URBAN HOUSING, DRINKING WATER AND SANITATION IN MIZORAM

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Abstract

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Mizoram University

July 2018

Declaration

I, M Lallawmzuala, hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

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Certificate

This is to certify that the thesis of *Urban Housing, Drinking Water and Sanitation in Mizoram* submitted by Mr *M Lallawmzuala* for the award of Master of Philosophy in Social Work is carried out under my guidance and incorporates the student's bonafide research and this has not been submitted for award of any degree in this or any other university or institute of learning.

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LIST OF ABBREVIATIONS

AAY	:	Antyodaya Anna Yojana
AMC	:	Aizawl Municipal Corporation
APL	:	Above Poverty Line
BPL	:	Below Poverty Line
BSNL	:	Bharat Sanchar Nigam Limited
CADC	:	Chakma Autonomous District Council
CBO	:	Community Based Organization
CCIM	:	Christian Church of India Maraland
COHRE	:	Centre on Housing Rights and Evictions
DC	:	Deputy Commissioner
DUDO	:	District Urban Development Officer
ECM	:	Evangelical Church of Maraland
GDP	:	Gross Domestic Product
GOI	:	Government Of India
HFA	:	Housing For All
IHSDP	:	Integrated Housing and Slum Development Programme
KM	:	Kilometre
LAD	:	Local Administration Department
LADC	:	Lai Autonomous District Council
LPG	:	Liquefied Petroleum Gas
MADC	:	Mara Autonomous District Council
MCHP	:	Mara Chano Py
MDC	:	Member of District Council
MTP	:	Mara Thyutlia Py

NGO	:	Non-Government Organizations
NREGS	:	National Rural Employment Guarantee Scheme
NSSO	:	National Social Survey Organization
NUHHP	:	National Urban Housing and Habitat Policy
NULM	:	National Urban Livelihood Mission
OECD	:	Economic Co Operation and Development
PHED	:	Public Health Engineering Department.
PMAY	:	Pradhan Mantri Awas Yojana
PRA	:	Participatory Rural Appraisal
QDA	:	Qualitative Data Analysis
SDO	:	Sub-Divisional Officer
SPSS	:	Statistical Package for the Social Sciences
UD & PA	:	Urban Development and Poverty Alleviation
UN	:	United Nation
UNPD	:	United Nation Population Database
UPC (Mz)	:	United Pentecostal Church Mizoram
UPC (NEI)	:	United Pentecostal Church North East India
UT	:	Union Territory
VC	:	Village Council
WB	:	World Bank
WSP	:	Water and Sanitation Programme
YMA	:	Young Mizo Association

CHAPTER I

INTRODUCTION

Urbanizationcomprises of an increase in a number of centres of population concentration, a growth in number and size of urban settlements, transfer of people from agricultural to non-agricultural occupations. Urbanization takes place mainly through a natural increase in population, reclassification of rural and urban places and rural-urban migration. Kingsley (1995) states that Urbanization is crucial for acceleration of the nation's economic development and pointed out that Urbanization has become universal phenomena as consequences of rapid industrialization. According to R.M Northam (1975) Urbanization is a cyclical process.

Urbanizationas a process is becoming and has been a Global trend where many third world countries are facing the dilemma at a larger scale. According to the World Bank, globally, 54% of the population lives in urban areas today, and this trend is expected to continue. By 2045, the number of people living in cities is estimated to increase by 1.5 times to 6 billion, adding 2 billion more urban residents. It is alsoestimated that in 2060, the urban population will reach 68%. With more than 80% of global GDP generated in cities, urbanization can contribute to sustainable growth if managed well by increasing productivity, allowing innovation and new ideas to emerge.

However, the speed and scale of urbanization come along with challenges, including meeting accelerated demand for affordable housing, well-connected transport systems, and other infrastructure, basic services, as well as jobs, particularly for nearly 1 billion urban poor who live in informal settlements.

India, which is at the middle level in income generations among developing countries, is facing an acute shortage in the provision of basic services for its growing urban population in general and the poor in particular. The problem apparently is more serious in less developed states and small and medium towns, many among this experiencing rapid demographic growth during the past few decades. Even after becoming an independent country in the year 1947, the problems in providing amenities or basic services still haunts the nation. Many of the developed states and metropolitan cities, too, are facing difficulties in providing the minimum level of amenities, despite their higher level of income as well as revenue generating capacity (Kundu, 2007)

According to the latest census (2011), there are approximately 377 million urban populationsin India which comprise 31.16 per cent of the total population i.e., 1.2 billion. Out of these 80 million people are considered to be poor and 61.80 million are living in slums, according to the National Sample Survey Office.

In developing countries, cities have contributed 60 per cent of gross national product which is significant for economic growth. The efficiency of the production rate of a city largely depends on the capacities of local governments to mobilize local resources, provide infrastructure, and improve access to shelter and services. Furthermore, the rapid growth of urban in developing countries has resulted in the incidence of urban poverty, inadequate access to housing, primary health care and water supply, the creation of slums and squatter settlements, and urban environmental degradation (Batra, 2007)

Most municipal governments have lacked financial and administrative resources to provide basic urban services to the common people. Government investments have been cornered often by middle to high-income colonies. Left to them, the urban poor has to find an alternate way or mechanisms to obtain basic services. Nevertheless, the availability of

services is very low due to their low paying capacity, uncertainties of service delivery and costs being very high due to illegal or semi-legal nature of functioning in the informal market (Cheema, 1987).

In Mizoram, 561,997 people are living in urban areas which comprise 51.51% with a decadal growth of 1.88 % (GOI Census, 2011). The percentage of urban population in Mizoram is much higher than the percentage of urban population in the country (31.16%). Aizawl District has the highest number of Urban population with 3,14,754(78.63%)which consists of four different towns(GOI Census, 2011).

In Mizoram, there are three Autonomous District Councils, namely, Chakma Autonomous District Council, Lai Autonomous District Council and Mara Autonomous District Council. In these regions, there are only two notified towns, Lawngtlai and Siaha towns.

Like other cities and towns around the world and specifically in India, Mizoram has also experienced Urbanization especially after the state is bestowed upon the Union Territory in 1972 and Statehood in 1987. This led to many developmental programmes initiated by the State Government and the Central Government and subsequently improved the socio-economic status of the state. With better opportunities at the urban centre, people started migrating from rural to urban centres especially in the capital city, Aizawl. The impact is none the less similar to other cities within the nation, where the basic services provided by the government cannot be met due to the urban sprawl occurring in the region.

There have been a very few studies in related to urban housing, drinking water and sanitation conducted in North Eastern Regions and specifically in Mizoram.Sanitation and water supply to the Urban Poor have always been more or less overlooked by the researcher in Mizoram.

With the setting up of Urban Development and Poverty Alleviation Department and Aizawl Municipal Council, there have been different Government Policies or Programmes launched in Urban Mizoram and in this matter Urban Poor Access to these Policies and Programmes of the Government, in reality, is unknown.

Mizoram, as mentioned earlier, has three Autonomous District Councils where there are no District Urban Development Offices. All UD&PA works have been carried out by Sub Divisional Officer in the area. Apart from that, a comparative study of administrative set up for urban poor between Government of Mizoram precisely Lunglei Town and Autonomous District Council at Siaha town have never been conducted.

1.1. Overview of Literature

There is a copious literature on various aspects of urban growth and development in India at national and local contexts. Trends in Urbanization and growth during the Post and Pre British era in India (For instance ; Maktav and Erber, 2005; Reddy V. Ratna 1994;Kundu 2007; Kundu 2011), as well as the North Eastern States (seeMaktav and Erber, 2005; Datta, Neog, Mazhari, 1991), have been probed into by a number of scholars. In India, there are a number of studies on urban poverty conducted by economists and social scientists (see see Engels 1973; Jay Moor 2002; Mander 2009; Kundu and Sarangi 2007). Migration has been probed in a number of studies (see Singh, 2009; Kunduand Sarangi, 2007; Desai, Mihir, Kapur, Devesh, McHale, John, 2004) have also been documented.

Urban Governance and Local Administration and the role of people's participation therein have been studied by some (see Mahadevia, Sharma, Joshi, 2009). Provision of Urban Basic Services (Dangwal, 1998; Kundu and Amitabh, 2002),Urban Housing and its issues (see Dennis A. Rondinelli, 1990; Faustin, 2014; AlpanaSivam and SadasivamKaruppannan, 2009; Kundu2012; Gupta; John F.C. Turner, 1970; Mahadevia, Sharma, Joshi, 2009) is being

probed for this study.Urban Drinking Water (Kundu, 2003; Kundu 1993),and Sanitation in Urban Areas (Kundu, 2003; Kundu 1993) have been probed by a number of authors.

In the context of Mizoram, there are a few studies on urbanization, urban development, urban livelihood and poverty(Sailo, 2014), urban local government and people's participation(Ruatkimi, 2012), grassroots organizations and urban development(Lalsiampui, 2012), urban water supply(Chhangte, 2010), domestic solid waste management (VLDiki, 2012), impact of urban housing schemes (Kanagaraj and Jahau 2015).

In spite of copious literature on urban basic service in India, we could notice a few research gaps.There have been a very few studies in related to urban housing, drinking water and sanitation conducted in North Eastern Regions and specifically in Mizoram. Sanitation and water supply to the Urban Poor have always been more or less overlooked by the researchers in Mizoram. The present study tries to fill this gap in the literature.

With the setting up of Urban Development and Poverty Alleviation Department and Aizawl Municipal Council, there have been different Government Policies or Programmes launched in Urban Mizoram and in this matter Urban Poor Access to these Policies and Programmes of the Government, in reality, is unknown.

Mizoram, as mentioned earlier, has three Autonomous District Councils where there are no District Urban Development Offices. All UD&PA works have been carried out by Sub Divisional Officer in the area. Apart from that, a comparative study of administrative set up for urban poor between Government of Mizoram precisely Lunglei Town and Autonomous District Council at Siaha town have never been conducted. Hence, this study attempts to probe into the household's housing, drinking water and sanitation in Lunglei and Siaha towns of Mizoram.

1.2. Statement of the Problem

Mizoram, after becoming UT in 1972 and an independent state in 1987 has witnessed drastic changes in the socio-economic conditions and living patterns of the people.The number of urban population in census 1951 was 6,596 (3.54%) and in 1981, it had a population of 121,814 (24.67%). With only 3 decades, it had a decadal growth of 21.13%.

In India, Mizoram is among the most urbanized state in the country. At present, urban population makes up 51.51% (561,997) of the total population. People from poverty-stricken rural areas have migrated into cities and towns seeking jobs, education, and other opportunities. Often jobs are not available for those without education and skills and the cities welfare rolls are increased. All of these migrations have contributed to the economic and social deterioration of cities and towns facing the realities of life with inadequate housing, poor sanitation, ill health and a breakdown of social services.

The present study attempts to focus on the delivery of and access tohousing, drinking water and sanitation at Siaha and Lunglei towns, the two notified towns in the Southern of Mizoram. Although there are no notified slums in the region, the conditions of housing, drinking water and sanitation in these towns will be probed into. As a town grows, the cost of housing and infrastructure also grows since there is an inadequate supply of water, land and building material and congestion problems.Thus, governments often do not meet the growing needs of residents especially the poor. In this context, the present study also attempts to assess urban housing, drinking water and sanitation in Mizoram. The demand for housing envisages the rental and ownership of the houses in relation to the housing conditions, housing features and the neighbourhood amenities.

The present study will also focus on drinking water and sanitation which have become serious issues and challenges in recent times in almost all the towns and cities in India.Lack

of sanitation in India has led to economic losses for the country (6.4 % of India's GDP) (WSP, 2010). It has been highlighted that urban households in the poorest quintile bear the highest per capita economic impact of inadequate sanitation—1.75 times the national average per capita losses and 60 per cent more than the urban average (World Bank, 2010a).

1.3. Chapter Scheme

The study will be organized into five chapters:

Chapter I Introduction

Chapter II Review of Literature

Chapter III Methodology

Chapter IV Results and Discussion

Chapter V Conclusion

CHAPTER II

REVIEW OF LITERATURE

Review of literature constitutes a major component of the research process. Hence, this chapter presents areview of studies on Urban Housing, Water Supply and Sanitation conducted in the globaland national contexts. In this age of information and communication, there is copious literature on these major challenges of urbanisation and urban development. Scholars working in this fieldat different national and regional contexts have carried out studies on a wide range of challenges to urban development. They have probed into a number of aspects of the development of urban areas such as towns and cities and suggested a wide range of measures to improve infrastructural facilities on Housing, Drinking water and Sanitation in Urban areas.The present chapter is presented inthe following five major sections, viz., Urbanisation, Urban Poverty, urban Housing, Urban Drinking Water and Urban Sanitation

2.1. Urbanisation

Urbanisation can be defined as the rapid growth of population in urban areas and economic activities which bring about development to towns. Migration from rural to urban is an important factor in Urbanisation. In urban areas, there are better opportunities for Education, Health and a higher standard of living as compared to rural areas which led to Urbanisation. Urbanisation is a global phenomenon and is expected to continue for decades to come (OECD 2006; UN 2008). According to the United Nations, roughly half of the world's population lives in urban areas (United Nations Population Database, 2009), and this share is increasing over time, projected to reach 60% by 2030. Asia has the highest number of people living in urban areas, followed by Europe, Africa and Latin America. Being 48 per cent urbanized and home to 53 per cent of the world's urban population, Asia has become a global

powerhouse, generating close to 33 per cent of world output in 2010 (World Cities Report 2016, UN-Habitat).

Historically, the process of urbanisation has paced up in the wake of the industrial revolution in the western world, leading to the expansion of infrastructure facilities like communication and transportation, which propelled increased rural to urban area migration. Increasing urbanisation and urban agglomeration is the biggest challenge of the present century because rapid urbanisation resulting in uncontrolled and unplanned development raises many issues like loss of agricultural land, unauthorized urban sprawl, and scarcity of food, high land values, degradation of the urban environment and other related issues (Maktav and Erber, 2005).

The influx of migrants in cities and towns resulted in the rapid growth of slums and squatter settlements. Similarly mushrooming of suburban settlements with rural migrants has become a significant phenomenon evenin small towns. Migrations have contributed to the economic and social deterioration of cities. Facing the realities of life with inadequate housing, poor sanitation, ill health and a breakdown of social services, giant cities are increasingly becoming a behavioural sink of human despair (Desai, Mihir, Kapur, Devesh, McHale, John, 2004).

India is the second largest country after China in total population number and is projected to cross China's population with 1.6 billion by 2050. India reached a billion marks at the turn of this century with the population of 1210 million. The total number of the population has increased from 238 million in 1901 to 1210 million in 2011, whereas the number of the population residing in urban areas has been increased from 25.85 million in 1901 to 377.11 million in 2011 (Census of India, 2011). Numbers of urban agglomerations /towns have grown from 1827 in 1901 to 7935 in 2011. The rapid growth in the last few

decades has been because of rapid industrialisation and rural to urban migration (Kundu 2007, 2011).

The transformation of rural service centres is in both time and space, due to concentration of commercial, transportation, and professional services, give rise to the development of urban centres. The increasing intensity of such processes over a landscape leads to urbanization. The growth of urban centres also leads to changes in infrastructure, which in tum further affect regional development, industrialization, transportation linkages, population distribution, and the entire rural-urban continuum (Datta, Neog, Mazhari, 1991).

In North East India, Mizoram (51.51%) is the most urbanized state and the least urbanized states of the region is Assam (14.08%) (Census GOI, 2011). While comparing with the all India average, the region shows a comparatively slower pace in the Urbanisation. Urbanisation has been recognised as a symbol of development as well as a burden over resources. At most of the places, urban development has haphazard nature like uncontrolled population growth, unplanned residential areas, scarcity of food, loss of agriculture land, a high value of land, degradation of the urban environment and other related issues (Maktav and Erber, 2005). It leads to many issues like traffic congestion, environmental pollution, inadequate water supply, electricity, housing, drainage-sewage system, garbage disposal etc.

2.2. Urban Poverty

Engels (1973) put in his account that every major city or towns have one or more slums or slum-like settlements. Poverty and overcrowding are closely associated with one another which led to the creation of slums like in an industrial town or cities.Urbanisation, as defined by Jay Moor (2002), is a growth of the urban portion of a country's population; the diffusion of urban values and standards throughout a society; and the increase of concentrations of land covered by houses and roads and due to limited resources led to the rise of urban poverty.

The quality of life in developing countries is substandard and even inhuman as more than half of the urban population lives in unplanned settlements. Delhi, the capital city of India, is a prime example as more than half of its population. The pace of Urbanisation is now set to accelerate as the country sets out on more rapid growth. Three hundred million Indians currently live in towns and cities, underserved by utilities, with inadequate housing, and now congestion in traffic. This pattern of development in urban towns or cities is increasing the new slums or putting pressure on the existing slums. And there are many manipulative experiences come into the picture when a band of new migrants seeking shelter in an old slum or creating new slums. These are all unavoidable urban risks associated with the labour when they seek shelter in new towns and cities (Planning Commission, 2008)

Non-affordability of housing by economically weaker sections of society and low-income families in urban areas is directly linked with the magnitude of urban poverty. Poverty in India has declined from 320.3 million in 1993-94 to 301.7 million in 2004-05. While there has been a decline of 18 million persons in the total numbers of the poor in India, the NSSO reportsthat the number of the urban poor has risen by 4.4 million persons duringthe same period. One-fourth of the country's total urban population, numbering 80.7 million persons is below the poverty line. The urban poor constitute 26.7% of the total poor in the country. The fact that the numberof urban poor has risen is in stark contrast with rural poverty, where both the total number of rural poor and its incidence vis-à-vis the rural population has fallen (NUHHP, 2007)

Eleventh five year plan, 2007-12, (Planning Commission, Oxford University Press, New Delhi) has indicated that while examining the population growth in urban areas it has been identified that a significant proportion of the urban population is poor to the tune of 23.6 percent, who are looking in the informal sector like vending, have based economic activities or marginal labour services and added that those people who are suffering for want of basic

services such as clean drinking water sanitation facilities, garbage disposal and electricity, transportation and those poor are living in urban slums. Where their living and working conditions lack basic infrastructural facilities making their life vulnerable.

2.3. Urban Housing

Presently the highest rate of economic growth is being witnessed in Asia and hence high urban growth. This is particularly perceptible in India which today has the largest rural population but is urbanizing rapidly. According to the Global Report on Human Settlement, Urbanisation contributes to national and economic development. Most countries with high rates of Urbanisation during the last decade also experienced economic growth. Dr Rao in his book, "Urbanisation in India" (1983) traced the accelerating trend of Urbanisation in India from 1901 to 1971. According to him, growth has been highly unbalanced, not only in the regional patterns, but also in relation to urban settlement, size, classes and that as the proportion of workers engaged in manufacturing increases, the city size increases and the multiplier effect is seen in the growth of employment, trade and commerce, services, transport and other household services.

Dennis A. Rondinelli has stated in his paper 'Housing the Urban Poor in developing countries' (1990) that governments in developing countries will face increasingly serious problems in providing adequate shelter for more than 25 million households which would be added to their urban population by the end of this century.

With changing communication technology, the traditional living spaces need to be redefined with the changing forms and functions. Houses are changed as people are becoming physically and socially more integrated with the outside world. With growing urban spaces, new housing developments are less influenced by existing traditions and more influenced by new trends and communication patterns. The spatial pattern of various housing types not only

illustrate different domestic experiences but also identify the impact of physical transformation by the process of urbanisation (Faustin, 2014).

The urban centres find it very difficult to cope with the high influx of people, which ultimately causes several problems such as rapid growth of slums, housing shortages, inadequate water and electric supply, pollution, and increasing crime; moreover, inadequate transport, educational, medical, and recreation facilities, a high rate of unemployment and underemployment, over congestion, and social tension are also problems generated by high rural-urban migration. The housing shortage has increased from 10.4 million in 1991 to 15.5 million in 2001. (Alpana Sivam and Sadasivam Karuppannan, 2009)

Kundu (2012) in his study of urban housing, it has been mentioned that housing shortage in Urban has increased to 18.8 million households in 2012 where 0.58 million are households in homeless conditions, 0.99 million of households live in non-serviceable katcha houses, 2.27 million are in obsolescent houses and the remaining 14.99 million of households are living in congested houses requiring new houses.

