

Impact of Diminishing Arable Land on Livelihood Strategies: A Case Study of Eralibill Village, Dimapur District, Nagaland

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Abstract: 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 but there is also changes in intangible qualities like the sense of community, solidarity and social disorder. The growth of the cities is absorbing villages surrounding the cities, migration from rural to urban areas and high population growth in the cities which is experiencing significant and several impacts on the environment. This paper explores the changes in the livelihood strategies of small and marginal farmers of Eralibill village in Dimapur 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. The study is based mainly on qualitative data obtained from interviews and discussions with the Village Council members, leaders of different organizations and with the members of the rural communities. The study try to gain an understanding at a broader level about the relationship between the natural resources and the livelihoods of the local people and throwing light on the nature and extent of impacts of urban intrusion on this relationship. The study revealed that the livelihoods-security of the most vulnerable sections has been severely threatened with the erosion of the availability to the local natural resources.

Keywords: land use, rural, livelihood, community, urban intrusion.

1. INTRODUCTION

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 harmony, social disorder. Rapid changes are also taking place in demographic characteristics and occupational possibilities. Through the establishment of new commercial activities changing livelihood opportunities and high immigration rates has become a typical characteristic of this frontier region and also the stagnating economic activities are replaced by new activities. New settlement processes and patterns emerge with the influx of new people into these areas. In some cases migration patterns also changes 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 variability due to new livelihood opportunities.

With the growth of towns and cities, the rural areas in the vicinity are constantly being engulfed into urban landscape ultimately acquiring an urban character. The high growth of population at the urban Centers not only leads to spatial extension of city limits but also causes the changes in the limits of periphery. A city acts as a functional center, providing

the employment not only to the residents of the city but also to those who reside in its surrounding area. As a city grows the demand for service increases, with the result the people residing in the surrounding villages of city found increasing employment opportunities other than the agricultural sector, so the proportion of workers in agricultural sector starts to decrease. Another reason is that rural population migrates into the city in search of employment and they are bound to get settled in the vicinity of city and commute everyday due to lack of cheap residence. The workers are engaged in household industry, manufacturing industry, construction trade and commerce, transport, communication and other services.

Das (1997) mentioned that the villages adjoining the major cities are affected in two ways. On the one hand, the proximal villages provide for the permanent migrants or the temporary commuting labour force to cater to the needs of the city, on the other hand, the ideas and innovations flowing from the city are imprinted on the residents of the 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 (Chembo, 2011). 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.

2. OBJECTIVE, DATA BASE AND METHODOLOGY:

The main objectives of the present study can be as,

1. To know about the historical, economical and social evolution of the study area.
2. To study the factors of rural-urban dynamics and its impact on the livelihood of the village and its sustainability.
3. To analyze the nature and the pattern of livelihood strategies adopted by the rural populace as a consequences of diminishing on farm land uses in the study area.

As far as the data base is concern, the study is based on both the primary and secondary data. The primary data is generated by the extensive and the intensive field studies based on questionnaires and the interaction with the early settlers and the inhabitants.

Secondary data is collected from published and unpublished records of various government departments and private agencies like Census Department, souvenirs were consulted to trace the evolution of the village. After collecting the data on various aspects of the need of the subject, maps and tables are used to interpret the data.

The methodology is that the present study is chiefly based on primary source of information which is supplemented by Secondary information. Firsthand Knowledge is obtained through Secondary Sources in the form of Governmental publication, historical books etc. After getting firsthand knowledge detailed study was conducted through an extensive field survey in the study area covering the important aspects like the economic and social characteristics. The study is based mainly on qualitative data obtained from interviews and discussions with the Village Council members, leaders of

different organizations and with the members of the rural communities. For this study 3 approaches were adopted a) formal interview with the village Chairman and VDB secretary b) field observation, c) interaction with the head of the households through questionnaire. The survey was administered to a random sample of 108 household (30%). After collecting the data, the data was then tabulated and interpreted. The aspects of the physical morphology have been represented through the maps to substantiate the study. Besides, the study is mainly empirical in nature based on the source of data and information.

