes were implemented – Below Poverty Line (BPL) population are to be provided food grains as per norms/ scales at the subsidized price in order to ensure food security to economically weaker sections of society.

Antyodaya Anna Yojana (AAY) was launched in December 2000 by the Government of India to ensure food security to the poorest of the poor by providing wheat and rice at the rate of Rs.2 per kg and Rs.3 per kg respectively. The families under Antyodaya Anna Yojana were selected out of the families living below poverty line. In Nagaland, this scheme was implemented from October 2001 onwards. Annapurna scheme was launched (April 2000) by the Government of India with the aim to provide food security to those senior citizens who remained uncovered under the National Old Age Pension Scheme (NOAPS). Under this scheme, 10 kg of rice are to be provided free of cost every month to senior citizens. Besides the above schemes, the department is also implementing a scheme for the Above Poverty Line (APL)

population, where ration cards are issued and the distribution is made through permit holders appointed by the Government of Nagaland.

Some of the anomalies observed during the survey was, non-issue of ration cards to beneficiaries especially to the economically weaker and vulnerable sections of society, delay in lifting and distribution of food grains to the beneficiaries, non-existence of any mechanism for checking the quality of food grains supplied to the beneficiaries.

5.2. 8. (g) Impact on human resource development: According to the insight evaluation another changed resource for livelihood of the villagers in the sample areas is the human resource. The factors that brought about changes in human resources are the social mobilization and public awareness-oriented activities of the various organizations and agencies, conducting training and seminars, and inculcating skills of leadership development. Similarly, in the recent years support has been extended at the private level for the operation and establishment of organizations and agencies. Among the main indicators measured under human capital included training based on forest and other biological resources; persons who had acquired skills; agriculture, health and other technical hands; women leaders and their presence in social activities, stake holding and their leadership in resource management; their presence in organizations and agencies in decisive roles; the increase in the proportion of school going boys and girls and higher education, technical trainings, etc.

The rural conditions have been enriched by the employment opportunity and income generating activities initiated by the government agencies for rural development. Now better education can be provided to the children as well as providing better medical facilities

Despite the progress made in many parts of the rural Nagaland still some areas encounter certain challenges. Due to difficult terrain in the interior remote area accessibility becomes difficult and hence the developments cannot be reached in time and also management of developmental funds cannot be monitored. In some cases, the implementation of MGNREGA, SGSY and IAY cannot be successful due to diversion

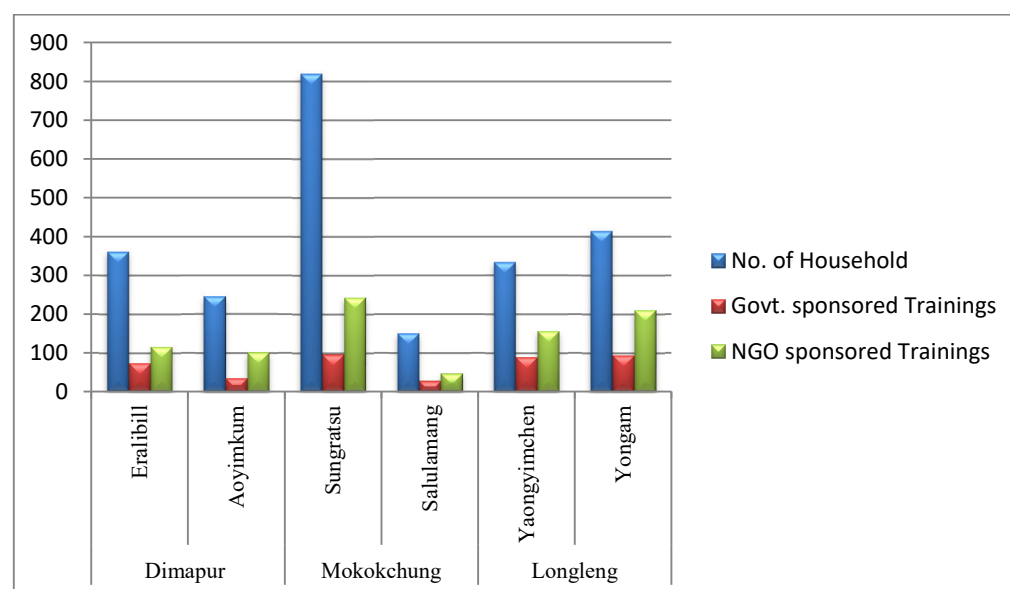
and mismanagement of developmental funds, lack of awareness among the beneficiary about the schemes and programme, improper relationship between the Block office's and grassroots people.

Table 5.16. Skill development trainings

District	Village	Number of households	HH attended skill development trainings	
Dimapur	Eralibill	360	74	116
	Aoyimkum	244	35	101
Mokokchung	Sungratsu	819	96	243
	Salulamang	150	28	47
Longleng	Yaongyimchen	333	89	156
	Yongam	413	94	210

Source: Field survey, 2015-2017.

Figure 5.7. Skill development trainings



Source: Field survey, 2015-2017.

In the process of the study period it has been observed that in Sungratsu, Salulamang, Yaongyimchen and Yongam villages the Agri and allied departments have initiated trainings to the farmers under different schemes and programmes on afforestation, construction of water reservoir, construction of water harvesting

structures, construction of check dams, construction of half-moon terracing, , construction and process of vermin compost pit, construction of irrigation channels and micro-irrigation system for enhancing horticulture crops/ cash crops/ vegetable cultivation like bamboo drip irrigation system, etc.

Upon analyzing Table.5.16 the number of households undergoing different kinds of training, it is found that more households have undergone skill development trainings for income generation or livelihood-oriented training sponsored and organized by NGOs than the Government sponsored trainings. It is also found that members from the same household are found to have participated in various trainings several times. Some households are totally ignorant whether they have undergone any training or not. Going by the distribution analysis of the households that had received trainings the opportunities for training, orientation and capacity building do not appear to be proportionately distributed. While some have got repeated opportunities, many houses do not know anything about this. Consequently, the above table highlights the fact that there are a large number of beneficiaries but the opportunities for training and capacity building have not been distributed proportionately and equitably.

While the rural developmental programs has brought some positive changes to the life of the rural people such as infrastructure development, it has also caused adverse impacts especially the loss of indigenous culture and knowledge and a deteriorating plant and animal diversity.

The policies have proven effective in transforming aspects of the rural peoples' life, among which is the installation and improvement of the infrastructure system for manufacturing and services such as transportation, water resources, water supply, electricity, dwelling, medical centres and schools, etc.

In almost in every village a primary health centre, a primary school and a road connecting the villages have been constructed. Social services such as education and health care have also improved significantly. A major setback, however, is that the ethnic customs and traditions are slowly disappearing. New farming practices and techniques are replacing the age-old traditional knowledge and practices of agriculture.

Cash crop and market-orientated cultivation has developed widely. With the decline on shifting cultivation, a cash-oriented economy has replaced in many rural areas.

These changes however have brought new problems: Disappearing plant varieties and traditional knowledge on rotation farming as a result of the government prohibition on rotational farming and the introduction of new high-yielding varieties, indigenous plant species are disappearing along with the traditional knowledge and cultivation practices related to them. Similarly, herbal plants are gradually dying out, and thus knowledge on their medicinal use is no longer handed down to the next generation. Monoculture in agriculture is abolishing indigenous knowledge and diversity of crop plants.