Devendra B. Gupta has evaluated the existing housing stock in the country and the role of housing in the national economy in his book, “Urban Housing in India”. He has analysed the components of increasing housing demand and identifies the series of constraints like land, rent control, construction material, financing, and property taxation that impair the expansion of supply. He has also mentioned that the constraints in the supply of housing have resulted in a large number of slums and squatter settlements that have continued to grow in Indian towns and cities.

John F.C. Turner (1970) brought a viewpoint into urban planning that the slums and squatter settlements are one of the assets in developing countries where people were taking care of their housing needs on their own and thus involved in economic activity. Housing

rights subsume right to land, right to housing finance and access to affordable building materials.

One of the important aspects of increasing land availability for the poor in the cities is giving tenure rights to the slum dwellers in existing slums. However, land tenure, which basically gives land rights to the slum dwellers also give citizenship rights to the urban poor. Many of these are migrants and the dominating urban development ideology has always seen migrants as problems in cities. The cities have not even found ways to give land tenure to the slum dwellers because of complications arising from land and planning legislation and lack of legal options available with the local and state governments (Mahadevia, Sharma, Joshi, 2009)

Kapadia (1992) had asserted that high and increasing prices of land and material cost for construction of houses made housing affordability a problem even housing finance are easily available through Government and other institutions Schemes. Housing affordability is one of the key factors that can describe the socioeconomic stability and development of a country. Housing for the poor is not just space, but it provides them with the survival, transformative and empowerment support. It has the community, socio-cultural, financial and environmental dimensions. In terms of planning and design, it means adopting a holistic approach where housing acts as a vehicle for poverty reduction, social empowerment, community interaction, and access to health, educational and recreational facilities. The five elements viz., the people, community, local activities, place and resources should be interfaced by planning.

Housing affordability is aimed to ensure the housing provided is affordable for every income earner group whether low-income, middle income and high-income group. Housing

affordability is not a feature of housing but a feature of housing service in relation to consumer capacity and desire to own or buy the houses (M.S Suhaida, 2011)

Samaranayake, S., Budinich, V., & Kayser, O. (2011), in their research found out that the relationship between income and affordability for various income groups have significant differences. The costs of food, non-food essentials and house rent form a significant portion of income for lower-income groups. As we move towards higher-income levels, the rise in costs does not increase at the same pace. Disposable surplus income, which is often used to purchase a new house, drops significantly at lower-income levels and is higher at higher-income levels. Thus, people of higher-income levels can better afford to purchase new houses, owing to higher disposable surplus incomes.

Mahadeva (2008) found that the housing needs of the depressed sections have emerged as a major challenge, social housing schemes, being the only avenue of meeting the housing and amenity needs have been very ineffective in terms of the coverage due to inadequate financing by the government since public expenditure has not increased correspondingly to the housing needs during the 90s, this paper documents institutional potentialities in the state to effectively address the problem besides suggesting a need-based housing development strategy higher public expenditure, reorienting the existing institutional infrastructure and an integrated approach in meeting the total housing requirements of these families.

The magnitude of the housing problem in theurban areas of northeastern states of India is also alarming.Access to the basic amenities is concentrated in the rich states and inequality is more in the urban sector as compared to the rural sector. The basic services are unequally distributed, particularly in the rural sector as compared to urban areas. There are fluctuations in inequality over the years in the three basic services. Inequality in access to electricity is highest in an urban sector as compared to the rural sector among the three basic services.

Among the states of NER, the maximum average deprivation in the basic facilities is located in Meghalaya (0.6009) followed by Assam (0.5387)(Konwar, 2015).

According to Vanlalramsanga, Secy, UD&PA (2018), providing urban infrastructure is very costly in Mizoram due to topography, location and poor transportation system within the state. The cost of providing urban infrastructure is much higher than in plain areas. Moreover, due to heavy and prolonged rainy season and topographical disadvantage, most of the urban infrastructure requires the high cost of maintenance.

On the contrary to this, IHSDP has had a positive impact on the housing and infrastructure development of Lunglei Town. However, it could address only a tiny portion of the problem of housing and infrastructure development. Many poor houseless households are left out because of the inadequate allocation made under IHSDP for Lunglei Town. The housing conditions of the beneficiaries have actually improved from kuccha to semi pucca. The amount sanctioned under the scheme is inadequate considering the topographical conditions of Mizoram. (Kanagaraj and Priscilla, 2015)

2.4 Urban Drinking Water

There have been several works of literature associated with the urban water supply and it uses. Within these studies, challenges faced by the consumers in different dimensions have been found out.

India is a country with very deep historical origins with strong beliefs and traditions. These are reflected in our social fabric and institutions of community life. Most important among these is the tradition of collecting, storing and preserving water for numerous uses. Water is a supporter of all forms of life, including vegetation and forests, and plays a vital role on the sustainment of earth. Traditionally, water for households use was obtained from springs, flowing mountain streams, or built rainwater harvesting structures. All these

structures were common property resources. They were largely owned, used and maintained by local communities. There was minimal state intervention in water rights or management. Local autonomy in resource management is the critical sufficient condition but it never results from inequitable access for all. Development of reliable sources of water like storage reservoirs, ponds, lakes, irrigation canals, etc. came to be regarded as an essential task of the state (Shri.Krishan 2011).

Lewis & Miller (1987) in their research had found out that public water supply systems were characterized by high costs, insufficient supplies, and chronic deficits that were covered by central government transfers. On the other hand, the private water supply programme in Abidjan had not met its coverage targets, but yet the system had remained financially solvent and fostered a rapid growth in capacity through the informal sector. The study revealed that where the public sector decided to control and operate the water supply and sanitation system, some partnership with the private sector was possible through contracting out specific tasks as billing, metering, maintenance of distribution system or tracking water losses. According to them, the supply of water would be an ideal activity for a public-private partnership.

Ngowi (1997) discovered that community managed facilities would work if the people in the community would participate in all the stages of a project - Planning, design, construction and eventually maintenance. The study showed that with proper planning the people in the community can be mobilized, sensitized and made to participate in the management of infrastructure facilities upon which they depend.

Bahri (2001) in his research discovered that with Urbanisation growth and increased competition for natural resources and water, in particular, there is a need for a holistic approach which integrates the different issues relating to sustainable urban and urban

development and defining the best strategies and option. To him water management is becoming a driving component in water resource management which requires the combination of micro and macro scale approaches, water saving technique and increased water use efficiency in every activity sector and minimizing production and discharge of waste and recycling and reuse as much as possible and disposing of the remainder in an environmentally sound manner.

As per the National Sample Survey (NSS) 65th round, only 47 per cent of urban households have individual water connections and rest are fetching water from public water sources. The current estimates of unaccounted for the poor water treatment capacity of sewage treatment plants and sewerage networks in cities, most of the sewage ultimately finds its way into city drains (Nallahs) and to the rivers that these Nallahs drain into. This results in poor quality of the water sourced from rivers. Many times, sewage and faecal sludge find its way into the ground due to the non-availability of faecal sludge treatment plants.

Prakash, A., & Adaptation, H (2015) in their study in India, found out that water demand is increasingly exceeding supply, leading to more water-related conflicts. In terms of water quality, advocacy for key protection measures is required, sanitation being a critical one. An understanding of gender's importance in water programming is essential and so disaggregated data are needed in this respect.

Responsibilities for service delivery have been shifting to local bodies, although often these local bodies are unable to adequately cope with the additional responsibilities, due to the paucity of human resources and a lack of awareness and understanding of planning water resource development and management activities. In most states, institutions created for water management at the community level are not accountable and therefore do not have any

legal identity. They also lack capacity in merging multiple programmes and schemes (Cronin & Khosla, 2012).

Shanbhag. M.M (2004), in his study, observed that consumption of unsafe drinking water and improper disposal of human excreta has become the major cause of many diseases in urban areas. Poor sanitation has resulted in high infant mortality rate in urban areas in many developing countries. Proper sanitation practice plays a vital role in individual and social life by preventing contamination of water/soil and thereby the spread ofdiseases

Anthony (2007) study presents the findings of a door to door survey of Imphal, the capital city of Manipur. He found out that the primary source of water is a neighbourhood pond and the secondary source is piped water. According to him, the government services in providing water supply is poor and the majority of residents consumed water from different sources. Access to neighbourhood pond is not determined by income rather the private sector water supplier. Most households boiled and filtered in order to make it safe for drinking. It has also been found out from the respondents that in general, water from different sources including pond and rainwater is poor in quality.

The Government of India acknowledges that there are disturbing reports about social exclusion, with Dalits and Adivasis (marginalized low caste and tribal groups) being discriminated against. Furthermore, a huge disparity is evident between the water consumption patterns of the rich and the poor, for example in one part of Delhi, '92% of the water supplied goes to 20% of the population; and the remaining 80% of the population gets 8% of the total piped water supply'. Thus, access to water resources is governed by power relations in Indian society, with the poor often being differentially excluded from this process. All efforts to augment water supply and 'manage the scarcity' often concentrate only

on the technical and managerial aspects, thereby reinforcing existing inequalities (Water Aid, 2006)

Lalrosangi (2005) while conducting a study in Sihphir Village, Rural Mizoram, she has found out that the main sources of water are local spring (tuikhur). There was no piped water connection in the area, the government or PHED supplied water by truck or tankers for domestic use with a few payments had to be made. Each family has to pay Rs.118 per month for the service charge. Water is mainly used for drinking and preparing food.

2.5. Urban Sanitation

Urbanisation has, in many places, resulted thus in the creation of vast urban slums, wherein thousands and sometimes millions of urban residents live in sub-standard housing, without access to even the most basic services including access to sanitation and safe drinking water, (COHRE, 2008). An estimated one-third of all urban residents are poor who represent one-quarter of the world's total poor (Ravallion, Chen, and Sangraula, 2007)

According to Elledge, M. F., & Mcclatchey, M. (2013) more than 40% of the world's population lacks improved sanitation facilities, and India's urban sanitation coverage rate is only 50%. Consequences of poor sanitation are devastating to human health and the environment. Many urban areas provide access to toilets, yet often upkeep is lacking, septage is not well managed, and sewerage is discharged untreated. India is a prime example of the global sanitation challenge; nearly 60% of the world’s open defecation occurs in India. Rural sanitation in India has received considerably more attention and funding than urban sanitation, yet the health, environmental, and aesthetic consequences of poor sanitation in urban areas are particularly large, given space constraints and population density. Moreover,

although Indian cities have become engines of economic growth, India's prospects for long-term prosperity are hindered by its inability to provide basic services.

A study by the World Bank's Water and Sanitation Program (WSP) estimated that India's lack of sanitation coverage cost the country the equivalent of 6.4% of its 2006 gross domestic product. Growing poverty and income inequality in urban areas have compounded the sanitation problem, and many Indian mega-cities have very large slum populations. In Mumbai, India's largest city, 57% of the city's population lives in slums,4 and nationally, the 2011 Indian census shows one in six Indians lives in an urban slum. According to the Ministry of Urban Development (MoUD), in notified slums (slums registered by the municipality), 17% of the population is without access to improved sanitation, and in non-notified slums, the average is 51%.5

Research from around the world has reported that the children of the slums are acutely aware of their waste-strewn, dilapidated surroundings and the absence of trees and basic services that they see these physical conditions as a humiliating reflection of their own worth. Urban poor are thus more vulnerable to fall prey to social evils and poor environmental health. Meeting the present needs to improve living conditions for existing slum populations will in itself be a daunting task. Yet, it will be inadequate unless equal efforts are made to reduce the need for future slums (Chawla, 2002)

Clean water, together with hygiene and sanitation, is necessary to sustain human life and to ensure good health and human dignity. Almost 30 years after the United Nations proclaimed the 1980s as the International Drinking Water Supply and Sanitation Decade, more than one billion people (statistics has it as 748 million people) still lack ready access to improved sources of drinking water (Coles and Wallace, 2005)

Pullan et al. (2014), investigates differences in the use of improved drinking water, improved sanitation, and open defecation at small spatial scales, use household survey data to develop comprehensive maps of water supply and sanitation. They identify specific geographical areas where coverage is substantially worse than national averages and explore relative geographical inequalities within countries of Sub-Saharan Africa. The study confirms the necessity for targeted policies and metrics that reach the most marginalized populations. The authors also report that the maps and analysis approach can provide a mechanism for monitoring future reductions in inequality within countries, reflecting priorities of the post-2015 development agenda.

Doron and Raja (2015) interrogate the cultural, political and economic conditions that give rise to the sanitation crisis in India, with it severe implications for the poor and the marginalized. The key question of their work is ‘how to interpret and explain the spectre of ‘open defecation' in the Indian countryside and booming urban centres. Drawing on interviews and a review of ethnographic work, the researchers interrogate the idiom of modern sanitation, with its emphasis on cleanliness, progress and dreams of technology, as a constitutive idea and an explanatory force in Indian modernity.

Saini (2012) aims to assess water and sanitation facilities in a resettlement colony of Madanpur Khadar. The main objective of the study is to find out the existing water and sanitation facilities available to the community and to understand the community's practices in respect of the facilities. Interviews, focus group discussions, observations and community mapping are the methods applied to collect data. Women are the key respondents to understand the problems of water and sanitation from a gender perspective. The findings of the study reveal that the water and sanitation conditions in the resettlement colony are unsatisfactory. Ultimately, the researcher suggests a collaboration of sector-related agencies and departments for a focused implementation of the water and sanitation programmes, along

with the involvement of NGOs and community, especially women, who could make such a plan truly participatory and ever-sustaining, in the future.

The foregoing review of the literature on urbanisation, poverty, housing, drinking water and sanitation shows that these problems have been studied in varied contexts from different theoretical points of views. Different methodologies have been employed in probing into them. These studies contribute much to our understanding of the challenges posed by urbanisation to urban development policy, planning as well as social work practice in the urban community contexts in different countries. Yet a few research gaps could be noted

Firstly, there have been a very few studies related to urbanization and urban development conducted in the context of North Eastern Region and specifically in Mizoram(see for instance Sailo, Rindiki 2011, Lalruatkimi 2011, Changte 2010). Even these studies have focussed on the capital city of Aizawl while the study by Kanagaraj and Jahau(2015) focussed on Lunglei. Still, there is no notable study on any aspect of urban development in the other urban areas of Mizoram especially in autonomous council areas of Mizoram. Secondly, housing, sanitation and water supply to the Urban Poor have always been more or less overlooked by the researchers in the context of North East India especially Mizoram. Perceptibly there is no significant study on these crucial aspects of urban development could be seen in this context. There is only one study on water use in urban areas of Mizoram (Changte 2011) while in the context of Aizawl city also there are no studies on access to housing or sanitation though there is the problem in this regard. The present study tries to fill these research gaps by comparing the household's access to housing, drinking water and sanitation in one urban area in the autonomous council region and another in non-autonomous council region of Mizoram.

In this chapter, an attempt has been made to review the literature on the interrelated dimensions of urban development viz., urbanisation, urban poverty, urban housing, water supply, and sanitation. A few research gaps in the literature have also been highlighted. In the light of them in the next chapter, an attempt will be made to present the methodological aspects of the present study.

CHAPTER III

METHODOLOGY

In the earlier chapter, a review of the literature was presented and a few research gaps therein were highlighted. In this chapter, the methodological aspects are described and also the context of the present study i.e. the setting is presented. This chapter has been structured into three broad sections. The first section is devoted to description of the setting of the study areain terms of the ecological, historical and social profiles of core and periphery localities selected from two different towns representing autonomous council and non-autonomous council areas. The second section presents the research problem in terms of the objectives and hypotheses. The methodological aspects of the present study are presented in the third section in terms of research design, sampling, tools of data collection and analysis.

3.1 The Setting: Profile of the Study Area

The present study was conducted in the urban localities of Lunglei town and Siaha town which have different administrative setup. Lunglei town is under direct Mizoram Government Administration whereas Siaha falls under the jurisdiction of an Autonomous Body called Mara Autonomous District Council. The profile of the studied areas conducted was based on the location of the locality in both the towns, core and periphery localities.

3.1. The Towns Studied

3.1.1 Lunglei Town

Lungei town is the district capital of Headquarters of Lunglei District. Lunglei is a town located at 170 km (approx.) or 7 hour's drive from the State capital Aizawl.It is the second capital of Aizawl and the most important urban center in the southern part of Mizoram. It serves as the commercial and administrative center for the southern region of the state.

According to the 2011 census by GOI, Lunglei town has a population of 57011 in which male comprises of 29474 and female, 27537 in numbers. It is the second most urbanized town in Mizoram only next to Aizawl which has a population of 2,93,416.

In Lunglei town, there are in total 24 localities and Venglai and Sazaikawn have been selected for the present study to represent core and periphery locality respectively.

Fig 3.1 Mizoram Map (District Wise with towns of Lunglei and Siaha)

The Localities Studied

There are two localities, core and periphery selected based on commercial and non-commercial locality, as mentioned earlier Venglai represents the core locality whereas Sazaikawn represents the Periphery (see Fig 3.2)

Source: Google Map

Fig. 3.2 Lunglei Town Map showing Core and Periphery

Lunglei Venglai

Venglai' means Locality at the center, as the name states, Venglai is located at the main center of the town and also the commercial hub of the town. Many people from different places migrated to Venglai for different purposes. All most all the Government offices, schools, colleges, hospitals, hotels, marketplace, etc. are scattered in and around Venglai. Due to this urban agglomeration, there are many challenges faced by the community in housing, water supply and sanitation in particular.

Key Informants Interview and Social Mapping have been conducted with leaders of the Village Council (V.C) and Young Mizo Association (Y.M.A) where we have come to learn that Venglai has a population of 2,277 with 544 households. Services and Opportunities Map was also conducted to identify the resources and institutions available nearby the localities.

Housing: As mentioned above many people migrated from other places and stay in a rented house and most of them are very expensive as compared to other localities. There are around 580 households with a population of 2400 (approx.). The low-income group lives in a congested room with less than 3 rooms in the house. According to the YMA President, there are many old and dilapidated household needed to be renovated. These households are mostly from the poorer section of the society. It is evident that, although the commercial center of the town also has a poor household dwelling.

Drinking Water: Like other parts of the locality, the water supply is being provided by the PHE where the connections are shared by the tenants and the owner of the house. This water supply has to be treated again in order to make it safe for drinking. There is a scarcity of water during autumn and during this period they have to buy water from a private water supplier.

Sanitation: The locality also faced sanitation problems. Since it is the marketplace, many vendors left their garbage in open and they have to be frequently warned by the YMA and the VCs. The VC owned a garbage truck which cannot cover the whole of the locality. They also faced drainage blockage during the rainy seasons. The YMA occasionally organized a public service thrice a year for cleanliness drive. They get a little or no assistance from the government.