3. STUDY AREA

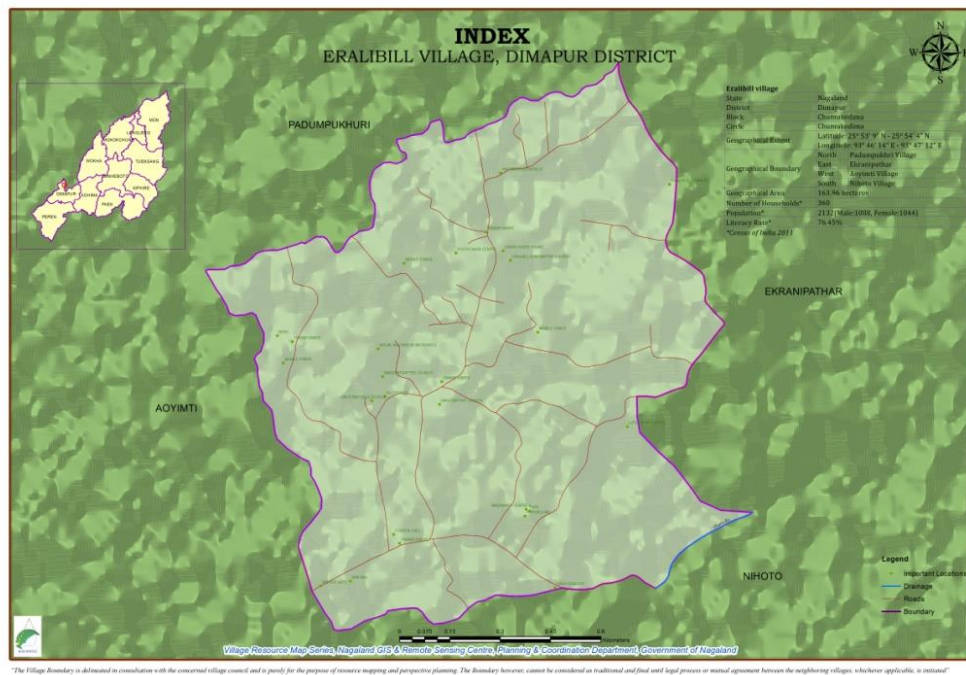


Figure 1: Map of Eralibill Village, Dimapur District, Nagaland.

Source: Nagaland GIS & Remote Sensing Centre, 2019

3.1. Locational extent

The area under study is Eralibill Village which lies in the North West of Dimapur district, Nagaland under Chumukedima Block. It is bounded by Padumpukhuri village in the North, Ekranipathar 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.

3.2. Historical, Economical and Social Evolution

Dimapur town was a deserted place until 2nd World War, at the time of attaining township in 1961 there were only 5,753 persons (Centenary Souvenir, 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 (Centenary Souvenir, 2010). According to 1956

electoral roll, there were 49 households with a population of 114, out of which 47 were male and 67 female. 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 (Census 2011) which comprises of 1088 male and 1044 female, with a total household of 360. 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 center 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 hard working 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 cultivators 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 center. Since the land they occupied was not legally owned they had no choice but to surrender their occupied land receiving a meager 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 meager 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.

3.3. Recent trends in livelihood strategies

For fulfilling the various livelihoods needs such as water, food, fodder, shelter and etc., a particular household practices multiple livelihood activities such as limited farming, handicraft and basketry, gathering from forest, hunting, fishing, wage labor, etc. and to fulfill those activities they rely on varied and multiple livelihood sources such as land, forest, water, etc because quantum of arable land converted mostly to residential purposes.. For example, the basic food for a rural family may be obtained from agro forest produce, its cash income for buying necessary items for daily use may be

earned through wage labor, 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*). From the table 1 and Figure 2 below we find that livelihood depending and practicing on farming has been decreased tremendously within the span of 15 years (both permanent and traditional farming). Consequently the villagers adopted alternate livelihood strategy in the recent years. 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 as the Table. 1 clearly shows the major sources of livelihood of the households of Eralibill village.

Table 1: Diversified livelihood strategies of the Eralibill village in 2001 and 2015

Major Sources of livelihood	Household in %	
	2001	2015
Traditional farming	32.40	9.26
permanent farming	12.03	4.63
Salaried employee(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
	100	100