5.2. 9. Positive indicators:

The degree of changes varies from one village to the other but some of the positive indicators on physical, economic, social, and cultural and natural resources are mentioned below:

- a. Establishment, collection and operation of user groups' monetary fund and saving growth
- b. Increase in opportunities for income generation, enterprise, employment, production and processing based on forest products
- c. Business, raw material, setting up small scale industry, retail shop, etc.
- d. People's participation in development activities and forest conservation
- e. Establishment and operation of formal and informal groups and organizations, and providing services
- f. Local saving and credit mobilization groups.
- g. Representation and participation of distressed and ethnic groups, women and deprived groups
- h. Good governance, public hearing, and participation
- i. Training opportunities and increased in trained people among the poor farmers.

- j. Local woman leaders and leadership development; literate, educated and trained women
- k. Women groups engaged in cash income and cash generating activities
- l. Number and proportion of school going-age children, youths' participation in higher education.
- m. Metalled roads and agri link roads
- n. Reinforced cemented houses and replacement of thatched roofing by CGI sheets
- o. Reinforced low-cost toilets discouraging open defecation
- p. Total banned on open rearing of livestock
- q. Restoration and renovation of village ponds
- r. Community infrastructure, roadside waiting sheds, community buildings, schools, playground, etc
- s. Marketing shed and waiting shed
- t. Participation in conservation activities
- u. Preservation of wild life: birds, deer, bear, boar etc
- v. Forests under community management.

5.2. 10. The vulnerability to livelihood: In course of the discussions with the targeted groups and households the information gathered from the local inhabitants are as follows, both human induced and nature induced vulnerability to livelihood has significantly increased in sample villages in the last three decades and it is seen that in the near future it can usher negative results if that trend is not addressed and curtailed in time. In the recent years apart from the usual natural hazards and problems of climate change the excessive use of salt, weedicides, fertilizers, insecticides, etc., the agricultural production and the quality of foodstuffs are being adversely affected. With the consumption of outside culture there is drastic changes in people's living standard the behaviour of using polythene bags, plastic wrappers, bottles, alcohol packet, etc and also at the same time artificial demands have been growing because of the rapid changes in town planning and developed transportation.

The vulnerability to livelihoods as pointed by the participants in course of the discussion is given below:

- a. Forest fire
- b. Excessive, unnecessary and indiscriminate use of fertilizers
- c. Increased negative effects of insecticides use, affecting the quality of the crops
- d. Increased consumption of alcohol
- e. Urbanization-induced unemployment, infidelity, and social insecurity
- f. Temporary settlement and migration, pressure of migrants and conflict victims on local resources
- g. Erosion of cultivable land, landslide, water logging, etc due to excessive utilization of natural resources
- h. Decreased production of rice, dependent families at risk
- i. Environmental impact on nearby forests and villages due to urbanization
- j. Lack of market, price regulation.

The analyzed survey result of the livelihood vulnerability list shows that there is hardly any possibility that the people and local communities cannot resolve them and only vulnerability reduction measures can bring relief. From the other aspect it is noticed that the fall in the production of food is mainly due to hazards like pests and insects, infertile soil and use of fertilizers, pesticides and weedicides resulting not only in reduced supply but also the subsistence farmers and marginal farmers being unable to raise other resources with their own production, its direct effect being their adopting alternative coping strategies like encroachment upon the forest and fallow lands and being forced to migrate as a long term effect, as shown by the findings of the study.

Chapter 6

Discussion

6.1. Introduction

Livelihood is generally understood as the means of making a living and sustenance. But it also encompasses the wider aspects of everyday reality of the people's lives such as people's living spaces, their economic spaces and income, food security, resources and knowledge and their way of life and culture. It deals with people, their resources such as land, labour, knowledge, money, social relationships, what they do with these resources and what impact it has on their access to the resources, creating and embracing new opportunities and how it influences their personal, social, political, and economic life. At the same time, livelihood also entails the risks and uncertainties that people face and the choices they have to make, thus, it concerns the question of how secure and sustainable the livelihoods of the people are.

In the late 1990s and the beginning of the new millennium the livelihood studies gained its importance, when the British state development cooperation agency, Department for International Development (DFID) strongly promoted Sustainable Livelihood Framework.

This extensive study on the achievements in livelihoods shows that considerable changes have taken place in the living standard, day to day activities and the various aspects of the livelihoods of the local inhabitants. Conclusively, the two main dimensions of the changes that have taken place in the livelihoods of the inhabitants of the sample areas are the i) changes in institutional management capacity and ii) changes in people's wellbeing status.

In the era of globalisation, the question of sustainable livelihood has become the focal issue among policy makers, academicians, media, NGOs, etc. Various people have defined livelihood differently. Chambers and Conway (1991) define livelihood as: "A livelihood comprises the abilities, assets (store, resources, claims and access) and activities required for means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities to the next generation; and contribute net benefits to other livelihoods at the local and global levels in the long and in the short term."(IDS Discussion Paper No 296)

The concept of sustainable development emerged in the 1980s which has acquired the central theme of any tribal development. It propelled a paradigm shift in development thinking, and continues to dominate the development-discourse at various levels, from the local to global. The best explanation to sustainable development was given by the World Commission for Environment and Development (The Bruntland Commission) in its 1987 report, 'Our common future', as, 'the ability to meet the needs of the present without compromising the ability of the future generation to meet their own needs'. The concept of livelihood is rapidly gaining acceptance as a valuable means of understanding the factors that influence people's lives and well-being. 'It is comprised of capacities, assets, and activities required for means of living. A livelihood will be sustainable when it can cope with and recover from stress and shocks and maintain or enhance its capacities and assets, both now and in the future, while not undermining the natural resource base' (Carney, 1998:4)

6.2. Suggestions

On the basis of the above the challenges pointed out it is suggested that the following functions be implemented for a sustainable livelihood.

6.2.1. Supportive framework for the sustainable management: Sustainable livelihoods and a healthy landscape depend upon the integrated management of natural resources; this requires consideration of the social as well as the ecological dynamics of natural resource use (Gutierrez-Montes et al., 2012; Valdivia, 2001). In order to provide a supportive framework for the sustainable management of healthy landscapes policies should be framed based on the experiences and needs of the farmers. Policies should be structured at all levels with community participation and involvement for the long-term protection of the goods and services providing access to markets, financial support and partnership with private sectors. Shift in agricultural practices will be faced with a number of challenges. It is essential to adopt an integrated policy approach rather than to focus on one particular sector.

6.2.2. Proper market linkage, Proper storage facilities, Market regulation:

Agriculture is a major source of income for rural masses constituting 70% of the State's population. It is a major contributor to State's economy. However, there has been an

ever-increasing trend in cost of production of all crops but stagnation in prices for farm produce. The food items produced from the villages are organic in nature and it cannot be retained for a longer period so in order to store and preserve the perishable commodities construction of cold storage in major production areas for safe storage of perishable commodities is to be considered. There is a high level of post-harvest losses and an uncertainty of market price due to market glut. These factors have reduced the farm income to a great extent. In these circumstances, the farmers of Nagaland, like rest of the country have very few options but to improve their post-harvest management practices so that the present high levels of post-harvest losses of 25-30% could be brought down to a reasonable level of 5% or so.