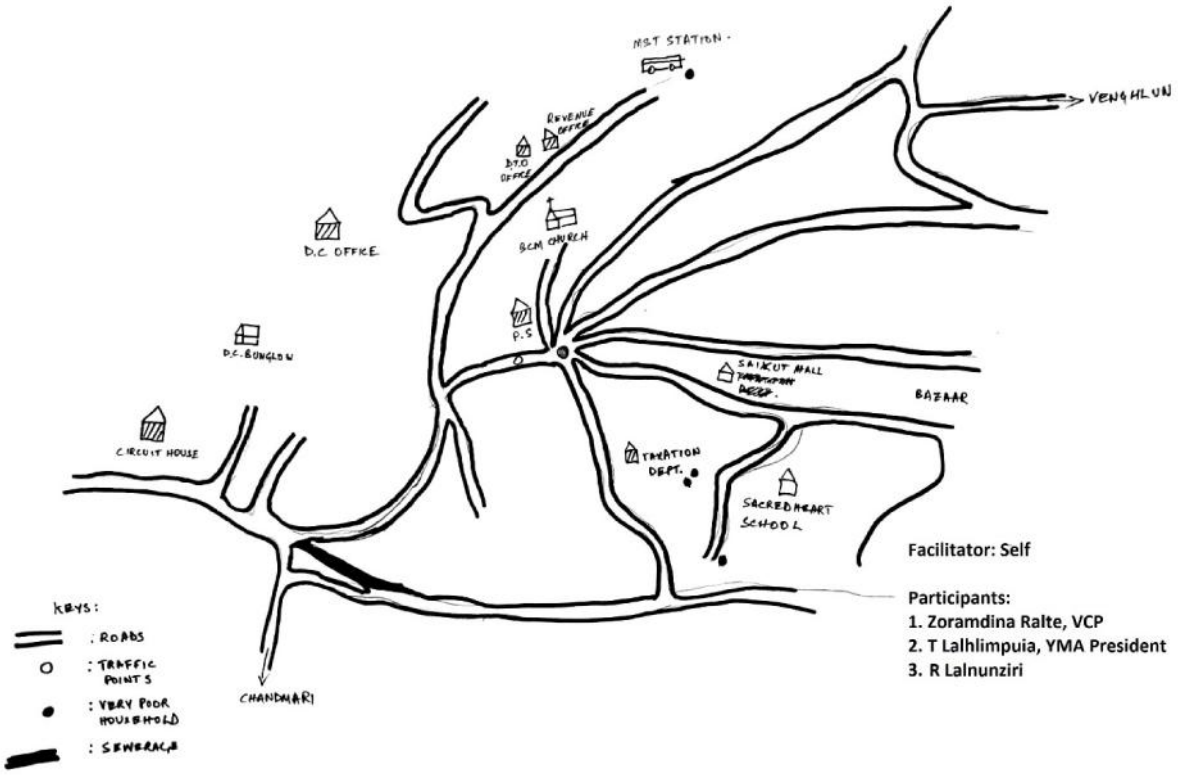

Fig.3.3 Social Map of Venglai

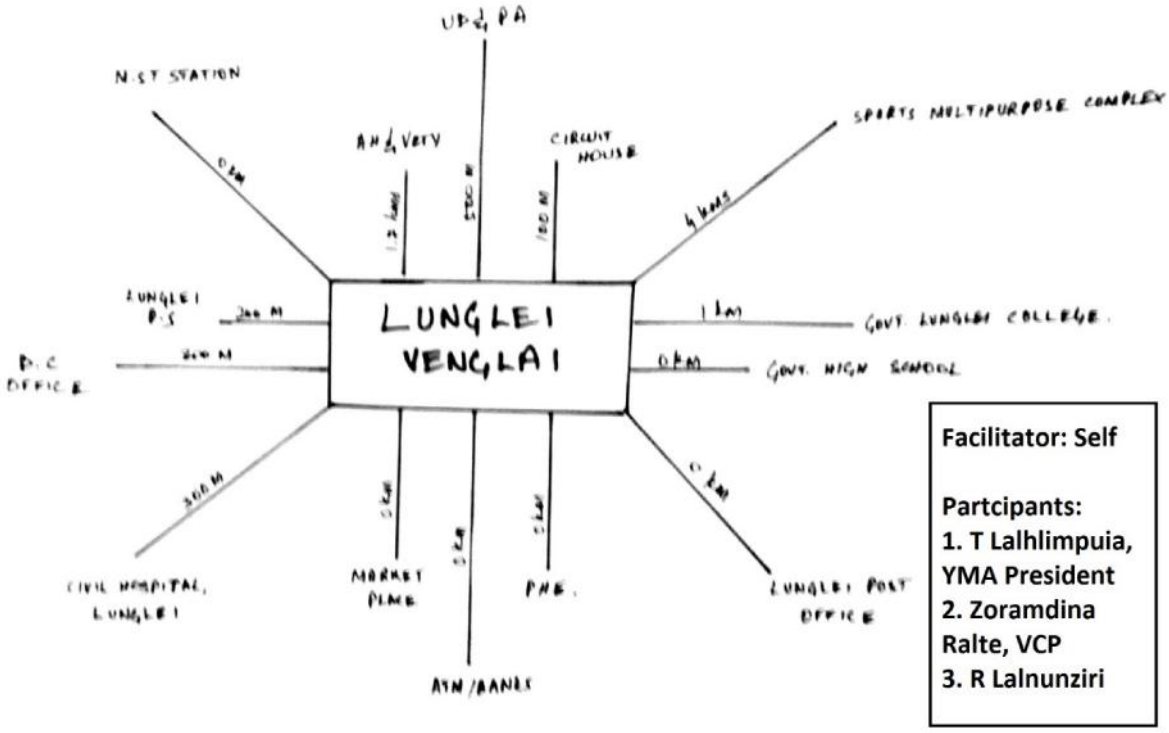

Fig. 3.4 Services and Opportunities Map: Venglai

Sazaikawn

The location of Sazaikawn (see Fig. 3.2) is in the outskirt of Lunglei, with a small community. There is little or less government organization within the locality. There are many challenges faced by the community in terms of roads, transportation, housing, sanitation and other urban basic amenities.

Key Informants Interview and Social Mapping have been conducted with leaders of the Village Council (V.C) and Young Mizo Association (Y.M.A) and other Locals where we have come to learn that there are 94 households with a population of 532 people under the VC of Szaikawn. Sazaikawn came into existence in the year 2006 after having separate VC from Rahsi Veng.

Housing: Housing is one of the major problems in Sazaikawn where people are living in an old and dilapidated house with no proper bathroom and toilets. There are 7 houseless families staying in a cheap rented house and these families are socially and financial backwards with low income. Half of the population are from other places or villages who reside in a government quarters as there are few Government offices in the area like Urban Public Health Centre, District Prison, and Sports Complex. According to the VC President, there are political influences in the selection for the beneficiaries of housing programmes.

Drinking Water: Almost all of the households have access to PHE water supply and some households have shared 1 connection especially those family staying in a rented house. The water supply provided by the PHE have to be treated by boiling or filter to make it safe for drinking. The scarcity of water is also one of the problems, especially during the autumn. Drinking water is not much of a problem as people are able to manage on their own.

Sanitation: Sazaikawn have no access to Sanitation service and each family has to manage on their own. All the garbage are disposed of at the outskirt of the locality. Sazaikawn is

located en route to garbage field and all the garbage trucks have to go through Sazaikawn which is problematic as the remains of the garbage fall in the locality which makes it unhygienic at times. Sazaikawn is located at the lower region of Lunglei town, during the rainy season all the wastes including both solid and liquid waste from the town are flowing in the locality led to blockage of the drainage system in the locality.

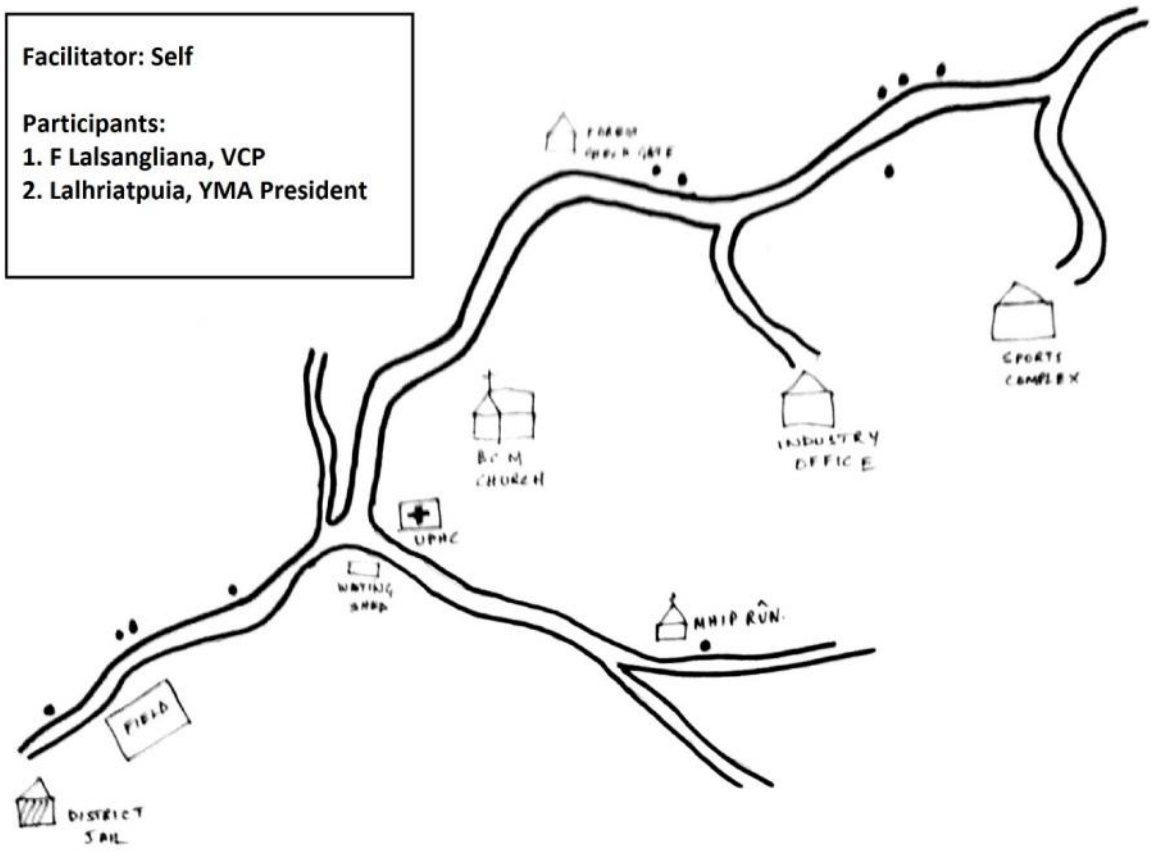

Fig. 3.5 Social Map: Sazaikawn

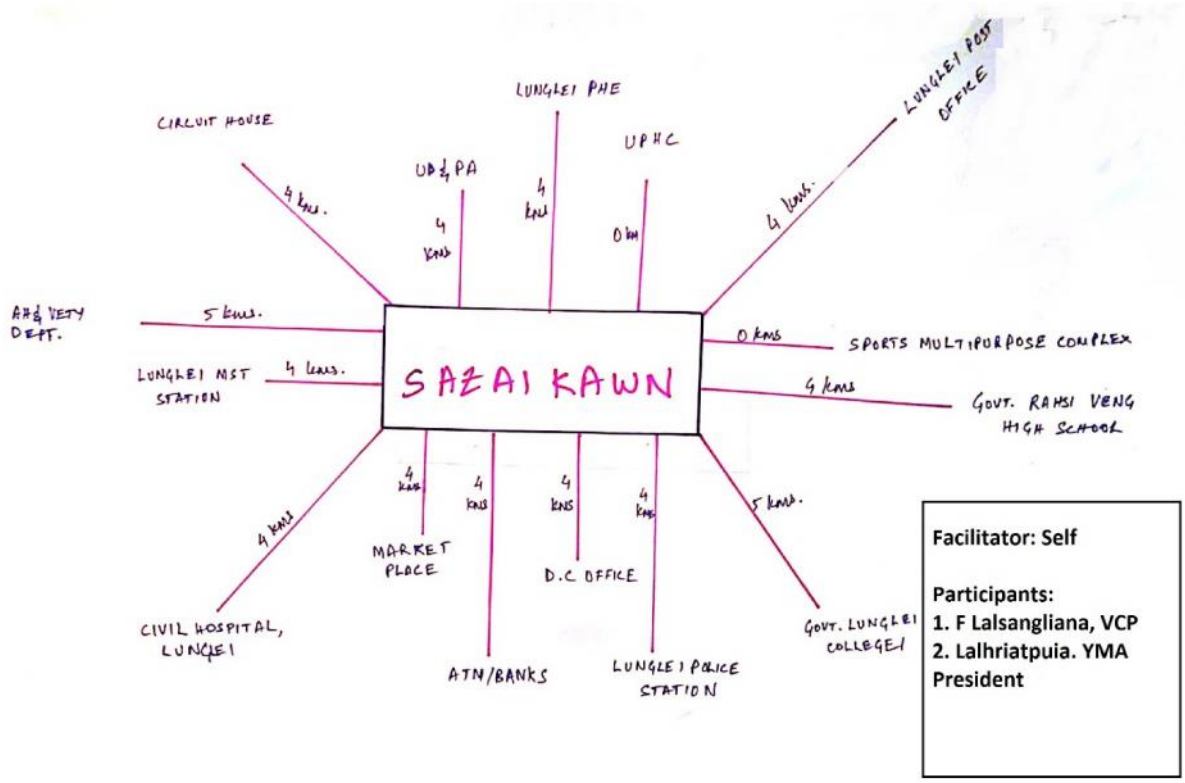

Fig. 3.6 Services and Opportunities Map: Sazaikawn

Urban Development Administration in Lunglei:

Housing: UD & PA or DUDO in Lunglei is the nodal agency for providing housing to the houseless. All the programmes and functions of administration in related to Urban Development at the district level is carried by DUDO office. According to one of the officials who is in charge of handling PMAY says that they although they wanted to achieve 'Housing for all' by 2025 at the same time they have to take precautions in order to control the pace of urbanization. So there are several criteria taken up in the selection for the eligibility of beneficiaries like – they have to be a residence of Lunglei town at least for 5 years and they have to have a possession of land sufficient enough for the construction of houses. The IHSDP was also quite successful as compared to other towns and cities in Mizoram. On the contrary to this, access to land or space for housing for the poor is very difficult as the price

of land is very high in Lunglei town. Therefore, there is a huge scope in the context of housing for the poor at Lunglei town.

Drinking water: Public Health Engineering (PHE) is the main agency which provides water supply to the people in Lunglei town. This water supply delivered to the people is not safe for drinking as the people then again have to boil it filter it in order to make it safe for drinking. There is not much of a problem in the case of drinking water in Lunglei town as there were complaints from the people, rather they take it as their own responsibility in the treatment of water for drinking. One of the problems is that people living in a rent have to share the connection with the owners which is sometimes not sufficient.

Sanitation: When a town grows, it is accompanied by tonnes of waste and garbage which ultimately have effects on the health of the people living around if not treated properly. According to the Assistant Sanitation Officer, DUDO, there are many challenges faced by the department in terms of sanitation. According to him, all the 24 localities of Lunglei town are covered officially but due to a shortage of garbage truck, the services provided to some areas are irregular. The garbage is disposed in an open ground and there are no proper facilities for treatment of such. Water logging due to blockage of drainage is common during the rainy season and the community's participation comes into value during such time of issues. The Swach Bharat Mission awarded and announced Lunglei Town as Open Defecation Free in 2017. But the study has observed and seen that many families do not have proper toilet and bathrooms within the town area. There are several public urinals with little or less management and very few public toilets.

3.1.2 Siaha Town

A study has been conducted based on Purposive Sampling where two localities were selected namely College Vaih and New Saiha. New Siaha is located at the main center of the

town which is also the main commercial hub of Siaha town. On the other hand, College Vaih is located just below New Siaha and they are less privileged in terms of economic conditions as compared to other localities in Siaha. Interviews and Social Mappings were conducted in order to evaluate the conditions of housing, drinking water and sanitation in these two localities.

Siaha town is the district capital and headquarters of Siaha District and it is the only Notified Town in the region. It is the commercial center for the Mara, who is the majority sub-tribe in the region. It is also the headquarters for the Mara Autonomous District Council which governs the administration of the district. It is approximately 380 km from Aizawl and 200 km from Lunglei.

The 2011 census (GOI) shows that there are 25,110 people reside in the town which is 44,38 % of the total population i.e 56574. College Vaih as Periphery and New Saiha as Core are the two localities selected for the study

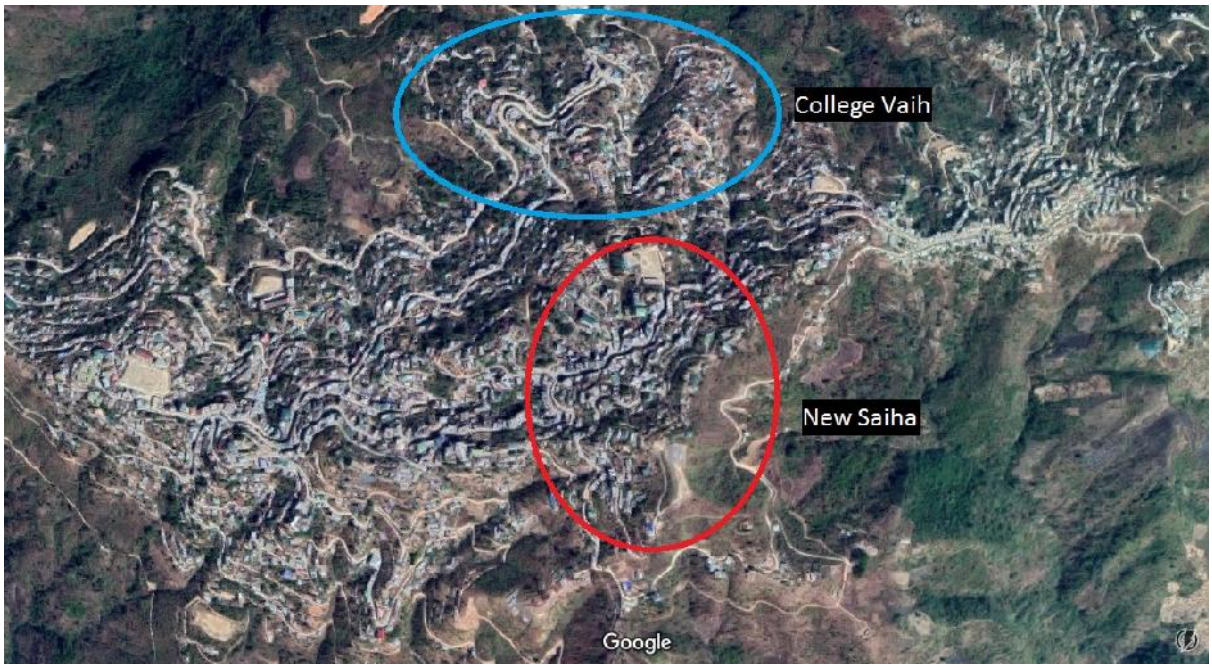

Fig. 3.7 Siaha Town Map showing Core and Periphery

The Localities Studied

In the case of Siaha town, one core and one peripherallocality were selected i.e. New Saiha and College Vaih respectively (See Fig. 3.7)

New Saiha

New Saiha is one of the oldest localities in Siaha which was established in 1956. It was earlier known as Model Veng and in 1986 it was changed to New Saiha. It is one of the commercial centers in the town andlocated at the core of Siaha town (See Fig. 3.3)

It has a Population of 6429 with 1167 households.There are 3 Village councils and two MDC's Constituencies. There are numbers of important governmental organizations including BSNL, Tourist Lodge, Helipad, etc. the inhabitants are a mixture of Mara, Lai, and Lusei. Mara and Mizo are the common languages spoken.

New Siaha is one of the commercial centers of Siaha town. It is located at the top of the town. There are several Government places like Hospitals, Government High Schools, Tourist Lodge, Circuit House and Government quarters. There a mixture of a population from Mara, Lai, and Mizo Communities. The major economic activity is business where people engaged daily on different kinds of the trade like Sumo Service, Bus, Mobile shops, Clothing line etc., A study has been conducted where interviews and social mapping is used to identify poor households and the conditions of housing, drinking water and sanitation in the locality.

Housing: The Government places are Housing at the center of the locality has decent outlook, but on the outskirt, there is poor household as well. Although the inhabitants look prosperous there are several traders and student living in a rented house and the rents are very high as compared to College Vaih. Compared to other localities, New Saiha is almost overcrowded and houses are built in a very congested manner. According to one of the locals, the public rarely benefits from the District Council and they are self-sustaining on their own.

Some of the poor have had been benefitted from IHSDP and the construction are better than estimated.