Source: Field survey 2015-17

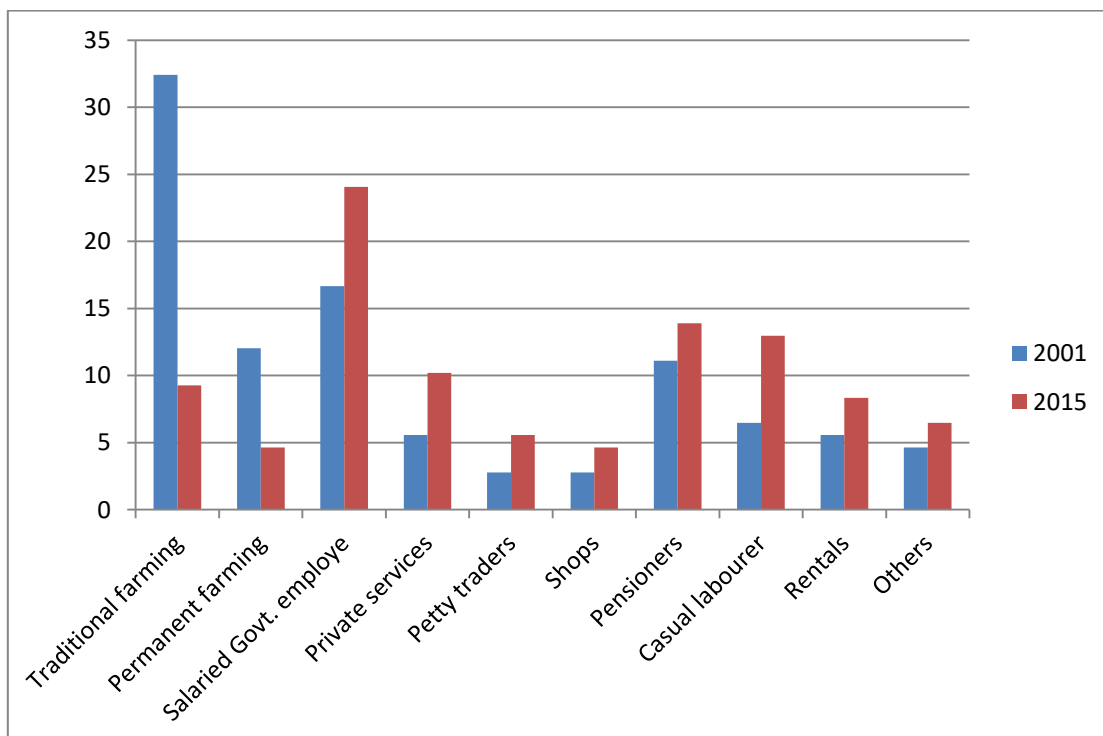


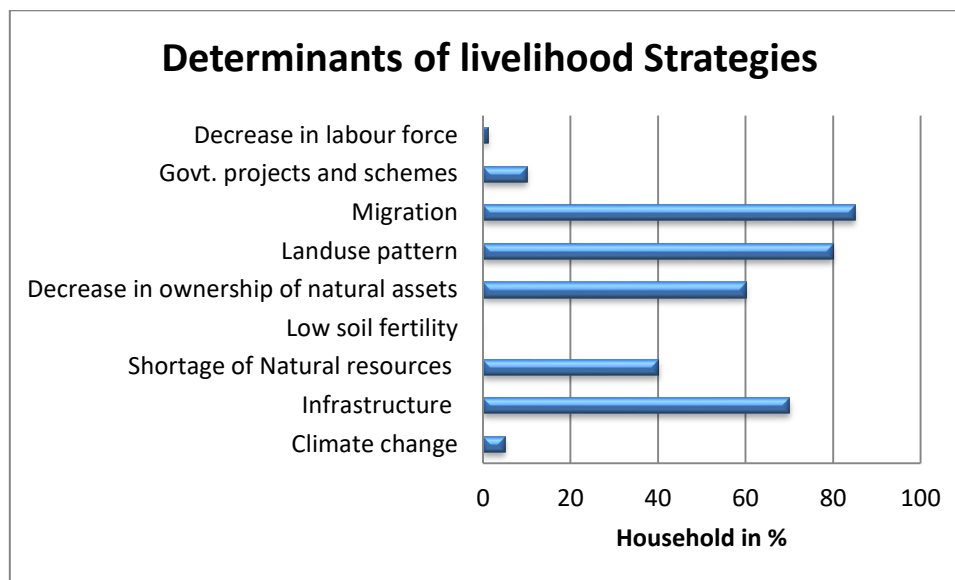
Figure 2: Diversified livelihood strategies of the Eralibill village during 2001 and 2015

Source: Field survey 2015-17

Table 2: Determinants of livelihood strategies

Determinants of livelihood strategies		Response by different households 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 3: 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, weedings, 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 rear 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 supplies 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 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, *Tsungremong* and *Moatsu* festival of the Aos, *Tuluni* festival of the Semas and the *Mongmong festival* of Sangtams the traditional attires, headgears, ornaments fetches 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 have been creating number of assets like, village approach road, playground, etc .

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.

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, 7 Kms away from the village. However, there are two Anganwadi centers, center A and center 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.

4. FINDINGS, CONCLUSION AND SUGGESTION

Traditionally the livelihood options were not much diversified. A farmer hold on to one job and worked in that throughout his life, worked in the same community in which he had been born, a manual labor, 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 (*Micheal Woods, 2005*).

The villages surrounding Dimapur represents a 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. 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 farmland 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.

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; Valdivia, 2001). 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 which include sudden shocks such as floods, draughts, earthquake, storm as well as long-term stresses like chronic illness, addiction, debt, seasonal shortages, food deprivation etc. Besides, the declining on the practice of farming rather boost to adoption of other alternate strategies of livelihood, consequently process of urbanization is in transition among the rural populace too and lifting up from poverty is on the upward trend.

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