Secondly, the farmers have to add value through processing to their farm produce for better remunerative prices. These steps can lead to better returns with increased market demand for agricultural produce and better chances of marketing. Therefore, priority should be given to post harvest management, food and agro processing, agri-business and agriculture marketing etc. Agricultural Produce Marketing Committees (APMC) can play a vital role in marketing of agricultural produces. There is enormous potential for producing season and off-season agricultural crops, fruits and vegetables but due to lack of proper storage and postharvest handling, there is a huge loss especially for the perishable items.

The enactment of Agricultural Produce Market Act in the State has not made much progress. The structures are lying idle and the farmers are not benefitted from it. The main reasons are locational disadvantage, non-cooperation of traders and government, lack of knowledge, deficiency in market structures, lack of initiatives etc. All these reasons have discouraged the farmers in taking up horticultural production in the State (Ao, Imkonglemba, 2015). The State has poor transport and communication facilities and the farmers are to walk several kilometres to reach the market for selling off their produce. Besides, rural market/assembling centres for horticultural produces are connected mostly by kaccha road and it incurs higher cost of transportation. Storage facility as well as market facility for horticultural produces was observed to be inadequate. Sungratsu village under Mokokchung district have experienced periods of

accumulation and wastage of horticultural crops like ginger, passion fruit and litchi during the peak season of production leading to huge losses which discouraged the farmers from taking up horticultural activities.

Therefore, the State needs to seriously strengthen its marketing and Post-harvest management facilities for giving a facelift to the horticulture scenario in the State. The State has immense Horticultural resources and has the potential to grow rapidly so as to meet the existing shortages and assume dominance in the national Horticultural economy. However, despite the strength of the horticulture sector, the rate of growth has been below its potential.

The success of rubber plantation in the state has also created avenues for setting up of rubber-based manufacturing industries in view of the easy availability of high-quality natural rubber in the state. Rubber-based industrial venture will not only improve the State's GDP, but through the expansion of economic activities, it would create the much-needed job opportunities thus fulfilling to our avowed objective of alleviation of poverty.

6.2.3. Good governance and programme implementation:

Successfully implementation of development programs requires adequate funds, appropriate policy framework and effective delivery machinery and above all people participation. Availability of fund alone may be a necessary but optimum utilization of fund is required to achieve sustainable growth.

However, without good governance and programmed implementation, much of the vast quantum of resources being spent for development is wasted. Therefore, it should be so designed as to bring about improve transparency, better accountability and streamlining of the structure of government.

It is the grassroots level organization like VDB (Village Development Board), which can ensure transparency and accountability in public life through active participation. Concerted efforts are, therefore, necessary to equip the grassroots organization through devolution of powers, functions and finance along with necessary training and capacity building.

The findings indicate that though rural and urban households derive a larger proportion of their income from farming, and trade and service provision, respectively, they combine their livelihoods from different sources. It was also found that small farm size and unequal distribution of land in the villages along with the decline in production confine the flows of agricultural produce to towns. However, land shortage and landlessness strengthen rural-urban linkages in terms of both the flow of people and non-farm activities.

Agricultural produce marketing showed strong linkages with the local, regional and national urban centres. The results imply that rural-urban linkages would be enhanced by improvements in the livelihood strategies of the people through supporting urban-based non-farm activities and informal activities in small towns, improving the labour absorptive capacity of business sectors in town, discouraging public monopolies in input marketing and distribution, supporting agricultural intensification, strengthening physical and market infrastructure, improving the financial sector, and supporting the development of agro processing industries

6.2.4. General Awareness to the villagers:

The government has at its disposal hundreds of various department and agencies to implement its various welfare and developmental measures and schemes. Employees of the government are paid public servants to serve the people. But employment in the government sector is only seen as a profitable prospect, it is only seen as a position of pride and prestige as well as for financial stability and security. The attitude of the general public towards them is of awe and respect. They are therefore not seen as paid servants to serve their interest answerable and accountable.

Under such circumstances, any funds meant for the welfare and development of the people becomes just financial packages for those in power. All these stems from lack of awareness or lack lustre attitude of the people towards their representatives and government employees. The general public, the government employees and the elected representatives are more or less disconnected and detached.

The people should have a clear mindset that the Government sector is not the only opening for the people of the State for getting employment and that there are other

sectors where employment with little acquired skill is easier and more productive than the jobs in the government sector. Government through different agents and channels should make people aware of the large number of opportunity available for self-employment. The state should also hold responsible for creation of a favourable environment for the rural people in pursuing various sustainable livelihood strategies.

These interventions need proper management with the structural reform programme of the central government on the one hand and on the other, there should have an in-built mechanism to ensure that the livelihood strategies of the vulnerable sections of the society do not get adversely impacted by any of the interventions.

6.2.5. Transparency in developmental programmes and skill-oriented trainings:

In order to build the capabilities of the poor, development programmes and skill-oriented trainings must be initiated and also supplied critical agricultural inputs either free or at subsidized cost. However, most of these programmes do not succeed due to lack of people's participation. They are suspicious about the relevance of the programme and also lost confidence in the programme due to frequent failures. Subsequently, they lost confidence in themselves and also lost initiative to work hard. Thus, it is necessary to make them understand through motivation, awareness and capacity building before initiating any livelihood activities.

Poor rural families who require different types of support to come out of poverty should be identified and targeted. Most of the development programmes reaches only the well to do and influential families who dominates over the poor and exploit the benefit to the maximum extend. Thus, such development projects may often create a wider gap between the rich and the poor within the community, family as a unit should be considered for development in order to maintain social harmony in the rural areas. Representatives from each household should be given opportunity for at least one of the skill development trainings and proper management and guidance should be made known in the loan, credit and necessary social cooperation.

Developmental agencies in all forms should not mislead the rural people, give proper guidance in utilizing the resources. The projects should be implemented judiciously and should have follow up programmes and see that the villagers are

benefitted. Necessary interventions are required to ensure that appropriate steps are taken to upgrade the skills of the rural populace so that they find a place in the highly competitive market. The skill up gradation programmes needs to have an orientation in line with the requirements of rapidly opening up markets.

6.2.6. Women empowerment: Special focus on capacity building for women is a requirement; their entrepreneurial spirit should be encouraged and empowered. Skill development and livelihood support programmes in embroidery, apparels and dress making, handicraft, beauty culture, management, etc, should be planned and organized which will create both self- employment and wage employment opportunities for the women in villages. Production and marketing resource centres with all necessary services and facilities should be established to offer livelihood support and enable them to generate a livelihood from their traditional skills.

Women are more vulnerable to the changes because they come forward and grasp the opportunity to get involved with the agents of change e.g., capacity building, trainings on livelihood, workshops and seminars organized by different governmental agencies, involvement in Self Help Groups, take up skill development trainings, sharing ideas of different activities with the SHGs of other villages, etc.

6.2.7. Community empowerment: all levels of community come together and participate through different organizations like VDB, churches, NGOs, etc. to motivate and mobilize the villagers and in facilitating the implementation of the activity. The transfer of traditional knowledge is an entry point to organize the community to come together and act on something that they felt important to the community and success and power is achieved when people unite and work under one umbrella. Centralized activities and gathering organized for the various communities create solidarity and it opens avenues to learn from each other, enhancing the corporation levels between leaders and their communities.

6.2.8. Awareness on climate change and its impact:

We can't stop climate change, but we can identify the probable changes with which we would have to adapt. It is important to adapt livelihood patterns in such a way that the common man is not taken for a shock when the effects of climate change are being felt by the people. Though we may not be able to stop climate change, we can always be prepared for it, increases capabilities of the people to know these effects and how to cope with them.