Drinking water: PHE administered by the Autonomous District Council is the main source of Water Supply in College Vaih, Siaha. The scarcity of water is one of the problems as the water supply is not adequate to cover the whole population of Siaha. The problem is worst especially during summer and they usually buy from a private supplier which is a huge burden especially for the poor. Water provided by the PHE is again had to be boiled or filtered for safe drinking which the people obliged it to do so. There are few water points in the area

Sanitation: The Village Council Committee have collected 30 rupees from each household per month and utilizes it for Sanitation purposes. There are one public toilet and one public urinal each which is hardly used by the public. The drainage system has improved over the past few years with funds coming from NREGS.

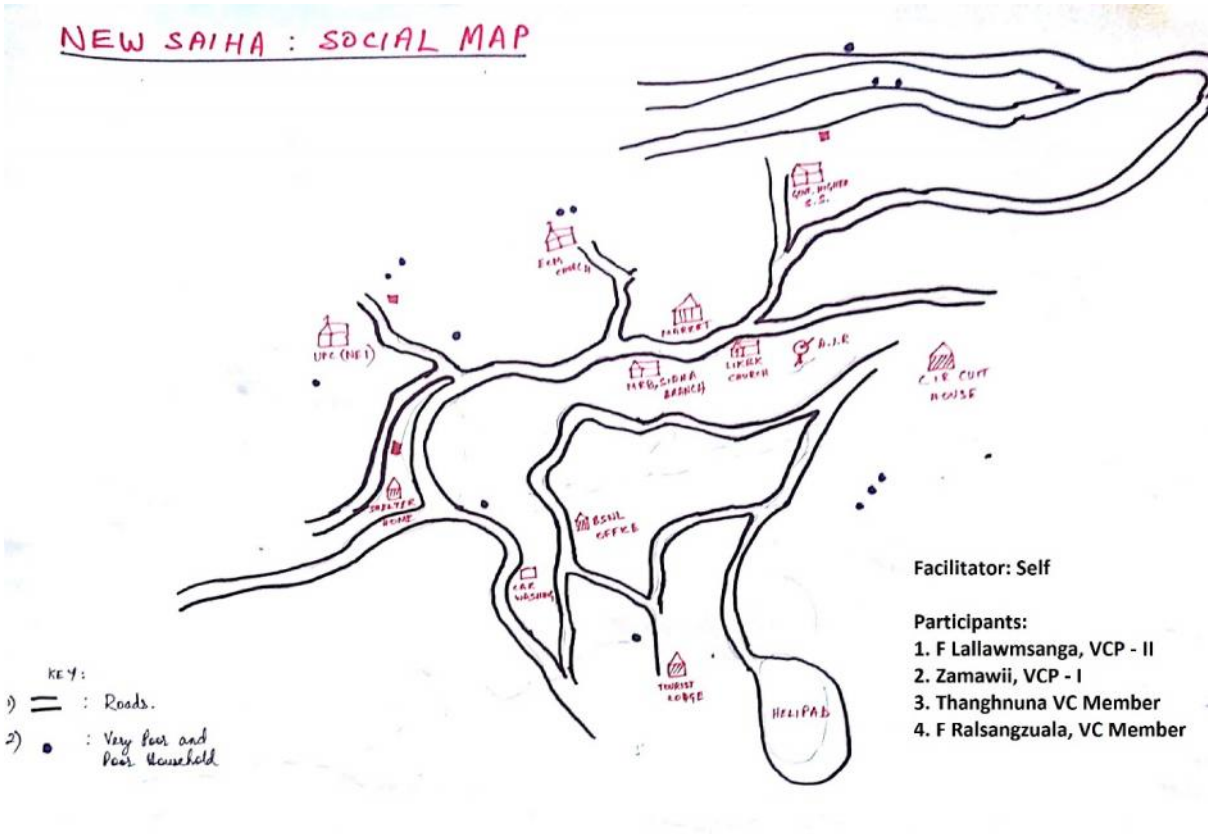

Fig. 3.8 Social map: New Saiha

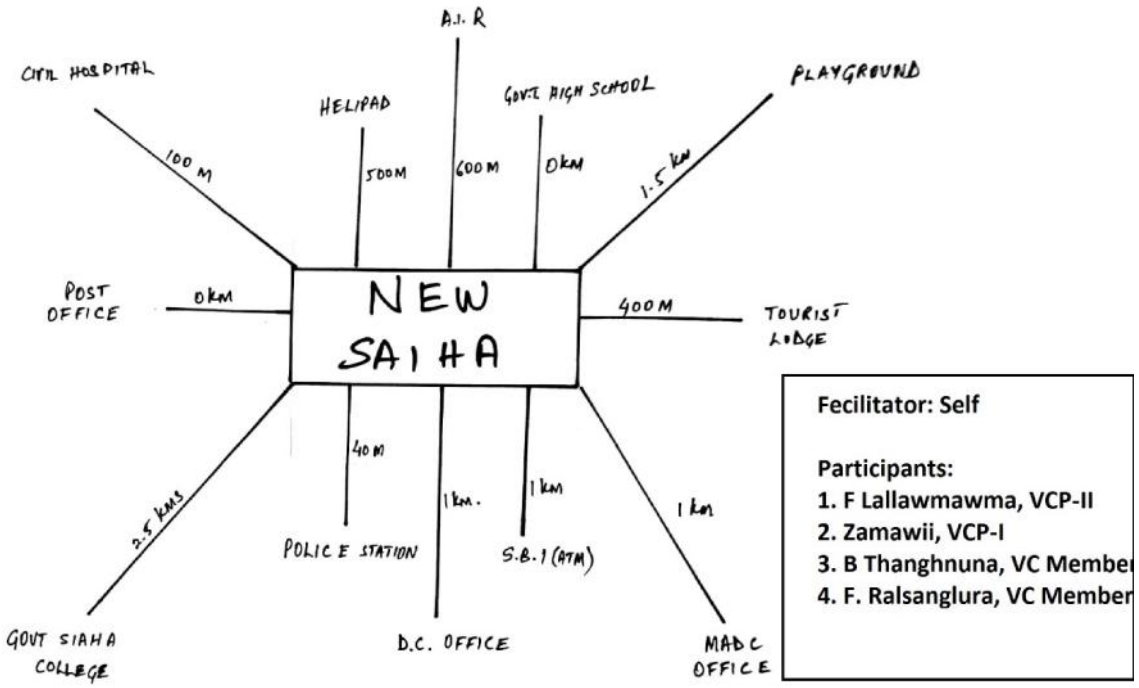

Fig. 3.9 Services and Opportunities map: New Saiha

College Vaih

Siaha was established in 1987 when it got its separate VC from New Colony. There are two separate Village Council i.e. VC-I and VC-II. Village Council got separated in 2006. There are two MDC's Constituencies in the locality.

Siaha Government College, which was established in 1978 is the only degree college is located in College vaih.It has a Population of 2948 with 526 households in both VC areas. Majority of the population are ECM Denomination.

Within Mara ethnicity, there are 5 different clans which are Saikao or Tlosai, Chapi, Zyhno, Tisih, and Vytuchho or Siata clans. The inhabitants of College Vaih are a mixture of these clans with a few populations from other ethnics or groups as well. People migrated from villages mostly settled at College Vaih as the price of land and rent at College Vaih is less expensive compared to other localities as the locality is not crowded as little or fewer government places. Since the only college in the district is located at College Vaih, many students with their families live in a rented house and other stays with their relatives.

Housing: During the studies conducted, it has been observed that the condition of housing at College Vaih is characterized by poverty. There are many old and dilapidated house needed to be renovated. Some are built using metal sheets and other lack all the provision of standard living conditions with no proper toilet or bathrooms. The living standard condition is also characterized by the size of a family where one big family resides in one house can also be found. When IHSDP was implemented in Siaha District, there are beneficiaries who could not complete the construction as the money involved is not sufficient for the purpose. According to the Vice President, MTP (Mara Thyutlia Py) College Vaih, the materials used for the construction of the house are very expensive and are not affordable for the poor. This

is one key which led to the problem of housing conditions in the area. According to the MCHP Vice President, housing, in general, is the major problem for the native as well as people migrated to college Vaih from other places. The rent on a proper house is expensive so people always prefer to cheap houses for renting which are not up to the standard. Access to land or possessing land is also very difficult at the center of the locality as they have become expensive. There are no regulations to this matter by the government.

Drinking Water: PHE administered by the Autonomous District Council is the main source of Water Supply in College Vaih, Siaha. The scarcity of water is one of the problems as the water supply is not adequate to cover the whole population of Siaha. The problem is worst especially during summer and they usually buy from a private supplier which is a huge burden especially for the poor. Water provided by the PHE is again had to be boiled or filtered for safe drinking which the people obliged it to do so.

Sanitation: Waterlogging during the rainy season is the main problem faced by the community. There are houses with no proper toilet and pit latrine is still a very common practice as well. The absence of Public toilet in the area shows that less concern is given to this matter. The MTP organizes public service occasionally in cleaning the locality once or twice a year.

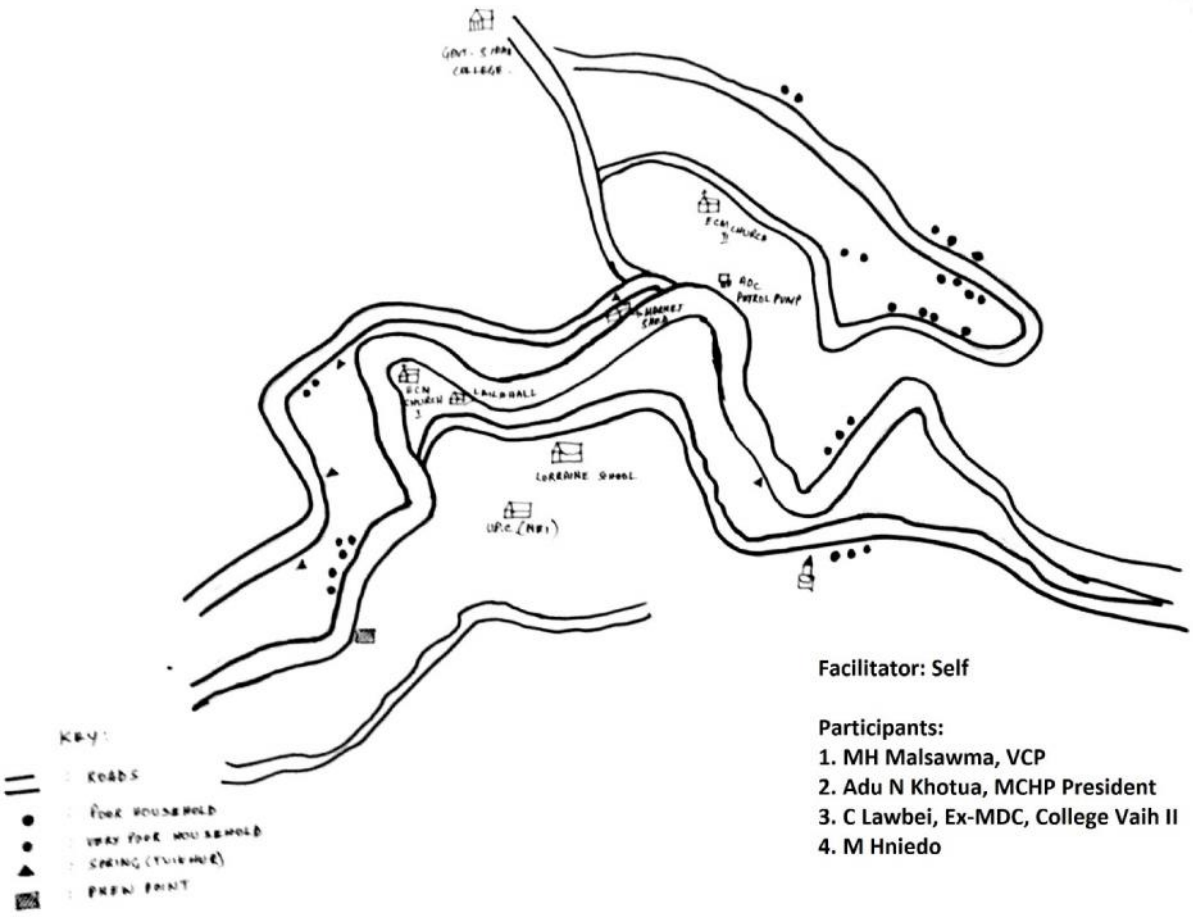

Fig. 3.10 Social Map: Siaha College Vaih

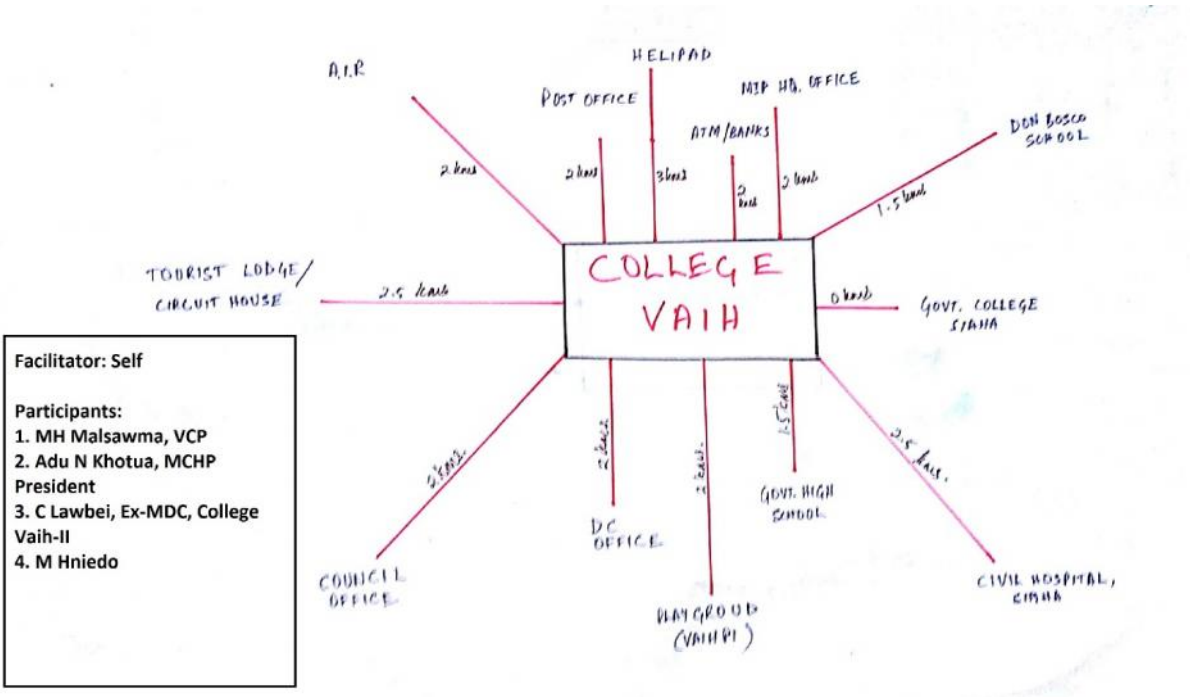

Fig. 3.11 Services and Opportunities Map: Siaha College Vaih

Urban Development Administration in Siaha:

In Siaha town there is no DUDO office, all urban related works are carried out through the Deputy Commissioner's Office and the Nodal Officer is the SDO (Sadar) of the District. Sanitation works are carried out by the District Council's LAD.

Housing: The selection for the beneficiaries of PMAY is still in the process. And according to officials from UD&PA officials, IHSDP was not successful in achieving its goals. The District Council, on the other hand, has no programmes or policies in relations to the housing during this study are conducted.

Sanitation: Sanitation of Siaha town is in the hands of District Council where the Departments have faced many challenges. According to the Assistant Sanitation Officer, the following points are some of the challenges:

1. No segregation of liquid and solid waste
2. Garbage is dumped openly on the outskirt which could be hazardous for people residing near the dumping ground.
3. There is no treatment process or facility, they just dump it and leave them as they are.
4. Less Public toilet
5. Low level of awareness
6. Lack of funds
7. Septic tank leakage is very common in some areas
8. Poor drainage system.
9. The absence of Slaughter House.

3.2 Research Problem

In the previous section, an attempt has been made to present an understanding of the context of the study. The profiles of the towns, localities studied and the urban development administration therein was described. In this section, the objectives and hypotheses are presented.

3.2.1. Objectives

The following are the objectives of the present study.

1. To assess the household's access to housing, drinking water, and sanitation in urban areas of Mizoram.
2. To assess the quality and adequacy of housing and water in urban areas of Mizoram.
3. To identify the socioeconomic determinants of household's access to housing, drinking water, and sanitation in urban households in Mizoram.
4. To understand to role of government programmes in promoting urban households access to housing, drinking water and sanitation in Mizoram.

3.2.2. Hypotheses

To provide focus to the above objectives the following hypotheses were formulated.

1. There are differences in households' access to housing, drinking water and sanitation between urban areas under the autonomous council and those under direct state administration.
2. Households' access to housing, drinking water and sanitation between urban areas depend upon the location of the locality, household assets and household income.
3. Households' access to housing, drinking water and sanitation are interdependent.

3.3. Research Design

The present study is cross-sectional in nature and descriptive in design. The study is also of Mixed Research Method design. The primary data was collected with the help of Qualitative, Participatory and Quantitative methods employed sequentially in the order. Though the qualitative and participatory data were used, the study is predominantly quantitative.

3.3.1. Sampling

The unit of the study was household while all the urban households in Mizoram constitute the population of the present study.

A multistage sampling procedure was adopted to select the urban areas, localities, and households. In the first stage, Lunglei and Siaha were selected purposively to represent autonomous and non-autonomous district areas. In the second stage, the selection of urban localities was made.One core area and one periphery area were selected in both the towns based on field visits and interaction with development functionaries. In the third stage, selection of households was done in the selected localities. The list of households was collected from the village council presidents. From each of these lists, systematic random sampling was used to select respondent households. In the final stage, a knowledgeable member of the selected households was interviewed.

3.3.2. Data Collection, Processing and Analysis

The primary data was collected using a multimodal approach. Quantitative data was collected using Pretested Structured Household Interview Schedule. Participatory Rural techniques such as Timeline, Social and Resource Map, Services and Opportunities Map were used to understand the ecological contexts of the selected localities.

The household interview schedule was designed by using Kobo toolbox which is a free open-source tool for mobile data collection, available to all. Kobo Collect, an Android applicationwas used tocollect the data with the help of cell phones.

The collected data was analyzed using Statistical Package for the Social Sciences (SPSS). The analysis was done with the help of Cross Tabulation, Simple Averages, and Percentages. Hypotheses were tested with the help of Independent 't' test, and Karl Pearson's Product Moment Correlation coefficients.

Key Informant Interviews with officials from UD&PA, CBOs, VC and Locals were conducted to understand the policy context of urban housing, water supply and sanitation. To analyze the qualitative data QDA miner was used.

In this chapter, the ecological, social and administrative contexts of the study areas of the present study were described.Tools of qualitative and participatory research were used. Then the research problem was specified in terms of objectives and hypotheses. Following them, the methodological aspects of the present study were highlighted. In the light of them, the next chapter presents the discussion on the results of the analysis of quantitative data collected through pretested, structured household interview schedule.

CHAPTER IV

RESULTS AND DISCUSSION

In this chapter an attempt has been made to present the results of the analysis of data collected through field survey in four urban localities of Lunglei and Siaha towns. This chapter is presented in terms of five major sections each with a few sub-sections. The first section is devoted to discuss the demographic, social, economic and civic characteristics of the respondents and their households. In the second section, the living conditions of the respondent households are discussed. In the third section the housing conditions are discussed. The urban households' access to water is discussed in the fourth section while in the fifth section their access to sanitation is discussed.

4.1. Profile of Respondents and their Households

The profile of the respondents is presented in five sections viz., demographic characteristics of the four localities, family characteristics, and social characteristics, economic and civic characteristics.

4.1.1. Demographic Characteristics of the Localities

The demographic characteristics comprises of age group, gender, marital status and educational status of the studied localities (see Table 4.1).

Gender Female respondents are comparatively higher for both the towns, i.e. Siaha and Lunglei. In Lunglei, a little more than half (55%)of the respondents are female while 45% are male. In Siaha, more than half (60%) of the respondents arefemale while males constitute 40 percent.

The age group is categorised into four: Children (0 – 17 years), Youth (18 – 34 years), Middle (35 – 59 years) and Old (60 years and above). The majority of the respondents are

from the Middle Age Group (56%) followed by Youth Age Group (32 %). Children and Old Age Group constitute 3% and 9% respectively. In both towns, respondents' age group is more or less similar. The mean age of the sample is calculated to be 40 to 14 years of age which is similar both towns.

With regards to marital status, married respondents constitute the highest number (58%) while remarried respondents were the least (1%). Unmarried respondents constitute 24 % while both Divorcees and widowed made up 8% each. There is no evidence of remarried respondents in Lunglei while it is 2% in Siaha.

The Educational status is classified into 6 categories viz; Illiterate, Primary (1-4), Middle (5-8), High School (9-10), Higher Secondary (11-12) and lastly College and above. Illiterate respondents have the lowest with 3 percentage. Majority of the respondents had attended college or higher (40%) followed by those with higher secondary level of education (28%), High School (18%), middle (9%) and Primary (3%). There are also a few respondents (3%) who had not attended formal education. The mean level of education is lower in Siaha (11.7 to 4.2) as compared to total mean of both the towns (12.0 to 4.2).

4.1.2. Family Characteristics

The family characteristics include Type of Family, Form of Family and Size of Family. (See Table 4.2)

The type of family is categorized into Nuclear and Joint. In both the towns, nuclear families were found to be more (84%) than joint families (16%). This is found true for both towns, but nuclear families are more in Lunglei (90%) as compared to Siaha (78%).

The majority of the respondents came from stable families (93%) while only 9% were from broken families. There is no significant difference in either of the towns in this regard.

Size of family is classified into small (1-3), medium (4-6) and large (7 and above). Majority of the respondents are from medium size families (58%) followed small (32%) and Large family (10%). Differences in family size can be seen in the two towns. While less than half (45%) of respondent families in Lunglei are Small in size, almost a fifth (18%) of the same can be found in Siaha. While almost a fifth (17%) of respondent families from Siaha are large in size, Lunglei has only 3% of the same.

4.1.3. Social Characteristics

Table 4.3 describe the social characteristics of the respondents which are sub-divided into sub-tribe, type of clan and denomination.

Majority of the respondents (43%) are Lusei followed by Mara (28%) and Lai (16%) while other sub-tribes such as Ralte, Paithte and Hmar also constitute the sample. As can be seen from the table, vast differences are found among sub-tribes in Lunglei and Siaha. The dominant sub-tribe for Lunglei are Lusei (73%) while it is Mara in the case of Siaha (57%). There are no Mara and Lai respondents in Lunglei. Other than Mara, Lusei and Lai, there are no traces of other sub-tribe in Siaha. Non-Mizo respondents comprise of 3% of the sample and are found only in Lunglei.

As regards to type of clan, a large majority respondents (82%) are from commoner clans and the rest (18%) are from ruling clans.

Denomination-wise, since Lunglei is the headquarters of Baptist Church of Mizoram, majority of the respondents (67%) are Baptist. Likewise, Siaha is the birthplace and headquarters of the Evangelical Church of Maraland and therefore, respondents belonging to ECM are the majority (60%) in Siaha. Respondents from denominations like Presbyterian, IKK, UPC (Mz), UPC (NEI) and others also constitute the sample in small numbers.

4.1.4. Economic and Civic Characteristics

Table 4.4 describes the Economic and Civic characteristics of respondents which include socio economic category, political party affiliation, and presence of church elder in family and family member as Office Bearer in Community Based Organization (CBO).

Socio Economic category of respondents are sub-divided into very poor (AAY), Poor (BPL) and Non Poor (APL). The distribution of the said categories is almost similar in both Lunglei and Siaha where Non-Poor constitute a majority of the respondents (57%) followed by Poor (36%) and Very Poor (9%).

4.2. Living Conditions

This section of the chapter describes the living conditions of the respondent households in terms of Sources of Household Income, Patterns of Household Income, Household Assets and Average Market Value of Household Assets.

4.2.1.Sources of Household Income

Table 4.5 shows the different sources of household income where it can be said that, Majority of the households in Lunglei (50%) and Siaha (55%) have income generated from Government Service/Pension. People also engage in Daily wage labour (23%) in both the towns where Lunglei (27%) has more as compared to Siaha (18%). In terms of income generated from Agriculture, Lunglei is again higher with 28% as compared to Siaha which is only 3 percent. Business/Petty Trade (15%), Skilled Labour (13%), Private Employment (8%) and Livestock Rearing (3%) are among the sources of household income in both Lunglei and Siaha**.**

4.2.2. Pattern of Household Income

The section shows the pattern of household income generated from different sources mentioned in the above description. In Table 4.6, it can be seen that, the average household

income for both the towns from Government Service/Pension is Rs 2,44,687/- which is 61 % of the total average household income which stands at Rs. 3,97,954/-. Other sources like Business Petty Trade (12%), Private Employment (12%), Daily wage labour (6%), Skilled Labour (4%), and Agriculture (4%) also generated plenty of household income while Livestock rearing (1%) is not a common practice especially in Siaha (0%) with no household generate income from Livestock Rearing. Comparatively, Siaha (73%) has generated more income from Government Service/Pension than Lunglei (49%).

4.2.3. Household Assets

The disparity of assets varies from household to household in both the towns as can be seen in Table 4.7. Cell Phone (99%) is the asset owned by every household and only 1 household in Siaha does not have cell phone. Majority of the population also has Television (90%) with Household Furniture (88%), Refrigerator (75%) House Building (64%) and Washing Machine (60%). Almost half of the respondents' household owned Bank Saving (46%). Other assets like Computer/Laptop (39%), House site (38%), Inverter (34%), Land (33%), Two Wheeler (28%), Insurance (22%), Four Wheel (21%) and Livestock (20%) are also own by households in both the towns.

In comparison of the household assets owned by Lunglei and Siaha, there is no significant differences in the pattern and they are more or less similar.

4.2.4.Average Value of Household Assets

The maximum amount of assets owned by a household in today's market value is Rs. 143,06,000/- and the lowest being Rs. 9,500/- and these households are from Siaha. The average of all the total Household Assets worth at 14,38,891 rupees. Averagely, Siaha (Rs. 19,51,141) is better than Lunglei (Rs. 9,26,653) in terms of Household Assets. (Table 4.8)

4.3. Access to Housing

In this section Access to Housing is brought out in broad sub-category viz. Housing Conditions: Ownership and Type, Housing Conditions: Ceiling and Walls, Housing Facilities, Level of Housing, Respondent's Perception on Quality and Adequacy of Housing, Housing Schemes, and Social and Economic Factors and Housing: Pearson's R.

4.3.1. Housing Conditions: Ownership and Type

Housing conditions are assessed in terms of a number of indicators such as ownership, type of house, type of floor, type of Roof and No. of Rooms available in a house. These indicators were analysed individually (see Tables 4.9 and 4.10) for their difference between Lunglei and Siaha towns.

The first indicator of housing conditions Ownership of House.It has been found out that in both the towns, a majority of the households (63%) reside in their own houses while there are also some households living in a rented house (31%) and a few resides in rent free (6%). There is no significant differences between Lunglei and Siaha in terms of Ownership of House.

4.3.1.(b) Type of Houses

The type of houses are classified into Pucca, Semi-Pucca and Kutcha Houses. It is significant to note that, in Mizoram context, the concept of the said classification of houses is different in terms of materials used for construction of houses. For instance, Kutcha house in Mizoram refers to houses built by using bamboo with Tin or Corrugated Iron as roof. There are little or less houses build with mud alone. Therefore, it can be said from the findings that, majority of the household have a semi-pucca type of house and 33% of household lives in Pucca type of House and the rest (9%) love in a Kutcha House. Comparatively, household living in a Semi Pucca in Lunglei (63%) is higher than Siaha (53). In terms of pucca type of

housing, Siaha (37) is slightly better than Lunglei (37%) and no big difference in Kutcha between Lunglei (8%) and Siaha (10%).

4.3.1. (c) Type of Floor

The type of floor commonly used in both the towns are Wood (53%) and Concrete (45%). Bamboo (1%) and Mud (1%) are also used by few. Comparatively there is no huge differences in the type of floor in both the towns except there is no evidence of Mud and Bamboo type of floor in Siaha.

4.3.1. (d) Type of Roof

Concrete (50%) and Corrugated Iron (45%) are the two common types of roof used in both the town and roghly 12% of people used Tin as a Roof in these two towns. Tins in Siaha (15%) is slightly higher than Lunglei (8%) and there is no huge margin between two towns in Corrugated Iron and Concrete.

4.3.1. (d) No. of Rooms

The number of room available is different from household to household. The maximum number available in a house is recorded as 8 and minimum is 2 in both the cases of towns. The average of rooms available comes in at 3.6. Lunglei (4.1) is higher than Siaha (3.1) averagely in comparison.

4.3.2. Housing Conditions: Ceiling, Walls, House Post and Connectivity

This section explains Table 4.10 which shows the type of ceiling used, type of walls, house post and whether the house is connected with roads or other means.

4.3.2. (a) Type of Ceiling

Concrete (36%) holds the majority in the type of ceiling used in both the towns which is almost similar with Woods (34%). There are people (27 %) who do not have ceilings in their house and Corrugated Irons (2%), Bamboo (1%) and Asbestos (1%) as a ceiling come in small numbers.

In Siaha (38%), some of the people have no ceiling in their house which is slightly one-fold higher than Lunglei (15%). On the other hand, the used of Wood in Lunglei (42%) is higher than that of Siaha (27%). There is no big difference between Lunglei (38%) and Siaha (33%) in terms of Concrete type of Ceiling.

4.3.2. (b) Type of Wall

Brick (37%) and Woods (36%) are the most common type of walls used in both the towns followed by Corrugated Irons (14%), Asbestos (10) and Bamboo (3%). The used of Corrugated walls are founded to be more in Siaha (22%) than Lunglei (7%) and likewise, Wood is more in Lunglei (45%) than Siaha (27%). Brick used in Lunglei (38%) and Siaha (35%) are almost similar in percentages.

4.3.2. (c) Type of House Post

From the survey it has been found out that there are two types of household posts which are wood (58%) and Concrete (42%). From the findings, there is no differences in the type of house post in the types and they are exactly found to be matched.

4.3.2. (d) Road Connectivity to House

Road connectivity to house is an important entity which determines the quality of housing. Most of the houses are connected with four wheeler roads (64%) and two wheeler roads come in at 10 percent. There are also houses not connected with proper pathway (24%) and a few is connected with foot path (13%). (See Table 4.10)

Foot path connected to house in Lunglei (17%) is found to be higher than that of Siaha (8%) while Four Wheeler connected to house in Siaha (58%) is higher than Lunglei (48). Others are almost similar in their percentages.

4.3.3. Housing Facilities

Good condition of house determined by the facilities attach to the house. Table 4.11 shows that, all the household in both the towns are electrified (100%) and almost all the household have accessed to LPG (95%) with Attached Bathroom (86%). Over half of the people have Separate Kitchen (55%) and slightly less than a half have spaces for Garage (47%).

Comparatively, apart from LPG and Electricity, Lunglei has topped Siaha in terms Attached Bathroom and Toilet (95%-77%), Separate Kitchen (65%-45%) and Availability of Garage (65%- 28%).

4.3.4. Level of Housing

Table 4.12 clearly shows the level of housing into four different level where more than one-third of the people are living in a low level (33%) and high level (27%) of housing and there are also people living in Medium and Low Level of housing which shares the same magnitude of 18 percent. The table also shows that, people living in Siaha are less fortunate in terms of level of housing as there are 18% living in very low level of housing as compared to Lunglei (8%).

4.3.5. Respondents' Perception on Quality and Adequacy of Housing

Respondents were asked during survey to rate the quality of their housing and adequacy of their house, the findings are as follows. (See Table 4.13)

4.3.5. (a) Quality of Housing

Majority of the respondents feel that the quality of their house is Moderate (58%) in both towns and others feel that they live in Low quality (20%), High (12%) and Very Low (10%) quality of houses. (See Table 4.13)

Respondents' perception on the quality of their houses differs between both towns. In Lunglei, majority of the respondents feel that their house is moderate (82%) which is much higher than Siaha (33%). In terms of Low Quality of Housing, Siaha (33%) is higher than Lunglei (7%) as well as High Quality of Housing with 15% from Siaha to that of Lunglei which is 8 percent. People in Siaha (18%) also feel that the quality of their house is Very Low while Lunglei can only come up with 2 percentage. The table also shows that there are no respondents who feel the quality of their house is Very High in Siaha (0%) while the latter has 2 percentages in the perceptions.

4.3.5. (b) Adequacy of Housing

The majority of the total respondents (54%) perceive that the adequacy of their house is moderate. Almost aquarter feels their house is inadequate (22%) while more than s a fifth says that their house is Adequate (13%) and very few believes that they are highly inadequate (4%). Few of the respondents also feel that their house is Highly Adequate (7%). (See Table 4.14)

In terms of Perception to Moderate, Lunglei (70%) is much higher than Siaha (38%). The Perception of respondents are higher in every level of the adequacy of housing in Lungei except 'Adequate' which are similar.

4.3.6. Housing Schemes

Only 6 percent of the total respondents have benefitted Housing Schemes which are IAY, IHSDP and PMAY. The number of beneficiaries are similar in both the towns with 5 percent each.

4.3.7. Social and Economic Factors and Housing Conditions:

Karl Pearson's product moment correlation coefficients were used to analyse the socio economic determinants of housing conditions of the respondent households. The results indicate that there are many factors which determine the condition of housing, their quality and adequacy(see Table 4.15).

There are no Significant Differences in Gender, Age Group, Type of Family, Political Party Affiliation, Tribe and Denomination. On the other hand, there is significant difference in terms of town where the quality and adequacy of housing depends greatly on town viz. Lunglei is better than Siaha. For better Quality and Adequacy of Housing chances are much greater in Lunglei rather than Siaha.

Location, mainly core and periphery in a town also have significant differences in the quality and conditions of housing where residing in core locality have greater impacts upon them.Education has high impact on the Condition and Quality of Housing where the higher the education status,the higher in the housing condition and quality but not in the adequacy.

Size of family also matters to the fact that, the greater in size of family implies, the chances of adequacy of housing is reduced which is evident in the said table.Chances are that, the higher in the socio economic status, the higher in the condition of the house, their quality and adequacy.

One of the unlikely findings is that, some of the respondents whose family is in Office Bearer of CBO or Church Elder in Family, have low condition of housing, their quality and adequacy. But this can be negligible as they represent only a few respondents. The greater household income implies that the condition of housing, their quality and adequacy are also greater.

The greater the value of Household assets defines good condition of housing with better quality and adequacy.Quality of Housing, conditions of Housing and Adequacy of Housing are all co-related to one another. Failing one of the said entities could lead to the deterioration of the latter of the two.

4.4. Access to Water

This section is sub-divided into subsectionsviz., the sources of water during dry seasons and rainy seasons, Ranking of Sources of Water during dry season according to quantity collected, Perceived quality of water with their level, Adequacy of Water by Use and its Sources and Water Determinants.

4.4.1 Sources of Water during Dry Season

PHEW Household Connection (73%) is the dominant sources of water for most of the households in both the towns. Half of the total sample also uses PHEW Shared Connection (50%). Less than a half consumes from spring or Tuikhur (44%). There are huge differences in the patterns of sources of Water Supply comparatively between Lunglei and Siaha.

In Siaha (58%), only half of the population have access to PHEW Household Connection which is lower than that of Lunglei (88%). There are also disparities in PHE Shared Connection, Spring (Tuikhur), PHEW Point, Rain Water Harvesting, Bottled Water, Water Vendors and Hand Pump between the two towns where Siaha is lower in percentages in all the sources. There are no traces of PHEW Point, Rain Water Harvesting, Bottled Water, and Hand Pump are being mentioned as sources in Siaha.

4.4.2.Sources of Water during Rainy Season

Table 4.17 indicates that, the sources of water during the dry season and rainy season differ in both the areas. During rainy season, Rain Water is more abundant where water

consumption jumps up from 38% to 42 % for the total sample. Other than that no huge difference in the sources of water in comparison of the seasons.

4.4.3 Ranking of Sources of Water during Dry Season according to Quantity Collected

PHEW Household topped the ranked with PHEW Point in total followed by Shared Connection, Rain Water Harvesting, Hand Pump, Spring water, Water Vendors and Bottled Water. There is slightly difference between two towns which are clearly visible in Table 4.18.

4.4.4. Perceived Quality of Water by Source

Table 4.19 shows that Perceived quality of Water is greater in Lunglei as compared to Siaha

4.4.5. Perceived Quality of Water by Source

Table 4.20 explains the respondents' perception on the Quality of Water by source which are made according to the level viz. Very Low, Low and Moderate. The majority of the total sample feels that the level of water is Low (40%) and more than a quarter feels it is Low (34) and lastly 26 percent of the respondents feel it is Very Low.

In terms of towns, Siaha is less privileged in their Perception towards the Quality of Water as their quality of water in Low (60%) and Very Low (33%) is much higher thang Lunglei which is 20 and 18 percent respectively.

4.4.6. Adequacy of Water by Use

Table 4.21 shows that there is no differences in the Perceived quality of Water between the towns rather they are almost similar.

4.4.7. Perceived Adequacy of Water

The majority of the total respondents feel that water is moderate for use (78%), 13% says they are Inadequate and 8% Adequate. There are none who feel Highly Adequate but 2% feels they are Highly Inadequate. Comparatively, Lunglei is less deprivedin the adequacy of Water, (See Table 4.22)

4.4.8.Socio Economic Determinants of Access, Adequacy and Quality of Water

Karl Pearson's' coefficient of correlation was used to identify the socio economic factors determining the household's' access to water and its adequacy and quality in the study areas (see Table 4.23). The results of the correlational analysis are as under.

No Significant Differences in Gender, Age Group, Type and Size of Family, Dominant Tribe, Denomination, Political Party Affiliation and Adequacy of Housing in relation to Perceived Quality and Adequacy of Water.Town signifies that, if one resides in Lunglei, then chances of better water quality is higher than Siaha.

People living in the core have more access to water supply in terms of quality and adequacy than people living in Periphery.The higher the education status resulted in better quality of Water and its Adequacy.The higher Socio Economic Status, the higher in the quality of water and its abundancy.Church Elder and OBs in CBO from a family means that, the quality of water is low and likely to be inadequate.

The more household income and assets maintain that, there would be enough adequate of water.Good Housing Conditions and Better Housing Quality are determined by the quality and adequacy of Water.Lastly, the perception on Quality of Water and Its Adequacy are closely linked to one another. The better in the quality of water resulted in its adequacy and vice versa.

4.5. Access to Sanitation

The discussion on the access to sanitation is presented in three subsections viz., Frequency and Type of Toilet Used, Type of Drainage, socio economic determination of household's access to sanitation.

4.5.1. Frequency and Type of Toilet Used

Table 4.24 is on the frequency and type of toilet used where it is shown that, the frequency of Pour Flush Toilet is better in Lunglei than Siaha. Others have no significant differences.

4.5.2. Type of Drainage

The type of drainage used by respondents' household is classified into two, namely – Connected to Drainage and notconnected to any System. (See table 4.25)

The majority of the respondents' have their waste water flow in a drainage connected to sewerage (73%). In Siaha, the household not connected to any drainage is greater in percentage i.e. 27% is greater than Lunglei (7%).

4.5.3.Socio Economic Determinants of Access to Sanitation

To identify the socio economic determinants of the household's access to sanitation, Karl Pearson's correlation coefficients were used (see Table 4.26). There are many factors which determine the frequency of different types of toilet used.