Rising temperature, erratic rainfall and occurrence of moderate drought are beginning to impact food production in Nagaland. In order to meet the challenge of climate change, the state is now turning to its forgotten resource – traditional food crops which can withstand higher temperatures and water-stressed conditions. The hilly state has initiated steps to revive traditional rice as well as millet varieties which over the years gave way to high yielding crop varieties for various reasons. Though farmers are not growing traditional varieties for sustenance, they are still the custodian of knowledge about them. In wake of climate change, these varieties will be promoted among farmers, as they are the best bet for adapting to changing climate.

In order to control and reduce the extent of environmental damage caused by the developmental works in the sample villages, awareness programmes should be organized by the village councils and also the Environmental Protection Agency must enforce its environmental regulations. It must see to it that all those involved in quarrying operations have, as a matter of priority, the protection of the integrity of the environment. The steps taken to protect the forest will not only benefit the village but the whole environment.

6.2.8. Conservation of indigenous knowledge: Rotational farming contributes to the conservation of traditional cultures therefore it must be protected in appropriate ways. It not only provides food for but is also a means to conserve indigenous knowledge in farming and traditional seeds that ensure diverse gene resources. Another challenge facing indigenous peoples is the promotion of modern agricultural systems. Due to the increasing demand for cash, many of them are moving from subsistence production to commercial production. The desire to meet the market demand and earn more cash has

resulted in overexploitation of resources and excessive use of chemicals in farming, which undermine traditional sustainable agricultural systems. At the same time, limited market access and low and fluctuating prices of local products put indigenous peoples at a disadvantage in the market, often resulting in chronic indebtedness. Loan schemes and contract farming schemes lead to privatization and loss of agricultural lands. Indigenous technologies are set aside, taking away control over production, especially from indigenous women. Jill K. Cariño (2010).

6.2.9. Revival of the age-old tradition:

The problem of unemployment in the rural areas in particular and the state in general will decrease if our modern education system adopts and institutionalize these traditional skills. The younger generations need to document the traditional knowledge of medicinal plants and learn the good practices and lessons. The virtue dignity of labor seems to elude the younger Naga generation and therefore it should be made known that their hard work, sincerity and honesty will be paid. Efforts should be shown by each community to address the loss of traditional knowledge on livelihood. The few elders with the intact knowledge should pass it on or transmitted to the younger generation and the learners should be willing to learn and use it. Why depend on outside help, why can't we practice what our forefathers taught us and live like them, self-sufficient, self-sustenance, etc. The outsider may not understand the setting, culture, language and other things prevalent in the local area. As such, rural people themselves have to participate in their sustainable rural development.

6.3. Conclusions

It has come to light that even in those areas where there are strong political consciousnesses among the public, except for some basic infrastructural development like roads and electrification, all others become financial bonuses for the people to supplement their modernised lifestyles. You will see just symbolic representation of the projects rather than the materialisation of it.

Self-preservation is the call of the day and financial incentives are only sought to pay their way to finance their modernise lifestyles. The misutilization of funds for the specified projects is a very sorry situation especially in the rural areas for economic

development and it has many causes and complexities. Ignorance of the masses of the various welfare measures and schemes of the government, remoteness and inaccessibility and market of the finished products etc are some major issues in relation to rural areas.

Belonging to no discipline in particular, livelihoods approaches can allow a bridging of divides, allowing different people to work together – particularly across the natural and social sciences. Being focused on understanding complex, local realities livelihoods approaches are an ideal entry point for participatory approaches to inquiry, with negotiated learning between local people and outsiders.

The livelihood approaches should focus more on how people organize their lives, acknowledges the opportunities and agents of change and rather not to concentrate on the economic failure of the people affected. A standard and systematic analytical framework should be framed for each area depending on the local reality. Attempts should be made not only on poverty levels, welfare and wellbeing of the rural people but also should apply to other livelihood issues, i.e., environmental degradation and climate change, mobility and migration, the quality of space and the underlying power relations.

We should look at the real world, and try and understand things from local perspectives. Responses that follow should have a clear picture of the realities of the local situation and try not to impose artificial categories and divides on complex realities (Ian Scoones, 2009). Every scholars and researchers should look at the real world and understand things from the local perspectives so that the complex developmental problems taking place in the rural areas can be solved.

References

1. Adhikari, M. Nagata, S. Adhikari, M. 2004. Rural household and forest: an evaluation of household's dependency on community forest in Nepal. *Journal of Forest Resources*, 9:33-44.
2. Agriculture Production Commissioner Nagaland Kohima. 2015. *Report for Task Force on Agriculture*. Government of Nagaland Kohima.
3. Alain D.J. and E. Sadoulet. 2001. Income strategies among rural households in Mexico: the role of off-farm activities. *World Dev.* 29(3): 467-480.
4. AIRCA (The Association of International Research and Development Centers for Agriculture). 2013. *Transforming rural livelihoods and landscapes: sustainable improvements to incomes, food security and the environment* Editing: Green Ink (www.greenink.co.uk) Oct 2013 ISBN: 978-92-95098-31-2
5. Anbumozhi, V., 2007. Eco-Industrial Clusters in Urban-Rural Fringe Areas- A Strategic Approach for Integrated Environmental and Economic Planning, Business and the Environment Research Project, Kansai Research Center, Hyogo, Japan.
6. Angelsen, A. Wunder, S. 2003. *Exploring the forest-poverty link: Key concepts, issues and research implications*. CIFOR, Occasional Paper No 40, CIFOR, Bogor Indonesia.
7. Angelsen, A. 2005. How to look at the world: some theoretical approaches to understand the link between forest dependence and poverty. PEN Proceedings, CIFOR, Bogor, Indonesia.
8. Angelsen, A. Wunder, S. Babigumira, R. 2011. *Environmental incomes and rural livelihoods: a global-comparative assessment*. Paper presented at the 4th Wye Global Conference, Rio de Janeiro, 9.-11. November 2011. pp. 1-17.
9. Anne Lasimbang, 2010. *Transmitting Indigenous Knowledge on Traditional Livelihoods to Younger Generations in Malaysia*. In *Traditional Livelihoods and Indigenous Peoples* (Ed. Ms.Etot Tamayo) Publisher, Asia Indigenous Peoples Pact (AIPP) Foundation, Thailand, 2010
10. Ao, A. L., 1993. *Rural development in Nagaland*. New Delhi: Har Anand.
11. Ao, Imkonglemba, 2015. Report of the Task Force Nagaland 2015.