Household's access to sanitation depends of the town and location of localities wherein they are located. The access to sanitation was better in Lunglei town as compared to that of the Siaha town. Further, between the core and peripheral locations of the localities the access to sanitation was better in core localities. The frequency of the use of Pour Flush Toilet with Septic Tank was higher in Lunglei as compared to Siaha. Also the use of Pit Latrine withSlab was higher in peripheral localities as compared to those of core localities.As

expected, household income and household assets have positive effect on the frequency of use of Pour Flush with Toilet Septic Tank. Similarly, housing condition, and quality of housing, Perceived Quality of Water and Perceived Adequacy of Water have positive effect on the frequency of household's use of pour flush toilet with septic tank.

The following four hypotheses were proposed at the outset of the present study.

1. There are differences in households' access to housing, drinking water and sanitation between urban areas under the autonomous council and those under direct state administration.
2. Households' access to housing, drinking water and sanitation depend on the location of the locality i.e. core or periphery.
3. Household's access to housing, drinking water, and sanitation depend upon household assets and household income.
4. Households' access to housing, drinking water and sanitation are interdependent.

These hypotheses have been tested in this chapter. The correlational analyses validate all these hypotheses. As hypothesized the household's access to housing, drinking water and sanitation depend upon the town, location of the locality, household income and assets.

The household access to housing, drinking water and sanitation were significantly different between the Lunglei (town under direct state administration) as compared to Siaha (town under the autonomous council area). Not only the access but also the quality and adequacy of housing, water and sanitation were found to be significantly greater in Lunglei town as compared to Siaha. The household's access to housing, drinking water and sanitation was greater for the households belonging to the core location of the town as compared to those residing in peripheral location.

The household's access to housing, water and sanitation depends upon the living conditions of the households. Higher the households income and assets, its access, quality and adequacy to housing, water and sanitation are better.

As hypothesised the access to housing, drinking water and sanitation are interdependent. No doubt to improve the household's access to water and sanitation housing condition of the households need to be improved.

In this chapter, an attempt has been made to discuss the results of the analysis of primary data on the housing, drinking water and sanitation. The next chapter presents the summary of the findings, conclusion and suggestions of the present study.

CHAPTER V

CONCLUSION

In the previous chapter, the results of the quantitative data analysis have been discussed. In this chapter, the findings are summarised, conclusion is presented and suggestions for policy making and further research are furnished. This chapter is presented into three major sections viz., major findings, conclusion and suggestions.

5.1.Major Findings

A conclusion will be drawn based on the findings of data collected primarily through field survey, interview and literature from various scholars.

5.1.1. The Urban Development Contexts of Lunglei and Siaha

Migration of people from rural areas contributes to urbanisation in Mizoram. This is true in the cases of urban areas in autonomous council (Siaha) area as well as those towns under the direct administration of state government (Lunglei).However, the pattern of migration is different between Lunglei and Siaha. The urban sprawl is higher in the cases of core location in the cases of Lunglei town as we could observe in the Venglai locality. Contrary to this matter, in the cases of Siaha, College Vaih, which is the peripheral locality experiences more migration in comparison with core locality studied i.e., New Siaha.

The towns studied have been governed by two different types of administrative or Government. Lunglei is under direct administration of Government of Mizoram while Siaha town is under the administration of Autonomous Council. In Lunglei, DUDO Office has been set up while all urban related works in Siaha are carried out through DC's Office in NULM cell and SDO (Sadar) is the Nodal Officer.

The housing condition in core locality in comparison with peripheral locality is higher than that of the peripheral locality. The rent for housing is also higher in core locality as core

locality is associated with commercial center of a town. There are no regulations or rules for housing adopted in the both the towns.

In terms of water and sanitation are concerned, both the towns i.e., Lunglei and Siaha, have more or less similar challenges and issues. The main source of water in both the towns is PHE Household Connection and Pour Flush Toilet is the main type of toilet used. Waterlogging in some areas during the rainy season is experienced in both the towns. There is less or little government intervention in Sanitation for both the towns.

The KIIs havealso shown that, there are political interferences for the selection of beneficiaries for housing schemes. Siaha, in particular who is under the jurisdiction of Autonomous Council has no separate Programmes for housing, drinking water and sanitation

5.1.2 Access to Housing

Majority of the population are found to have their own house in both the two towns viz. Lunglei and Siaha. Comparatively, there is no significance differences in access to housing in both the towns, People either live in a rented/rent free or in their own house in both the towns. In terms of type of houses, it is found that people are still living in an old and dilapidated in a kutcha type of house. This proves that there is a huge scope in improving the living conditions of the poor in these two towns in terms of housing.

Housing conditions indicators like type of houses, floors, roofs and no. of rooms were aggregated to derive a weigh score for a comparative study between Lunglei and Siaha town. From the findings, it can be clearly concluded that, Housing conditions are better in Lunglei as compared to Siaha town.

Access to housing deeply depends on the location of the town (Lunglei and Siaha), education, socio-economic status, household assets, household income and location of locality (core and periphery). Residing in Lunglei and core locality in the towns more or less ensures access to housing wherein the higher the education status, socio-economic status,

household assets and household income are also found to have a positive impact for access to water. Perceived Quality and Adequacy in both the towns vary where Lunglei is higher than Siaha. Location of locality (core and periphery), education, socio-economic, household assets and household income have also positive association with perceived quality and adequacy of housing.

5.1.2 Access to Water

The main source of water for both the towns is PHE Household Connection in both the seasons viz. dry and rainy season. Rain water harvesting is not a common practice in both the towns. People living in a rented house commonly have PHE Shared Connections and Spring (Tuikhur) is also an important source of water for some of the households. The perceived quality of water is higher in Lunglei as compared to Siaha. In terms of adequacy, both the towns have no differences.

The better the housing conditions, household assets, household income, education and socio-economic status imply the higher in the perception level of quality and adequacy of housing. In the cases, quality and adequacy, Lunglei's perception is higher than Siaha.

5.1.3 Access to Sanitation

Poor flushed toilet is the type of toilet considered as a standard type of toilet where Lunglei town is better in terms of toilet used than Siaha. Apart from this, the used of pit latrine is still prominent in both the areas especially in the periphery locality. Therefore, access to sanitation in urban periphery is still a problematic due to various reasons.

The used of pour flushed toilet is determined by household income, household assets, household conditions, quality of housing, quality and adequacy of water.

5.1.3. Access to Housing, Drinking Water and Sanitation

House is a basic necessity. Every one, rich or poor, whether in rural or urban areas, needs a house to protect his life and property and also to promote his well-being. Housing is

thus a fundamental requirement both for the human existence and settlement. Housing is also accepted as a key sector of the national economy which measures the standard of living and economic condition of a country. Good housing is a pre-requisite for human development and welfare. It provides shelter, security, privacy and basic amenities like drinking water and sanitation to the human beings for decent living. Without good housing, the provision of drinking water and sanitation would not have been possible.

Housing, Drinking Water and Sanitation are inter-related to one another where, the conditions of housing characterised the condition of water and sanitation and vice versa.

In comparison between the two administrations of the town i.e Autonomous District Council and direct State Government, it has been found that direct administration of government are superior in terms of housing, drinking water and sanitation in Mizoram exclusively to urban areas. It has also been founded that, there is no UD&PA office or DUDO in Siaha town. All urban related works including urban development schemes which are CSS are carried out in a small establishment in NULM Cell, DC Office which is headed by the SDO (Sadar) who is the nodal officer. As of now there are no housing schemes under MADC.

5.2. Conclusion

The patterns of urbanisation, urban development, urban basic services and urban development administration inLunglei are significantly different from those of Siaha. Yet they have one common feature that both lack urban local self-government so as to address the challenges of urbanisation, urban infrastructure development, and urban basic services faced by its populace. The urban development scenario especially access, quality and adequacy of housing, water supply and sanitation in Lunglei town under direct administration of state government is better than Siahawhich is under Mara district autonomous council. Housing conditions in both the towns have a huge scope of improvement where Siaha is behind

Lunglei. Apart from inter town differences in access, quality and adequacy of housing, water and sanitation, there are significant differences between the core and peripheral areas of both the towns. The access, quality and adequacy of housing, sanitation and water greatly depend on the livelihood base of the households. Further, the access, quality and adequacy of housing, drinking water and sanitation are interdependent. In other words, to improve the household's access to sanitation there is need to improving housing conditions and access to water also.

5.3Suggestions

In the light of above findings and conclusion, the following sections present policy implication for policy and suggestions for further research.

5. 3.1. Policy Implication

1. Access, quality and adequacy of urban basic services such as housing, drinking water and sanitation mainly depend upon the livelihood asset base of the households. Hence, to improve them, livelihood promotion needs to be prioritised.
2. Siaha, the town belonging to the autonomous district area lags behind the Lunglei town in terms of access to housing, drinking water and sanitation. The Government of India and Mizoram State Government needs to give special care to promote urban infrastructure development, livelihood promotion and provision of urban basic services.
3. The major challenge to urban development administration in Lunglei and Siaha is lack of integrated urban local self-government. At present a number of village councils are managing each locality affairs. People and leaders of both the localities want to have democratically elected municipal administration which will properly implement the urban development programmes.
4. The setting up of DUDO in Siaha, Autonomous District Council Area is needed in order to facilitate better implementation and monitoring of urban development programme.

5. The existing policy of the government should be reoriented to cater to the needs of the housing especially to periphery locality. Policy makers should put into consideration that core and periphery needs are different and should draw the line of differences during the policy formulation.
6. Political interference in selection of beneficiaries under urban livelihood and urban basic services programmes should be curtailed. The local leadership unit needs to be restrained from controlling the process of selection of beneficiaries and the elected bodies need to be empowered so as to implement the programmes as stipulated in the guidelines.
7. The community leaders, government officials and the beneficiaries of centrally sponsored housing schemes felt that the money sanctioned under schemes such as IHSDP are highly inadequate to construct good quality house with water and sanitation facilities. This is because of the hilly topography of the state, high cost of construction material and high wages for construction workers. Considering these the amounts sanctioned under the PMAY scheme needs to revised specially for hilly states of North East India such as Mizoram.

5.3.2. Suggestions for Further Research

1. Studies on urban development in North East India especially Mizoram are few. Social science departments such as social work, sociology, economics, geography, management, commerce, political science, public administration need to focus on various aspects of urbanisation and urban development. The faculties across these disciplines need to come forward to work together for interdisciplinary research on urban development.
2. There is need for studies on interstate and inter district variations in access, quality and adequacy of urban basic services, urban infrastructure development and urban livelihood promotion across the north eastern states of India.

Table 4.1 Demographic Profile of Respondents

Sl.No	Characteristic	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
I	**Gender**			
	Male	27 (45)	24 (40)	51 (43)
	Female	33 (55)	36 (60)	69 (58)
II	**Age Group**			
	Children (0 -17)	1 (2)	3 (5)	4 (3)
	Youth(18 - 34)	21 (35)	17 (28)	38 (32)
	Middle (35 -59)	32 (53)	35 (58)	67 (56)
	Old (60 and Above)	6 (10)	5 (8)	11 (9)
	Mean Age	41± 15	40± 14	40± 14
III	**Marital Status**			
	Unmarried	18 (30)	11 (18)	29 (24)
	Married	32 (53)	38 (63)	70 (58)
	Divorced	6 (10)	4 (7)	10 (8)
	Remarried	0 (0)	1 (2)	1 (1)
	Widowed	4 (7)	6 (10)	10 (8)
IV	**Education Status**			
	Illiterate	2 (3)	1 (2)	3 (3)
	Primary (1 - 4)	0 (0)	3 (5)	3 (3)
	Middle (5 -8)	6 (10)	5 (8)	11 (9)
	High School (9 -10)	10 (17)	11 (18)	21 (18)
	Higher Secondary (11 -12)	17 (28)	17 (28)	34 (28)
	College	25 (42)	23 (38)	48 (40)
	Mean	12.4± 4.2	11.7± 4.2	12.0±4.2

Source: Computed Figures in parentheses are percentages

Table 4.2 Family Characteristics

Sl.No	Characteristic	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
I	**Type of Family**			
	Nuclear	54 (90)	47 (78)	101 (84)
	Joint	6 (10)	13 (22)	19 (16)
II	**Form of Family**			
	Stable	55 (92)	56 (93)	111 (93)
	Broken	5 (8)	4 (7)	9 (8)
III	**Size of Family**			
	Small(1 - 3)	27 (45)	11 (18)	38 (32)
	Medium (4 - 6)	31 (52)	39 (65)	70 (58)
	Large(7 and Above)	2 (3)	10 (17)	12 (10)

Source: Computed Figures in parentheses are percentages

Table 4.3 Social Characteristics

Sl.No	Characteristic	Town		
		Lunglei n = 60	Siaha n = 60	Total N = 120
I	**Sub tribe**			
	Lusei	44 (73)	7 (12)	51 (43)
	Mara	0 (0)	34 (57)	34 (28)
	Lai	0 (0)	19 (32)	19 (16)
	Ralte	8 (13)	0 (0)	8 (7)
	Non-Mizo	4 (7)	0 (0)	4 (3)
	Hmar	3 (5)	0 (0)	3 (3)
	Paihte	1 (2)	0 (0)	1 (1)
II	**Type of Clan**			
	Ruling	6 (10)	16 (27)	22 (18)
	Commoner	54 (90)	44 (73)	98 (82)
III	**Denomination**			
	Baptist	40 (67)	5 (8)	45 (38)
	ECM	0 (0)	36 (60)	36 (30)
	Presbyterian	14 (23)	0 (0)	14 (12)
	IKK	0 (0)	4 (7)	4 (3)
	UPC(NEI)	4 (7)	2 (3)	6 (5)
	UPC(Mz)	0 (0)	1 (2)	1 (1)
	Others	2 (3)	12 (20)	14 (12)

Source: Computed Figures in parentheses are percentages

Table 4.4 Economic and Civic Characteristics

Sl.No	Characteristic	Lunglei n = 60	Siaha n = 60	Total N = 120
I	**Socio Economic Category**			
	Very Poor(AAY)	5 (8)	4 (7)	9 (8)
	Poor(BPL)	21 (35)	22 (37)	43 (36)
	Non-poor(APL)	34 (57)	34 (57)	68 (57)
II	**Political Party Affiliation**			
	None	39 (65)	34 (57)	73 (61)
	INC	13 (22)	10 (17)	23 (19)
	MNF	8 (13)	8 (13)	16 (13)
	BJP	0 (0)	8 (13)	8 (7)
III	**Church Elder in Family**	30 (50)	13 (22)	43 (36)
IV	**Any Family Member OB in CBOs**	33 (55)	8 (13)	41 (34)

Source: Computed Figures in parentheses are percentages

Table 4.5 Sources of Household Income

Sl. No	Source of Income	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
1	Government Service/Pension	30 (50)	33 (55)	62 52
2	Daily Wage Labour	16 (27)	11 (18)	28 (23)
3	Agriculture	17 (28)	2 (3)	19 (16)
4	Business/Petty Trade	10 (17)	8 (13)	18 (15)
5	Skilled Labour	4 (7)	11 (18)	16 (13)
6	Private Employment	7 (12)	3 (5)	10 (8)
7	Livestock Rearing	1 (2)	2 (3)	4 (3)

Source: Computed Figures in parentheses are percentages

Table 4.6Pattern of Household Income

Sl.No	Source of Income	Town				Total N = 120	
		Lunglei n = 60		Siaha n = 60			
		Mean	S.D	Mean	S.D	Mean	S.D
1	Government Service/Pension	181100 (49)	223036	308333 (73)	444687	244717 (61)	356072
2	Business/Petty Trade	42833 (11)	121419	54333 (13)	179758	48583 (12)	152851
3	Private Employment	77500 (21)	394499	14667 (3)	72427	46083 (12)	284177
4	Daily Wage Labour	29008 (8)	57477	20100 (5)	53797	24554 (6)	55613
5	Skilled Labour	11000 (3)	49633	21333 (5)	50236	16167 (4)	49995
6	Agriculture	28000 (8)	51414	2700 (1)	19401	15350 (4)	40725
7	Livestock Rearing	3333 (1)	25820	1667 (0)	9051	2500 (1)	19283
8	Annual Household Income	372775 (100)	446837	423133 (100)	442139	397954 (100)	443344

Source: Computed Figures in parentheses are percentages

Table 4.7 Household Assets

Sl.No	Household Assets	Town		
		Lunglei n = 60	Siaha n = 60	Total N = 120
1	Cell Phones	60 (100)	59 (98)	119 (99)
2	Television	57 (95)	51 (85)	108 (90)
3	Household Furniture	51 (85)	54 (90)	106 (88)
4	Refrigerator	48 (80)	42 (70)	90 (75)
5	House Building	45 (75)	32 (53)	77 (64)
6	Washing Machine	39 (65)	33 (55)	72 (60)
7	Bank Saving	39 (65)	16 (27)	55 (46)
8	Computers/Laptops	30 (50)	17 (28)	47 (39
9	House Site	18 (30)	27 (45)	46 (38)
10	Inverter	26 (43)	15 (25)	41 (34)
11	Land	34 (57)	5 (8)	40 (33)
12	Two Wheeler	22 (37)	12 (20)	34 (28)
13	Insurance	19 (32)	7 (12)	26 (22)
14	Four Wheeler	12 (20)	13 (22)	25 (21)
15	Livestock	6 (10)	18 (30)	24 (20)

Source: Computed Figures in parentheses are percentages

Table 4.8 Average Value of Household Assets

Sl.No	Household Assets	Town		
		Lunglei n = 60	Siaha n = 60	Total N = 120
1	Minimum	12500	9500	9500
2	Maximum	4911000	14306000	14306000
3	Mean	926653	1951141	1438897
4	Std. Deviation	1004867	3299104	2482246

Source: Computed

Table 4.9 Housing Conditions : Ownership and Type

Sl.No	Characteristics	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
I	**Ownership of House**			
	Rent Free	2 (3)	5 (8)	7 (6)
	Rented	14 (23)	23 (38)	37 (31)
	Owned	44 (73)	32 (53)	76 (63)
II	**Type of House**			
	Kutcha	5 (8)	6 (10)	11 (9)
	Semipucca	38 (63)	32 (53)	70 (58)
	Pucca	17 (28)	22 (37)	39 (33)
III	**Type of Floor**			
	Mud	1 (2)	0 (0)	1 (1)
	Bamboo	1 (2)	0 (0)	1 (1)
	Wood	30 (50)	34 (57)	64 (53)
	Concrete	28 (47)	26 (43)	54 (45)
IV	**Type of Roof**			
	Tin	5 (8)	9 (15)	14 (12)
	Corrugated Iron	30 (50)	24 (40)	54 (45)
	Concrete	25 (42)	27 (45)	52 (43)
V	**No. of Rooms**			
	Minimum	2	2	2
	Maximum	8	8	8
	Mean	4.2	3.1	3.6
	S.D	1.7	1.4	1.6

Source: Computed Figures in parentheses are percentages

Table 4.10 Housing Conditions: Ceiling, Wall,

Sl.No	Housing Attributes	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
I	**Type of Ceiling**			
	None	9 (15)	23 (38)	32 (27)
	Bamboo	0 (0)	1 (2)	1 (1)
	Corrugated Iron	2 (3)	0 (0)	2 (2)
	Asbestos	1 (2)	0 (0)	1 (1)
	Wood	25 (42)	16 (27)	41 (34)
	Concrete	23 (38)	20 (33)	43 (36)
II	**Type of Wall**			
	Bamboo	1 (2)	3 (5)	4 (3)
	Corrugated Iron	4 (7)	13 (22)	17 (14)
	Asbestos	5 (8)	7 (12)	12 (10)
	Wood	27 (45)	16 (27)	43 (36)
	Brick	23 (38)	21 (35)	44 (37)
III	**Type of House Post**			
	Wood	35 (58)	35 (58)	70 (58)
	Concrete	25 (42)	25 (42)	50 (42)
IV	**Road Connectivity to House**			
	None	12 (20)	17 (28)	29 (24)
	Foot Path	10 (17)	5 (8)	15 (13)
	Two Wheeler	9 (15)	3 (5)	12 (10)
	Four Wheeler	29 (48)	35 (58)	64 (53)

Source: Computed Figures in parentheses are percentages

Table 4.11 Housing Facilities

Sl.No	Housing Facilities	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
1	Electricity	60 (100)	60 (100)	120 (100)
2	Liquid Petroleum Gas	55 (92)	59 (98)	114 (95)
3	Attached Bathroom and Toilet	57 (95)	46 (77)	103 (86)
4	Availability of Separate Kitchen	39 (65)	27 (45)	66 (55)
5	Availability of Garage	39 (65)	17 (28)	56 (47)

Source: Computed Figures in parentheses are percentages

Table 4.12Level of Housing

Sl.No	Level	Town		Total
		Lunglei	Siaha	
1	Very Low (<= -1)	5 (8)	17 (28)	22 (18)
2	Low (-.99 - .00)	26 (43)	19 (32)	45 (38)
3	Medium (0.00001 - 1)	10 (17)	11 (18)	21 (18)
4	High(1.00001+)	19 (32)	13 (22)	32 (27)
	Total	60 (100)	60 (100)	120 (100)
	Mean Housing Conditions	0.16 ± 0.90	-0.16 ± 1.08	0.00 ± 1.00

Source: Computed Figures in parentheses are percentages Mean ± S.D

Table 4.13 Respondent's Perception on Quality and Adequacy of Housing

Sl.No		Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
I	**Quality of Housing**			
	Very Low	1 (2)	11 (18)	12 (10)
	Low	4 (7)	20 (33)	24 (20)
	Moderate	49 (82)	20 (33)	69 (58)
	High	5 (8)	9 (15)	14 (12)
	Very High	1 (2)	0 (0)	1 (1)
II	**Adequacy of Housing**			
	Highly Inadequate	1 (2)	4 (7)	5 (4)
	Inadequate	4 (7)	22 (37)	26 (22)
	Moderate	42 (70)	23 (38)	65 (54)
	Adequate	8 (13)	8 (13)	16 (13)
	Highly Adequate	5 (8)	3 (5)	8 (7)

Source: Computed Figures in parentheses are percentages

Table 4.14 Housing Schemes

Sl.No		Town		
		Lunglei n = 60	**Siaha n = 60**	**Total N = 120**
I	**Benefitted under Housing Scheme**	3 (5)	3 (5)	6 (5)
II	**Housing Scheme**			
1	IAY	1 (1.7)	0 (0)	1 (0)
2	IHSDP	2 (3.3)	2 (3.3)	4 (3.3)
3	PMAY	0 (0)	1 (1.7)	1 (0.8)

Source: Computed Figures in parentheses are percentages

Table 4.15 Social and Economic Factors and Housing: Pearson's R

Sl.No	Variable	Housing Conditions	Quality of Housing	Adequacy of Housing
1	Town	-0.16	-.344**	-.264**
2	Location	-.281**	-.324**	-0.094
3	Area	-.363**	-.415**	-0.093
4	Gender	0.022	-0.071	-0.109
5	Age Group	-0.054	-0.063	0.054
6	Education Status	.312**	.238**	0.056
7	Type of Family	0.041	0.03	0.016
8	Size of Family	0.089	-0.059	-.277**
9	Socio Economic Category	.581**	.428**	0.134
10	Political Party Affiliation	0.059	-0.106	-0.083
11	Church Elder in Family	-.537**	-.432**	-.284**
12	Dominant Tribe	0.076	0.082	0.059
13	Dominant Denomination	0.023	0.013	0.054
14	Any Family Member OB in CBOs	-.400**	-.297**	-0.146
15	Annual Household Income	.547**	.388**	.228*
16	Household Assets	.543**	.387**	.320**
17	Housing Conditions	1	.706**	.429**
18	Quality of Housing	.706**	1	.651**
19	Adequacy of Housing	.429**	.651**	1

Source: Computed ** P< 0.01 * P < 0.05

Table 4.17(A) Factor Matrix of Indicators of Housing Conditions

Sl. No	Indicator	Component			Communalities (h^2)
		1	2	3	
1	Type of House Post	0.84	-0.34	0.06	0.83
2	Type of Wall	0.83	-0.03	-0.21	0.73
3	Type of Floor	0.81	-0.30	-0.05	0.75
4	Type of Ceiling	0.81	0.10	-0.29	0.75
5	Type of House	0.80	-0.29	0.10	0.74
6	Type of Roof	0.75	-0.32	0.06	0.67
7	Availability of Separate Kitchen	0.74	0.47	-0.07	0.77
8	No. of Rooms	0.73	0.29	-0.07	0.63
9	Garage Available	0.70	0.20	-0.23	0.58
10	Attach Bathroom and Toilet	0.54	0.19	-0.28	0.40
11	House Building	0.51	0.08	0.58	0.60
12	Road Connectivity to House	0.37	-0.32	0.15	0.27
13	Ownership of House	0.35	0.68	0.36	0.71
14	House Site	0.33	-0.03	0.67	0.56
15	% of Variance	45.6	9.7	8.7	
16	Cumulative %	45.6	55.4	64.1	
17	Eigenvalues	6.4	1.4	1.2	

Extraction Method: Principal Component Analysis.

(Annex)

Table 4.16 Sources of Water during Dry Season

Sl.No	Source	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
1	PHEW Household Connection	53 (88)	35 (58)	88 (73)
2	PHE Shared Connection	44 (73)	16 (27)	60 (50)
3	Spring (Tuikhur)	40 (67)	13 (22)	53 (44)
4	PHEW Point	47 (78)	0 (0)	47 (39)
5	Rain Water Harvesting	46 (77)	0 (0)	46 (38)
6	Bottled Water	46 (77)	0 (0)	46 (38)
7	Water Venders	24 (40)	3 (5)	28 (23)
8	Hand Pump	23 (38)	1 (2)	24 (20)

Source: Computed Figures in parentheses are percentages

Table 4.17 Sources of Water duringRainy Season

Sl.No	Source	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
1	PHEW Household Connection	54 (90)	39 (65)	94 (78)
2	PHE Shared Connection	45 (75)	14 (23)	59 (49)
3	Spring (Tuikhur)	43 (72)	14 (23)	58 (48)
4	Rain Water Harvesting	48 (80)	2 (3)	50 (42)
5	PHEW Point	48 (80)	0 (0)	48 (40)
6	Bottled Water	46 (77)	0 (0)	46 (38)
7	Hand Pump	26 (43)	2 (3)	28 (23)
8	Water Venders	24 (40)	1 (2)	25 (21)

Source: Computed Figures in parentheses are percentages

Table 4.18 Ranking of Sources of Water during Dry Season according to Quantity

Sl.No	Sources of Water	Town		Total N = 120
		Lunglei n = 60	Siaha n = 60	
1	PHEWHouseholdConnection	1	2	2
2	PHEWPoint	2	3	2
3	PHEWSharedConnection	3	3	3
4	RainWaterHarvesting	4	4	4
5	HandPump	5	5	5
6	SpringTuikhur	6	6	6
7	WaterVendors	7	7	7
8	BottledWater	8	8	8
	Test Statistics			
	Kendall's W[a]	0.79	0.54	0.65
	Chi-Square	330	225	546
	Df	7	7	7
	Asymp. Sig.	0.00	0.00	0.00

Source: Computed a Kendall's Coefficient of Concordance

Table 4.19Perceived Quality of Water by Source

Sl.No	Source	Town				Total N = 120	
		Lunglei n = 60		Siaha n = 60			
		Mean	S.D	Mean	S.D	Mean	S.D
1	PHEW Household Connection	2.6	0.6	2.3	1.0	2.4	0.8
2	PHEW Shared Connection	2.4	0.7	2.0	1.0	2.2	0.9
3	Spring Tuikhur	2.4	0.7	1.9	0.8	2.2	0.8
4	Rain Water Harvesting	2.5	0.8	1.8	0.8	2.1	0.9
5	Bottled Water	2.6	0.8	1.4	0.6	2.0	0.9
6	PHEW Point	2.4	0.8	1.5	0.6	2.0	0.8
7	Hand Pump	2.4	0.8	1.6	0.7	2.0	0.8
8	Water Vendors	2.4	0.8	1.6	0.7	2.0	0.8
	Perceived Quality of Water	2.4	0.7	1.7	0.5	2.1	0.7

Source: Computed

Table 4.20Perceived Quality of Water

Sl.No	Level	Town		Total
		Lunglei	Siaha	
1	Very Low	11 (18)	20 (33)	31 (26)
2	Low	12 (20)	36 (60)	48 (40)
3	Moderate	37 (62)	4 (7)	41 (34)
	Total	60 (100)	60 (100)	120 (100)

Source: Computed Figures in parentheses are percentages

Table 4.21 Adequacy of Water by Use

Sl.No	Use	Town				Total N = 120	
		Lunglei n = 60		Siaha n = 60			
		Mean	S.D	Mean	S.D	Mean	S.D
1	Cooking	2.9	0.3	3.0	0.6	3.0	0.4
2	Drinking	2.9	0.3	3.0	0.7	3.0	0.5
3	Toilet	2.9	0.3	2.9	0.7	2.9	0.5
4	Cleaning	2.8	0.4	3.0	0.6	2.9	0.5
5	Bathing	2.9	0.4	2.9	0.7	2.9	0.6
6	Personal Care	2.8	0.5	2.8	0.8	2.8	0.6
7	Washing	2.7	0.6	2.9	0.7	2.8	0.6
8	Kitchen Gardening	2.8	0.4	2.3	0.9	2.5	0.7
	Perceived Adequacy of Water	2.8	0.3	2.9	0.6	2.8	0.5

Source: Computed

Table 4.22Perceived Adequacy of Water

Sl.No	Adequacy of Water	Town		Total
		Lunglei	Siaha	
1	Highly Inadequate	0 (0)	2 (3)	2 (2)
2	Inadequate	6 (10)	10 (17)	16 (13)
3	Moderate	54 (90)	39 (65)	93 (78)
4	Adequate	0 (0)	9 (15)	9 (8)
	Total	60 (100)	60 (100)	120 (100)

Source: Computed Figures in parentheses are percentages

Table 4.23 Water Determinants

Sl.No	Variable	Perceived Quality of Water	Perceived Adequacy of Water
1	Town	-.505**	.004
2	Location	-.205*	-.194*
3	Area	-.678**	-.300**
4	Gender	-0.017	-0.038
5	Age Group	-0.085	-0.153
6	Education Status	.291**	.214*
7	Type of Family	-.197*	-0.147
8	Size of Family	-.203*	-0.005
9	Dominant Tribe	-0.038	0.001
10	Dominant Denomination	-0.109	-0.136
11	Socio Economic Category	.285**	.216*
12	Political Party Affiliation	-0.026	0.1
13	Church Elder in Family	-.518**	-.252**
14	Any Family Member OB in CBOs	-.418**	-.225*
15	Annual Household Income	0.176	.362**
16	Household Assets	-0.039	.304**
17	Housing Conditions	.363**	.384**
18	Quality of Housing	.363**	.325**
19	Adequacy of Housing	0.11	0.11
20	Perceived Quality of Water	1	.361**
	Perceived Adequacy of Water	.361**	1

Source: Computed ** P< 0.01 * P < 0.05

Table 4.24 Frequency and Type of Toilet Used

Sl.No	Type of Toilet	Town				Total N = 120	
		Lunglei n = 60		Siaha n = 60			
		Mean	S.D	Mean	S.D	Mean	S.D
1	Pour Flush Toilet Septic Tank	2.8	0.8	2.2	1.2	2.5	1.0
2	Pit Latrine with Slab	1.1	1.4	0.5	1.1	0.8	1.3
3	Pit Latrine without Slab	0.2	0.7	0.2	0.7	0.2	0.7
4	Public Latrine	0.2	0.6	0.1	0.4	0.1	0.5
5	Open Defecation	0.1	0.4	0.0	0.0	0.1	0.3

Source: Computed

Table 4.25 Type of Drainage

Sl.No	Type of Drainage	Town		Total
		Lunglei n = 60	Siaha n = 60	
1	Not Connected	4 (7)	16 (27)	20 (17)
2	Connected	29 (48)	44 (73)	73 (61)
3	Veng Drain	27 (45)	0 (0)	27 (23)

Source: Computed Figures in parentheses are percentages

Table 4.26 Sanitation Determinants

Sl.No	Variable	Frequency of Toilet Used				
		Open Defecation	Pit Latrine without Slab	Pit Latrine with Slab	Pour Flush Toilet Septic Tank	Public Latrine
1	Town	-.197*	0	-.205*	-.280**	-0.11
2	Location	-0.066	0.098	.376**	-0.104	-0.047
3	Area	-0.14	.198*	-0.073	-.277**	0.022
4	Gender	0.1	0.029	-0.062	-0.026	0.013
5	Age Group	-0.161	0.059	0.004	-0.08	0.016
6	Education Status	0.022	-0.107	0.068	0.171	0.011
7	Type of Family	0.005	0.017	-0.06	0.073	0.041
8	Size of Family	-0.038	0.035	-.248**	0.095	-0.108
9	Dominant Tribe	-.235**	0.011	-0.011	0.084	0.131
10	Dominant Denomination	-0.144	0.03	-0.064	0.048	0.142
11	Socio Economic Category	0.159	-.189*	-0.07	.380**	0.015
12	Political Party Affiliation	-0.138	-0.135	-0.13	-0.095	-0.109
13	Church Elder in Family	-.196*	0.073	-.182*	-.270**	0.054
14	Any Family Member OB in CBOs	-0.135	0.142	-0.121	-.256**	-0.019
15	Annual Household Income	0.008	-0.149	-0.039	.250**	-0.014
16	Household Assets	0.005	-0.112	-.180*	.203*	-0.058
17	Quality of Housing	0.064	-.209*	-0.115	.469**	0.124
18	Adequacy of Housing	0.007	-0.114	-0.007	0.082	0.079
19	Perceived Quality of Water	.213*	-0.161	.305**	.304**	0.01
20	Perceived Adequacy of Water	0.031	-.260**	-0.093	.355**	-0.041
21	Housing Conditions	0.099	-.276**	-.208*	.519**	-0.023
22	Open Defecation	1	-0.005	0.107	0.093	0.084
23	Pit Latrine without Slab	-0.005	1	-0.046	-.366**	.429**
24	Pit Latrine with Slab	0.107	-0.046	1	-.329**	0.167
25	Pour Flush Toilet Septic Tank	0.093	-.366**	-.329**	1	0.097
26	Public Latrine	0.084	.429**	0.167	0.097	1

Source: Computed ** P< 0.01 * P < 0.05

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URBAN HOUSING, DRINKING WATER AND SANITATION IN MIZORAM

Interview Schedule

(*Confidential and for research purpose only*)

Researcher
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Prof. KanagarajEaswaran
Dept. of Social Work
Mizoram University

A. Identification Information:

1	Schedule No.	:	
2	House Number	:	
3	Town	:	1 Lunglei 2 Siaha
4	Locality	:	1
5	Location of Locality	:	1 Core 2 Periphery
6	Area	:	1 Non-Slum 2 Slum
7	Date and Time	:	
8	Location (GPS)	:	
9	Field Investigator	:	

B. Profile of the Respondent

1	Name	:	
2	Sub-Tribe	:	1. Lusei; 2. Mara 3. Paihte; 4. Hmar 5. Ralte; 6 Lai 7. Non-Mizo
3	Type of Clan	:	1. Ruling 2 Commoner
4	Religion	:	1. Christian; 2. Hindu; 3. Others
5	Denomination	:	1. Presbyterian; 2. Baptist; 3. ECM; 4. CCI (M) 5. IKK; 6. UPC 7. Others
6	Type of Family	:	1. Nuclear; 2. Joint
7	Size of Family	:	Number of Members
8	Form of Family	:	1. Stable; 2. Broken; 3. Reconstituted
9	Socio Economic Category	:	1. Very Poor (AAY); 2. Poor (BPL); 3. Non-Poor(APL)
10	Political Party Affiliation	:	1 None 2 INC 3 MNF 4 BJP 5 ZNP 6 MPC 7 PRISM 8 Others
11	Church Elder in Family	:	1 Yes 0 No
12	Any Family Member OB in COs	:	1 Yes 0 No

C. Household Composition

Kindly furnish the details of your household. Please enter the name of head first.

ID	Name	Age	Gender #	Marital Status***	Education	Earner/ Dependent**	Relation*	Respondent
								Yes/No

Codes: ***1.Unmarried; 2 Married 3. Divorced/Separated 4. Remarried 5.Widowed

** 0. Dependent 1. Earner

*0. Head; 1. Wife; 2. Son; 3. Daughter; 4. Parents; 5. Others # 0. Male; 1. Female

D. Household Income

1. What are the sources of your livelihood (income)?

Sl.No	Source	Yes/No
1	Agriculture	
2	Livestock Rearing	
3	Government Service/Pension	
4	Daily Wage Labour	
5	Skilled Labour	
6	Business/Petty Trade	
7	Private Service	

2. Please tell me the actual income from different sources.

Sl.No	Source	Annual Income(Rs)
1	Agriculture	
2	Livestock Rearing	
3	Government Service/Pension	
4	Daily Wage Labour	
5	Skilled Labour	
6	Business/Petty Trade	
7	Private Sector Employment	

E. **Household Assets**

1. Please tell me the assets owned by your household!

Sl.No	Asset	Yes/No
1	Land	
2	House Site	
3	Livestock(Pig, Cow, Poultry etc.)	
4	House/Buildings	
5	Household Furniture	
6	TV	
7	Refrigerator	
8	Cell Phones	
9	Washing Machine	
10	Computers/Laptop	
11	Two Wheeler	
12	Four Wheeler	
13	Inverter	
14	Bank Saving	
15	Insurance	

Sl.No	Asset	Current Market Value (Rs)

1	Land	
2	House Site	
3	Livestock	
4	House/Buildings	
5	Furniture	
6	TV	
7	Refrigerator	
8	Cell Phones	
9	Washing Machine	
10	Computers/Laptop	
11	Two Wheeler	
12	Four Wheeler	
13	Inverter	
14	Bank Saving	
15	Insurance	

2. Please tell me the value of assets owned by your household!

F. Housing Conditions

1	Ownership of House	:	1 Rent Free 2 Rented 3 Owned
2	Approximate Plinth Area	:	Square Feet
3	Number of Rooms	:	
4	Type of House	:	1 Kucha; 2 Semi-pucca; 3 Pucca
5	Type of Floor:	:	1 Mud; 2 Bamboo; 3Wood; 4 Concrete
6	Type of Roof:	:	1 Sun Grass 2 Tin 3 Corrugated Iron 4 Concrete
7	House Having Ceiling	:	0 No 1 Yes
8	Type of Wall:	:	1 Bamboo; 2 Corrugated iron; 3 Asbestos; 4 Wood; 5 Concrete
9	Type of House Post:	:	1 Bamboo; 2 Wood; 3 Concrete
10	Availability of Separate Kitchen	:	0 No 1 Yes
11	Attached Bathroom and Toilet	:	0 No 1 Yes
12	Electricity	:	0 No 1 Yes
13	Using LPG	:	0 No 1 Yes
14	Garage Available	:	0 No 1 Yes
15	What kind of road connectivity does your house have?	:	0 None 1 Foot Path 2 Two Wheeler 3 Four Wheeler
16	Have you benefitted from any Govt Housing Scheme:	:	
17	If Yes Specify the Scheme	:	
18	If No Please specify the reason	:	1
19	Please rate the quality of your housing	:	5 Very High 4 High 3 Moderate 2 Low 1 Very Low
20	Please rate the adequacy of your housing	:	5 Highly Adequate 4 Adequate 3 Moderate 2 Inadequate 1 Highly Inadequate

G. Drinking Water

1. Please tell me the sources of water for your household use during the dry season.

Sl.No	Source	Yes
a.	PHEW Point	
b.	PHEW Household Connection	
c.	PHE Shared Connection	
d.	Rain Water Harvesting	
e.	Hand Pump	
f.	Spring(Tuikhur)	
g.	Water Vendors	
h.	Bottled Water	

2. Please tell me the sources of water for your household use during the rainy season.

Sl.No	Source	Yes
a.	PHEW Point	
b.	PHEW Household Connection	
c.	PHE Shared Connection	

d.	Rain Water Harvesting	
e.	Hand Pump	
f.	Spring(Tuikhur)	
g.	Water Vendors	
h.	Bottled Water	

3. Please rank the sources of water for your household during the dry season according to the quantity collected?

Sl.No	Source	Rank
a.	PHEW Point	
b.	PHEW Household Connection	
c.	PHE Shared Connection	
d.	Rain Water Harvesting	
e.	Hand Pump	
f.	Spring(Tuikhur)	
g.	Water Vendors	
h.	Bottled Water	

4. Please rate the sources of water used for your household according to their quality during the dry season?

Sl.No	Source	Very High	High	Moderate	Low	Very Low
a.	PHEW Point	5	4	3	2	1
b.	PHEW Household Connection	5	4	3	2	1
c.	PHE Shared Connection	5	4	3	2	1
d.	Rain Water Harvesting	5	4	3	2	1
e.	Hand Pump	5	4	3	2	1
f.	Spring(Tuikhur)	5	4	3	2	1
g.	Water Vendors	5	4	3	2	1
h.	Bottled Water	5	4	3	2	1

5. Please rate the adequacy of water for your household during the dry season?

Sl.No	Usage	Highly Adequate	Adequate	Moderate	Inadequate	Highly Inadequate
a.	Washing	5	4	3	2	1
b.	Bathing	5	4	3	2	1
c.	Toilet	5	4	3	2	1
d.	Cooking	5	4	3	2	1
e.	Cleaning	5	4	3	2	1
f.	Personal Care	5	4	3	2	1
g.	Drinking	5	4	3	2	1
h.	Kitchen Gardening	5	4	3	2	1

H. Sanitation

1. Please rate the different Types of Toilet according to the frequency of its use by your household?

Sl.No	Toilet	Always	Mostly	Sometimes	Never
a.	Open defecation	3	2	1	0

b.	Pit latrine without slab	3	2	1	0
c.	Pit latrine with slab	3	2	1	0
d.	Pour Flush Toilet(connected to septic tank)	3	2	1	0
e.	Public Latrine	3	2	1	0

2. Does your household have drainage for waste water? 0 No 1 Yes
3. If Yes Please specify the type of drainage.
4. If No Why specify the reasons.
5. Where do you depose your household solid waste?