12. Asif, K., 2010. Developing agro-processing enterprises in the rural-urban fringe areas – a view point on sustainable development and propelling rural prosperity, Emerging Technologies for Sustainable Environment, Proceedings of the International Conference 29-30th October, Department of Civil Engineering, A.M.U., Aligarh, pp. 592-595
13. A Thematic Report. 2009. *Traditional Agricultural Practices and Sustainable Livelihood*. Government of Nagaland Department of Planning and Coordination Nagaland - Kohima 797 001.
14. A.W.Davis. 1891. *Census of India, 1891*, Assam Vol.I.
15. Bebbington; a. (1999): *Capitals and capabilities: a framework for analyzing peasant viability, rural livelihoods and poverty*. In: World Development 27 (12), 2021–2044. DOI: 10.1016/S0305-750X(99)00104-7
16. Belcher, B. Ruiz-Pérez, M. Achdiawan, R. 2005. Global patterns and trends in the use and management of commercial NTFPs: Implications for livelihoods and conservation. World Development, 33:1435–1452.
17. Blaikie PM, Cameron J, Seddon D. Understanding 20 years of change in west-central Nepal: Continuity and change in lives and ideas. World Development. 2002;30(7):1255–1270.
18. Byron, N. Arnold, M. 1999. *What Futures for the People of the Tropical Forests?* World Development 27 (5): 789–805.
19. Cahn, M. 2006. Sustainable rural livelihoods, micro-enterprise and culture in the Pacific Islands: case studies from Samoa. Development Studies, Ph.D. Thesis, Massey University, Palmerston North, New Zealand
20. Carney, D. (1998). “Sustainable rural livelihoods: What contribution can we make?” Department for International Development.
21. Cavendish, W. 1999a. Incomes and poverty in rural Zimbabwe during adjustment: Chivi Communal Area, 1993/94 to 1996/97. Centre for the Studies of African Economies, University of Oxford.
22. Cavendish, W. 2003. How do forests support, insure and improve the livelihoods of the rural poor? A research note. CIFOR, Bogor. Indonesia.

23. Cecilia Tacoli 1998. *Bridging the divide: Rural-urban Interactions and livelihood Strategies* International Institute for Environment and Development, Sustainable Agriculture and Rural livelihoods Programme
24. Chambers, R. Conway, G. 1992. *Sustainable rural livelihoods: practical concepts for the 21st century*. IDS-University of Sussex, Brighton, U.K.
25. Chambers, R. and Gordon Conway (1991). *Sustainable Livelihoods: Practical Concept for the 21st Century*, IDS Discussion paper 296.
26. Chang 1977, *Traditional and Modern Natural Resource Management in Latin America*. edited by Francisco J. Pichon, John Frechione, Jorge E. Uquillas
27. Changkakati, B.N.1956. Electoral Roll 1956. Gaon Eralibill, Kohima Sadar, Naga Hills District, Assam. Pp: 352-353.
28. Concept Note, Siem Reap. 2010: *Asia Regional Seminar on Traditional Livelihoods and Indigenous Peoples*, Siem Reap, Cambodia, 16 – 18 August 2010. Consumerist lifestyle.
29. Coomes, O. T. Barham, B. L. 1997. *Rain forest extraction and conservation in Amazonia*. The Geographical Journal, 163 (2):180-188.
30. Coomes, O. T. Barham, B. Takasaki, Y. 2004. Targeting conservation–development initiatives in tropical forests: Insights from analyses of rain forest use and economic reliance among Amazonian peasants. *Ecological Economics*, 51:47–64.
31. Csaki, C. and L. Tuck. 2000. *Rural Development Strategy: Eastern Europe and Central Asia*. World Bank Tech. Rep. No.484. World Bank, Washington DC.
32. Davis, J. and D. Pearce. 2001. *The Non-agricultural rural sector in central and eastern Europe*. Rep. No. 2630, National Resource Instt, Chatham, UK.
33. De Haan, A. et al. (2000). *Migration and Livelihoods: Case Studies in Bangladesh, Ethiopia and Mali*. IDS Research Report 46. IDS, Brighton
34. De Haan, L. and Zoomers, A. (2003): *Development geography at the crossroads of livelihood and globalization*. In: *Journal of Economic and Social Geography* 94 (3), 350–362. DOI: 10.1111/1467-9663.00262
35. De Janvry A. *The agrarian question and reformism in Latin America*. Johns Hopkins University Press; Baltimore, MD: 1981.

36. De Sherbinin, A. Vanwey, L. McSweeney, K. Aggrawal, R. Barbieri, A. Henry S. Hunter, L. M. Twine, W. 2007. *Rural household demographics, livelihoods and the environment*. CIESIN- Columbia University, New York.
37. DFID (Department for International Development). 1999. *Sustainable livelihoods guidance sheets*. Department for International Development; London, UK:
38. DFID (Department for International Development). 2001. *Sustainable Rural Livelihoods Guidance Sheet*. London, UK.
39. Dharmawan, A.H. 1994. Farm income and financing in rural Indonesia: A case study from west Kalimantan. Alano Verlag, Aachen, Germany.
40. District Census Handbook: *Dimapur, Census of India (2011)*. Series-14, Part XII-B. Directorate of Census Operations Nagaland
41. District Census Handbook: *Mokokchung, Census of India (2011)*. Series-14, Part XII-B. Directorate of Census Operations Nagaland
42. District Human Development Report: Dimapur, 2013. *GOI – UNDP Project, Bridging Inequalities Towards Human Development*; Government of Nagaland Department of Planning and Coordination, Nagaland.
43. District Human Development Report: Longleng, 2013. *GOI – UNDP Project, Bridging Inequalities Towards Human Development*; Government of Nagaland Department of Planning and Coordination, Nagaland
44. District Human Development Report: Mokokchung, 2013. *GOI – UNDP Project, Bridging Inequalities Towards Human Development*; Government of Nagaland Department of Planning and Coordination, Nagaland
45. Ellis, F. 2000. Rural livelihoods and diversity in developing countries. Oxford Univ. Press, Oxford, UK.
46. Escobal, J. Aldana, U. 2003. Are non-timber forest products the antidote to rainforest degradation? Brazil nut extraction in Madre de Dios, Peru. *World Development*, 31: 19871-1887.
47. Felix Asante, Kabila Abass, Kwadwo Afriyie, 2014. Stone Quarrying and Livelihood Transformation in Peri-Urban Kumasi. *Research on Humanities and Social Sciences* Vol.4, No.13, 2014

48. Fellmann, J. D., Getis, A. & Getis, J. (2005). *Human Geography: Landscape of Human Activities*, Eighth Edition, McGraw-Hill Companies, Inc. New York, NY10020.
49. Fernandes, Walter, Geeta Menon and Philip Viegas (1984). *Forests, Environment and Forest Dweller Economy in Orissa*. Indian Social Institute, New Delhi, mimeo, pp 129-33.
50. Fernandes, Walter and Geeta Menon (1987). *Tribal Women and Forest Economy*. Indian Social Institute, New Delhi.
51. Final Report, Nagaland. 2011. Livelihood Based Agri Business and Market Studies for North East Rural Livelihood Project. April 2011, Submitted by MART
52. Gaillard, J.; Maceda, E.; Stasiak, E.; Le Berre, I. and Espaldon, M. (2009): *Sustainable livelihoods and people's vulnerability in the face of coastal hazards*. In: *Journal of Coastal Conservation* 13 (2), 119–129. DOI: 10.1007/s11852-009-0054-y
53. Garo Baptist Church Eralibill Dimapur: Nagaland 2010. *Centenary Souvenir 1910-2010*
54. Geiser, U.; Mükker-Böker, U.; Shahbaz, B.; Steimann, B. and Thieme, S. (2011b): *Towards an analytical livelihood's perspective in critical development research*. In: Wiesmann, U. and Hurni, H. (eds.): *Research for sustainable development: foundations, experiences, and perspectives*. Perspectives of the Swiss National Centre of Competence in Research (NCCR) North-South. *Geographica Bernensia* 6. Bern, 257–271
55. Glauben T, Tietje H, and Weiss C. *Agriculture on the move: Exploring regional differences in farm exit rates*. *Jahrbuch für Regionalwissenschaft*. 2006; 26:103–118.
56. Goutam Kumar Chakma 2010. Shifting cultivation as traditional livelihood and impacts of climate change in Bangladesh. In *traditional Livelihoods and Indigenous Peoples* (Ed. Ms. Etot Tamayo) Publisher: Asia Indigenous Peoples Pact (AIPP) Foundation Thailand 2010.
57. Grigg D. B. 1974. *The Agricultural Systems of the World: An Evolutionary Approach*, Cambridge University Press, 07-Nov-1974 - Nature - 358 pages

58. Gutierrez-Montes, I., Emery, M. and Fernandez-Baca, E. 2012. *Why gender matters to ecological management and poverty reduction*. pp. 39–60. In: Integrating Ecology and Poverty Reduction: The Application of Ecology in Development Solutions, Vol. 2 (Ingram, J.C., DeClerck, F. and Rumbatisdel Rio, C., Eds) Springer, New York, USA.)
59. Haan, D.L. & Ufford, V.Q. 2002. *About trade and trust: The question of livelihood and social capital in rural-urban interactions*. In: Realigning Actors in an Urbanizing World, Baud, I. & Post, J. (eds) 283–308.
60. Horam, N. 1975. *Naga Polity*. B. R. Publishing Corporation, Delhi.
61. Hormila. G. Zingkhai, 2015. *Traditional Practice of Sustainable Utilization of Forest Resources among the Ao-Naga Tribe of Nagaland*. IOSR Journal of Humanities and Social Science (IOSR-JHSS) Volume 20, Issue 7, Ver. III (July 2015), PP 01-06 e-ISSN: 2279-0837, p-ISSN: 2279-0845.
62. Hussain, A. 1989. *Labour absorption in Pakistan's agriculture*. Agric. Econ. Series, Islamabad, Pakistan. Pp.332-350.
63. Hussain, M. 2007. *Models in Geography*, Rawat Publication, New Delhi.
64. Ian Scoones. 2009. *Livelihood's perspectives and rural development*, Journal of Peasant Studies Vol. 36, No. 1, January 2009 ISSN 0306-6150 print/ISSN 1743-9361 online 2009 Taylor & Francis DOI: 10.1080/03066150902820503 <http://www.informaworld.com>
65. Inayatullah Jan, Munir Khan Khatta K, M. Asif Khan, Shakeel Hayat and Tariq Rahim Sarhad J. 2012. *Factors Affecting Rural Livelihood Choices In Northwest Pakistan*, Agric. Vol.28, No.4, 2012
66. International Labour Organization. 2000, *Traditional Occupations of Indigenous and Tribal Peoples: Emerging Trends* -Project to promote ILO policy on Indigenous and Tribal Peoples Copyright ©
67. Jill K. Cariño. 2010. *An Overview of Indigenous Peoples and Traditional Livelihoods in Asia*. In Traditional Livelihoods and Indigenous Peoples (Ed. Ms.Etot Tamayo) Publisher, Asia Indigenous Peoples Pact (AIPP) Foundation, Thailand

68. Kaag, m.; Van Berkel, r.; Bros, J.; De Bruijn, m.; Van DiJk, H.; De Haan, L.; Nooteboom, G. and Zoomers, A. (2004): *Ways forward in livelihood research*. In: Kalb, D.; Pansters, W. and Siebers, H. (eds.): Globalization and development. Themes and concepts in current research
69. Kumar Ali. 1990. *Development and Population of efficient Agricultural Tools and Implements for Hill Agriculture*. Published in Rural Development in India, Engineering, Application, ICAR, New Delhi, pp.66-67.
70. Kusters, K. 2009. Non-timber forest product trade, a trade-off between conservation and development. Amsterdam University, Amsterdam
71. Lal, H. 1987. *City and Urban Fringe: A Case Study of Bareilly*, Concept Publishing Company, New Delhi.)
72. Lanusosang, T. 1987. Nagaland A Study in Social Geography. –pp 216
73. Lanjouw, P. 1999. *The rural non-farm sector: a note on policy options*. The World Bank Washington D.C., USA.
74. Liepins,R. 2000a. New energies for an old idea: reworking approaches to ‘community’ in contemporary rural studies, Journal of Rural Studies, 16, 23-35
75. Little, J. 1997. *Employment marginality and women’s self-identity*, in P.Cloke and J. Little (eds), Contested Countryside Cultures. London and New York: Routledge. Pp.138-157.
76. Longkumer Lanusashi and Jamir Toshimenla, 2012. *Status of Adivasis Indigenous Peoples Land Series: Nagaland- Land Alienation: dynamics of Colonism, Security and Development*. Published by AAKAR BOOKS, 2012. ISBN 10: 9350021773 / ISBN 13: 9789350021774
77. MacIver, R.M. 1931. Society: Its Structure and Changes, New York
78. Manig, W. 1991. Stability and changes in rural institutions in north Pakistan. Socio-econ. Studies on Rur. Dev. Vol. 85, Alano Verlag, Aachen, Germany.
79. Malmberg, B. Teegenu, T. 2007. Population pressure and dynamics of household livelihoods in an Ethiopian Village: an elaboration of Buserup-Chayanovian Framework. Population and Environment, 29:39-67
80. Mduma, J.K. and P. Wobst. 2005. *Determinants of rural labour market participation in Tanzania*. Africa. Stud. Quart. 8(2), pp. 32-47.

81. Meindertsma, D. 1997. *Income diversity and farming systems: modeling of farming households in Lombok, Indonesia*. Royal Tropical Instt. Amsterdam, the Netherlands.
82. Michael Woods. 2005. *Rural Geography-Processes, Responses and experiences in Rural Restructuring*. Sage Publications -London-Thousand Oaks- New Delhi –pp 18
83. Nancy M. Wells, 2000 *At Home with Nature Effects of “Greenness” on Children’s Cognitive Functioning*, November 1, 2000 published by <http://www.sagepublications.com>
84. Nagaland GIS & Remote Sensing Centre, 2019. *Village Resource Map*. Nagaland GIS & Remote Sensing Centre, Planning & Coordination Department, Government of Nagaland.
85. Nakro, Vengota. 2009. *Traditional Agricultural Practices and Sustainable Livelihood. A Thematic Report*. Government of Nagaland, Department of planning and Co-ordination, Nagaland: Kohima.
86. NEPED .1999. *Building upon Traditional Agriculture in Nagaland, India*. Nagaland Environment protection and Economic Development Nagaland, India and International Institute of Rural Reconstruction, Sliang, Cavite, 4118 Philippines. pp:21
87. NEPED. 2006. Nagaland empowerment of people through economic development, adding value to shifting cultivation in Nagaland. Phase II NEPED
88. Neumann, P. R. Hirsch, E. 2000. *Commercialization of non-timber forest products*. Review and analysis of research. CIFOR, Bogor, Indonesia.
89. Okali, D. et al. 2001. *The Case of Aba and its Region, Southeastern Nigeria*. Rural-Urban Working Paper 4 (<http://www.iied.org>). IIED, London.
90. Phadke, V.S. & Sita, K. 1981. *Spatial patterns of Urban Impact in a Metropolitan Region- A Case Study of Bombay*, Annals of the National Association of Geographers of India, Vol. 1, No. 1, pp.18 – 28.
91. Pocock and Hudson. 1978. *Images of the Urban Environment*, Macmillan, London.