I. Problems Related to Housing, Water and Sanitation.

1. Please rate the following Problems faced by your households related to housing, water supply and sanitation according to their severity.

Sl.No	Constraint	Very High	High	Moderate	Low	Very Low
a.		5	4	3	2	1
b.		5	4	3	2	1
c.		5	4	3	2	1
d.		5	4	3	2	1
e.		5	4	3	2	1
f.		5	4	3	2	1
g.		5	4	3	2	1
h.		5	4	3	2	1
i.		5	4	3	2	1
j.		5	4	3	2	1
k.						

Particulars of the Candidate

NAME OF THE CANDIDATE	:	M Lallawmzuala
DEGREE	:	Master of Philosophy
DEPARTMENT	:	Social Work
TITLE OF DISSERTATION	:	Urban Housing, Drinking Water and Sanitation in Mizoram
DATE OF PAYMENT OF ADMISSION (Commencement of First Sem)	:	17/08/2016
COMMENCEMENT OF SECOND SEM/DISSERTATION (From conclusion of end semester exams)	:	26/02/2017
APPROVAL OF RESEARCH PROPOSAL		
1. BOS	:	17/05/2017
2. SCHOOL BOARD	:	19/05/2017
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Educational Qualification

Name of Examination	Board/University	Year of Passing	Total Mark's	Mark's obtained	Percentage (%) of mark's
HSLC	MBSE	2005	500	375	75
HSSLC	MBOSE	2010	500	198	39.6
B.A.	MZU	2014	600	330	55
M.A.	MZU	2016	1600	1070	64.32

Fieldwork Experience

Population Based Cancer Registry (PBCR): Civil Hospital Aizawl

PBCR is an organization for the systematic collection, storage, analysis, interpretation and reporting of data on subjects with cancer. During my fieldwork in this institution I conducted case work, attended workshop and Seminar and had also gone for field visits.

Integrated Child Development Scheme: Tlangnuam Project

It is a Centrally Sponsored Government Scheme to improve Nutritional and Health Status of Children. During my fieldwork,I had conducted case work, attended panel discussion, visited AnganwadiCenters under Tlangnuam CDPO Project.

Block Placement: Action Aid, Mamit Project (CDP)

During my block placement in this Agency in Guwahati which is its Regional Centre for North East. Their Project in Mizoram was undertaken by Centre for Peace and Development (CDP) in Mamit District. Case work; Public Meeting, Meeting with stakeholders of the community and field visits are some of the works conducted.

Community Based Fieldwork: Zonuam Locality

Studies were conducted on the basis of needs based, and plans were made strategically in order to meet these needs. Social Work Intervention in the form of SHG workshop, Health Clinic, Awareness on Career Guidance and Substance abuse and Veterinary Health Camp were organised.

Introduction

Urbanization comprises of an increase in a number of centres of population concentration, a growth in number and size of urban settlements, transfer of people from agricultural to non-agricultural occupations. Urbanization takes place mainly through a natural increase in population, reclassification of rural and urban places and rural-urban migration. Kingsley (1995) states that Urbanization is crucial for acceleration of the nation's economic development and pointed out that Urbanization has become universal phenomena as consequences of rapid industrialization. According to R.M Northam (1975) Urbanization is a cyclical process.

Urbanization as a process is becoming and has been a Global trend where many third world countries are facing the dilemma at a larger scale. According to the World Bank, globally, 54% of the population lives in urban areas today, and this trend is expected to continue. By 2045, the number of people living in cities is estimated to increase by 1.5 times to 6 billion, adding 2 billion more urban residents. It is also estimated that in 2060, the urban population will reach 68%. With more than 80% of global GDP generated in cities, urbanization can contribute to sustainable growth if managed well by increasing productivity, allowing innovation and new ideas to emerge.

However, the speed and scale of urbanization come along with challenges, including meeting accelerated demand for affordable housing, well-connected transport systems, and other infrastructure, basic services, as well as jobs, particularly for nearly 1 billion urban poor who live in informal settlements.

India, which is at the middle level in income generations among developing countries, is facing an acute shortage in the provision of basic services for its growing urban population in general and the poor in particular. The problem apparently is more serious in less

developed states and small and medium towns, many among this experiencing rapid demographic growth during the past few decades. Even after becoming an independent country in the year 1947, the problems in providing amenities or basic services still haunts the nation. Many of the developed states and metropolitan cities, too, are facing difficulties in providing the minimum level of amenities, despite their higher level of income as well as revenue generating capacity (Kundu, 2007)

According to the latest census (2011), there are approximately 377 million urban populations in India which comprise 31.16 per cent of the total population i.e., 1.2 billion. Out of these 80 million people are considered to be poor and 61.80 million are living in slums, according to the National Sample Survey Office.

In developing countries, cities have contributed 60 per cent of gross national product which is significant for economic growth. The efficiency of the production rate of a city largely depends on the capacities of local governments to mobilize local resources, provide infrastructure, and improve access to shelter and services. Furthermore, the rapid growth of urban in developing countries has resulted in the incidence of urban poverty, inadequate access to housing, primary health care and water supply, the creation of slums and squatter settlements, and urban environmental degradation (Batra, 2007)

Most municipal governments have lacked financial and administrative resources to provide basic urban services to the common people. Government investments have been cornered often by middle to high-income colonies. Left to them, the urban poor has to find an alternate way or mechanisms to obtain basic services. Nevertheless, the availability of services is very low due to their low paying capacity, uncertainties of service delivery and costs being very high due to illegal or semi-legal nature of functioning in the informal market (Cheema, 1987).

In Mizoram, 561,997 people are living in urban areas which comprise 51.51% with a decadal growth of 1.88 % (GOI Census, 2011). The percentage of urban population in Mizoram is much higher than the percentage of urban population in the country (31.16%). Aizawl District has the highest number of Urban population with 3,14,754 (78.63%) which consists of four different towns (GOI Census, 2011).

In Mizoram, there are three Autonomous District Councils, namely, Chakma Autonomous District Council, Lai Autonomous District Council and Mara Autonomous District Council. In these regions, there are only two notified towns, Lawngtlai and Siaha towns.

Like other cities and towns around the world and specifically in India, Mizoram has also experienced Urbanization especially after the state is bestowed upon the Union Territory in 1972 and Statehood in 1987. This led to many developmental programmes initiated by the State Government and the Central Government and subsequently improved the socio-economic status of the state. With better opportunities at the urban centre, people started migrating from rural to urban centres especially in the capital city, Aizawl. The impact is none the less similar to other cities within the nation, where the basic services provided by the government cannot be met due to the urban sprawl occurring in the region.

There have been a very few studies in related to urban housing, drinking water and sanitation conducted in North Eastern Regions and specifically in Mizoram. Sanitation and water supply to the Urban Poor have always been more or less overlooked by the researcher in Mizoram.

With the setting up of Urban Development and Poverty Alleviation Department and Aizawl Municipal Council, there have been different Government Policies or

Programmeslaunched in Urban Mizoram and in this matter Urban Poor Access to these Policies and Programmes of the Government, in reality, is unknown.

Mizoram, as mentioned earlier, has three Autonomous District Councils where there are no District Urban Development Offices. All UD&PA works have been carried out by Sub Divisional Officer in the area. Apart from that, a comparative study of administrative set up for urban poor between Government of Mizoram precisely Lunglei Town and Autonomous District Council at Siaha town have never been conducted.

Overview of Literature

There is a copious literature on various aspects of urban growth and development in India at national and local contexts. Trends in Urbanization and growth during the Post and Pre British era in India (For instance ; Maktav and Erber, 2005; Reddy V. Ratna 1994;Kundu 2007; Kundu 2011), as well as the North Eastern States (seeMaktav and Erber, 2005; Datta, Neog, Mazhari, 1991), have been probed into by a number of scholars. In India, there are a number of studies on urban poverty conducted by economists and social scientists (see see Engels 1973; Jay Moor 2002; Mander 2009; Kundu and Sarangi 2007). Migration has been probed in a number of studies (see Singh, 2009; Kunduand Sarangi, 2007; Desai, Mihir, Kapur, Devesh, McHale, John, 2004) have also been documented.

Urban Governance and Local Administration and the role of people's participation therein have been studied by some (see Mahadevia, Sharma, Joshi, 2009). Provision of Urban Basic Services (Dangwal, 1998; Kundu and Amitabh, 2002),Urban Housing and its issues (see Dennis A. Rondinelli, 1990; Faustin, 2014; AlpanaSivam and SadasivamKaruppannan, 2009; Kundu2012; Gupta; John F.C. Turner, 1970; Mahadevia, Sharma, Joshi, 2009) is being probed for this study.Urban Drinking Water (Kundu, 2003; Kundu 1993),and Sanitation in Urban Areas (Kundu, 2003; Kundu 1993) have been probed by a number of authors.

In the context of Mizoram, there are a few studies on urbanization, urban development, urban livelihood and poverty(Sailo, 2014), urban local government and people's participation(Ruatkimi, 2012), grassroots organizations and urban development(Lalsiampui, 2012), urban water supply(Chhangte, 2010), domestic solid waste management (VLDiki, 2012), impact of urban housing schemes (Kanagaraj and Jahau 2015).

In spite of copious literature on urban basic service in India, we could notice a few research gaps.There have been a very few studies in related to urban housing, drinking water and sanitation conducted in North Eastern Regions and specifically in Mizoram. Sanitation and water supply to the Urban Poor have always been more or less overlooked by the researchers in Mizoram. The present study tries to fill this gap in the literature.

With the setting up of Urban Development and Poverty Alleviation Department and Aizawl Municipal Council, there have been different Government Policies or Programmes launched in Urban Mizoram and in this matter Urban Poor Access to these Policies and Programmes of the Government, in reality, is unknown.

Mizoram, as mentioned earlier, has three Autonomous District Councils where there are no District Urban Development Offices. All UD&PA works have been carried out by Sub Divisional Officer in the area. Apart from that, a comparative study of administrative set up for urban poor between Government of Mizoram precisely Lunglei Town and Autonomous District Council at Siaha town have never been conducted. Hence, this study attempts to probe into the household's housing, drinking water and sanitation in Lunglei and Siaha towns of Mizoram.

Statement of the Problem

Mizoram, after becoming UT in 1972 and an independent state in 1987 has witnessed drastic changes in the socio-economic conditions and living patterns of the people. The number of urban population in census 1951 was 6,596 (3.54%) and in 1981, it had a population of 121,814 (24.67%). With only 3 decades, it had a decadal growth of 21.13%.

In India, Mizoram is among the most urbanized state in the country. At present, urban population makes up 51.51% (561,997) of the total population. People from poverty-stricken rural areas have migrated into cities and towns seeking jobs, education, and other opportunities. Often jobs are not available for those without education and skills and the cities welfare rolls are increased. All of these migrations have contributed to the economic and social deterioration of cities and towns facing the realities of life with inadequate housing, poor sanitation, ill health and a breakdown of social services.

The present study attempts to focus on the delivery of and access to housing, drinking water and sanitation at Siaha and Lunglei towns, the two notified towns in the Southern of Mizoram. Although there are no notified slums in the region, the conditions of housing, drinking water and sanitation in these towns will be probed into. As a town grows, the cost of housing and infrastructure also grows since there is an inadequate supply of water, land and building material and congestion problems. Thus, governments often do not meet the growing needs of residents especially the poor. In this context, the present study also attempts to assess urban housing, drinking water and sanitation in Mizoram. The demand for housing envisages the rental and ownership of the houses in relation to the housing conditions, housing features and the neighbourhood amenities.

The present study will also focus on drinking water and sanitation which have become serious issues and challenges in recent times in almost all the towns and cities in India. Lack of sanitation in India has led to economic losses for the country (6.4 % of India's GDP)

(WSP, 2010). It has been highlighted that urban households in the poorest quintile bear the highest per capita economic impact of inadequate sanitation—1.75 times the national average per capita losses and 60 per cent more than the urban average (World Bank, 2010a)..

Objectives

The following are the objectives of the present study.

1. To assess the household's access to housing, drinking water, and sanitation in urban areas of Mizoram.
2. To assess the quality and adequacy of housing and water in urban areas of Mizoram.
3. To identify the socioeconomic determinants of household's access to housing, drinking water, and sanitation in urban households in Mizoram.
4. To understand to role of government programmes in promoting urban households access to housing, drinking water and sanitation in Mizoram.

Hypotheses

To provide focus to the above objectives the following hypotheses were formulated.

1. There are differences in households' access to housing, drinking water and sanitation between urban areas under the autonomous council and those under direct state administration.
2. Households' access to housing, drinking water and sanitation between urban areas depend upon the location of the locality, household assets and household income.
3. Households' access to housing, drinking water and sanitation are interdependent.

Research Design

The present study is cross-sectional in nature and descriptive in design. The study is also of Mixed Research Method design. The primary data was collected with the help of Qualitative, Participatory and Quantitative methods employed sequentially in the order. Though the qualitative and participatory data were used, the study is predominantly quantitative.

Sampling

The unit of the study was household while all the urban households in Mizoram constitute the population of the present study.

A multistage sampling procedure was adopted to select the urban areas, localities, and households. In the first stage, Lunglei and Siaha were selected purposively to represent autonomous and non-autonomous district areas. In the second stage, the selection of urban localities was made. One core area and one periphery area were selected in both the towns based on field visits and interaction with development functionaries. In the third stage, selection of households was done in the selected localities. The list of households was collected from the village council presidents. From each of these lists, systematic random sampling was used to select respondent households. In the final stage, a knowledgeable member of the selected households was interviewed.

Data Collection, Processing and Analysis

The primary data was collected using a multimodal approach. Quantitative data was collected using Pretested Structured Household Interview Schedule. Participatory Rural techniques such as Timeline, Social and Resource Map, Services and Opportunities Map were used to understand the ecological contexts of the selected localities.

The household interview schedule was designed by using Kobo toolbox which is a free open-source tool for mobile data collection, available to all. Kobo Collect, an Android application was used to collect the data with the help of cell phones.

The collected data was analyzed using Statistical Package for the Social Sciences (SPSS). The analysis was done with the help of Cross Tabulation, Simple Averages, and Percentages. Hypotheses were tested with the help of Independent 't' test, and Karl Pearson's Product Moment Correlation coefficients.

Key Informant Interviews with officials from UD&PA, CBOs, VC and Locals were conducted to understand the policy context of urban housing, water supply and sanitation. To analyze the qualitative data QDA miner was used.

Chapter Scheme

The study was organized into five chapters:

Chapter I Introduction

Chapter II Review of Literature

Chapter III Methodology

Chapter IV Results and Discussion

Chapter V Conclusion

Conclusion

The patterns of urbanisation, urban development, urban basic services and urban development administration in Lunglei are significantly different from those of Siaha. Yet

they have one common feature that both lack urban local self-government so as to address the challenges of urbanisation, urban infrastructure development, and urban basic services faced by its populace. The urban development scenario especially access, quality and adequacy of housing, water supply and sanitation in Lunglei town under direct administration of state government is better than Siaha which is under Mara district autonomous council. Housing conditions in both the towns have a huge scope of improvement where Siaha is behind Lunglei. Apart from inter town differences in access, quality and adequacy of housing, water and sanitation, there are significant differences between the core and peripheral areas of both the towns. The access, quality and adequacy of housing, sanitation and water greatly depend on the livelihood base of the households. Further, the access, quality and adequacy of housing, drinking water and sanitation are interdependent. In other words, to improve the household's access to sanitation there is need to improving housing conditions and access to water also.

Suggestions

In the light of above findings and conclusion, the following sections present policy implication for policy and suggestions for further research.

Policy Implication

1. Access, quality and adequacy of urban basic services such as housing, drinking water and sanitation mainly depend upon the livelihood asset base of the households. Hence, to improve them, livelihood promotion needs to be prioritised.
2. Siaha, the town belonging to the autonomous district area lags behind the Lunglei town in terms of access to housing, drinking water and sanitation. The Government of India and Mizoram State Government needs to give special care to promote urban infrastructure development, livelihood promotion and provision of urban basic services.

3. The major challenge to urban development administration in Lunglei and Siaha is lack of integrated urban local self-government. At present a number of village councils are managing each locality affairs. People and leaders of both the localities want to have democratically elected municipal administration which will properly implement the urban development programmes.
4. The setting up of DUDO in Siaha, Autonomous District Council Area is needed in order to facilitate better implementation and monitoring of urban development programme.
5. The existing policy of the government should be reoriented to cater to the needs of the housing especially to periphery locality. Policy makers should put into consideration that core and periphery needs are different and should draw the line of differences during the policy formulation.
6. Political interference in selection of beneficiaries under urban livelihood and urban basic services programmes should be curtailed. The local leadership unit needs to be restrained from controlling the process of selection of beneficiaries and the elected bodies need to be empowered so as to implement the programmes as stipulated in the guidelines.
7. The community leaders, government officials and the beneficiaries of centrally sponsored housing schemes felt that the money sanctioned under schemes such as IHSDP are highly inadequate to construct good quality house with water and sanitation facilities. This is because of the hilly topography of the state, high cost of construction material and high wages for construction workers. Considering these the amounts sanctioned under the PMAY scheme needs to revised specially for hilly states of North East India such as Mizoram.

Suggestions for Further Research

1. Studies on urban development in North East India especially Mizoram are few. Social science departments such as social work, sociology, economics, geography, management, commerce, political science, public administration need to focus on various aspects of urbanisation and urban development. The faculties across these disciplines need to come forward to work together for interdisciplinary research on urban development.
2. There is need for studies on interstate and inter district variations in access, quality and adequacy of urban basic services, urban infrastructure development and urban livelihood promotion across the north eastern states of India.

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