92. Pokorny, B. Johnson, J. Medina, G. Hoch, L. 2012. *Market-based conservation of the Amazonian forests: Revisiting win-win expectations*. *Geoforum*, 43 (3), 2012, Pages 387–401
93. Pyhälä, A. Brown, K. Adger, W. N., 2006. Implications of livelihood dependence on non-timber products in Peruvian Amazonia. *Ecosystems*, 9 (8), 1328-1341
94. Quang, D. V. Anh, T. N. 2006. Commercial collection of NTFPs and households living in or near the forests: Case study in Que, Con Cuong and Ma, Tuong Duong, Nghe An, Vietnam. *Ecological Economics*, 60:65-74
95. Rajbala. 1985. “Extension of Town Boundary in India its Implications”, 7, NAGI.
96. Ramachandra, R. 1989. *Urbanization and urban systems in India*. Oxford University Press
97. Reardon, T., J.E. Taylor, K. Stamoulis, P. Lanjouw and A. Balisacan. 2000. *Effects of non-farm employment on rural income inequality in developing countries: an investment perspective*. *J. Agric. Econ.* 51(2), pp. 266-288.
98. Reardon, T. Vosti, S. 1995. Link between rural poverty and environment in developing countries: Asset categories and investment poverty. *World Development*, 23:1495- 506
99. Resources and Livelihoods Group, Prayas, Pune, India. January. 2005. A Study on the Livelihoods Situation of the Tribal Communities in Raigad District of Maharashtra State.
100. Robinson, L.W. Fuller, A. M. 2010. Towards an Ecosystem Approach to Policy Process: Insights from the Sustainable Livelihoods and Ecosystem Health Approaches. *International Journal of Sustainable Development* 13, (4):393.
101. Salter, L. A. 1940. “*Land Classification Along the Rural Urban Fringe*” Univ. of Missouri Agl. Expt. St. Bull. No. 421, p. 24.
102. Scoones, I. 1998. *Sustainable rural livelihoods a framework for analysis*. IDS Working Paper, 72, Brighton, UK
103. Scoones, I. 2009. *Livelihood's perspectives and rural development*. *The Journal of Peasant Studies* 36 (1): 171–196
104. Shah, A. M. 2012. *The Village in the City, the City in the Village*. *Economic & Political Weekly* December 29, Vol XLVII no. 52

105. Sharma, H. 1983. "Spatial Pattern of Demographic Changes in the Villages around Guwahati City", 5, NAGI.
106. Singh, K. S (eds). 1994. *People of India: Nagaland*. Calcutta: Anthropological Survey of India.
107. State Resources and Livelihoods Group, 2005.
108. Statistical Handbook of Nagaland. 2000 to 2013. Government of Nagaland, Directorate of Economics and Statistics, Nagaland: Kohima
109. Statistical handbook of Nagaland. 2009. Published by the Directorate of Economics and Statistics, Government of Nagaland
110. Stiglbauer A M, Weiss CR. 2000. *Family and non-family succession in the Upper-Austrian farm sector*. *Cabiers d'Economie et Sociologie Rurales*.; 54:6–26
111. Sudgen Fraser. 2009. Neo-liberalism, markets and class structures on the Nepali lowlands: The political economy of agrarian change. *Geoforum*. ; 40:634–644.
112. Sundaram K.V., Moni. M., Mrityunjay M.Jha. 2004. *Natural Resources Management and Livelihood Security, Survival Strategies and Sustainable Policies*. Published by Bhoovigyan Vikas Foundation.
113. Sunderlin, W. D. Angelsen, A. Belcher, B. Burgers, P. Nasi, R. Santoso, L. Wunder, S. 2005. *Livelihoods, forests, and conservation in developing countries: An overview*. *World Development*, 33, 1383– 1402
114. Tacoli, C., 1998. Rural-urban interactions: A guide to the literature, *Environment and Urbanization*, Vol. 10, No. 1
115. Takasaki, Y. Barham, B. L. Coomes, O. T. 2001. Amazonian peasants, rain forest use, and income generation: the role of wealth and geographical factors. *Society and Natural Resources*, 14,291-308
116. Thingreiphi Franthong. 2010. *Traditional Occupations and Livelihood Practices in Northeast India*. In *Traditional Livelihoods and Indigenous Peoples* (Ed. Ms.Etot Tamayo) Publisher, Asia Indigenous Peoples Pact (AIPP) Foundation, Thailand
117. Thong.S. Joseph (1997). *Glimpses of Naga Legacy and Culture*, edited by Phananmo Kath: Society of Naga Students' Welfare Kerela. Palm Grove, Kottayam, Kerela- pp 176

118. Upton, M. 1996. *The economics of tropical farming systems*. Cambridge Univ. Press, Cambridge, UK.
119. Vashum. R. 2000. *Naga's Right to self-determination- An Anthropological-Historical Perspective*: Mittal Publications-New Delhi- pp17
120. Vedeld, P. Angelsen, A. Sjaastad, E. Bojö, J. Berg, G. K. 2007. *Forest environmental incomes and the rural poor*. Forest Policy and Economics, 9, 869–879
121. Vidal de La Blache, P. 1911a. *Les genres de vie dans la géographie humaine*. In: Annales de Géographie 20 (111), 193–212. – (1911b): *Les genres de vie dans la géographie humaine*. In: Annales de Géographie 20 (112), 289–304. ordrecht, Boston, London, 49–74
122. Vijay Oraon. 2012. *Changing pattern of tribal livelihoods: a case study in Sundargarh District, Odisha*. Department of Humanities and Social Sciences National Institute of Technology Rourkela India 769008, 2012 - pp 8-10
123. Wang, L., Zhang, J. L & Liu, L.M. (2010). Diversification of Rural Livelihood Strategies and its Effect on Local Landscape Restoration in the Semiarid Hilly Area of the Loess Plateau, China. [Online] Available at: www.wileyonlinelibrary.com (September 28, 2012).
124. Waralak Ittipon-olan .1998. *Rotational Farming the Mother of Plants, Northern river basin development by people organization Project*. Support by Sustainable Resource Management Project, the Cooperation on Environment and Development of Denmark.
125. Wells, J. 2000. *Environmental Concerns and Responses in Small-scale Stone Quarries in Nairobi, Small Enterprise Development, Nairobi, Kenya*. [Online] Available at: <http://www.igentaconnect.com/content/itpub/sedv/2000/00000011/00000002/art00004> (September 28, 2012).
126. Wiersum, K. F. 1997. Indigenous exploitation and management of tropical forest resources: an evolutionary continuum in forest–people interactions. Agriculture, Ecosystems and Environment, 63 (1): 1 –16
127. Yanthan, Mhonthung. 2016. *Relevance of Naga Morung Culture*. Department of Political Science St. Joseph's College, Jakhama.

APPENDIX

Questionnaire

Household Schedule on the socio-economic and livelihood pattern

1. Name of the household respondent:
2. F/ name or husband's name:
3. Sex: Male/Female
4. Age:
5. Marital status:
6. Educational attainment:
7. Occupation:
8. No. of household members:
9. Present address:
10. Permanent Address:
11. Religion/denomination:

HOUSING

1. Dwelling tenure:
 - a) Owned.....
 - b) Rented.....
 - c) Other.....
 - d) No dwelling unit.....
2. Do you have secure rights on your homestead land?
 - a) Yes, owned.....
 - b) Yes, patta.....
 - c) No.....
3. Type of structure:
 - a) Katcha/thatch.....
 - b) Katcha/tile.....
 - c) Semi-pucca.....
 - d) Pucca, through weaker sector housing schemes.....
 - e) Pucca.....

4. Floor type:
 - a) Mud.....
 - b) Brick.....
 - c) Cement, stone, tile.....
 - d) Other.....

ACCESS TO FACILITIES

1. Where does your drinking water generally come from?
 - a) Tap.....
 - b) Well.....
 - c) Tube well / hand pump.....
 - d) Tank / pond / reservoir (reserved for drinking)
 - e) River / canal / lake / pond.....
 - f) Other.....
2. Do you share this source with other households?
 - a) Yes.....
 - b) No.....
3. How far is this source from your dwelling?
 - a) Within premises.....
 - b) Less than 0.5 km.....
 - c) 0.5 to 1 km.....
 - d) 1 km or more.....
4. Is water from this source ever scarce?
 - a) Yes.....
 - b) No.....
5. What type of latrine do you use?
 - a) No latrine.....
 - b) Flush system.....
 - c) Septic tank.....
 - d) Service latrine.....
 - e) Other latrine.....

6. What is the main source of lighting for your dwelling?
 - a) No lighting.....
 - b) Electricity.....
 - c) Gobar gas, oil, kerosene.....
 - d) Other.....
7. What kind of fuel is most often used by your household for cooking?
 - a) LPG or piped gas.....
 - b) Locally produced gas.....
 - c) Electricity.....
 - d) Kerosene.....
 - e) Coal.....
 - f) Firewood.....
 - g) Leaves/straw/thatch.....
 - h) Other.....
8. Does your household own any of the following items?
 - a) Radio / cassette player
 - b) Camera/camcorder
 - c) Bicycle
 - d) Motorcycle / scooter
 - e) Motor car etc.
 - f) Refrigerator or freezer
 - g) Washing machine
 - h) Fans
 - i) Heaters
 - j) Television
 - k) Pressure lamps
 - l) Telephone sets / cordless
 - m) Sewing machine
 - n) Pressure cooker
 - o) Watches
9. Banking Facilities (Name of the banks, distance and location):

Land use Pattern:

Ownership of land: Individual/ clan/ community/others

Livelihood

1. What has been the main source of livelihood in the village since time immemorial?
2. What has been the main source of livelihood in 2001?
3. Are there any changes in the livelihood pattern? Yes/ No
4. If yes, what are the factors leading to the changing nature of the livelihood?
Climate change/shortage of land/low soil fertility/ increase in household members/
expansion of economic activities/ landuse pattern/ migration/ govt projects and
schemes/ decrease in labour force/ others
5. To what extent is the traditional practices carried out at present:
6. What is your household's home-grown food sufficiency status?
1 year and above/ 6 to 9 months/ unable to support/ No response
7. At present (2015) what are the major sources of livelihood for your household (both
in cash and in kind)?
 - a) Own farm activities
 - b) Casual labour (farm and non-farm)
 - c) Salaried employment
 - d) Personal services
 - e) second petty business/trade/ manufacturing
 - f) Major business/trade/ manufacturing
 - g) Interest income, property, land rentals, etc
 - h) Pensions
 - i) Others
8. Is it sustainable? Yes/No
9. If not, mention the reasons
10. Is your household a beneficiary of any of the major land-based projects implemented
in the village? Yes/No
11. If yes mention the scheme or the project.
12. Is your household member involved in any of the SHGs? Yes/No

13. If yes, under which department and mention the activities undertaken.
14. Is there any change in the livelihood pattern of your household with the introduction of different schemes and developmental projects by the government?
15. What are the assets created through government schemes and programmes:-
 - On Community land:
 - On private land:
16. Your household rating on community assets creation through government schemes and programmes : Excellent/ Very good/ Good/ Satisfactory/ Poor
17. Do you think that the traditional life style or the livelihood is weakening with the emerging schemes and developmental projects by the government?
18. What is the main source of your household income?
19. What is your household annual income?
Below 1 lakh/ 1 to 2 lakhs/ 2 lakhs and above/ No response
20. Do you face any financial difficulties? If yes, how do you manage to sustain your household demands.
21. What is the migration status of your household? Mention the reasons.

Status of skills in the household:

1. Mention /tick the status of skills in your household in order to meet your daily needs: (stitching, weaving, embroidery, food processing, candle making, knitting, handicraft, carpentry, electrician, construction, driver, masonry, others).
2. Is the skills used for business? Yes/No
3. Is it a traditional skill passed down from parents or acquired skill? Yes/No
4. Any training or workshops attended for skill development. Yes/No
5. Mention the programme or schemes under which department it is undertaken.
6. Mention the advantages /disadvantages of the programme on the livelihood of your household.

Transportation:

1. The distance of the village to the nearest-
 - Urban centre _____
 - Bank _____
 - Health center _____
 - Post office _____

- Police station _____
2. What is the mode of transportation in the village?
 3. Are the roads metalled/unmetalled?
 4. How do the availability /non-availability of proper means of transport affect you?
 5. What are the changes or improvement you would like to see in the existing road condition?
 6. How does it affect your livelihood?

Livestock status of the household:

1. Does your household own any livestock? Yes/No
2. If yes put a tick mark on the animals you own.
 - a) Cows
 - b) Poultry
 - c) Pig
 - d) Goats
 - e) Other livestock
3. Any marketable surplus from the sale of the livestock. If yes, mention the approximate income generated from the product.

Agriculture:

1. Type of agriculture the household practices: Jhum/terrace/ kitchen garden
2. Average jhum cycle:
3. What are the types of implements used in the field- traditional/ modern?
4. Different types of crops cultivated in the field - summer crop/winter crop
5. Does your household produce any saleable items (market surplus)? Yes/No
6. Where do you sell the products?
In the neighborhood/ local haat within the village/ in the urban haat/
7. Are the sales of agricultural produce mostly to meet the immediate cash needs or a systemic income generation?
8. Do you notice any changes in the agro-climatic situation that affect the cropping pattern?
If yes mention the changes:
9. How does the change affect the livelihood of your household?
10. Mention if you have attended any environmental programme?

11. Any follow up activities related to environment conservation?
12. Underline the major factors that affect the changes of environment in your village?

Increase in population, shifting cultivation, forest fire, developmental activities, commercialization of forest, government policies, others.
13. Suggest some measures to combat the situation.
14. Mention the problems faced by the village
 - a. Forest Fire
 - b. Open cattle grazing
 - c. Top soil erosion
 - d. Landslide
 - e. Excessive, unnecessary and indiscriminate use of fertilizers
 - f. Negative effects of insecticides use, affecting the quality of crops
 - g. Rampant destruction of forest
 - h. Drinking water shortage
 - i. Land scarcity
 - j. Water scarcity for irrigation
 - k. Low productivity due to short jhum cycle
 - l. Crop disease and pest
 - m. Wild animal menace
 - n. Lack of market and price regulation
 - o. Anti- social activities
 - p. Social insecurity due to urbanization
 - q. Pressure of migrants and conflict on local resources
 - r. Any other
15. Do you notice any changes in the rural character? Yes/No
16. Mention some of the changes that are associated with rurality. Community feeling/ agricultural change/ land ownership/ land use/ nature of economy/demographic change/environmental change/ rural governance/ selling of the rural environment
17. Are there any rural conflicts?

Place:

Date: