

**THE DYNAMICS OF RURAL-URBAN
INTERDEPENDENCE
IN NAGALAND WITH SPECIAL REFERENCE TO
MOKOKCHUNG AND ZUNHEBOTO DISTRICTS**

**Thesis Submitted to Nagaland University
in Fulfilment of the Requirements
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In
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This is to certify that the thesis submitted by **Shri T. Temsu Imti** towards the Degree of Doctor of Philosophy (Ph.D) in Geography titled “**The dynamics of rural-urban interdependence in Nagaland with special reference to Mokokchung and Zunheboto districts**” is a bonafide study to the best of our knowledge and belief. The study acknowledges duly works of other scholars and sources. We also certify that the thesis has not been submitted to any other University or awarding institutions in India or abroad for the same degree of others.

We, therefore, recommend that subject to fulfillment of other formal requirements, the study may be placed before examiners for evaluation.

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Declaration

I, Mr. T Temsu Imti, do hereby declare that this thesis entitled **“The dynamics of Rural-Urban interdependence in Nagaland with special reference to Mokokchung and Zunheboto Districts”** submitted for the award of the degree of Doctor of Philosophy in Geography comprises the result of my own research work that studied in the Geography department, Nagaland University. The content and basis of this thesis is not an extract or form of the award of any previous degree to me in any manner or to the best of my knowledge to anybody else and the thesis has not been submitted by me for any research degree in any other University.

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CHAPTER I
INTRODUCTION

1.1. BACKGROUND OF THE STUDY

The present research work is confined to the linkages between rural and urban settlement as it is generally believed that these two areas are independent to each other with definite boundary in social, economic and political aspects. However, whether rural and urban area, one cannot survive or fulfill all the needs of the people without depending on other. It is therefore depending on each other to meet various needs and aspects which are inevitable. Thus the study on the interdependence between rural and urban settlement is valuable. In this regard the interaction is understood through dynamics of elements in these settlements by means of flow of people (migration), flow of goods and services, flow of ideas and information, flow culture and flow of funds. Besides, with the advancement of man's civilization, the activities are not unique and definite in rural and urban areas. In many a case, the rural activities i.e agro-forest and urban activities i.e non-farm are found and do practiced in urban and rural areas respectively which can be termed as sectoral interaction.

The specific study of this kind of interaction may not be something new; it is an interesting aspect for most of the planners,

researchers and policy makers in global dimension as it has involved policy strategy and livelihood implication for developmental phenomenon and ecological maintenance of a region or a nation. Traditionally Nagas are cultivators that the environment primarily permits its people to practice shifting cultivation which has an adverse effect to the environment. So the environmentalist policy drove away the people from this occupation in order to preserve forests and its environment, as a result some strategic policies are to be designed as an alternate occupation which has livelihood implication to the people. As a result, Nagas are adapting to other activities of farming like, horticulture, pisciculture, dairy farming, sericulture etc., in rural areas and in some cases in urban areas as urban farming. Besides, some nonfarm activities are being practiced in rural areas as weaving, trade and village household industry etc., as agriculture is generally subsistence in nature. As such this mechanism is the object and also the subjects of active interaction between rural and urban areas.

Proper identification of problems faced in rural and urban areas, especially by the poor, and policies like economic reforms reflecting to ecological settings, are required to be evaluated and implemented. So the interaction like the flow of people, goods and

services, ideas and funds; to support livelihoods, is needed rather than two separate and isolated socio-economic entities.

1.2. STUDY AREA

The study area of the present research work is Nagaland in general and Mokokchung and Zunheboto districts in particular. (Fig.1.1). The state of Nagaland, the 16th state of Indian union, was inaugurated on 1st December 1963. Nagaland lies between 25°60' and 27°40' north latitude and 93°20' and 95°15' East longitude with an area of 16579 sq km. She is bounded by Assam in the west, Arunachal Pradesh in the north, Myanmar in the east and Manipur in the south. The topography of the state is hilly terrain with an altitude ranging from 194 to 3840 meters above main sea level being Saramati, the highest peak is about 3840 meters above main sea level in Kiphire district. Nagaland has 11 districts with number of tribes as the entire state is a tribal state. Tribes like Angami, Ao, Sema, Lotha, Phom, Konyak, Chang, Sangtam, Kiamnungam, Yimchunger, Chakhesang, Zeliangrong, Rengma, etc inhabit the state. The tribal council regulation of 1945 empowers its council to try Criminal and civil cases and to impose fines.

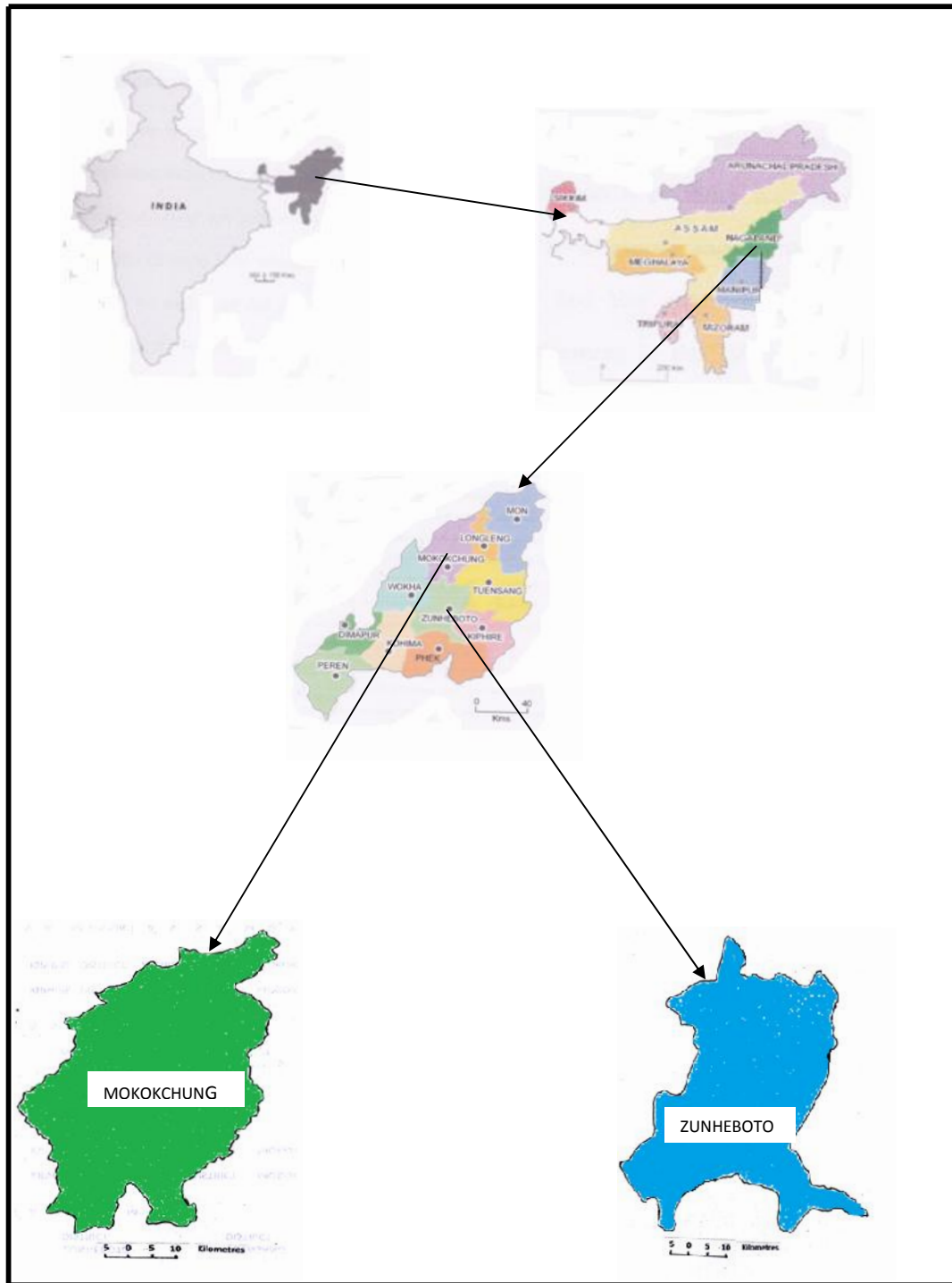


Fig.1.1. Maps showing Study Areas.

**1.3. DIFFERENTIATION BETWEEN RURAL AND URBAN SETTLEMENT
IN NAGA CONTEXT**

Every independent nation has a distinct interpretation of rural and urban settlement which is not similar among nations and so uncontroversial. Nagaland remains under sovereign India, generally definition given by census of India do apply in our context, yet it might have a few exceptional unique features which are negligible. Census of India defined that a village is a settlement with one or more hamlet as surveyed and revenue village. However, an unsurveyed village in forest with locally recognized boundaries within Forest Range Officer's jurisdiction is also considered as village. On the other hand, urban area is that all places within municipality, corporation and cantonment or notified town area; places which have minimum population of 5000, 75% of male population are non-agriculturist, and a density of population of at least 400/ sq Km.

A rural area is a village, its people are depending on natural environment with agriculture and allied activities. It is a small community in size living in a tiny geographical area with lower density of population. An important feature of rural people is that they have a primary group behaviour like face to face relationship. Their social structure is based on kinship, clan and family relationship. Another characteristic of rural area is that they have group feelings and mutual

co operation as brotherhood feelings; rich in culture consisting of customs, rituals and norms etc., which are unwritten rather orally transmitted and imparted. Their way of tilling soil is relatively having primitive technology which shows other traits of rural India. In case of Nagaland, rural areas are mostly tribal villages where tribal norms, traditions and customs with its pattern of administration do practice. Gaon Boras are the chief of the villages in Sema areas of Zunheboto district; and the village council as 'Tatar Putu Menden' is the supreme body, consisting of elected clan representatives, of Ao village in Mokokchung district.

Urban areas include towns, cities and metros with specific way of livelihood. It is an area having higher density of population and its people are engaged mostly in non-farm activities. An important feature of this is that it has a heterogeneous culture and is populated by migrants from different community and section of people. Their cultural and ecological environment is not natural rather man made. Availability of better social and economic amenities with a sense of class structure based on economic criteria is another trait of urban settlement in India. In regard to Nagaland, the urban centers cannot be termed totally as tribal towns because of its heterogeneity

in all aspects where tribal norms are not applied in Toto. Gradually, some features of heterogeneity are also become imminent even in rural areas by urban influence and also urban areas have retained some rural characteristics. Certain primary foods are exchanged; raw materials are supplied by villages to urban areas, as such, both have relationship of an interdependence which can be termed as constant interaction.

1.4. HYPOTHESIS

1. The volume of population is the key factor for size of rural and urban centers which leads to active participation in the process of movements during the exchange between the settlements.
2. Historical and contemporary status and tendency of current migration by economic, cultural and ecological factors resulted to complexity of society which is dynamics in nature.
3. Different policies on ecological rejuvenation divert the activities of poor and people with poverty for their livelihood strategy.
4. Sectoral activities, both in rural and urban areas, by politico-economic factors and advancement of scientific knowledge and technology are countable.

1.5. DATA BASE AND METHODOLOGY

Both intensive and extensive field coverage is used in this study and based on both secondary and primary data. Various research reports, journals, books, gazetteers, census publications, daily newspaper and reports and publications are used as secondary source of data. The primary data are collected through questionnaire, interviews and discussion for the different level as macro, micro and household and individual level of study. For macro level study of the state as a whole various secondary data are used in which, the districts are studied as urban centers of Nagaland where secondary data are being used. For micro level study of the selected villages of two districts are considered, and the collection of data is done primarily by village Schedule questionnaire, which is obtained from village governing bodies wherever necessary, households questionnaires, interviews and informal discussions. Besides, the secondary data from various sources are also used. And also households and individual study in the selected rural and urban areas, the primary data are collected by means of interviews and questionnaires.

Apart from this, several census maps, cartographic representations, statistical calculations and representations, statistical maps are included in this work from the available data. The plates and photos observed in the field sites are also incorporated within the research work. It is imperative to be cited that the research is empirical in nature as extensive observation, survey on selected areas and informal interview and discussions are conducted while obtaining different datas. For the identifications of the different interactive and interdependency zones of the districts gravity models are used for socio-economic and socio-cultural interdependency based on percentage of number of amenities and volume of population respectively. In gradation of the zones of interdependency uniform grade could not do because the value for grade varies in different districts based on the size and volume of determinant. In case of the sample villages zones based on volume of population is used as the test of bivariate correlation between amenities and population revealed a positive product.

1.6. OBJECTIVES

The objectives of the proposed research is to acquire knowledge on the degree of dynamics of linkages due to existing policies and its implication on the livelihood of people; and dependency on the natural resources and consequent interaction between rural and urban areas of Nagaland in general and Mokokchung and Zunheboto districts in particular. The specific objectives are:-

1. To highlight the nature, forms, types and extend of interdependence between rural and urban areas.
2. To determine and understand the interrelatedness and level of development and potentiality with rural - urban interaction in the study area.
3. To investigate whether the volumes of migration, flow of goods and services is due to demographic or economic factors that affect the rural – urban linkages in Mokokchung and Zunheboto districts.
4. To identify if the participation of people in the interaction between rural and urban is socio-economic, cultural and ecological factors.
5. To evaluate the policy implications on the dynamics between rural and urban towards livelihood strategy of its people.

6. To compare the two case study areas for understanding the level of development and its degree of interactivity in the process of interdependence.

1.7. CONCEPTUAL FRAMEWORK OF THE STUDY

To ensure and understand in detail about the linkages between different aspects of rural and urban interdependence, a conceptual framework is needed. The framework is that rural and urban areas are independent localities and has different characteristics of activities which are exchanged to meet similar human needs. The interaction between rural and urban are reflected under two types as spatial and sectoral. Spatial linkages are so called because it is associated to space as focusing on the widening of space within the particular study area. Here the exchanges of elements between the so called independent urban and rural areas are considered. In these linkages the flow of people – both migration and commuting, flow of ideas, flow of goods and services and flow of funds are included. The second type of interaction is sectoral as it is confined to a particular rural or urban sector where the activities are straddled to one another. Under this the practice of agriculture in urban areas and the nonfarm activities like manufacturing, salaried,

daily wage earner etc in rural areas are considered. Besides, inclining from a different perspective, the interdependence is studied as socio-economic, socio-cultural and ecological where all elements of spatial interdependence are considered. As such it is being revealed that both the perspective are more or less same.

The two above cited categories of interactions are governed by set of four factors such as traditional, politico-economic, socio-cultural and ecological; each of which has several elements. Each of these group factors is related to the other three groups. Take an example, the practice of shifting cultivation in Nagaland; of which through a government policy under politico-economic factor drove away its people from it and encourage preservation of forest so as to enhance sustainable livelihood in the near future. In this case, its impact on the rural populace who are compelled to engage in the other activities other than jhumming may in turn pose a challenge to the traditional socio-cultural institution and set up consequent to emerging new politico-economic policies which would govern the linkages between rural and urban localities.

The framework considers three levels of analysis; the macro level – Nagaland state as a whole; the meso level – the districts

as urban centers; micro level – the selected villages of the two case studies like Mokokchung and Zunheboto districts; where the phenomenon of the households and individual are considered. These aspects will understand better in the subsequent chapters. The dynamics of the linkages between rural and urban area is governed by the said factors at all the cited level which gives the analysis that depending on the volume of people living in a particular settlement or region. This is because the object is the population and the said factors acts as subject which might depicts the potentiality of interdependence among rural and urban areas of the study area. The potentiality is the first consequence and then types are to be identified. So this conceptual framework is important and main driver for monitoring, identifying and even filling up the gaps in the course of the whole research work. (Fig 1.2)

CONCEPTUAL FRAMEWORK OF THE STUDY

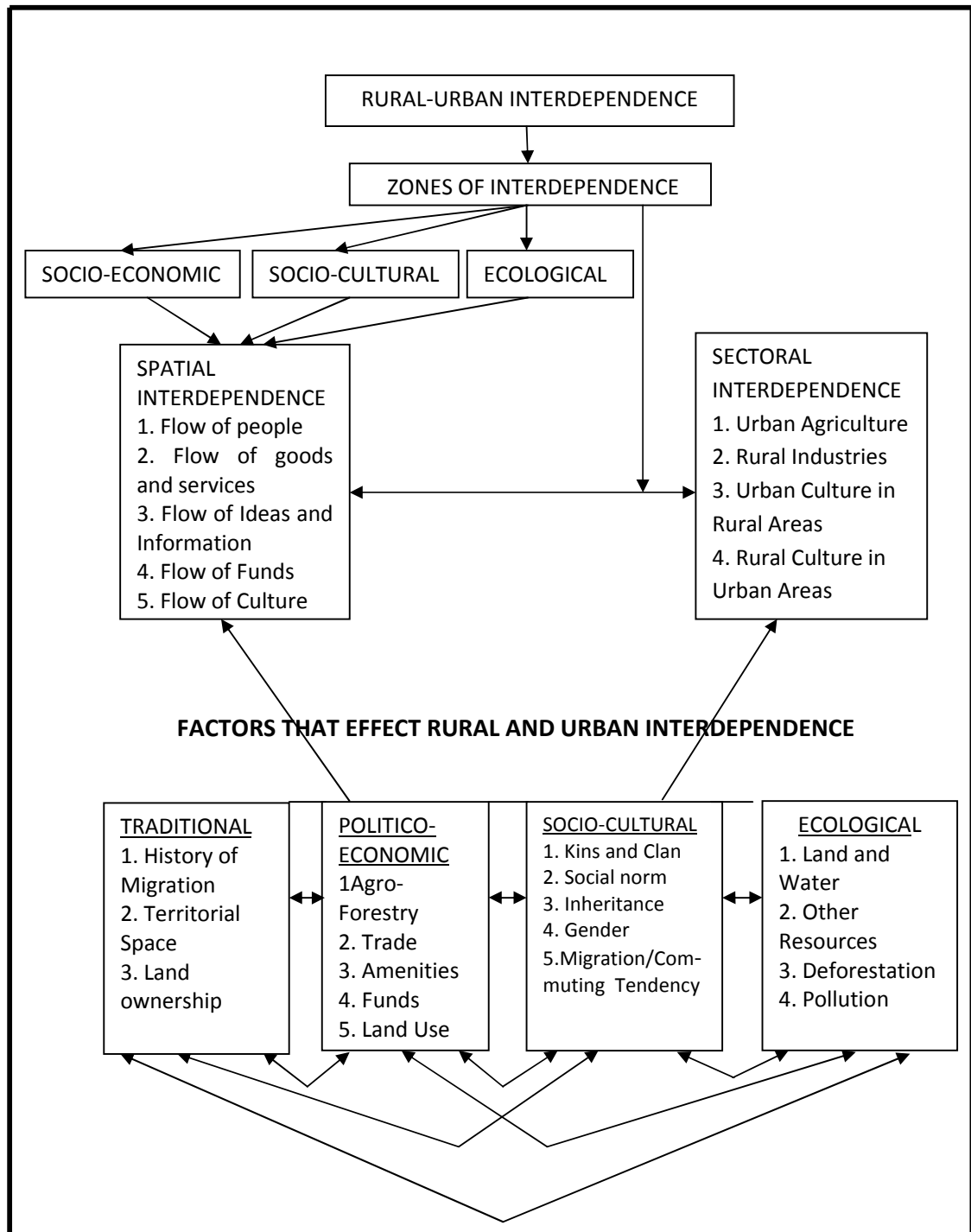


Fig.1.2. Diagram showing conceptual framework.

1.8. REVIEW OF LITERATURE

The division between rural and urban is purely on assumption and the distinction between the two areas is self explanatory and uncontroversial. In this view, however, there are three major problems. Firstly, the demographic and economic criteria used to define rural and urban vary between nations. Asia remains predominantly 'rural' continent with two – third of its population living in rural areas in 1990. However, if both India and China were to change their definition of urban centre to one based on a low population threshold of 2000 – 2500 inhabitants as used by many Latin American and European nations, a large proportion of their population would change from 'rural' to 'urban'. The fact is that India and China have high share of Asia's population, this in turn would significantly change Asia's level of urbanization and even world's level of urbanization, UNCHS (1996). Second problem is the differentiation of urban boundaries. In Southeast Asia extended metropolitan regions, agriculture, cottage industries industrial estate, sub-urban development and other type of land use coexist in areas with a radius of as large as 100 km where 285 high mobility of population include circular migration and commuting, Firman (1996). The third problem

in the boundaries between 'rural' and 'urban' areas is that urban residents and enterprises depend on area significantly larger than built up area for basic resource and ecological functions. The larger and wealthier the city, the more its industrial base and its wealthy consumer will draw on such resources and ecological function from beyond its surrounding region, Mc Granaham, et al (1996). The concept of a city ecological footprint was developed to quantify the land area in which the city dweller depends for food, water and other renewable resources like fuel wood, Rees (1992). The territory of urban settlement keeps on expanding as the periphery has ceased to be an open space, and in this sense it ceased to be a frontier, whose growth logic led to the spread of urban land ownership, Ribiero, et al (1995).

In regard to the dichotomy on the definition of rural and urban areas, every nation has its own sets of parameters in defining its rural and urban concepts and as such in the Indian scenario the Census of India gives the proper definition. Village or town is recognized as the basic area of habitation. In all censuses throughout the world this dichotomy of rural and urban areas is recognized and data are generally presented for the rural and urban areas separately. In the

rural areas the smallest area of habitation viz the village generally follows the limit of a revenue village that is recognized by the normal district administration. The revenue village need not necessarily be a single agglomeration of the habitation. But the revenue village has a definite surveyed boundary and each village is a separate administrative unit with separate village account. It may have one or more hamlets. The entire village is one unit. There may be unsurveyed villages within the forest etc, where the locally recognized boundaries of each habitation area is followed within the larger unit of say the forest Range Officer's jurisdiction. And in defining the urban area that problem generally arises. However, for the 2011 census also the definition adapted in previous censuses is used which are as follows:-

(a) All places within municipality, corporation or cantonment or notified town area.

(b) All other places which satisfies the following criteria:(a) a minimum population of 5000,(b) at least 75% of the male working population are non-agricultural,(c)a density of population of at least 400/sq Km.

And to say, all areas which are not recognized as urban area are considered as rural area, Census of India (2011).

The study of inter relationship between urban and rural is different in developed and developing countries. According to Mylott (2009), the nature of rural – urban interdependence is not similar in developed and developing countries. The country like USA, Canada and Europe, the rural and urban land uses are no longer mutually exclusive, but rather exists on a continuum of community types that are increasingly interconnected. Settlement and migration are changing as new form of urban, suburban and exurban development alter pattern of community development. There is decentralization of population as suburbanization is replaced by exurban development where households with fewer people characterized by low density growth start living in larger piece of land. This development and resulting land use and lifestyle clashes occur in peri-urban areas once dominated by agriculture. As non-farm growth rural and peri urban an area competes with agricultural land, tensions arise between farmer and non farmers. Whereas, in developing countries, there is a clear division between rural and urban areas that distinct the realities of rural and urban areas, and the peri-urban areas in which both urban and rural features can be found. Rural areas depend on urban areas for secondary school, post and telephone, credit, agricultural

expansion services, farm equipments, hospitals and government services. Greater access to information technology, better road, improved education and changing economic realities are increasing the movement of people, goods and services. As incomes from agriculture decreases, rural people are forced to develop new livelihood strategies both in agriculture and non agricultural sector. Besides, low income households in urban areas rely on agricultural goods from rural relatives to supplement their income blurring the distinct division between the terms in such instances.

In the study of rural-urban interaction certain aspects are need to be considered like the spatial and sectoral. In the spatial aspect the flow between urban and rural is the main focus. It is believed that flows are always rural to urban areas; however, the migration from the urban to rural is increasing. In sub-Saharan Africa, significant numbers of retrenched urban workers are thought to return rural home, where cost of living is lower, Potts (1995). Seasonal waged agricultural work in rural areas can also provide temporary employment for the low income urban people, Kamete (1998). Whether, rural – urban, urban – rural migration, flow of people is a focus in their interaction. It need to view rural – urban interaction

within a general systems framework which emphasizes the interrelatedness of the complex variety of elements involved in the movement of people between rural and urban areas, Akin (1967). Rural – urban linkages refers to flow of capital, people and goods between rural and urban areas. Besides, economic flows flow of ideas, innovation and information, Gaile (1992). To integrate rural regions into national economy require local and national Institution for management and planning of human settlement which emphasis on the rural – urban interaction and led villages and towns as two ends of human settlement continuum, UNCHS (1997).

In the case of India the flow of rural people to urban areas is tremendous. The urban population stands at 300 million which is approximately a third of its total population. Compare to 2.5 times during the last 5 decades, the urban population has increased by 5 times. It is estimated that about 410 million Indians living in cities by 2011 and 800 million by 2045, Chakraborti (1996). Though India experiencing a rapid urbanization, India has yet to join the urban century, as she is still a mosaic of 500,00 villages with 60% of population dependant on agriculture. Fewer than 30% of Indians are presently urbanized, Mohan (2004).In India, though lesser segment of

population lives in urban areas, the trend is in positive graph. This could be the reason that according to, vide press note 2 (2005) dated march 3, 2005 the Government of India has decided to permit Foreign Direct Investment (FDI) up to 100% under the automatic route, in township, housing, built up infrastructure and construction development project which is expected to attract foreign companies to invest in India, Baijlal (2005). In India 35 – 40% of its people lives in cities and is expected to increase to about 60% by 2025, Brockerhoff (2000). It is also estimated that everyday 1000 people come to live in Delhi which include poor migrants from UP and Bihar, National Capital Region Planning Board 1996). In 2011, the increased of urban unit as towns are 2774, statutory towns 242, census town 2,532, whereas rural unit are 2,279 only which shows the urbanization is in positive trend that is being contributed by migration, Chandramouli (2011). Due to social and economic development and technological advancement as improvement in education, transport and communication facilities, shift of workforce from agriculture to tertiary and industrial sector increases migration, Davis (1951). Another factor is that rural to urban migrants are generally a substantial proportion of socially and economically displaced with

high incidence of poverty, Kundu, et al (2007). Pull factors for migration to urban areas is that the cities with strong economic base are attracting private sector investment from both within and outside country which enable to get also a disproportionate share of subsidized HUDCO funds, Kundu, et al (1999).

In the hilly and mountainous region too people are generally leaving the mountain areas, Goldstein, et al (1983). And there is high degree of variability that is found within high mountain region in regard to migration, Karan (1987). Some region experiencing depopulation while other having concentration of population around the market towns, Mac Donald (1996). In case of mountainous Ladakh region, migration from its rural areas to its capital Leh has been a highly conspicuous factor in the towns' rapid expansion, Grodell (2004). There is economic, demographic and social implication for both sending and receiving region which form migration an importance, Bose (1980). It is also depicted that flow of people in the process of rural and urban interaction is mainly of young adults. It is found that in macro-level interpretation of migration of rural to urban, flow of people in Oceania, South Asia and Africa are young adults, mainly of males, Oberai and Singh (1983). According to, Dolfus (1999,

retiree and young people of schooling age comprises mainly the migrant people. Circular or temporary surplus labor from agricultural areas is observed in urban areas by sending one or more adult from a household to earn wages in urban areas, Hugo (1985).

In case of multispatial interdependence, the reciprocal support happens across space as urban based households remit source of income to rural based members who look after their children and properties as return which is commonly taking place in Old Naledi from low income settlement of Gaborone (Botswana), Kruger (1988). With regard to the flow of goods, exchanges of goods between rural and urban areas are essential elements of rural – urban linkages in which three phases are involved; firstly, rural household earn more income from production of agricultural goods and increase their demand for consumer goods; secondly, this lead to creation of non-farm job and employment in small towns close to agricultural production areas; and thirdly, in towns absorbs surplus rural labor and raises for demand of agricultural products and boosts agricultural productivity and rural incomes, Evans (1990). Flow of goods are being operated through markets, and these markets are social institution where some actors are able to enforce mechanism of control in favor

of specific group that access it and exclude others. According to, Ribot (1998), In Senegal, forest are owned by state and managed by forest service which allocates commercial rights to urban based merchants by means of permit, quotas, and license. Deciding whether to allow merchants and woodcutters is in the hands of the village chiefs. However, only a small portion profit from the commercial forest is obtained by villagers, yet the merchants and wholesaler gets maximum profits out of it through their social relation, access to forest market, labor and urban distribution and accessibility to state agents and officials. Therefore the local control and management of natural resource is weakened. Besides, to minimize the control and profit by specific group over the operation of market is necessary. In Tamil Nadu, an initiative is done by State Government in 1999, where semi – drought conditions and labor shortages affect small scale farmers. Marketplaces were constructed where vegetable farmers would sell their products directly to urban consumer, aiming to avoid brokers and traders, Rengasamy, et al (2002).

It is well noted that market facilities are more important for the flow of goods in the interdependence of rural and urban settlement. According to, Reardon, et al (2009), In India, the

traditional market is made improved to modern market; in traditional market, the drawbacks are ineffective regulation, the confusing role of wholesaler and brokers, imperfect information transmission and limited service delivery by brokers. In modernizing it, he distinguish two waves of modernization of market in developing countries; firstly, led by public sector and interfere by Government in agricultural market and streamline the food supply chain; secondly, led by private sector where emergence of food supply chain of private processing sector, the food service sector and modern retail. As such, to improve the flow of agricultural product, in India, the Government set up several public organizations to promote co-operatives including National Co-Operative Development Corporation and National Dairy Development Board (NDDDB), Acharya (2004). It is estimated that Co-Operatives handled about 10% of surplus of all marketed items in the country in the early 90's, Acharya (1994). One of the examples of these is the 'Anand" model of dairy co-operative which received worldwide significant attention, Candler, et al (1998). Improvement in modernizing Indian market are indicated as, Joseph, et al (2008), reports that the total value of food and grocery selling in retail is

about 191.6 billion US dollar in 2006 – 07. Thus the modern retail occupies about 3% of food retail sales in India.

With regards to sectoral interaction of rural – urban areas it is noted that the common strategies for poor urban dwellers include obtaining food from their rural areas, using their home as workplace and engage in urban agriculture, Jemi (2002). In many cities, most of the urban settler indirectly depends on agriculture for their livelihood, by means of employing in food transport, food retailing and processing, Brook et al (2000). The practice of agricultural activities in the urban areas as sectoral linkages is that the majority of people in the PUI still have natural resource based livelihood that is related to agriculture, eg. farming, dairy farming and agricultural labor, Gregory (2005). Even in remote Arctic region, constant contact and interchange found between rural and urban people. The physical boundaries are clear, however, social and economic boundaries are porous. The hunters and herders visits villages and the villagers go and send their children to tundra for fish camping during vacations. This interaction, economic interdependence and constant movement of people are well observed in the Russian and American Arctic as well as in Greenland, Bogoyavlenskiy (2001).

Besides, growing food in and around cities has become major industry, important to the people of million poor and less poor urban dwellers. It is being estimated that 15% of all the food consumed by urban dwellers is grown by the urban farmers and the percentage will be doubled in 20 years. Referring to Africa, the cultivation of food crops in many African urban areas is economically significant in which they pay 10 – 30 % more for food than rural dwellers. In Kenya and Tanzania 2 out of 3 urban household engage in farming. In Cairo 25% of all urban families raise small livestock. In these places womenfolk plays vital role in urban farming. Most of the farmers originate from poor household that are fully incorporated in urban economy. In Latin America and Caribbean, every available space including roofs and balconies are occupied for urban food production, specially, in Cuba's capital Havana. The city council facilitates the integrated management of wastewater for food production. Referring to Europe, 72% of urban families in Russian Federation raise food and Berlin has more than 80,000 urban farmers. In these areas rooftop gardening is popular because the gardens are secure, UNCHS (2001a, 2001b). Regarding the sectoral interdependence it is said that any activity which produces, processes and do marketing in urban and peri

– urban areas as urban farming by applying intensive production method on urban waste and re-using natural resources, IDRC (2000). In India too, referring to the cities like Ahmedabad, Gujarat where progressive urban agriculture policies as urban horticulture, forestry and solid waste are initiated, Furedy (1999). Learned and scientific personalities of Indian do practice urban farming as, Aroun Shourie, reports that on the roof of Dr. Doholkar's house, vegetables, corn, sugarcane, mango are grown on pots and soil made from waste, leaves were found. It is found that the natural and organic farming revolution in India is inspired by the idea of Masanubo Fukuoka as in, "The One – Straw Revolution", Korn ed. (1978). Assumedly, urban agriculture generally practiced by intellectuals in India, though country is populous, poor people are also with basic needs, yet foods are destroyed by rodents and insects due to bad and inadequate storage facilities; where the lost is about 10% of India's total food grain production which is 20 million tones, Roy (2000). In India 83% of rural and 14% of urban working population are involved in agriculture in 1991, and in around Delhi Sonapat recorded 61% of rural and 11% of urban workers, Faridabad 72% rural and 5% urban workforce were engage in agriculture, Census of India (1991), which is a good

indication of urban and peri-urban farming. It said that in case of UPA in and around Delhi is favorably done on the floodplain of Yamuna river where demand for vegetables and profitability of vegetable cultivation is high; therefore vegetable cultivation and distribution is a profitable activity, Bhupal (1999). Besides, in urban Delhi milk and its by-product are produce in peri – urban and rural areas which are mainly consumed in urban areas, Bal (1996).

In regard to the practice of non farming activities in rural area significantly employ directly a large share of rural population. It tends to centered on the countryside with little dependence on rural – urban links. These activities are generally home – based and small – scale production of goods, mainly sold locally. The other nature of this interaction is attraction and setting up of rural companies by urban or foreign business and a rapid increase in commuting labor force between villages and rural towns and intermediate cities, Reardon (2000). In India to uplift the livelihood of poor rural dwellers and alleviate poverty in rural areas, different strategy and programmes is enhanced .And this programmes lead to sectoral interdependence of rural people on non agricultural activities. Due to technology led growth in agriculture, in India, lead to

expansion of employment in the non – agricultural sector, Mellor (1978). Development of urban centers in India give rise to non – farm employment in the adjoining rural areas because of low factor of land and labor price in rural areas, however, these areas are need to be integrated to the nearest rural town, Visaria, et al (1994). According to, 10th Five year plan-(2002-07), Small land holding and their low productivity are the cause of poverty among families depending on land- based activities for their livelihood. Poor educational base and lack of vocational skills lead to poverty. So poverty alleviation has been one of the important principles of planning process in India. The new approach to self employment has made significant contribution to the improvement of beneficiaries as evidence from the evaluation of Swarnjayanti Gram Swarazgar yojana (SGSY) in Tamil Nadu as in Mathur village 100 woman from 8 self-help groups were trained in fruit processing by N.G.O. Members engaged in processing activities are given employment on rotation basis and the monthly income of a member is not less than Rs 1,000 in the year 2000. Besides, other Schemes and programmes are introduced for rural livelihood like Employment Assurance Schemes (EAS), food for work programme and Sampoorna Gramin Roggar Yojana (SGRY). On the impact of these

programmes it is found that in Rajasthan for the period 1995 – 2001, Employment Assurance Scheme (EAS) and Jawahar Gram Samridhi Yojana (JGSY) funds were utilized to create school building, health infrastructure or economic infrastructure such as road , shops etc ,10th 5 year plan(2002-07).

The different programs were introduced in the 10th plan in order to provide self employment and wage employment to the rural poor; as SGSY would provide opportunities for self employment to the rural poor; network of institution that promote self-help movements; greater attention would be paid to marketing; Access to land to alleviate poverty; the promotion of a movement to enhances social, capital and forges linkages, 10th 5 yr plan (2002 – 07). To encourage and promote rural industries Government of India has created certain institution for rural non-farming activities. KVIC at the national level, Khadi and Handloom Board at state level and many institution and co-operative societies tends to uplift it as improving the qualities through brands such as ‘ Sarvodaya’ for items like soap, pickles, honey; ‘Khadi’ for essential products like essential oils and herbal products; ‘Desi Aahar’ for organic foods, cereal and spices. For marketing, it is

operated through CPKVI (Confederation for Promotion of Khadi and Village Industries), Jha (2005).

At present in Nagaland these programmes are implemented indicating sectoral interaction between rural and urban areas; and in case of spatial linkages, development of transport and communication plays its role. It is interesting to look at the history of Nagaland in this aspect. Historically, the interdependencies were limited as every village were economically and politically independent of each other except during tribal war like clashes and famine where support were sought and provided on the basis of allegiances among them. In the late 1870's Nagas sold bee wax, ivory and locally woven clothes as far as Golaghat and Guwahati and in return they bought salt, brass utensils and wires. It was the Japanese invasion which brought another landmark in modern Naga history, as after the invasion of isolated Kohima, troops from all over India, Great Britian and commonwealth countries came in an unbelievable speed to rescue Kohima from the grip of the Japanese. As a result Dimapur became not only military base but opened to world dailies and finally to a commercial settlement to interact within and outside of Nagas. As such trade and the value of important items during 19th century

was as 1 cow cost for Rs 6 – 10, 1 pig for Rs 3, 1 dog for 4 annas, 1 chicken for 2 annas, 2 to 4 seers of salt cost Re 1,(Gazetteer of India, Nagaland). It is well understood that the trade and its interaction is governed by the transportation facilities, as Dr. S.C.Jamir, the then Chief Minister of the state, in his speech on the occasion of the commemoration of 35 year of statehood on 1st December 1998, opined that Nagas were primitive when the world was developing with scientific discoveries during Industrial Revolution and also he reminisced that at the time of India's Independence, there was only one highway passing through state which connects Imphal with Assam plain; during which he had to walk 3 days to reach Mokokchung to Kohima for appearing matric examination. But now he quotes," we see all round development in our rural areas", (The warrior Jan. 1999). At present Nagaland has 7145.83 kms of unsurfaced and 6225.62 Kms of surfaced road, (Statistical handbook of Nagaland 2006).

In the modern Naga society, the rural and urban linkages by means of flow of people, flow of goods and services and information; and sectoral interdependence are being experienced. The Nagaland Co-operative Marketing and Consumers Federation (MARCOFED) arranges procurement of consumer goods in bulk and

its distribution at fair prices on the other hand and marketing of surplus agricultural produce; the village councils are given the status of fair price shop. They receive public distribution system items that are being allotted to the village by the district Administration. An aspect of sectoral interaction is the setting up of fruit canning and processing factory in rural areas as at Saring, Longnak, Dikhu Valley and Baghty, DIPR (1988). In the field of cultivation, different policies are adopted to drive away its people from the practice of jhuming as department of Horticulture adopt a policy of approach for area expansion which enabled the department to develop about 400 hectares under its scheme during 1998 – 99. Fruits included under this are mandarin orange, sweet orange, litchi, pineapple, banana, passion fruit, plum, pears, peach and apple, (The warrior Nov. 1999). Besides, these developments continue as Nagaland Post daily, Jan. 29.2012, reports under heads "PRA to solve farmers agriculture related problem" which says that Krishi Vigyan Kendra (KVK) Tuensang conducted participatory Rural Appraisal (PRA) of Sansomong, New Sansomong, Phikahir and Holangke village under Longkhim block with objective to understand various researchable, development and to formulate to farmers problem related agriculture. Besides,

Agricultural Technology Management Agency, Peren block conducted training cum demonstration on oyster mushroom cultivation and pineapple juice preparation; about 35 active farmers from different SHG participated, reports Nagaland Post daily 29 Jan 2012. Apart from this an exhibition was conducted to create awareness to the farmers and public about the latest technology and technique in agricultural and allied sector, by SHG under ATMA Dimapur reports same media on 28 Jan 2012.

In regard to flow of funds to the rural areas it is being reported by media, Nagaland Post, on 27.1.12 that Tetok Chengnyu as the first village to set up CSP (Customer Service Point) of Kiorsk Banking under SBI, organized by Hill Area Development Organization (HADO) on behalf of Nagaland Development Outreach(NDO); and also SBI launched its project “ Bank On Wheel) which will deliver banking service to the rural customer in Nagaland, with the initiatives of NDO, report by the same media.

From the preceding reviews, it is revealed that the study on the movement of rural and urban interdependence in Nagaland is worth staking. However, as far as the available literature is concerned, many of the information are to be generated as first hand

information for the selected study area. And also to quote that, Nagaland, though small state with majority of villager engaging in agro – forest activities, the interaction of Nagas with few urban townships within the state makes life busy and makes their livelihood which cannot be undermined rather exposed.

CHAPTER 2
GEOGRAPHICAL FRAMEWORK OF THE STUDY
AREA

2.1. ADMINISTRATIVE SET UP IN NAGALAND

The state of Nagaland lies between 93°20'E-95°11'E and 25°6 – 27°4' N longitude and latitude respectively. The study, geographically, deals with the regionalization and its spatial differences. Besides, as the geography is the science of area, here the study area is Nagaland in general and Mokokchung and Zunheboto districts in particulars. Therefore it is being regionalized and their areal differentiations are identified in the geographical aspect and phenomenon. The physical phenomenon which is the geographical aspects, are being studied in this chapter. The physiography, climate, vegetation, drainage, geology, soil, economy and administrative division of Nagaland in general and Mokokchung and Zunheboto districts in particular are being dealt in this chapter.

For the sake of administrative convenient, Nagaland is divided into 11 districts viz., Kohima, Mokokchung, Tuensang, Wokha, Zunheboto, Mon, Phek, Dimapur, Longleng, Kiphire and Peren, and several sub – divisions headed by ADCs, SDO (C)s and EACs.(Fig.2.1). Kohima is the district where its headquarter is chosen as the capital of the state because even during the time of British administration it was the headquarter of

NAGALAND ADMINISTRATIVE DIVISION



Source: Census of India 2001.

Fig.2.1. Map of Administrative divisions of Nagaland.

the Naga hills district under Assam. Kohima is the home district of Angamis and Rengmas. On 1st December 1963, Kohima became the state capital with the inauguration of Nagland as 16th state of Indian Union. During then the present district of Kohima, Phek, Dimapur and Peren comprised the district of Kohima. This district headquarter is situated at 1444 meters above main sea level. Mokokchung the home district of Aos is another one of the oldest district in Nagaland which is situated at the altitude of 1325 meters above main sea level with a geographical area of 1615 sq km. It was included as a sub-division with Naga Hills district of Assam on 28th February 1890 during British rule. The present whole district of Wokha and Zunheboto, Chare region of Tuensang and Wakching of Mon district was initially under Mokokchung district. It has two ADC headquarters as Mangkolemba and Tuli with two SDO (C) namely Changtongya and Chuchuyimlang and 5 EAC headquarters and One Border magistrate. Wokha is another old district of Nagaland as in 1876 British government occupied it as district headquarter of Naga hills under Assam which was shifted to Kohima in 1878 and again shifted to Mokokchung in 1889. When NHTA (Naga Hills Tuensang Area) was created Mokokchung was declared as a district in 1957 and Wokha became sub – division. It was only in 1973 Wokha was

bifurcated from Mokokchung and full fledged district. Historically Wokha is also an old urban center in Nagaland which is the home district of Kyong (Lotha) Naga tribe and is situated at the altitude of 1313 msl. Tuensang is also one of the oldest districts in Nagaland, and it is the home district of Chang, Sangtam, Khiamnungam and Yimchunger. Tuensang is standing at the altitude of 1372 msl which was NEFA and in 1957 it was merged with Naga hill district of Assam and forms an administrative unit as NHTA. At present it has three ADCs headquarter, two SDO (C), and 5 EACs headquarters. Besides, Dimapur sub-division and Niuland sub-division of Kohima district was carved out as a fully fledged Dimapur district of Nagaland in the year 1997 which is situated at the altitude of 260 meters above main sea level. Culturally, Dimapur is cosmopolitan in nature as it comprises of all Naga tribe, Bengalis, Assamese, south Indians, Hindi speaking communities of North India and even foreign nationals specially Bangaladeshis, Nepalese and others. The urban center of Dimapur is the core commercial nest of Nagaland. It has seven blocks and 11 circles with 2 ADCs, 2 SDO(C)s and 3 EACs headquarters. Zunheboto district is inhabited by Sumi (Sema) Naga tribe and is geographically located at the centre of Nagaland which can be called as 'heart of Nagaland'. It is situated at the

height of 1874 msl. The nameclature of the district is not after any original local village name but derieved from from two sumi dialect as 'Zunhebo' a kind of flowering plant and 'To' means hill top as such Zunheboto is coined. It has ADCs at Aghanato and Poghoboto, SDO(C)s at Satakha and Akuluto and another 7 EACs headquarters. Phek was initially under Kohima district which was bifurcatd on 12 December 1973. It is inhabited by Chakhesang and Pochury tribe of Nagaland and has a ADc headquarter bat Pfutsoro, SDO(C) at Meluri, Chizami and Chazouba and another 7 EACs Headquarters. Kiphire Sub-division of Tuensang district was carved out and became a district on 24th January 2004. It is situated at 896 msl and mostly inhabited by Yimchunger tribe of Nagaland. On the same day of Kiphire was born, Longleng was also carved out from Tuensang district as a full fledged district. It is situated at the altitude of 1,066 meters above main sea level and is the home of Phom tribe of Nagaland. Mon district which is inhabited by Konyak Naga tribe located at the northern tip of Nagaland with an area of 1786 sq km. It has 6 sub-divisions headed by ADCs aqnd SDOs as Tobu, Tizit, Naginimora, Phomching and Wakching and 7 other EACs headquarters. Besides, Peren is one of the youngest districts which was a sub-division under kohima got full fledged district on 24th January 2004. It is situated

at 1445 meters above main sea level and is the home of Zeliang and Kuki tribe of Nagaland.

2.2. PHYSIOGRAPHY

As far as physiographic aspect of Nagaland is concerned, it lies in the Purvanchal region of Indian sub-continent. It is a ranges of eastern Himalayan mountain system that radiating from north to south. Nagaland comprises of Naga Hills and Patkai boom of the purvanchal ranges. As we focus on the whole of Nagaland, the altitude of the landscape is ascending from west to east. The altitude of Mon in the north east of Nagaland is 898m and Dimapur in the southwest is 260m are lower in height compare to Phek in the southeast 1524m and Noklak 1524m,Shamatore 1692m and Saramati 3840m in the extreme east and Wakching 1031m in the northeast of Nagaland. So it shows that the eastern part of Nagaland is comparatively higher in altitude than western part of Nagaland.

As focus at the vertical scale the northern part is lower in altitude than the southern part with a rise in the middle which is higher in altitude than both north and south of Nagaland. This is being justified as that Mon and Wakching is 898m and 1031m respectively in the north and Zunheboto 1874m and Longkhim 1676m in the

middle and Kohima 1444m and Phek 1524m in the southern part. The central Nagaland is much higher in altitude compared to southern and northern part where northern is lower in altitude than the southern part of Nagaland, which means the central part of Nagaland, is bulging upward with higher altitude.

Topographically, the landscape of Nagaland can be divided into three divisions.(Fig.2.2)

2.2.1. THE FOOTHILLS OF THE WEST

These ranges of foothills are characterized by undulating with gentle slopes. The important feature of this area is that, the river valleys of wider area are identified here. The important places with their altitude are Dimapur 260m, Medziphema 305m, Baghty 305m, Changtongya 954m, Mangkolemba 914m, Tuli 315m and Mon 898m. The river valleys of this region are in the rivers of Dhansari, lower course of Doyang, lower course of Milak and Dikhu. This region is ranging from the lowest altitude of 260m in Dimapur to the highest of 954m in Changtongya area of Mokokchung district. It lies as the north – south

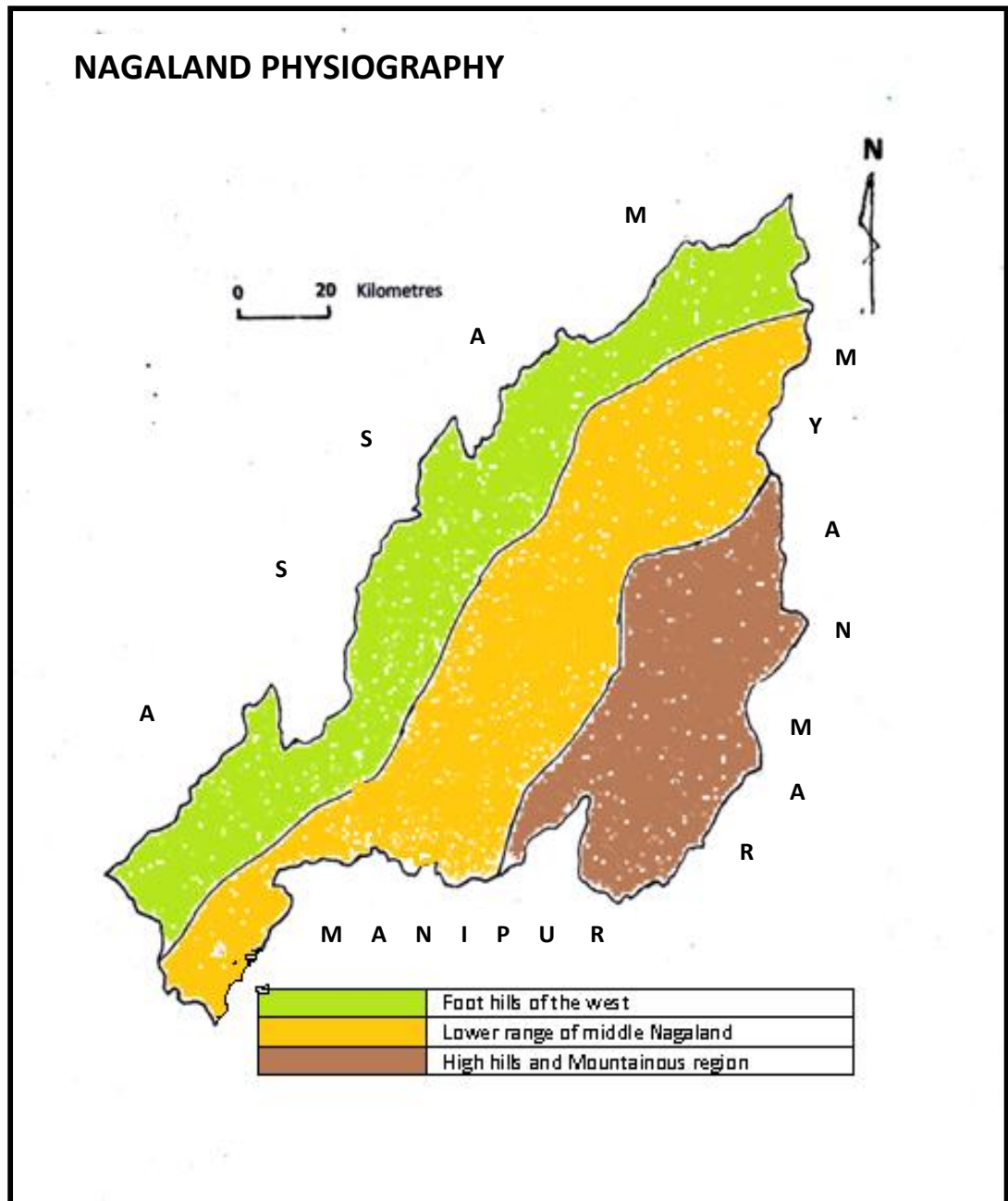


Fig.2.2. Map showingg Physiography of Nagaland

ranges with several ribs of hills from Mon area to Dimapur area. The altitude of this range is ascending from south to north.

2.2.2. THE LOWER RANGE OF THE MIDDLE NAGALAND

This range lies from 1000m – 1500m above main sea level which characterized by moderate degree of slopes with intensified ribs of ranges compare to the foothills range. Deepening of river beds with steep sided banks is also another characteristic of this region. Landslides are also important feature of this region and landforms are mostly of youth stage. This region is ascending from north to south in terms of altitude above main sea level. This is being justified as that Wakching area has an altitude of 1031m and Longleng 1067m, in the north, Mokokchung 1326m, Tuensang 1372m and Wokha 1314m in the middle and again raised at Tseminyu 1422m and Kohima area 1444m in the south. So it is found that this region is ascending in altitude from north to south.

2.2.3. HIGH HILLS AND MOUNTAINOUS REGION

This region runs north-south stretch with bulge of hills in the middle ranging from 1500m and above. The altitude of Noklak

1524m in the north, Longkhim 1672m, Shamator 1692m and Zunheboto 1874m within the middle, saramati 3837m, Phek 1524m, Pfutseru 2134m, Kikrumba 1643m and Japfu 3015m in the south and southeastern shows the picture of its physiography. The south and southeastern part of this region is comparatively higher in altitude than the northern part of the region. This region is characterized by highly dissected slopes and v shaped valleys of seasonal and perennial streams. The waterfalls and rapids are important feature of this region. The hill top of this region is characterized by the presence of spotted hills on it. The slope degrees of this region are steep and the ribs of ranges are intensified.

As far as the physiography of Mokokchung district is concerned, it follows the pattern of Nagaland. The northeastern part of the district is higher in altitude than the southern part of the district. The former is lying within the foothills region of Nagaland. The altitude of Tuli in the north is 314m and Mangkolemba in the west is 914m. Besides, Changtongya is 954m high which is comparatively higher in this foothills region within Mokokchung district. Secondly, the southern part of the district is higher in altitude with 1326m of

Mokokchung area which lies within the lower range of middle Nagaland. The slope degrees are gentle and moderate in these two regions respectively. The slope is, gradually ascending in altitude as proceeds from north to south. There is a fault which gives an abrupt rise at Changki cliff as proceeds from west to east. Besides, 6 ribs of ranges comprise the whole of the districts with its own direction. Langpangkong range runs north south direction; Asetkong range runs east west, Ongpangkong east west direction, Changkikong and Japukong southwest direction to northeast direction and finally Tsurangkong borders Assam.

The other case study area is the Zunheboto district. The Zunheboto district can also be divided into 2 regions corresponding to the physiographic divisions of Nagaland. The northern part of the district occupies the lower ranges of the middle Nagaland and the southern part falls under the high hills and mountainous region of Nagaland. The bulged hill of central Nagaland is falls under the southern part of Zunheboto district. Akuluto and VK range in the north has a comparatively lower range in altitude than Zunheboto and Tokiye ranges. Zunheboto is as high as 1874m and Tokiye has 2042m which is situated furthermore south of Zunheboto, means, the

landscape is increasing in altitude as proceeded toward the south of the district. There is similarity in the physiographic feature between south Mokokchung district and north Zunheboto district as they falls under the same geographic division of Nagaland as a whole. This region is characterized by the presence of widespread moderate degrees of slopes with wider water sheds areas. The southern part of the district is characterized by frequent landslides, dynamic diversion of river course and presence of hillock within the ribs of hills with steep degrees of slopes, waterfalls and rapids and intensified ribs of ranges. The whole of Zunheboto district is characterized by presence of two longitudinal or vertical ranges which runs parallel to each other that divided by the Tizu River. Within these ranges there is Aganatu and Satoi range in the eastern part of Tizu River and Sataka, Zunheboto, Atoizu and Akuluto ranges in the west of Tizu River. These two ranges are joined by Suruhuto range in the north which makes a horse shoe shape of range for the whole district of Zunheboto,'The heart of Nagaland'.

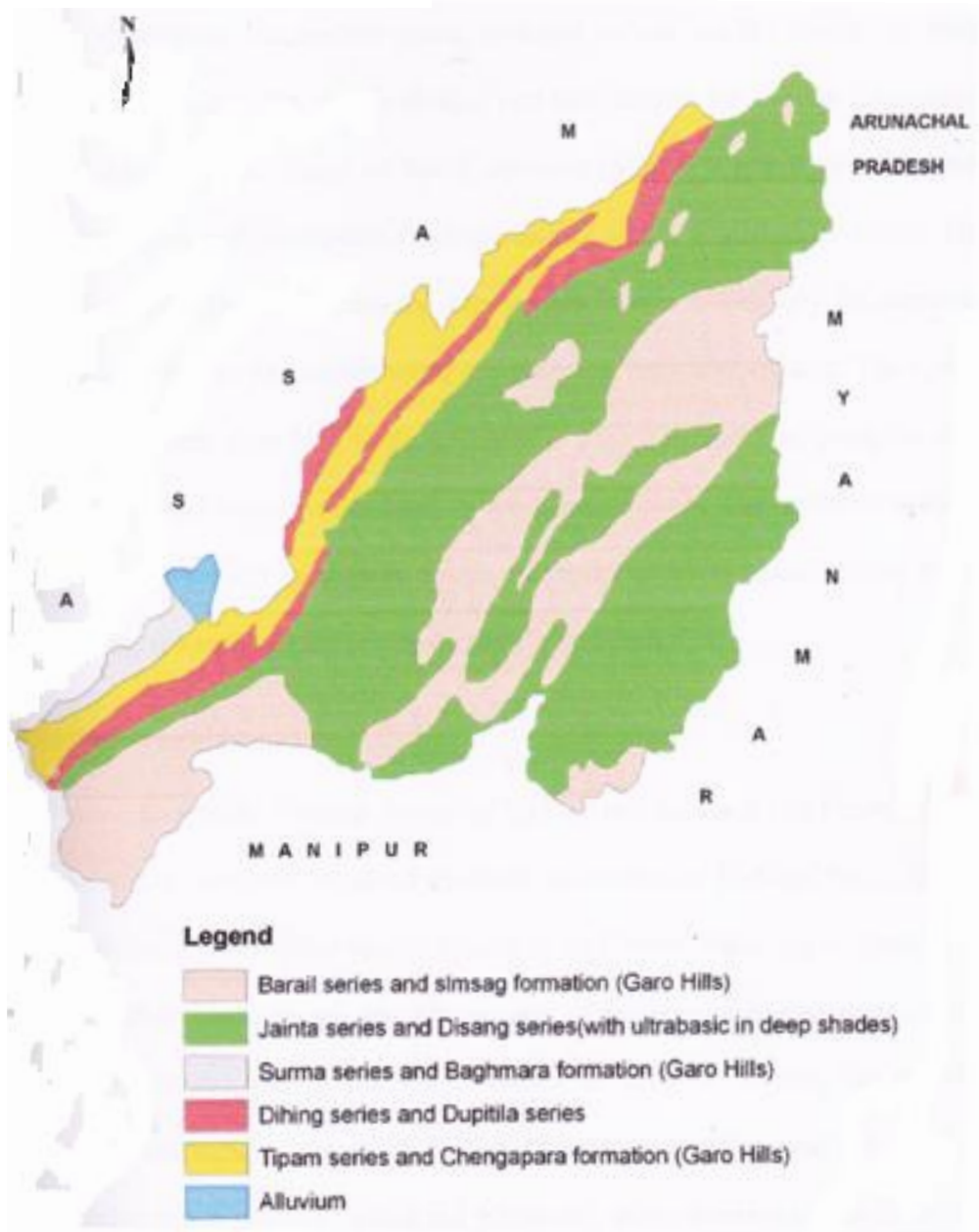
2.3. GEOLOGY OF NAGALAND

As far as the geological aspects of Nagaland is concern, The rocks of Nagaland is young of tertiary sequence which is of the

geo-synclinal facies, represented by the Disang group(Lower and middle Eocene, Upper Cretaceous), the Borail group (Upper Eocene and Oligocene), the Surma and Tipam group(Miocene), The Nasang Beds (Mio-pliocene) and the Dihing group (Pliocene – Pleistocene).(Fig.2.3)

The Disang group consists of a sequence of dark grey splintery shales with thin beds of sandstones. In some part of Naga hills, the Disang shales are splintery and slaty numerous thin ramifying Quartz and a few serpentine intrusions. The Borail group is essentially arenaceous and lowest beds. It enters the state at the south-west corner and runs into north-eastern direction up to Kohima and then with mountain ranges extends up to Manipur of which the main range to the northerly trends. The Surma groups are the alternation of shales and sandstone with more thin conglomerates overlies of Borail which thinning out rapidly toward north. The Tipam group is consisting of ferruginous sandstone of huge thickness of clay layers in the Naga Hills which is exposed in the northern part. Besides, the Dihing is represented

NAGALAND GEOLOGY



Source: National Bureau of soil survey and Land use Planning 2000.
Fig.2.3. Map showing Geology of Nagaland.

by pebbles beds, thin clay and sands those deposits over the Namsang beds. Apart from this, the old alluvium that comprising of clay, coarse

sand, gravel and boulder deposits over the areas along north-eastern Naga-Patkai range and part of Manipur. The newer alluvium which is the mixture of clay, sand and silts covers a vast area bordering Naga Hills which runs along the foot hills.

2.4. SOILS OF NAGALAND

The National Bureau of soil survey and land use Planning, Nagpur 1984, identified the soils of southern Nagaland within the district of Kohima, peren, Dimapur, Phek, Zunheboto and kiphire as high basal status soil of humid region (Udalfs) shallow black, brown and alluvial soil of northern region (Ochrepts), recent formation of soil type (Orthens) and alluvial soil (Fluvens). In the western district of Wokha and Mokokchung, it is shallow black, brown and alluvial of northern region (Ochretys). Besides, in the northern part of the state comprising of Mon district, northern part of Mokokchung and Tuensang, the soils are generally of based status, red sandy, and alluvial soil (Ustults) shallow black, brown and alluvial soil of the northern region (Ochrepts) high based status soil (Aqualfs) brown soil Aquefts).

Besides, basing on the Department of Soil and water conservation, Entisol soil dominate the entire foothills bordering

Assam and flanked by oxisol as the land raises its altitude starting from Peren and Mon districts. Besides, mollisol too starts from Peren district and extends up to Mokokchung district. And the oxisol dominates Kohima and Phek district and continue toward southern part of Tuensang district. The area bordering Myanmar is consist of spodosol with a strip of oxisol extends toward south eastern part of Tuensang district. In the valleys and foothills alluvial soils are found as the ranges with lower altitude which is more subjected to weathering than that of higher altitude.

2.5. CLIMATE OF NAGALAND

The climate of Nagaland at macro level is characterized by monsoon type of climate with wet and warm summer and dry and cold winter. The climate is governed by both the Arabean Sea and Bay of Bengal branch of Indian monsoon wind. As the word monsoon is derived from an Arabic word 'mausim' meaning 'season', it brings rain and storm in rhythmic form seasonally. The summer climate is mainly governed by the development of depression over the monsoonal branch of Bay of Bengal. All these categories of rainfall are occurs in Nagaland. However, the orographic rain is not dominant in most of the places. The rainiest period of the year is July and August in

Nagaland. And also this is the hottest period of the year. The places which receive rainfall above 500mm in rainy season are Tezit 503mm, Mokokchung 917mm, Zunheboto 1120mm, Mon 604mm, Wokha 886mm and Tuensang 903mm. The highest rainfall is recorded within Zunheboto area which is the outcome of the receiver of all three type of rainfall. Mon gets high rainfall which is mainly because of meeting point of both Arabian Sea and Bay of Bengal branch of monsoon. The orographic rainfall gives additional contribution in the rain gauge and is due to presence of uneven high hills within the states; as a result, uneven distribution of rainfall over the study area is experienced. For example, Dimapur and Tezit , both are lying in the foothill of Nagaland, yet Tezit receives more rain(503mm) than Dimapur(340mm) is because Dimapur is located in a rain shadow area made by the hills of Karbianglong and Cachar hills. That is why; Dimapur gets lesser of orographic rains but more from monsoonal depressions and local convectional or cloudburst.

The retreading monsoon wind blows in winter which brings little shower with cold wind from Siberian region. This wind touches mainly the place having higher altitude like Zunheboto and Pfutseru. In these places hailstorms are experienced which brings

temperature further below freezing point especially during night time. The places like Pfutsero, Zunheboto, Aghanato, Pungro, Japhu and Saramati experiences the presence of ice in winter months where Saramati and Pfutsero remain ice covered for several winter months. This phenomenon occurs in the central, southern and southeastern part of Nagaland. In these places the sky condition of the winters remains cloudy and overcast. This phenomenon is governed by the altitude of the places rather than the other factors like latitudinal location, duration of sunshine, inclination of sun's ray etc.

Another feature of overall climatic condition in Nagaland is that the temperature and rainfall are less correlated. So, the temperature of the place is mainly governed by the altitude of that particular area. Inversion of temperature phenomenon is noticeable so higher the altitude, the mercury tags are lessened. The coldest places detected are Zunheboto -1°c and Pfutsero 0.7°c in January and the average rainfall of these places are recorded as 110cm and 90cm respectively.

Therefore, the micro classification of climatic zones in Nagaland is mainly based on the warmness of places that correlated to the altitude which is a major characteristic of climate in

Nagaland. Basing on this factor, Nagaland can be divided into three micro climatic zone.(Fig.2.4)

2.5.1. WARM SUB-TROPICAL CLIMATE

It prevails over the foothills region of physiographic division of Nagaland that is below 1000m above main sea level of its altitude. In this zone the average temperature of Dimapur is recorded as 30°C, Tezit 29°C, Mon 28°C, Ghaspani 28°C in the hottest month, August, during summer. The winter temperature of Dimapur is 12°C, Tizit 18°C, Mon 13°C AND Ghaspani 14°C as recorded in the month of January. Rainfall is unevenly distributed, Dimapur min 4mm,max 340mm, Tizit min 1.9cm,max 73.2cm, Mon min 1.3cm,max 60.4cm, Ghaspani min 1.9cm,max 32.1cm. This climatic feature of the places in the north and south of the zone shows the characteristic of the entire zone. Besides

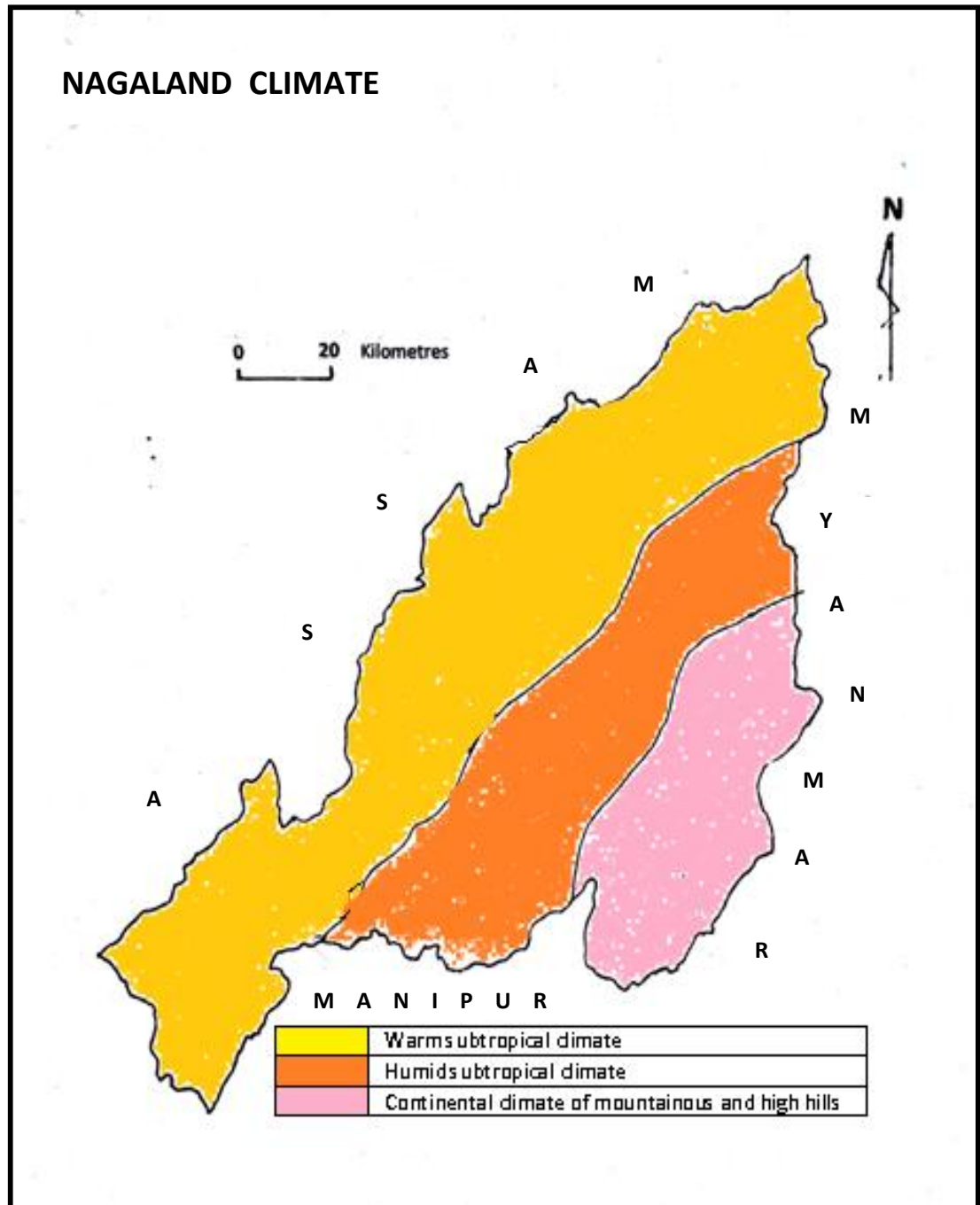


Fig.2.4. Map showing climate of Nagaland

there is no much variation in the relative humidity of the zone as Dimapur 90% in the south and Tizit 85% in the north of the region. Therefore this region fulfill the characteristics of warm subtropical

climate as the rainfall is 40cm-80cm and temperature shoots up to 30°C in summer months whereas winters remain dry and cold.

2.5.2. HUMID SUB-TROPICAL CLIMATE

This type of climate is characterized by availability of enough rainfall that is higher rainfall in summer, average temperature of 22°C, cold in winter. Similarly, in Nagaland this region falls under the places having altitude ranging from 1000-1500m above sea level, and also fulfills the nature of this type of climate. Kohima in the south receive an average summer rainfall of 42cm and the temperature of the hottest month is 22°C. Mokokchung and Wokha in the central part receive an average summer rainfall of 90cm and 87cm respectively. Their summer average temperature is 21°C and 22°C respectively. In the northern part Wakching and Longleng recorded an average temperature of 20°C and 21°C respectively. Enough rainfall is received in this region also.

In winter rainfall is not enough or in other words, rainfall is less in winter in this region. Kohima in the south receive only an average winter rainfall of 0.8cm and Mokokchung 0.1cm, Wokha 0.5cm in the central part of this region. In the north Wakching and Longleng receive an average rainfall of 0.2 and 0.6 cm respectively.

This feature clearly indicates that rainfall is scanty in this region during winter which is important characteristic of this type of climate. Besides, the temperature of the places in this region is low during winter. In Kohima temperature falls to 5°C in January. Mokokchung and Wokha falls its temperature below 10°C which clearly indicates that winter in this region is cold. This indicates that in Nagaland this zone can be classified and marked as humid subtropical climate.

2.5.3. HUMID CONTINENTAL CLIMATE OF THE MOUNTAINOUS AND HIGH HILL REGION

The characteristic of this type of climate are also recognized in the mountainous and high hills of Nagaland. This type of climate is characterized by falling of temperature below 0°C in winter and shooting up of mercury to 26°C in summer months. Enough rainfall throughout the year is another feature of the climate of this zone where average rainfall is about 60-120cm annually. Pfutsero in the south receives rainfall even in winter with an average of 4cm. and 90cm in summer. In the northwest of the zone Zunheboto recorded 6 cm in winter and 110cm in summer. In the northeast of this zone Noklak which is situated at the altitude of 1524m receives winter rain an average of 3cm and in summer 80 cm. This region receives rainfall

even in the winter so that the annual average of rainfall added to the quage. As this region is demarcated at altitude of 1500m and above, the winter is remains cold. Sometimes the mercury falls below freezing point in places of this region and so consequently Saramati and Japfu remain ice covered for several winter months. The pace like Zunheboto has fallen its temperature as low as 0.1°C and in summer pushes up to 27°C. Pfutsero recorded a low temperature of 0.6°C in winter and shoot up to 27°C in summer months. In Tuensang district Noklak and Longkhim shows similar cases over the nature of heat. So basing on these features this region is regarded as humid continental climate of mountainous and high hills of Nagaland.

The climatic condition of Mokokchung district also follows climatic phenomenon of Nagaland. The northern and the part of the district fall under warm subtropical climatic zone of Nagaland. Important places which experience this type of climate are Mangkolemba, Tuli and Changtongya areas. In these areas the warmer period are longer than the cold. Secondly the southern part of the district is falls under humid subtropical climate. In this area the rainfall is enough and the temperature shoots up to 22°C in summer months. This feature is found in Mokokchung and adjacent area as the mercury

indicates at 21°C in the month of August, the hottest month of the year.

In case of Zunheboto district, the northern part falls under humid sub-tropical climate which is the continuation of southern part of Mokokchung district. The places under this zone include VK town, Lumami, Akuluto, Suruhuto. Here also the similar phenomenon of southern Mokokchung district prevails. The feature of this climate is found in the strip of zone as the temperature of the hottest month in VK town and Akuluto are 21°C and 20°C respectively. Besides, the southern part of the district gets humid continental climatic condition. The 0°C temperature of winter and as high as 27°C in summer is the main feature of this type of climate. In Zunheboto, the winter temperature falls even to -1°C and during summer, in August, shoots up to 27°C. The important places falls under this zone are Zunheboto, Tokiye, Aghunato, Pokhoboto and Sataka. In this places rain is a daily phenomenon during summer, that is, May-September. Thus the climatic condition of the district is studied and found that the district experiences two type of climatic condition.

2.6. VEGETATION

Nagaland is land of forest so the vegetation covers the entire land. Various vegetations are found in the state. The forest covers an area of 8,62,845 ha, out of which reserved forest covers 8,583 ha, protected forest 50,756ha, wild life sanctuary 22,237 ha and the virgin forest 6,65,659 ha, degraded forest 2,84,280 ha, as per the record published by chief conservator of forest – Government of Nagaland. Besides, the composition of forest is that coniferous forest 25,905 ha, non coniferous 7, 61,188 ha and the bamboo forest occupies 75,835 ha. As far as the distributional pattern is concerned, coniferous forest covers the higher altitude region of east and southeast Nagaland, bamboo plants are found within the foothills region of western and northern part of Nagaland. The vegetation of the state is controlled by the factors of climate that prevail within the entire state. Besides, the climatic conditions are governed by the altitude of the region. So the distribution of vegetation is due to the altitude of the hills and mountains of the state. So basing on the height, the classification of the vegetation has been sorted out and divided as, sub-tropical evergreen hill wet-vegetation, broad-leaved temperate evergreen rainforest and coniferous vegetation. (Fig.2.5)

2.6.1. SUB-TROPICAL EVERGREEN HILL WET-VEGETATION

The western and northern part of the state is occupied by this type of vegetation. This vegetation thrives at an altitude ranging from 250-1000m above sea level. This belt occupies Dimapur district, western part of Wokha district and Mokokchung district, western and northern part of Mon districts. In other words, the foothill terrain region and hills of western Nagaland falls under this belt of vegetation. Important species of this forest are nahor, sam, poma, khokam, ajhar, hingari, hollong, lali, rata, chestnut, champaca, schima, wallichia, michelia and member of meliaceae. Deciduous trees and bamboo also dominate this belt of vegetation. This belt is also characterized by thick undergrowth over the entire region.

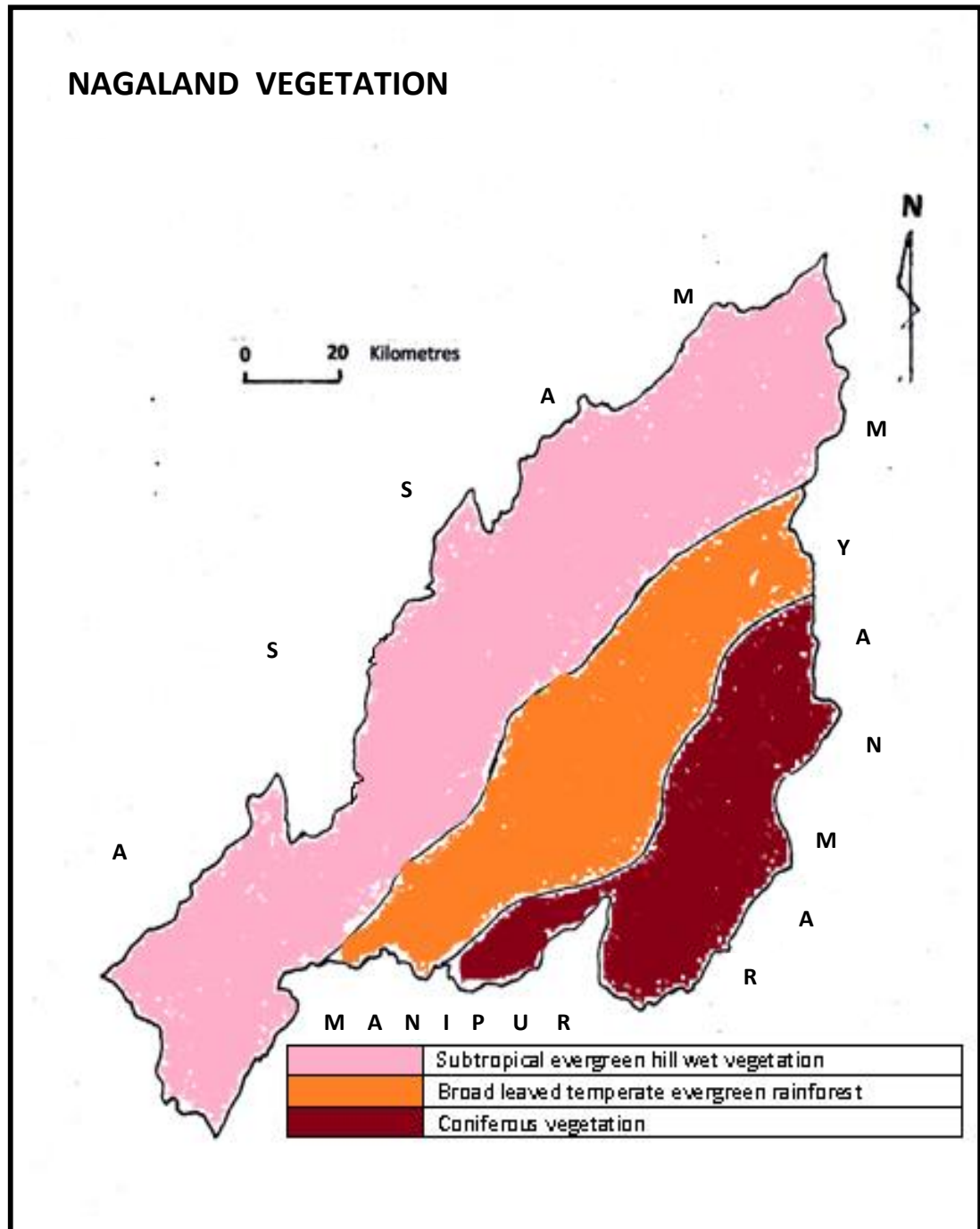


Fig.2.5. Map showing Vegetations of Nagaland

2.6.2. BROAD-LEAVED TEMPERATE EVERGREEN RAINFOREST

This type of vegetation is notice at an altitude ranging from 1000-2000m above sea level. This belt occupies southern part of Mokokchung district, northern part of Tuensang, entire Zunheboto district, eastern part of Wokha district and northwest of Kohima district. Betula, Rhododendron, magnolia, juglam, ragia, runus, alder, oak are main species of this belt. Due to high rainfall and cold temperature, this type of vegetation grows in this belt. The climatic condition and availability of its soil suited to grow undergrowth in abundance within this belt of the state.

2.6.3. CONIFEROUS VEGETATION

This type of vegetation grows at an altitude of 2000m and above. This belt occupies the eastern, southeastern of Tuensang district, Kiphre and Phek districts and southern part of Kohima district. In other words, eastern, southern and southeastern part of Nagaland is falls under this belt of vegetation. The important vegetations found in this belt are pine, oak and rhododendron. The entire region of Saramati and adjoining places, Japfu and its surrounding places are characterized by this type of vegetation. This belt is controlled by the climatic conditions and also the altitude of the

landscape. Most of the virgin forests are located in this belt which is an important feature of the region.

One of the important features of the vegetational covers over Nagaland is that the natural form is completely disturbed. It is being degraded by human activities like logging and jhuming which is noticed in almost all the three belts. The degraded forest accounts for about 2, 84,280 ha of the total forested area of the state. It accounts for 32% of the total area excluding the area under settlement.

2.7. DRAINAGE SYSTEM IN NAGALAND

With the presence of deep cut narrow gorges landscape, Nagaland has number of seasonal and perennial rivers and streams. These rivers are generally not navigable as these are mostly of upper course river with high water current. As far as the drainage system in Nagaland is concern, it can be divided into 3 system viz., Bramaputra drainage system, Chindwin drainage system and Meghna drainage system.(Fig.2.6)

NAGALAND DRAINAGE SYSTEM

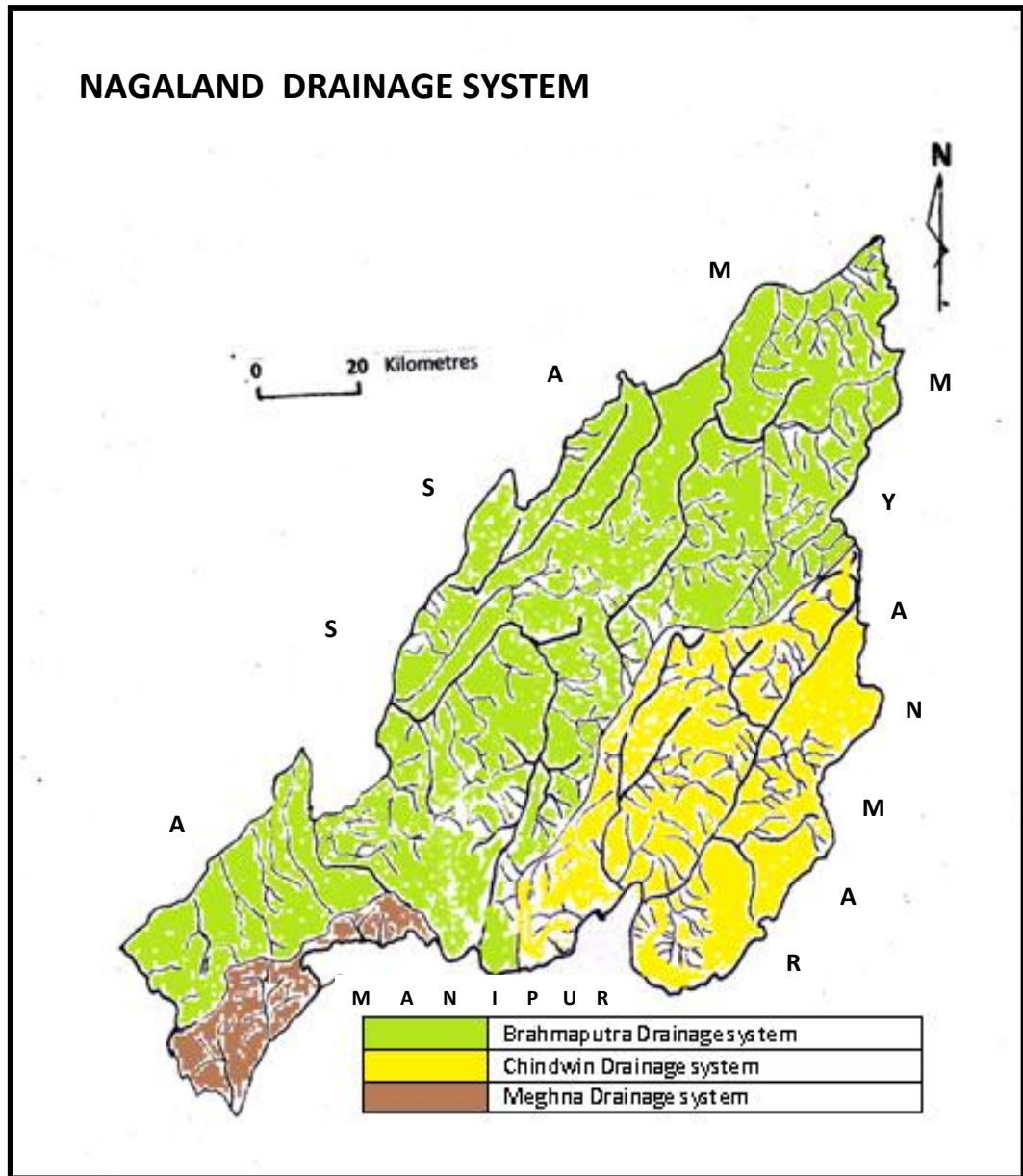


Fig.2.6. Map showing Drainage system in Nagaland

2.7.1. BRAHMAPUTRA DRAINAGE SYSTEM

It covers the 2/3rd of the entire area of Nagaland comprises of Dimapur, Peren, Kohima, Wokha, Mokokchung, Mon, Longleng, Northern part of Tuensang and eastern part of Zunheboto districts. The major rivers of this system are Dhansiri and its tributaries, Doyang and its tributaries, Milak and its tributaries and Dikhu and its tributaries. All these rivers are drained at Brahmaputra River in Assam. The Dhansiri River rises between Nsong and NC hills below Laiseong peak and joins by intangki, Monglumok, the Amaluma, the Diphu and Dzuda Rivers. It flows north east direction passing through Dimapur and runs westward after being joint by doyang near Golaghat in Assam. Another important river of this system is Doyang which is the biggest river in Nagaland its point of origin is at Mao Thana (Mao area) with two rivers and run parallel at the initial stage as dzuu and Sidzu Rivers. It flows between Kohima and Phek districts as Sidzu that passes through Poghoboto as Yeti River. After entering Wokha district it is called Doyang River and finally drained at Brahmaputra after being joint by Dhansiri at Golaghat. Milak (Jhanji) is another river which has its origin in Mokokchung town and flows northward traversing through entire Mokokchung district toward

Amguri in Assam and finally drained at Brahmaputra as Jhanji River. Another river of this system is Dikhu (Tzula) running northward direction bordering Mokokchung tuensang, Longleng and Mon districts. The river Tiru and Tizit of Mon district join Dikhu before it is being drained at Bramaputra.

2.7.2. CHINDWIN DRAINAGE SYSTEM

The two important rivers of this system are Tizu River and Zungki River. Both Tizu and Zungki river has its origin in Tuensang district. Tizu River traverses through Zunheboto and Phek districts. One of the important rivers which join Tizu River is Tsutha which borders Aghanato region of Zunheboto and Seyochung region of Kiphire districts and finally enters Myanmar via Manipur. Besides, Zungki River runs souyward passing through entire Tuensang and Kiphire district which is joint by Likhimro River and finally merged with Tizu before entering Myanmar. Both the Tizu ang Zungki Rivers and their tributaries are drained at Chindwin river of Myanmar.

2.7.3. MEGHNA DRAINAGE SYSTEM

This system occupies a small portion of Nagaland which runs toward Manipur. This system exists in the South-west tip of

Nagaland as south east Peren and south tip of Kohima district. The major river of this system is Barak River and its tributaries which run to Barak valley.

2.8. ECONOMY OF NAGALAND

Nagaland and its people from time immemorial predominated by agriculture as its economy. Traditionally jhum cultivation is the main occupation of its people before some tribe learnt about the practice of terrace cultivation in sloppy hilly areas where irrigation is possible from rain fed seasonal streams during monsoon period and this cultivation was confined only to Angamis, Chakhesang and Zeliang tribe of Nagaland.

After the attainment of statehood, the state Government encouraged and demonstrated to the farmers about wet cultivation through VLWs (Village Level Workers) or Gram Sewaks those who are trained from outside state. Now a day, wet cultivation is widely practice in areas along the foothills belts of Wokha, Mokokchung and Mon districts. Even mechanized farmings are practiced by Nagas of Dimapur and Peren districts. One important feature of our economy is that at present, Nagas stay away from practice of jhuming rather converted jhumland and rejuvenates and preserves forestry by means

of plantation of trees, fruits, bamboos etc where their livelihood is attained from the sources other than the jhuming.

Besides, at present, Nagas adopt floriculture, sericulture, horticulture, bee keeping, handloom and handicrafts, cottage and small industries by adopting modern technologies so as to obtain their livelihood.

CHAPTER 3
COMPONENTS AND INTERACTIVE ZONES IN
NAGALAND

3.1. INTRODUCTORY STATEMENT

The interaction between rural and urban settlement is, no doubt, the spatial and sectoral. In this chapter, the focus on Nagaland as a whole is considered and district wise analysis is given in three aspects as firstly on availability of socio - economic amenities where 17 indicators have been taken into account; secondly, volume of population is considered and thirdly, ecological aspect of interaction is focused. The interaction is examined between urban district headquarter and rural C.D blocks with particular aspect is focused which is governed by the distance between them. In this regard, various gravity models are being applied to depict the picture of phenomenon. For the first category the gravity model applied is partially based on a model; the fomula as,

$$a_{ij}=p_j/d_{ij}.$$

(Where, a_{ij} is the attraction and interaction between i and j settlement, p_j is the percentage of amenities available in j^{th} settlement and d_{ij} is the distance between i^{th} and j^{th} settlement)(Guenther Grohall, et al, 2003).

The second one is based on a gravity model; the formula as,

$$I_{ij} = km_i m_j / d_{ij}.$$

(where I_{ij} is the dependency and potentiality of i^{th} and j^{th} place, m_i is the population of i^{th} place, m_j is the population of j^{th} place and d_{ij} is the distance between i and j place) (Garrothers, G.A.P, 1956). The third one is based on the data available through various sources of publications for the districts in particular and Nagaland as a whole.

3.2. SOCIO-ECONOMIC DEVELOPMENT AND ANALYSIS OF RURAL – URBAN INTERACTION PATTERN IN NAGALAND

The Socio-economic factor taking the above mentioned indicators has directly determined the level of rural-urban interaction. The patterns of the interdependence are being depicted as high, medium, low and in some cases, very low, and interaction and attraction depending on the distance between urban district headquarter and C.D. block centers are being analyzed with the

consideration of the size of the district. The said factors and patterns of the interaction is being analyzed district wise as follows:

3.2.1. DIMAPUR DISTRICT

Table 3.1. Showing the component of socio-economic development and zones of interaction between Dimapur and its rural places.

C.D. Blocks	No of amenities available	%of amenities	Distance from Dimapur in Km	Rate of attraction and interaction
Nuiland	11	64.7	40	1.62
Kuhoboto	13	76.5	37	2.07
Nihokhu	12	70.59	30	2.35
Dimapur Sadar	9	52.9	7	7.56
Chumukedima	12	90.59	15	4.71
Dhansaripar	15	88.24	35	2.52
Medziphema	15	88.24	30	2.92

Based on gravity model – Data Source: - Directorate of Economics and Statistics Nagaland, 2006.

In Dimapur district, the availability of amenities in the places like Dhansaripar, Medziphema 15 each out of 17 (the base of available amenities) i.e. 88.24% which shows that number of amenities are also more and distance is high that is why the interaction with Dimapur is low which is about 2.52 and 2.92 respectively. In Dimapur sardar, amenities are low because more

facilities are available in Dimapur urban sector, which is only 9 out of 17 however interaction is 7.56 because the distance is only 7km radius. Another feature in this case is that both Nihokhu and Chumukedima have 12 numbers of available facilities. Yet, the rate of interaction is different as Nihokhu 2.35 and chumukedima 4.71 because the distance for Nihokhu is farther than Chumukedima as 30 km and 15 km respectively. Another important feature is the pattern of interaction which is higher at Dimapur as it has linkages with all the urban and rural places in Nagaland. The daily flow of transportation, both passenger and goods are linked by more numbers of means of transportation from both the urban and rural areas of all the districts of Nagaland. For instance the number of buses plying daily to and from Dimapur alone is estimated to be 70 – 80 in numbers. (Fig 3.1)

3.2.2. KOHIMA DISTRICT

Table 3.2:- Showing the components of socio – economic development and zone of interaction in Kohima district:-

C.D. block	No of amenities available	% of amenities	Distance from kohima in Km	Rate of attraction and interaction
Tseminyu	15	88.23	50	1.76
Chipoupouzuo	11	64.7	30	2.16
Kezocha	13	76.5	46	1.66
Jakhama	17	100	15	6.66

Kohima sadar	17	100	7	14.3
Sechu	13	76.5	16	4.78

Based on gravity model - Data Source:- Directorate of Economics and Statistic Nagaland , 2006.

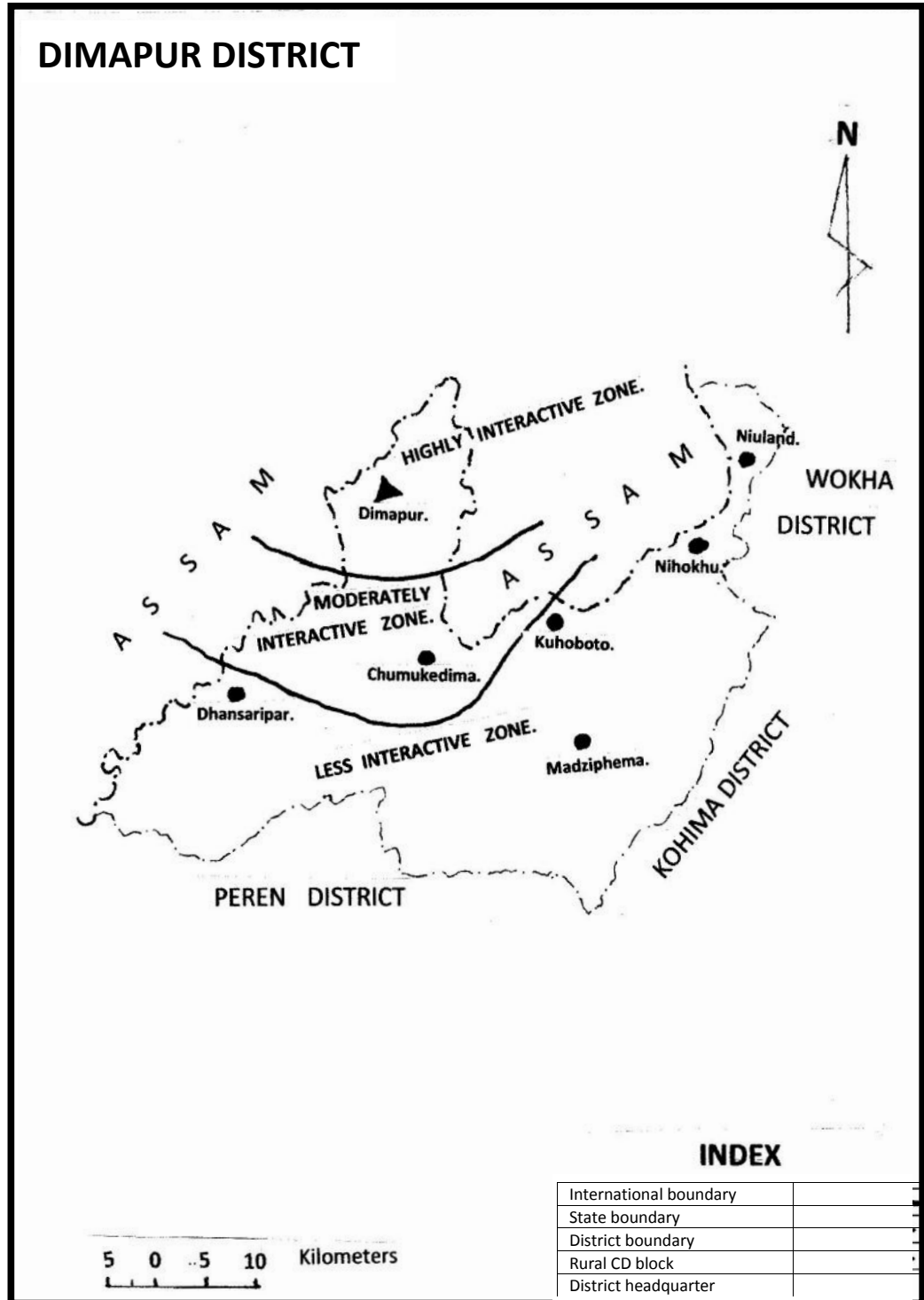


Fig. 3.1. Map showing Zones of interaction based on amenities in Dimapur district

Kohima district also shows a very interesting picture that even if both Jakhama and Kohima sardar are at 100% of its amenities, the rate of attraction and interaction is 6.66 and 14.3 respectively. The governing factor out here is the distance which is 15km and 7km respectively. Another feature is that both Kezocha and Sechu are having the same facilities of 13 each, however they fall under the category of medium and low interaction respectively. Tseminyu show a very interesting phenomenon that as it has more number of amenities i.e.,15 with a high percentage 88.23 with longer distance from kohima urban centres i.e., 50 km: It has less interaction with Kohima urban centre as it show only 1.96 rate of interaction and attraction. It clearly depict that as it has more facilities and longer distance, the people depend on the availability of its own facilities. It is revealed from the analysis of kohima that if the available facilities are high, it has less dependence on urban centers. And also if the distance is more, people seek shorter distance to avail the facilities that is why Tseminyu interact more with Wokha which is a bit nearer.

(Fig 3.2)

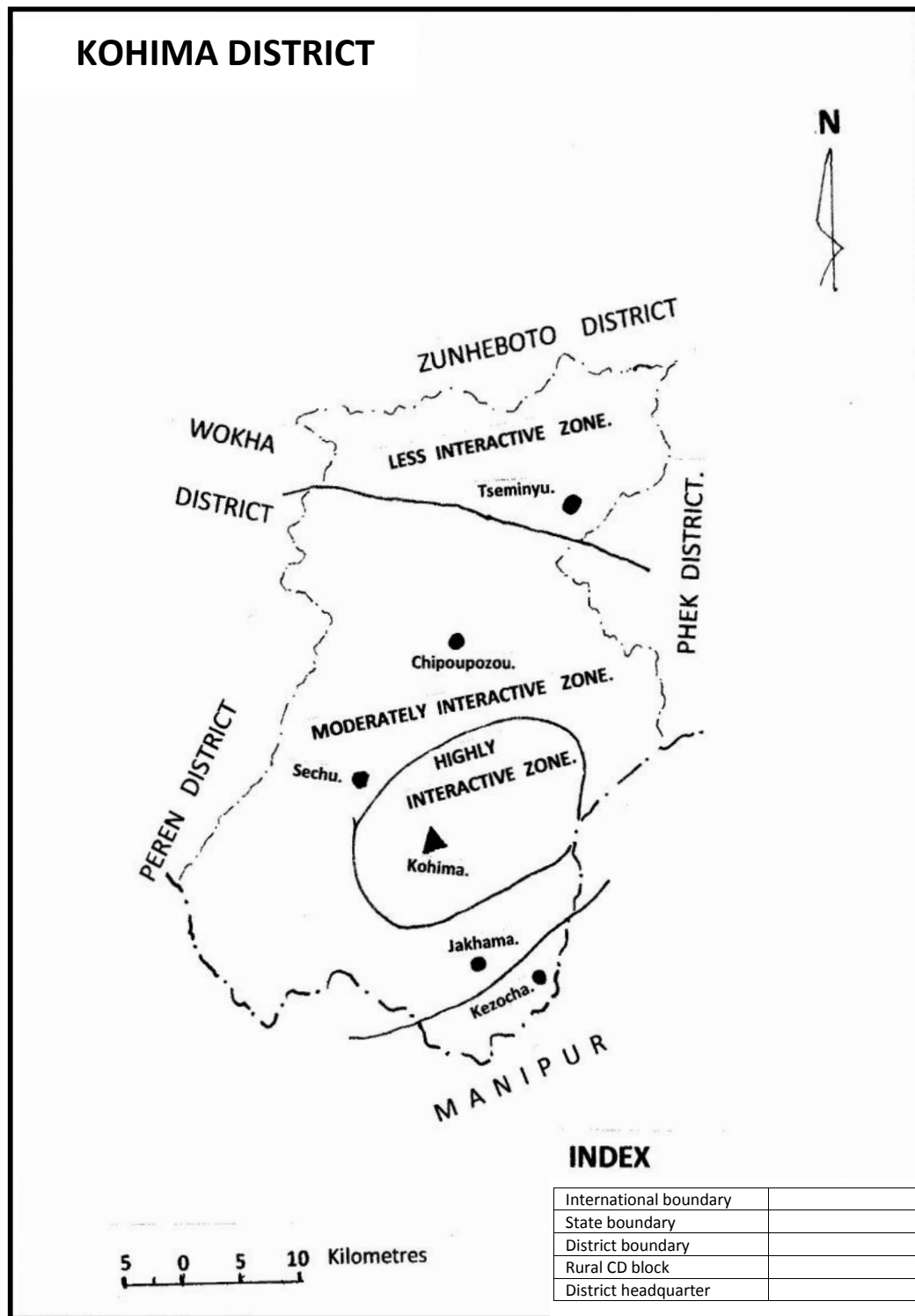


Fig.3.2. Map showing Zones of interaction based on amenities in Kohima district

3.2.3. PHEK DISTRICT

Table 3.3:- Showing components of socio – economic development and zone of interaction in Phek district.

C.D.block	No of amenities available	% of amenities	Distance from Phek in Km	Rate of attraction and interaction
Sekruzu	13	76.5	176	0.43
Phek Sader	12	70.6	22	3.21
Meluri	16	94.12	66	1.42
Phokhungri	8	47.1	105	0.50
Chazoba	9	52.9	161	0.32
Chetheba	9	52.9	151	0.35
Sakraba	11	64.7	45	1.44
Pfutsuro	12	70.6	75	1.01
Khezakhen	10	58.8	90	0.65
Chizami	10	58.8	53	1.12

Based on gravity model - Data Source: - Directorate of economics and statistics Nagaland, 2006.

Another feature is depicted from Phek district that bigger the geographical area and lesser the facilities available, the overall interaction rate remains low. However, the interaction of the urban center with the rural block based on the distance remains unchanged. This is being justified that the highest interaction in Phek is 3.21 and Kohima 14.3. Besides, in Phek district Khezakhen has 10 facilities with 90 km distance from urban area with 0.65 of rate of attraction and interaction whereas Sekruzu is only 0.43 with 13 amenities with 176km of distance from Phek town. It is being found

that Phek sardar has only 3.21 as the rate of attraction and interaction due to district is being comparatively bigger in size within the state of Nagaland. Chazoba and Chetheba recorded 0.32 and 0.35 respectively of its interaction with Phek town as it has smaller in number of amenities i.e., 9 each and longer distance 165 km and 151km respectively which clearly reveals that they interact with Kohima in about 80 Km as an alternative. (Fig 3.3)

3.2.4. PEREN DISTRICT

Table 3.4:- Showing the components of socio – economic development and zone of interdependence in Peren district.

C.D. block	No of amenities available	% of amenities	Distance from phek in Km	Rate of attraction and interaction
Pedi	12	70.59	36	1.96
Jalukhi	10	58.8	24	2.45
Athibung	13	76.5	10	7.65
Nsong	10	58.8	54	1.09
Tening	11	64.7	42	1.54
Peren	13	76.5	5	15.29

Based on gravity model - Data Source: - Directorate of economics and statistics Nagaland, 2006.

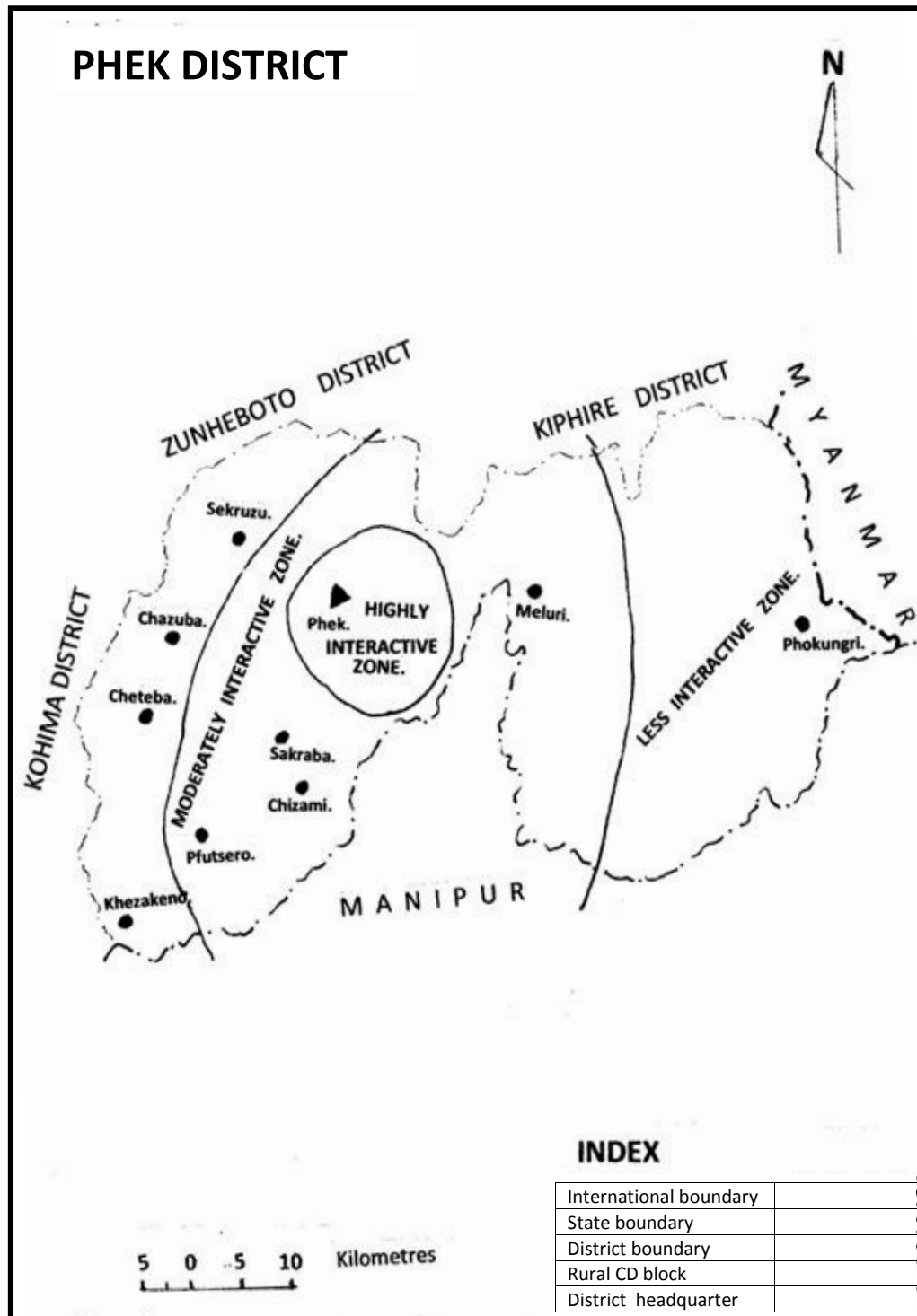


Fig. 3.3. Map showing Zones of interaction based on amenities in Phek district

Peren is a small district in Nagaland, the distance between Peren and the other rural C.D.blocks are also shorter. This is the reason why the attraction and interaction rate are showing bigger. Pedi and Jalukhi are having larger number of facilities like 12 and 10 respectively, and the distance from Peren are also high, so it is found to be lesser interacted i.e., 1.96 and 2.45 respectively. Athipung block has more facilities i.e., 10 yet the distance is short so the level of attraction and interaction is high as 7.65. Pedi and Jalukhi rural CD blocks are closer to Dimapur and also Dimapur has more facilities than Peren, so they interact more with Dimapur. (Fig 3.4)

3.2.5. KIPHIRE DISTRICT

Table 3.5:- Showing the components of socio – economic development and the interdependency in Kiphire district.

C.D. block	No of amenities available	% of amenities	Distance from kiphire in Km	Rate of attraction and interaction
Seyochung	10	58.8	75	0.78
Anahatore	12	70.6	30	2.35
Kiphire Sadar	12	70.6	12	5.88
Kuisam	6	35.3	58	0.61
Sitimi	14	82.35	42	1.96
Longmatra	13	76.47	33	2.32
Pungro	13	76.47	43	1.8

Based on gravity model - Data Source: - Directorate of economics and statistics Nagaland, 2006.

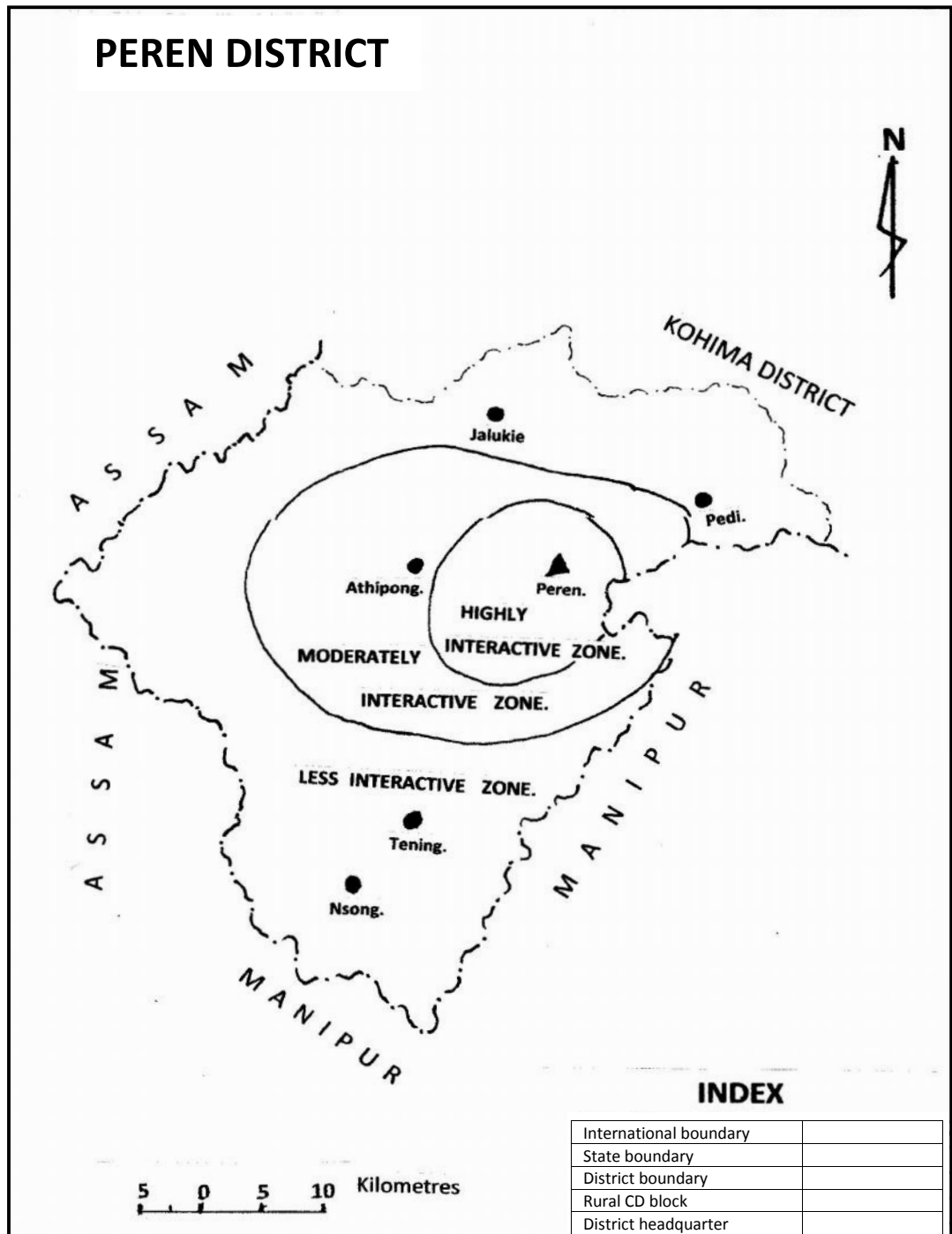


Fig.3.4. Map showing Zones of interaction based on amenities in Peren district

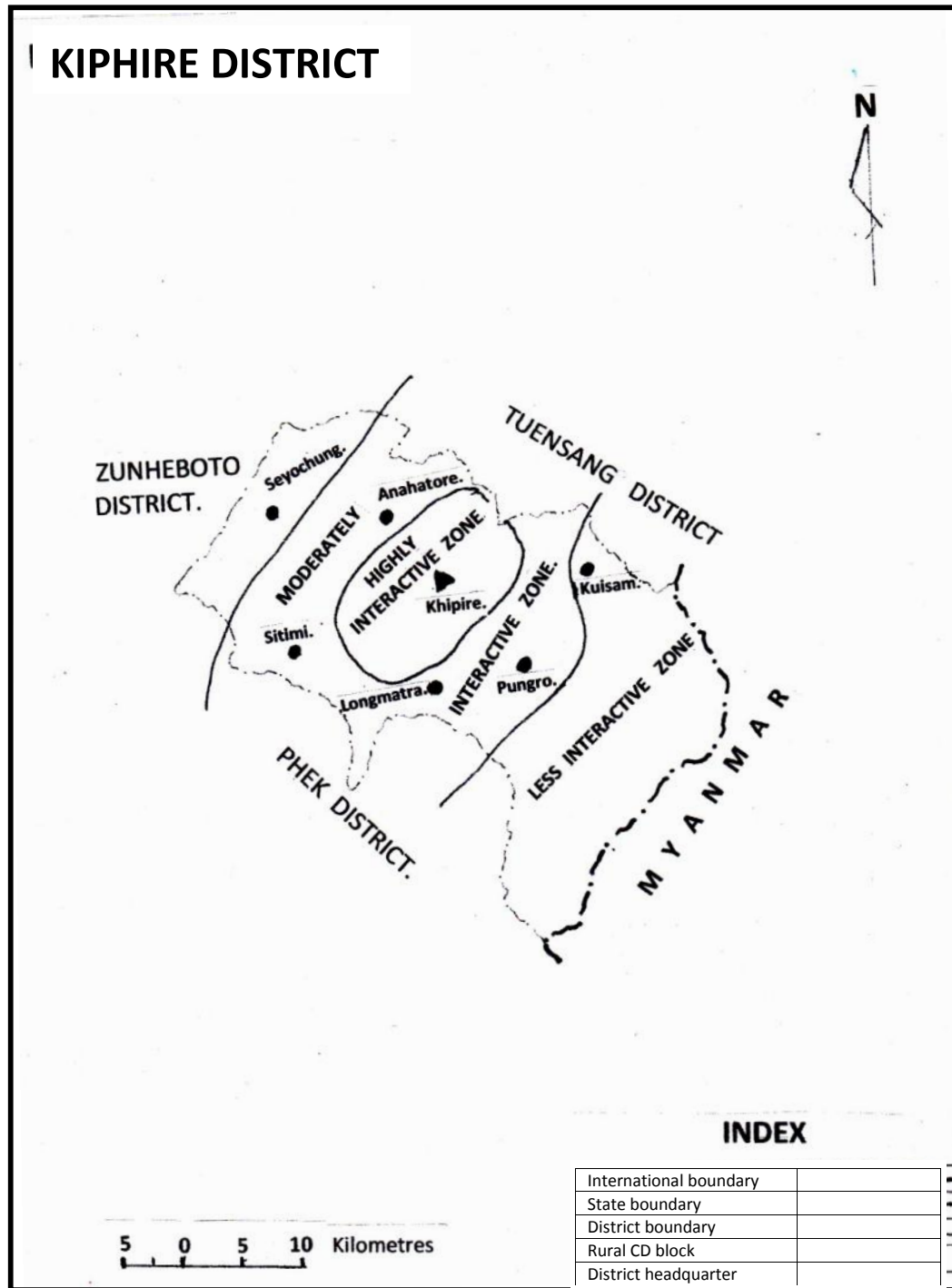


Fig. 3.5. Map showing Zones of interaction based on amenities in Kiphire district

In regard to kiphire and its rural C.D. block, it is categorized as high, medium, low and very low interaction. Kiphire town and its

proximity at the radius of 12 kms, the interaction is high i.e., 5.88. Seyochung and Tsurungto have a good number of facilities i.e., 10 and 11 respectively, with longer distance of 75km and 87km respectively, thus they have smaller rate which is less than 1. The rate of attraction and interaction of 2 to 3 is recorded for Sitimi, Longmatra, Pungro and Anahotore that categorized as medium because of the shorter distance than that of Seyochung. In case of kiphire, the distance determines a lot for its rate and level of interaction and attraction as the facilities available in the entire place are more or less uniform. (Fig3.5)

3.2.6. ZUNHEBOTO DISTRICT

Table 3.6:- Shows the components of socio –economic development and interdependency in Zunheboto district.

C.D block	No of amenities available	% of amenities	Distance from Zunheboto in Km	Rate of attraction and interaction
V.K.	11	64.70	57	1.14
Akuluto	5	29.41	42	0.70
Surohoto	13	76.5	64	1.19
Asuto	11	64.7	70	0.92
Aghanato	14	82.35	45	1.83
Zunheboto Sadar	11	64.70	13	4.98
Atoizu	10	58.8	25	2.35
Phughoboto	12	70.59	191	0.37
Ghatashi	12	70.59	206	0.34
Satakha	10	58.8	26	2.26

Satoi	13	76.5	70	1.09
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Based on gravity model- Data Source:- Directorate of economics and statistics Nagaland,2006.

Zunheboto the “heart” of Nagaland, as far as the location is concerned, shows a peculiar pattern of interaction. It maintains a circular pattern being Zenheboto located in the centre of the district as well as of Nagaland as a whole. Zunheboto and its villages at radius of 13km have the high level of interaction which is 4.98. In the second category as medium interdependency zone, Atoizu in the north and Satakha to the south has 2.35 and 2.26 respectively. The places like V.K, Akuluto, Suruhoto, Asuto and Aghanato to the north, Phughoboto, Ghatashi and Satoi to the south recorded 1 to 2 of its rate of attraction and interdependency. In this case also, it is being found that the distance govern the interaction as the number of facilities are more or less remain within a range. As the interaction is low to the north and south, these rural places, as alternatives, have more interdependency with Mokokchung in the north and Kohima in the south. (Fig 3.6)

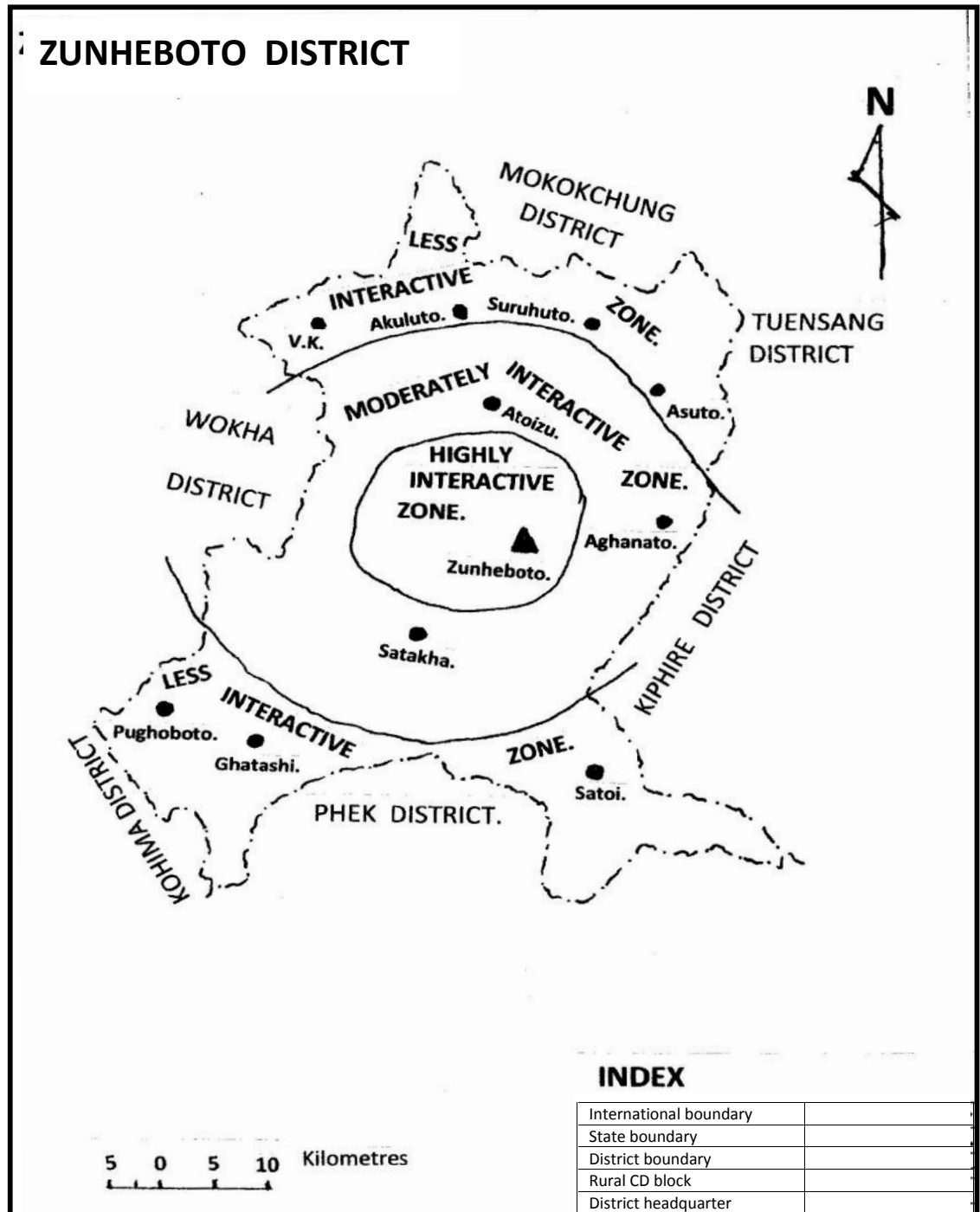


Fig. 3.6. Map showing Zones of interaction based on amenities in Zunheboto district.

3.2.7. TUENSANG DISTRICT

Table 3.7:- The components of socio – economic development and interdependency in Tuensang district.

C.D. block	No of available amenities	% of amenities	Distance from Tuensang in Km	Rate of attraction and interaction
Noksen	11	65	95	0.68
Chare	16	94	62	1.52
Longkhim	12	71	30	2.37
Tuensang Sadar	13	76.5	15	5.1
Noklak	14	82.35	58	1.42
Panso	11	64.7	82	0.72
Shamator	13	76.5	65	1.18
Chasore	10	58.8	155	0.51
Thonoknyu	13	76.5	125	0.61
Tsurongto	11	64.7	98	0.66

Based on gravity model – Data Source:- Directorate of economics and statistics Nagaland,2006.

The interdependency of Tuensang and its rural C.D block also show a similar pattern as Zunheboto district. From the data availed, it reveals a circular pattern of attraction and interaction of its rural areas with Tuensang urban centers. The Tuensang urban center is located in the core of the district indicate the decrease of interdependency towards all direction. Tuensang sardar and Longkhim has more or less same number of facilities that is 13 and 12 respectively and being nearer to each other, have more interaction as in case of Longkhim which recorded 2.37 of its rate and level of interaction. Chare and Noksen have a good number of facilities available as 11 and 16 respectively with longer distance from urban

Tuensang so the rate is shown as 0.68 and 1.52 which means not many linkages, based on socio-economic facilities that available. Rather they have greater connectivity with Mokokchung due to its shorter distance to each other and also it has far greater facilities to self support itself. Toward southern and eastern part of the district, Chesore, Shamatore, Panso and noklak show less interdependent with its headquarter as they also have more or less number of facilities as Tuensang urban centre which is 10, 13, 11, 14 respectively. On the other hand it is also being reasoned that the distance of these rural area from Tuensang is also high as Chesore 155km, Shamator 65km, Panso 82km and Noklak 58km. Unlike the northern part where the villages have alternate urban centre in lieu of its headquarter, the eastern and southern part have no alternative except its interaction with Tuensang as it is unable to depend on the backward region of Myanmar. But it is being revealed that uninteractive pattern is primarily due to similar proportions of facilities that are available in Tuensang. (Fig 3.7)

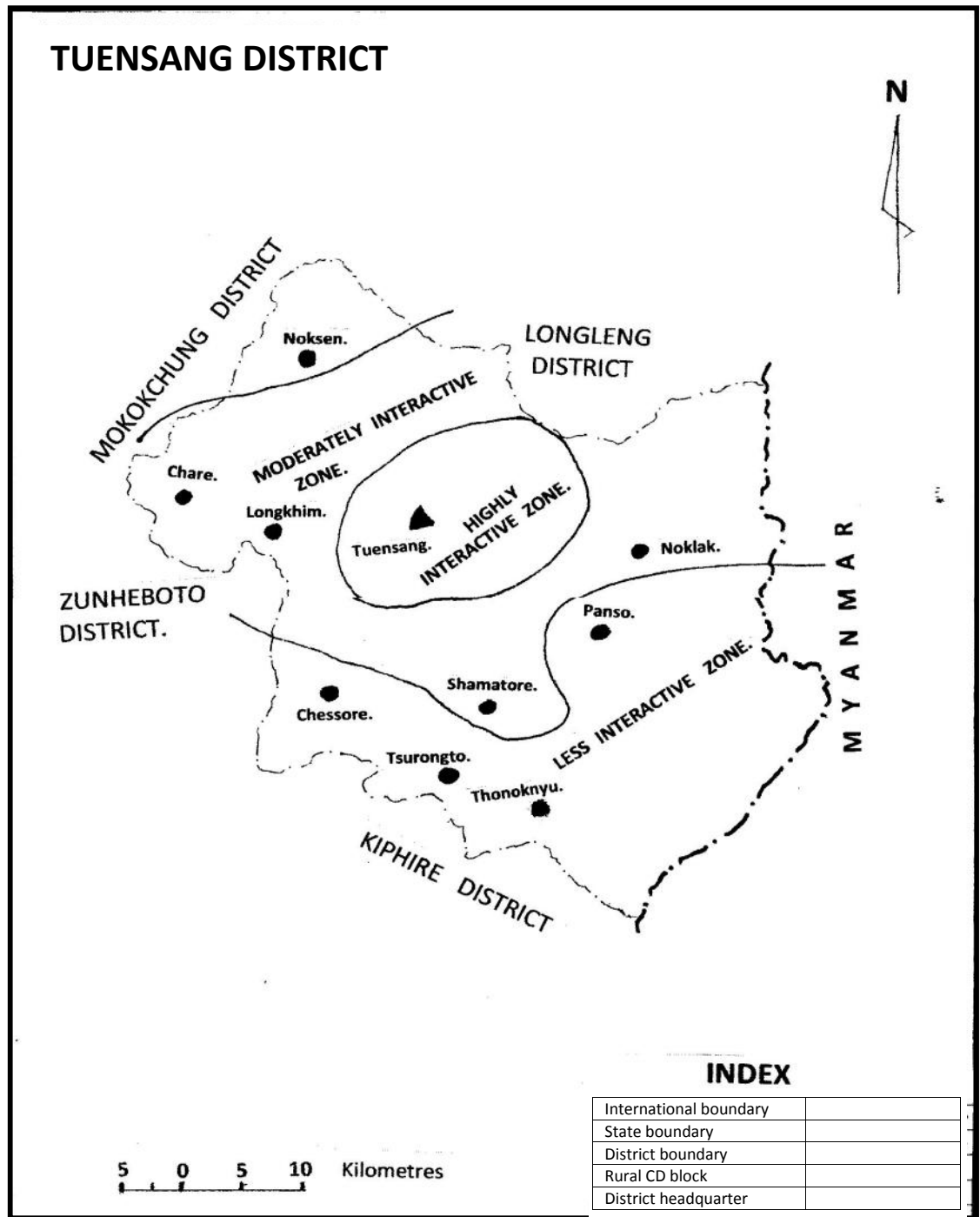


Fig 3.7. Map showing Zones of interaction based on amenities in Tuensang district

3.2.8. LONGLENG DISTRICT

Table 3.8:- The components of socio – economic development and interdependency in Longleng district.

Cd block	No. of amenities available	Percentage of amenities	Distance from Longleng in Km	Rate of attraction and interaction
Tamlu	13	76.5	75	1.02
Yongya	6	35.3	21	1.68
Longleng	12	70.59	11	6.42

Based on gravity model - Data Source: - Directorate of economics and statistics Nagaland, 2006.

Longleng the smallest district in Nagaland, interestingly shows a pattern which is a parallel stratum that the ties up of rural areas with Longleng headquarter is decreasing north ward. Longleng with its rural area at the radius of 11km with 12 numbers of facilities available indicates 6.42 of its rate which is active interdependence. There is medium interaction of Longleng, which is an urban centre, with Yongya because of lesser number of facilities as 6 number with shorter distance. Yongya has little facilities in which it cannot stand of its own, at the same time the distance is also only 21km, so it is compelled to be in touch with its headquarter. Tamlu, on the other hand, has 13 numbers of facilities accounting for about 75% with longer distance from Longleng which show a passive interaction and less attracted to Longleng. Rather, Tamlu is near to Mon, as a result it

tends to be more interacted with and mostly dependable on the facilities available in Mon. (Fig. 3.8)

3.2.9. MON DISTRICT.

Table 3.9:- The components of socio – economic development and interdependency in Mon district.

CD block	NO. of amenities available	Percentage of amenities	Distance from Mon in Km	Rate of attraction or interaction
Naginimora	13	76.5	75	1.02
Tezit	14	82.35	37	2.23
Hunta	8	47.06	53	0.89
Shangnyu	9	52.94	36	1.47
Mon Sardar	13	76.5	17	4.5
Wakching	15	88.38	38	2.32
Aboi	7	41.17	35	1.17
Longshen	9	52.94	34	1.56
Phomching	13	76.5	70	1.09
Chen	13	76.5	65	1.18
Longching	10	58.8	60	0.98
Mopong	6	35.8	100	0.35
Tobu	17	100	130	0.76
Monyakshu	13	76.5	155	0.49

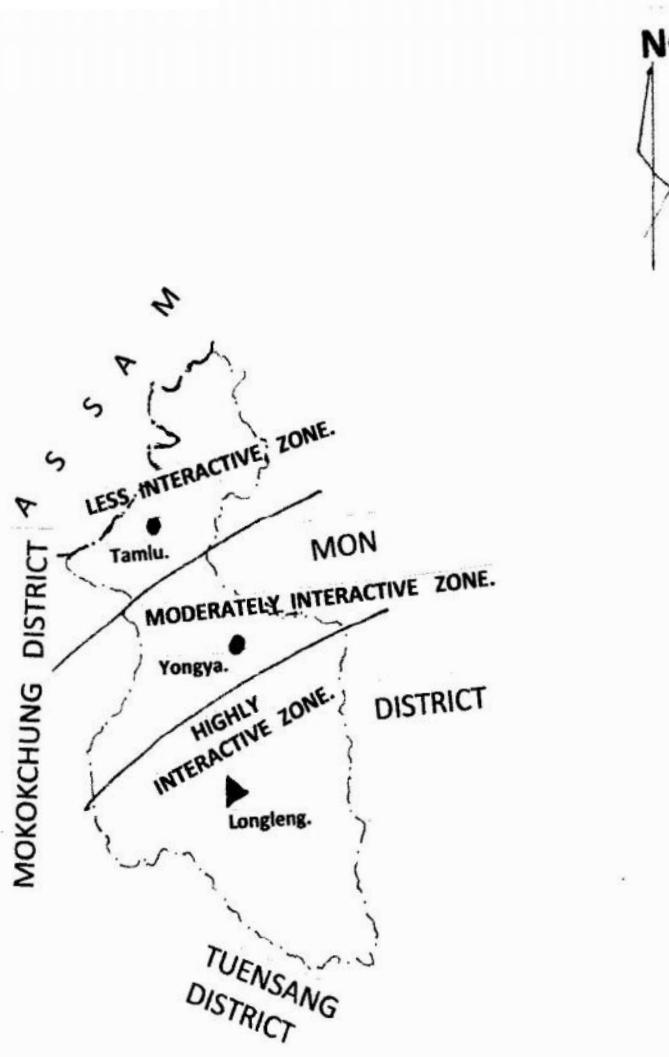
Based on gravity model - Data Source: - Directorate of economics and statistics Nagaland, 2006.

Mon and its rural C.D. block has a typical pattern governed by socio-economic facilities available and distance from its district urban headquarter. The distance play greater role in this aspect as

Naginimora has 13, Tobu has 17 numbers of facilities, and they have to cover longer distance that is why the interdependency is less. Secondly, even if the facilities are less as Mopung has 6 facilities, the distance is longer so in this case also lesser attraction is indicated rather it compelled to depend on near neighbor. This is the scenario of the interaction of Mon town and its rural areas. But it is very clear that having more facilities and longer distance also has lesser interaction. Though far away from Mon, Tobu and Naginimora has more number of facilities 17 to 13 respectively which has resulted to interact with other urban centres as Naginimora has an active interaction with the urban centres of Assam and Tobu tend to be dependable entirely to Tuensang. Wakching and Tizit with 15 and 14 numbers of facilities respectively and being the distance is shorter they remain active with Mon. It is understood that less interaction with Mon with lesser facilities and bordering Mynmar, as there is no alternative urban centres, is remain backward in terms of development. But for instance Naginimora, Tizit, Hunta, through passive with Mon, they have active tie up with Assam with regard to the availability of facilities, so they remain comparatively developed.

(Fig. 3.9)

LONGLENG DISTRICT



INDEX

International boundary	
State boundary	
District boundary	
Rural CD block	
District headquarter	

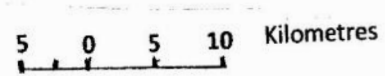


Fig. 3.8. Map showing Zones of interaction based on amenities in Longleng district.

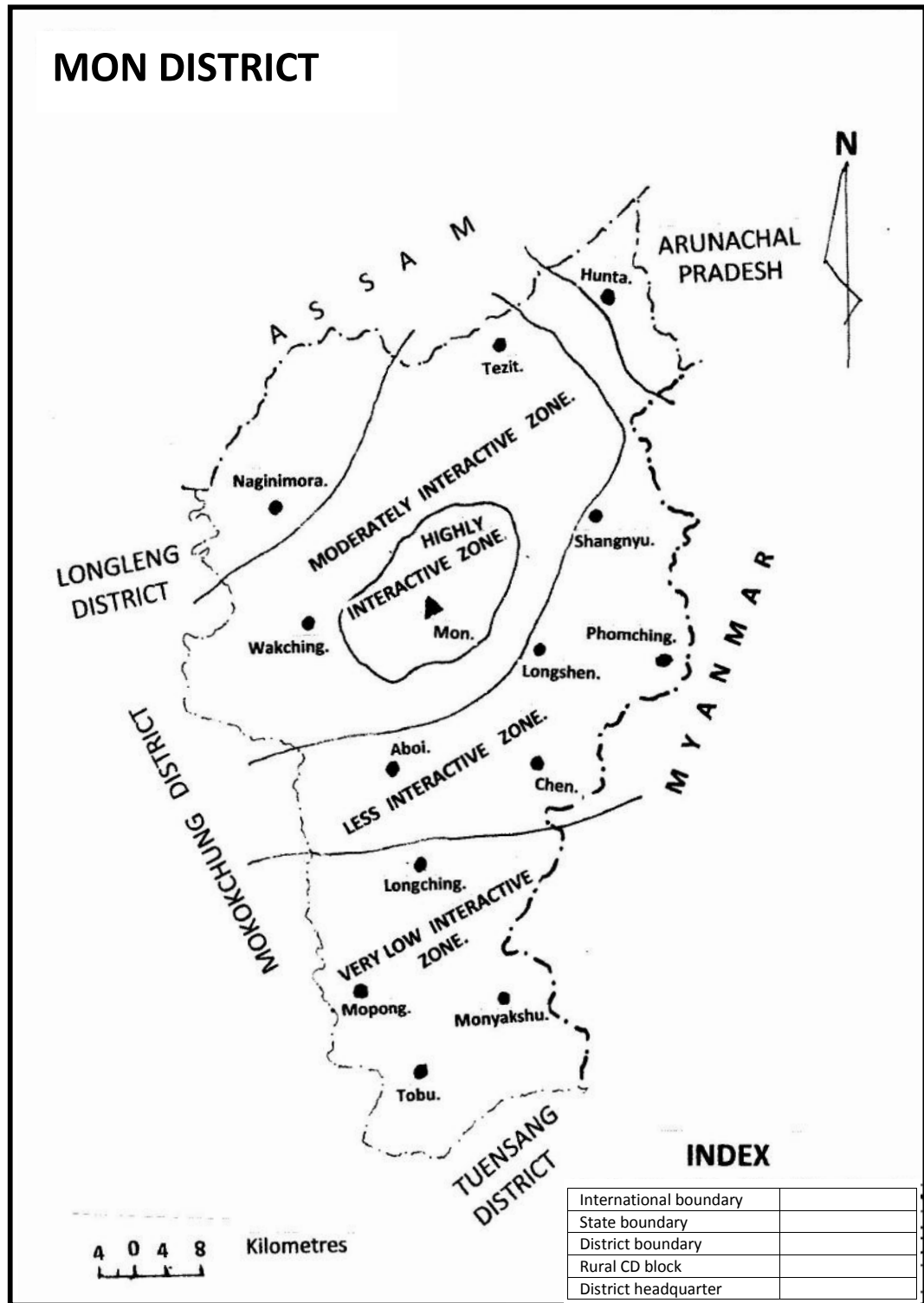


Fig. 3.9. Map showing Zones of interaction based on amenities in Mon district.

3.2.10. MOKOKCHUNG DISTRICT

Table 3.10:- The components of socio – economic development and interdependency in Mokokchung district.

CD block	No. of amenities available	Percentage of amenities available	Distance from Mokokchung in Km	Rate of interaction and attraction
Longchem	16	94.12	97	0.97
Alongkima	16	94.12	63	1.49
Tuli	15	88.23	77	0.99
Changtongya	15	88.23	45	1.96
Chuchuyimlang	15	88.23	29	3.04
Kobulong	13	76.05	20	3.83
Mangkolemba	13	76.05	87	0.87
Ongpangkong	11	64.70	4	16.18

Based on Gravity model – Data Source: - Directorate of economics and statistics Nagaland, 2006.

Mokokchung, interestingly, as revealed from the above table shows a terracing pattern decreasing its interaction towards western part of the district bordering Assam. Mokokchung and Ongpangkong C.D. block has the highest degree of interaction that is 16.18 with 11 numbers of its facilities. As proceeding toward the westward its level decreases depending on the distance of the place from Mokokchung town. Kobulong and Chuchuyimlang have 20km and 29km respectively from Mokokchung with 13 and 15 number of facilities are under medium level. Though Changtongya, Tuli and Chuchuyimlang have same number of facilities, there are marked

differences in the level of attraction and interaction due to distance factor. Kobulong and Chuchuyimlang tie up more with Mokokchung where Changtongya and Alongkima interact equally with Assam and Mokokchung. In case of Mangkolemba, Tuli and Longchem, though passive interaction with Mokokchung, they get more facilities because of having alternative urban centres to tie up covering shorter distance than Mokokchung. It reveals that even if there is passive relation with Mokokchung, from the developmental point of view they enjoy more or less better facilities as it is feed by Mariani and Amguri (Assam). Based on the locational advantages it is being found that having alternative urban centre to interact, a rural place is not backward though do not actively tie up with its urban headquarter. (Fig. 3.10)

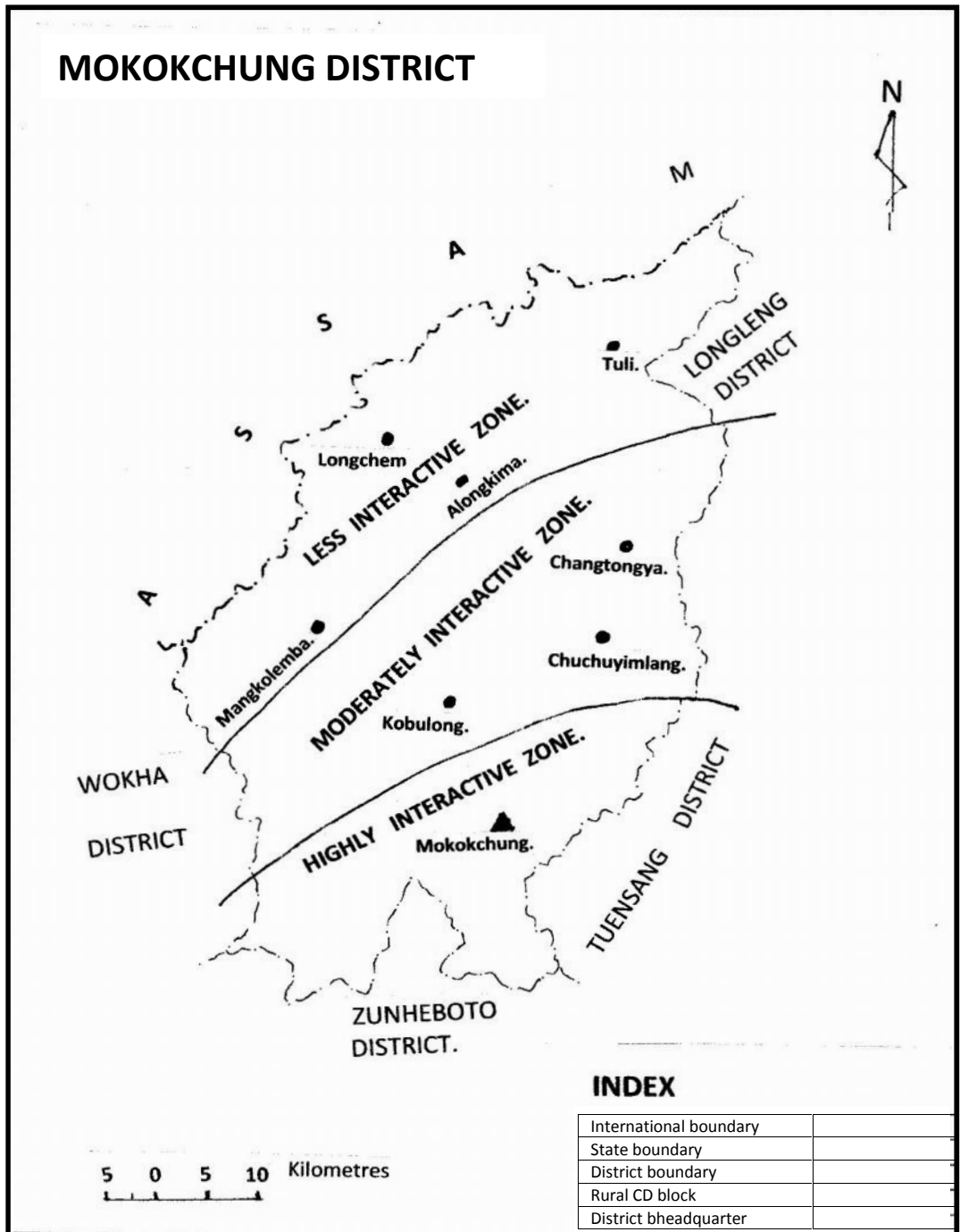


Fig. 3.10. Map showing Zones of interaction based on amenities in Mokokchung district.

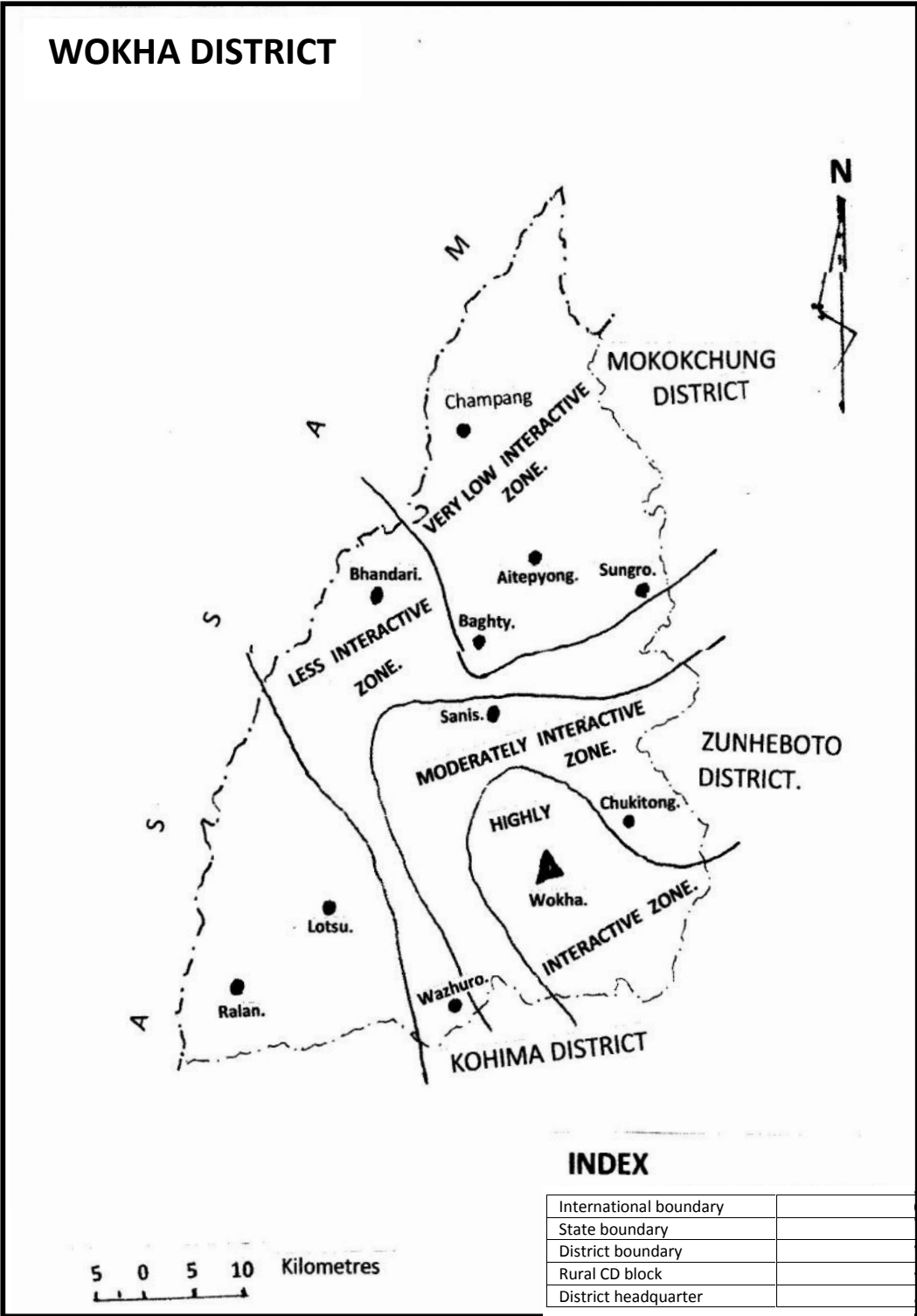


Fig. 3.11. Map showing Zones of interaction based on amenities in Wokha district.

3.2.11. WOKHA DISTRICT

Table 3.11:- The components of socio – economic development and interdependency in wokha district.

CD block	No. of amenities available	Percentage of amenities available	Distance from Wokha in Km	Rate of interaction and attraction
Champang	9	52.9	80	0.66
Aitepyong	9	52.9	58	0.91
Bhandari	16	94.1	54	1.74
Baghty	7	41.2	46	0.90
Sungro	10	58.8	85	0.69
Sanis	13	76.5	32	2.39
Lotsu	10	58.8	60	0.98
Ralan	8	47.06	82	0.57
Wazhuro	10	58.8	39	1.51
Wokha Sardar	12	70.59	9	7.54
Chukitong	11	64.71	18	3.59

Based on gravity model – Data Source: - Directorate of economics and statistics Nagaland, 2006.

The triangular shaped district, Wokha, from the above table reveals that the level of interaction is decreasing toward western part of the district. Though Champang, Bhandari, and Ralan are located at the western most Assam border, Bhandari interact more than the other two, because out of the four categories of interaction, Bhandari falls under third and the other two that Ralan and Champang falls under fourth category. As such it clearly reveals that connecting the place with the district headquarter through a highway is important as Bhandari and Wokha are linked by a state highway. Easy means of transportation tone up the rate and level of interaction. Another feature found here is that in case of Bhandari though third category of interaction with Wokha, it enjoys more

facilities as it has an alternative developed urban center that is Golaghat in Assam. Sungro and Wazhuro with 10 numbers of facilities each though less than Bhandari which is 16, falls under the same category as the distance is shorter to reach wokha. Sanis and Chukitong has more tie up with its district headquarter as the distance is shorter with good means of transportations. As such the interaction of Wokha and its rural areas shows a ridge like pattern running from the extreme corner of base of a triangle toward Assam border. (Fig. 3.11)

3.3. DEMOGRAPHIC VOLUME AND ANALYSIS OF RURAL – URBAN INTERDEPENDENCE PATTERNS IN NAGALAND

As far as Nagaland is concerned, the number or volume of population is important to be focused. In the analysis of rural – urban interdependence, the volume and potentiality of human interaction is determined by the number of urban and rural population within a particular area or region. To understand this aspect in Nagaland, the district wise analysis is found to be favorable and ideal. Here the district headquarters and rural C.D blocks are considered in the analysis of which number of population is found to be worth accounted.

3.3.1. MON DISTRICT

Table 3.12. Demographic volume and interdependency in Mon district.

Mon-16,590 urban population

C.D. block	Total Population	Distance from district H.Q in km	Volume of interaction in '00000 person/ sq km
Naginimora	12587	75	27
Tizit	18535	37	80
Hunta	6779	53	21
Shangnyu	7066	36	32
Mon Sadar	46332	17	439
Wakching	23676	38	100
Aboi	12199	35	56
Longchem	25710	34	122
Phomching	11315	70	26
Chen	23989	65	59
Longching	22692	60	61
Mopong	11846	100	19
Tobu	15319	130	19
Monyakshu	22607	155	24

Based on gravity model - Data Source: - Census of India, 2001

Considering the volume and potentiality of rural – urban interaction in Mon district, both the size of population and distance play important role. In the case of distance the quality and mean of road transport play important role in Tizit, though it is in the border area show 80,00,000 population involved in interaction with Mon. Shorter the distance, volume of population involve in potentiality of interaction is high and vice versa. In Aboi and Tobu, the later has 15,319 population which is higher than Aboi 12,199, yet as far as the distance is concerned, Aboi has shorter distance (35km) that is

why the volume of interaction is higher 56 lakhs than 19 lakhs in Tobu. So from the above table referring the fig-3.12, Mon district shows a circular pattern of interaction and is decreasing toward the border area of the district. Similar case is also found between Hunto and Mopung C.D. blocks. Further, though the bordering area interact less with its district headquarter, they have enough interaction with other nearer urban centers. In case of places on the northern part of the district, interaction is done with urban centers of Assam. Toward the south, Mopung, Tobu and Monyakshu have the linkage with Tuensang as Tuensang is comparatively more developed than Mon and also the distance is shorter. But in case of eastern sector of Mon district, they have no option except its district headquarter that is why though lesser interaction with Mon, volume is higher than the southern part of the district. (Fig.3.12)

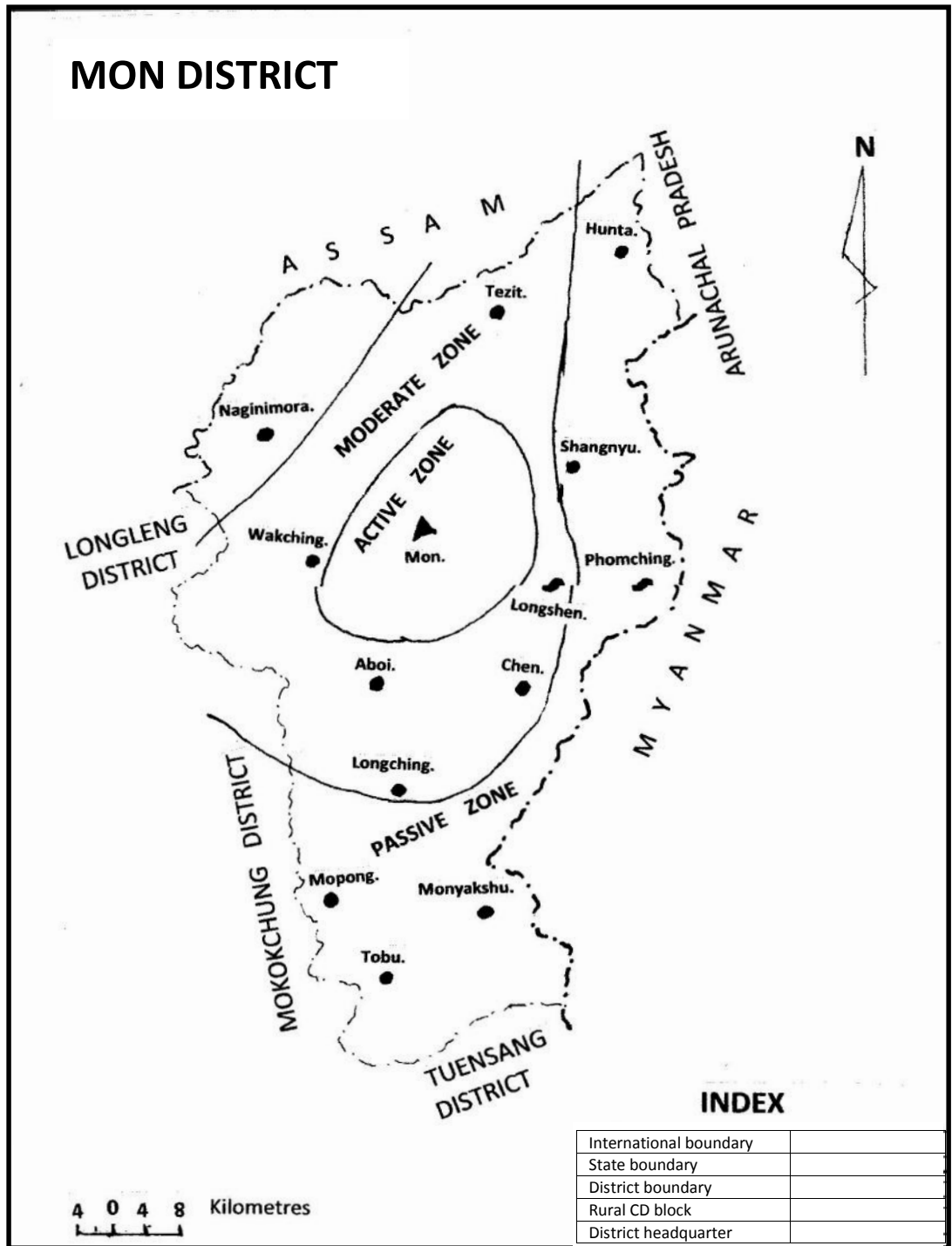


Fig. 3.12. Map showing Demographic Volume and Interdependency Zones Mon district.

3.3.2. TUENSANG DISTRICT

Table 3.13. The demographic volume and interdependency in Tuensang district.

Tuensang - 29772 urban populations

C.D. block	Total population	Distance from district headquarter in km	Volume of interaction in '00000 person /sq km
Tuensang	25039	188	40
Yongya	33033	202	49
Longleng	63509	181	104
Noksen	17931	95	56
Chare	11632	62	56
Longkhim	15894	30	157
Tuensang Sadar	63896	15	1263
Noklak	19962	58	102
Panso	8730	82	32
Shamator	16723	65	76
Tsurongto	7371	87	25
Chesore	16045	155	30
Senyochung	20867	197	15
Anahoto	11836	152	23
Kipheri	18094	122	44
Thonokyu	13631	97	42
Kuisam	6714	180	11
Sitimi	11748	164	21
Longmatro	8100	155	16
Pungo	24075	165	43

Based on gravity model - Data Source: - Census of India, 2001.

The shape of Tuensang district stands vertically. And it is being found that the Tuensang town and its rural area links vertically based on the volume of population that involved in the

interaction which is determined by its distance. As district headquarter Tuensang is located in the middle of the district, the volume is decreasing toward the extreme north and the south. The size of population also determines the volume as Tamlu 25,039 of population with 188km and Pungo 24,075 with 165 km shows 40 and 43 lakhs of population involved respectively. It is observed that though the distance is great when the size of population is large the volume is also found to be of good size. In case of Tuensang the northern and western part of the district has alternate places i.e., Mokokchung to tie up as it is being more developed than Tuensang and the distance to be covered is comparatively shorter too. However, in the southern and eastern part though volume involved for interdependency is less they have no alternative urban center but interact with its district headquarter on a limited frequency of interaction. However, it is being found that pattern of interaction between Tuensang town and its rural C.D. block is horizontally radiating out towards both north and south. (Fig.3.13)

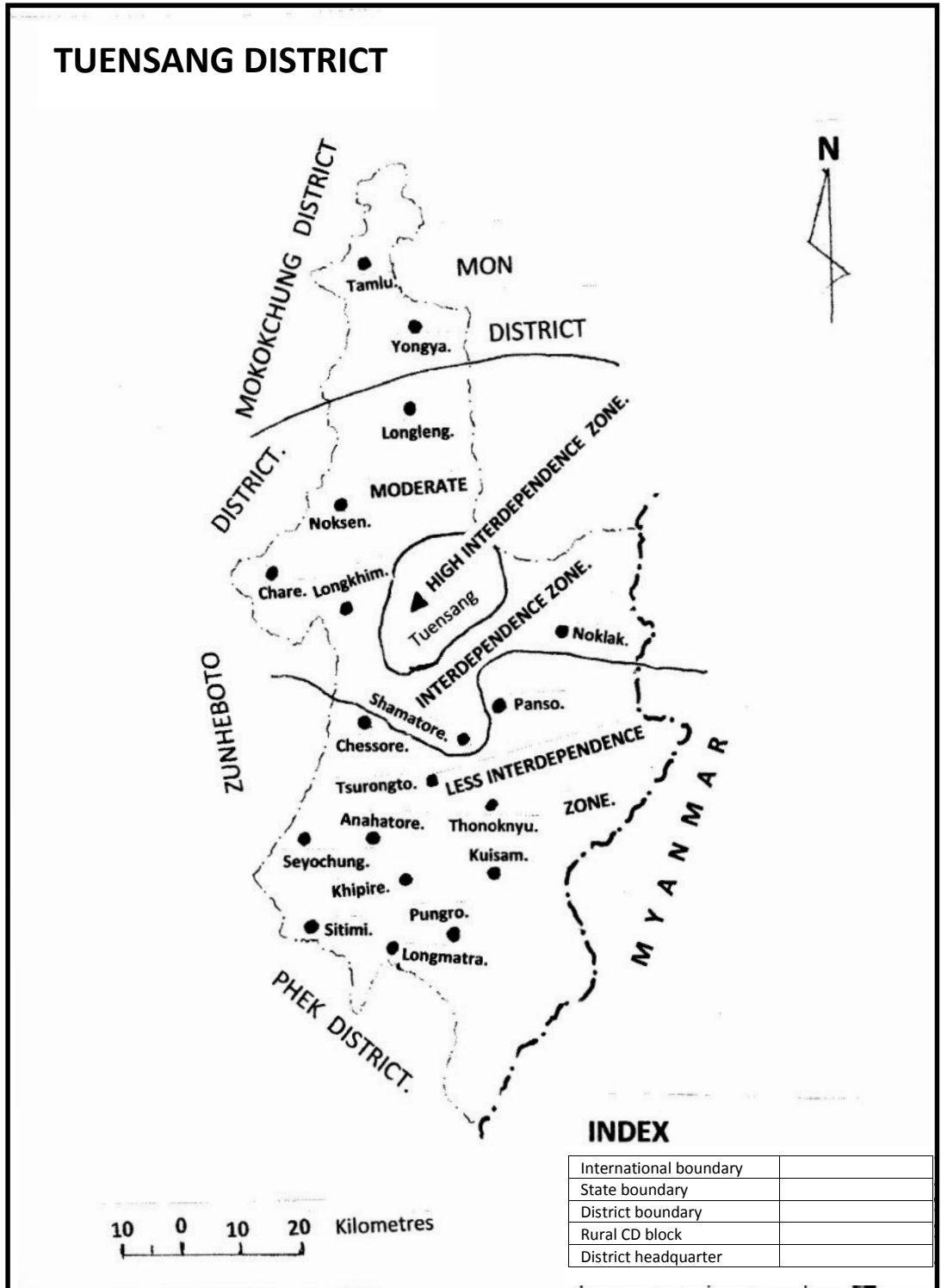


Fig. 3.13. Map showing demographic volume and interdependency Zones in Tuensang District.

3.3.3. MOKOKCHUNG DISTRICT

Table 3.14. The demographic volume and interdependency in Mokokchung district

Mokokchung – 31214 urban populations.

C.D. block	Total population	Distance from district H.Q in km	Volume of interaction in '00000 person/ sq km
Longchem	12972	97	42
Alongkima	16960	63	84
Tuli	27735	77	112
Changtongya	23560	45	163
Chuchu	22149	29	238
Kobulong	20686	20	323
Mangkolemba.	22356	87	80
Ongpangkong	54453	4	4249

Based on gravity model – Data Source: - Census of India, 2001.

The main feature of interaction between Mokokchung town and its rural is governed by geographical location of Mokokchung headquarter. Mokokchung is one of the developed urban centres in Nagaland and is located at the southern part of the district where the volume of interaction is radiating towards northern part of the district. It is already revealed that while radiating out the volume and potentiality of interdependency, it is also decreasing away simultaneously. Another feature of the interdependency in this district is that size of the population is bigger, the distance is shorter and its network is better, so the volume is larger. The national highway 61 connect Mokokchung

with Chuchuyimlang, Changtongya and Tuli, that is why volume is as big as 238 lakhs, 163 lakhs and 112 lakhs respectively. Another feature is that the extreme north and northwest areas interact with developed Assam's urban centers which are shorter distances too. Within the core zone of Mokokchung, it is being detected that the interaction is very active as it involves 42,49,00,000 population/sq.Km. (Fig. 3.14)

3.3.4. ZUNHEBOTO DISTRICT

Table 3.15. The demographic volume and interdependency in Zunheboto district.

Zunhoboto – 23081 urban population.

C.D.block	Total population	Distance from district H.Q in km	Volume of interaction in '00000 person/ sq km
V.K.	5,635	57	23
Akuloto	6,665	42	37
Surohoto	14,660	64	53
Asuto	7,445	70	25
Aghunato	16,713	45	86
Zunheboto Sadar	38,569	12	742
Atoizu	14,460	25	133
Pughoboto	15,088	191	18
Ghatoshi	9,547	206	10
Sataka	19,849	26	176
Satoi	5,324	70	17

Based on gravity model – Data Source: - Census of India, 2001.

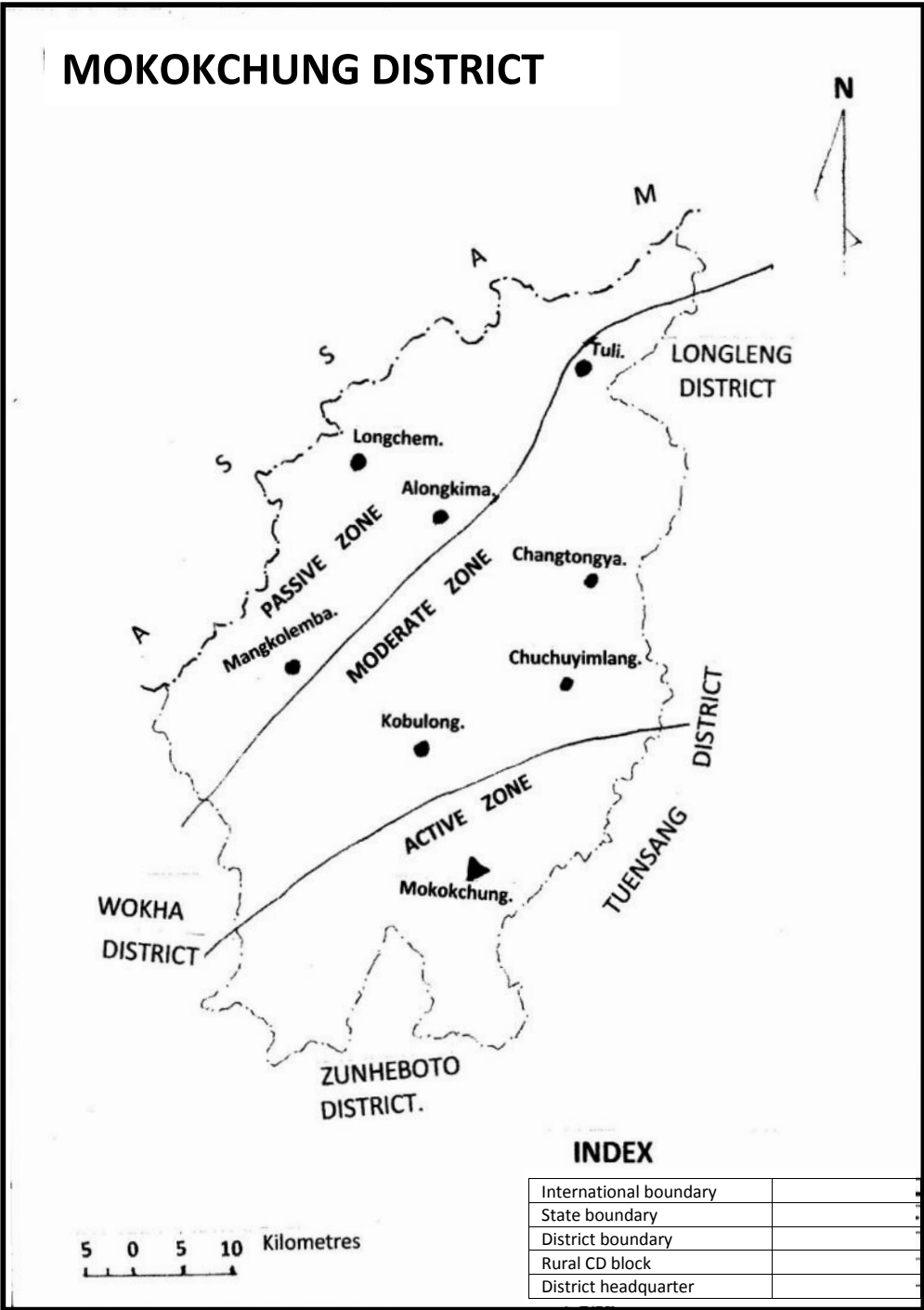


Fig. 3.14. Map showing Demographic volume and interdependency Zones in Mokokchung district.

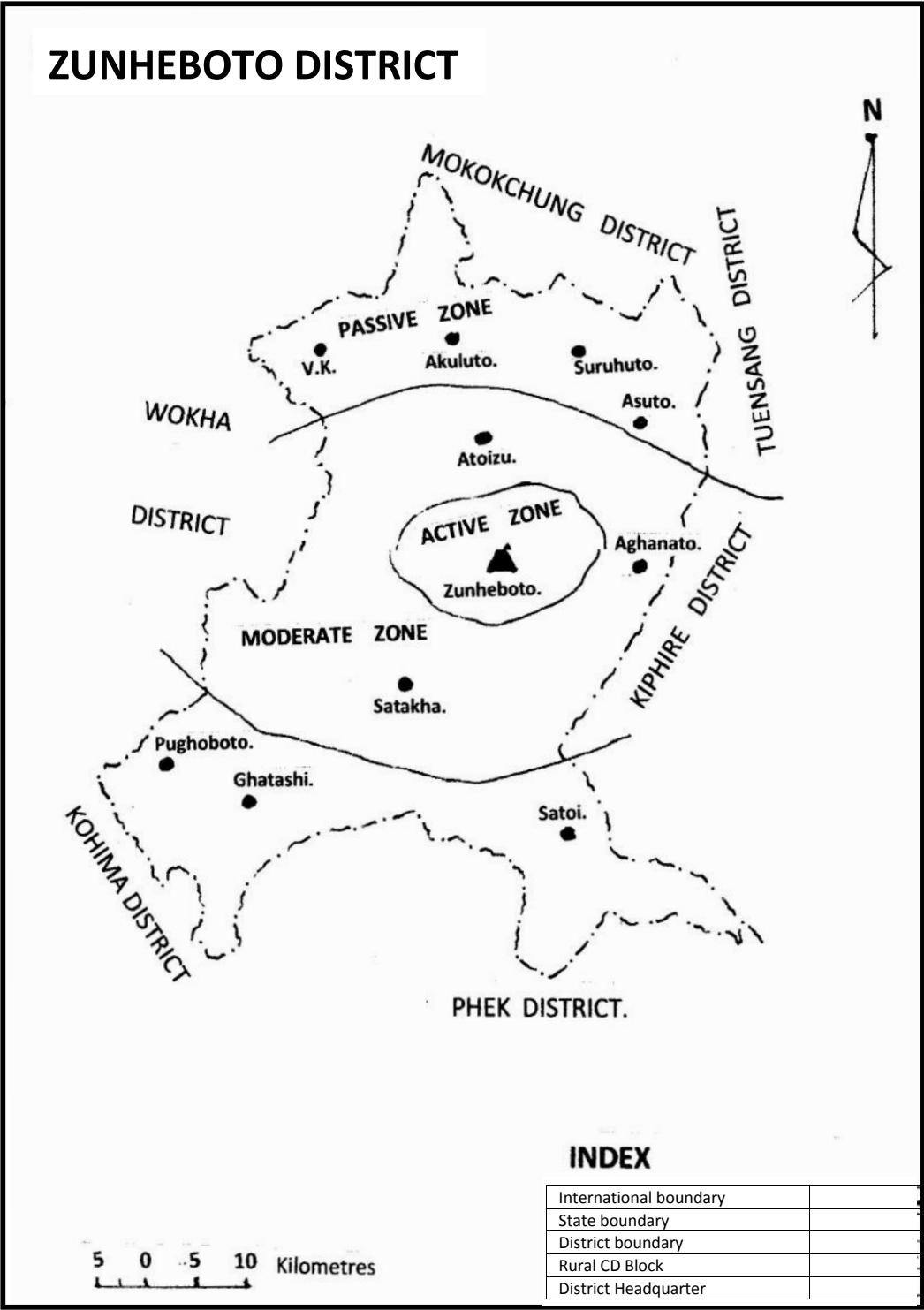


Fig. 3.15. Map showing Demographic volume and interdependency Zones in Zunheboto district.

Zunheboto is a rectangular shaped district running north to south direction where its headquarter is located in the centre. In

the north V.K., Akuloto, Surohoto and Asuto C.D. blocks are located which passively interact with its urban Zunheboto town. In the south Poghuboto, Ghatashi, Satoi C.D. blocks are located which is also within the third zone as passive interactive zone. Distance to be covered are greater for the southern rural places so the volume of interaction is comparatively much lesser where less than 20 lakhs population is involved in all the C.D. blocks rather few places have alternative interaction with Kohima. Take an example, Poghuboto, even during election all the activities and functionaries of conducting election is done in Kohima, even the counting of votes; which indicates that the geographical factor governs the interaction. The road connectivity also does not favors it as the distance to be covered is too great that Phoghoboto has 191km from Zunheboto with 15,088 rural population and Ghatashi has 206km with 9,547 rural population. Besides, in the northern part of the district C.D. blocks like, V.K , Akuloto, Suruhoto and Asuto, and in the eastern part Aghunato, have active interaction with Mokokchung in the north, and with Kiphire in the east though they have comparatively bigger volume of interdependency than the southern part of the

district. In general Zunheboto district show a circular pattern of entire picture for rural- urban interaction zone. (Fig. 3.15)

3.3.5. DIMAPUR DISTRICT

Table 3.16. The demographic volume and interdependency in Dimapur district.

Dimapur – 52200 urban populations.

C.D. block	Total Population	Distance from district H.Q in km	Volume of interaction in '00000 person/ sq km
Nuiland	31479	40	410
Kuhoboto	12699	37	179
Nihokhu	12155	30	211
Dimapur Sadar	277458	7	9505
Chumukedima	83744	15	2914
Dhansaripar	17088	35	255
Medziphema	2440	30	42

Based on gravity model - Data Source: - Census of India, 2001.

Dimapur the most developed and commercial district in Nagaland shows the highest participants in the process of interaction between Dimapur urban and its rural C.D. blocks. The volume is highest within Sardar block which has accounted for 9,505 lakhs of its population that are being participated. The second category also shows interestingly as Chumukedima accounted for 2,914 lakhs. Even the lowest and farthest block from Dimapur, Medziphema, this

records 42 lakhs of people as volume and potential of interaction. The remaining blocks shows the participation of more than 100 lakhs of people in the process of interdependency between Dimapur urban center and its rural peoples of Niuland, Nihokhu, Kuhuboto and Dhansaripar blocks. Unlike the other places of Nagaland it shows close networking of interdependency with several neighboring rural places of Assam.

Dimapur has linkages not only with its rural C.D blocks but do interact with other districts too. The matter is supported by presence of commercial vehicles like Sumo taxi and buses plying between Dimapur and other district headquarters. In general, the pattern of interaction within the district is a semi circular shape radiating in a north-south direction since the district urban headquarter is located at the extreme north bordering Assam. Another distinctive feature is that the volume of participation in the process of interaction is active due to bigger size of population and shorter distances that is to be covered between the urban headquarter and its rural C.D blocks.

(Fig.3.16)

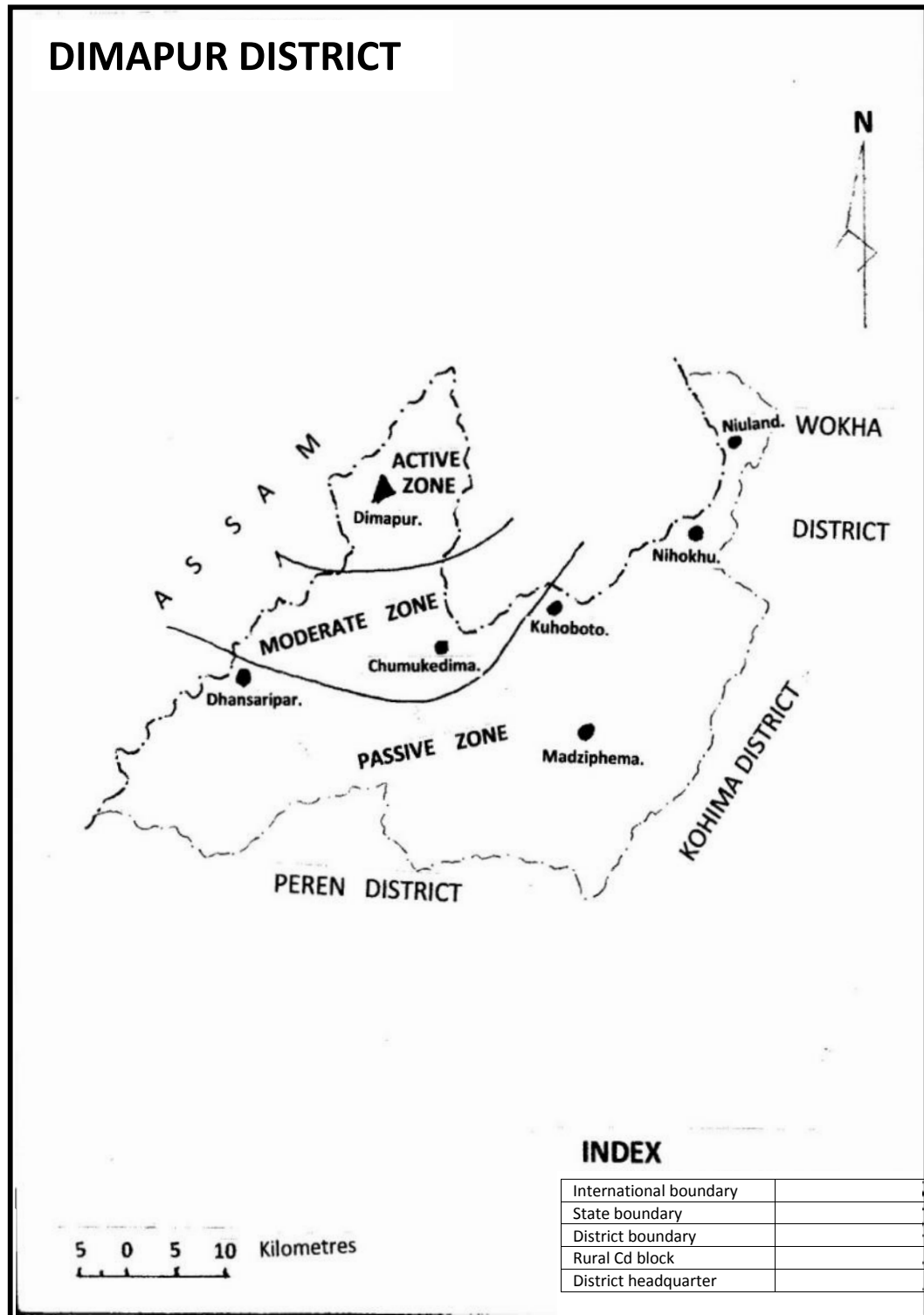


Fig. 3.16. Map showing Demographic volume and interdependence Zones in Dimapur district.

3.3.6 WOKHA DISTRICT

Table 3.17. Demographic volume and interdependency in wokha district.

Wokha – 37636 Urban population.

C.D. block	Total population	Distance from district H.Q in km	Volume of interaction in '00000person/ sq km
Champang	4892	80	23
Aitepyong	13226	58	86
Bhandari	13446	54	94
Baghty	3090	46	25
Sungro	14100	85	62
Sanis	6534	32	77
Lotsu	6026	60	38
Ralan	7312	82	34
Wazuro	11777	39	114
Wokha Sadar	72236	16	3021
Chukitong	8564	18	179

Based on gravity model – Data Source: - Census of India, 2001.

Wokha district which is standing at right triangle shaped being its headquarter located at the extreme south east. Thus the linkages continue decreasing towards north and west direction. The northern and western part of the district is bordering with Assam and Mokokchung district within passive interactive zone which indicates that they have alternate interaction with urban center in Assam and also with Mokokchung town. Chukitong and Wazero blocks being closer to Wokha town have the bigger volume of participation 179 and 114 lakhs of people respectively. Ralan and Lotsu blocks have higher frequency of tie up with Dimapur and Assam. But the interaction with

Wokha is recorded as 34 and 38 lakhs of people respectively only. As far as the alternative interaction is concern Champang, Bhandari, Baghty and Sanis have more interaction with towns of Assam and Aitepyong and Sungro with Mokokchung town. And as far as the tie up with Wokha is concerned, it is through Bhandari - Golaghat road and national highway 61. It has a pattern of semi – circular shape radiating and decreasing out toward north - west direction. Another feature is that in the core of the district, the participation is 3,021 lakhs people. (Fig. 3.17)

3.3.7. PHEK DISTRICT

Table 3.18. Demographic volume and interdependency in Phek district.

Phek – 12864 urban population.

C.D. block	Total population	Distance from district H.Q. in km	Volume of interaction in '00000 person/sq km
Sekruzu	9246	176	7
Phek Sadar	29422	22	172
Meluri	14911	66	29
Phokongri	3502	105	4
Chozupa	13540	161	11
Chetiba	14299	151	12
Sakraba	9676	45	28
Pfutsuro	13181	75	57
Khuzekeno	4129	90	6
Chizemi	15289	53	37

Based on Gravity model - Data Source: - Census of India, 2001.

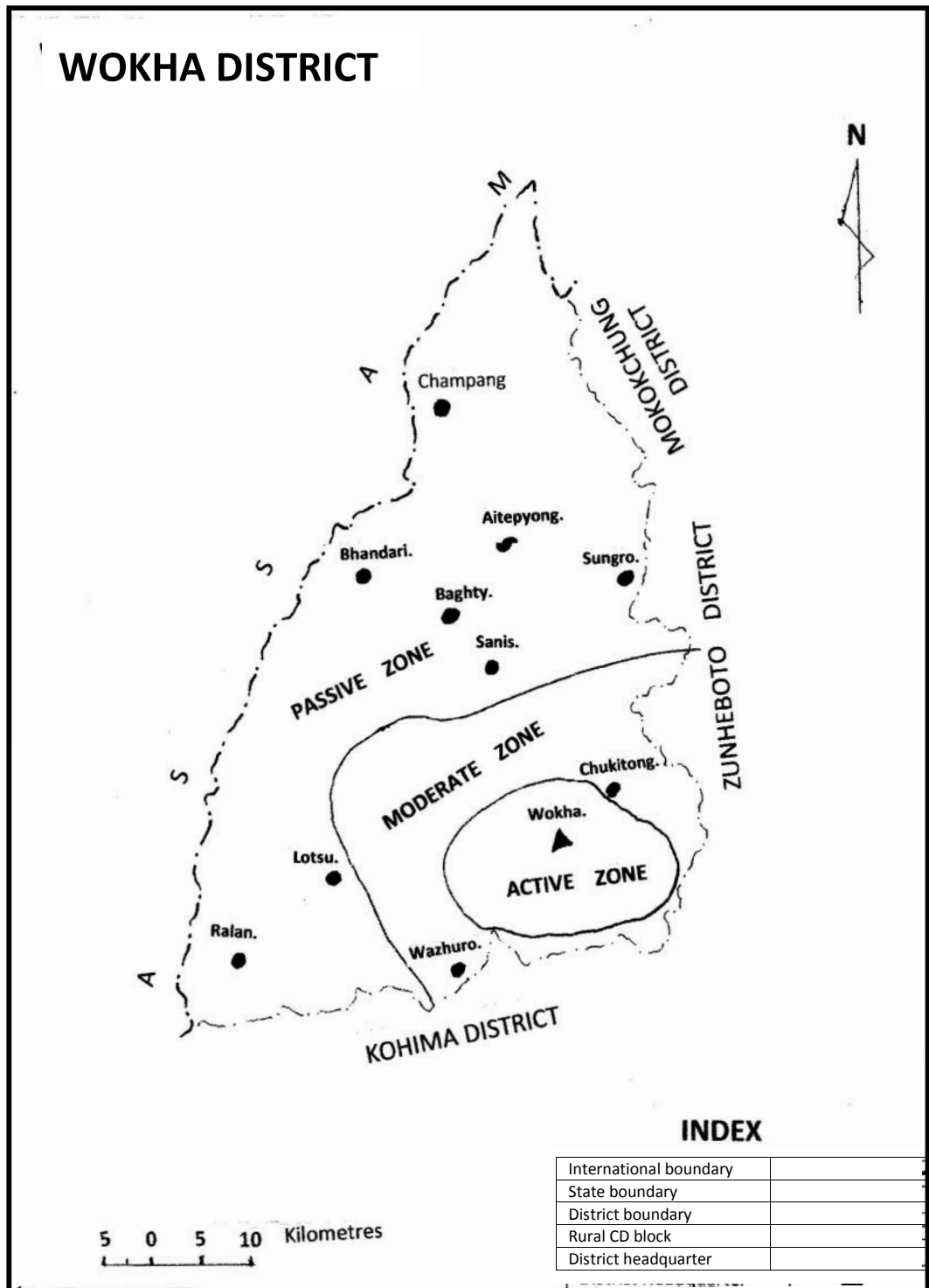


Fig. 3.17. Map showing Demographic volume and interdependency Zone in Wokha district.

The volume of participation of interaction in Phek district is quite low due to smaller number of population size and longer distances to be covered. The most interior rural block of Khazekhono and Phokungro recorded even less than 10 lakhs of population as 6 and 4 lakhs respectively. Due to smaller size of population the participation and the interaction is comparatively less even in Phek Sardar- the core – which is only 172 lakhs of populations. As the core urban is located in the middle of the district and the district has a stretch running towards east and west direction, the interdependencies radiating and decreasing away toward west and east direction. The western part though its interaction is less with Phek it has alternative with kohima, however, the eastern rural places of the district mostly depend on Phek Sardar. Besides, the whole district has two segments – eastern and western segments. The western segment has more volume of interdependency than western segment. (Fig. 3.18)

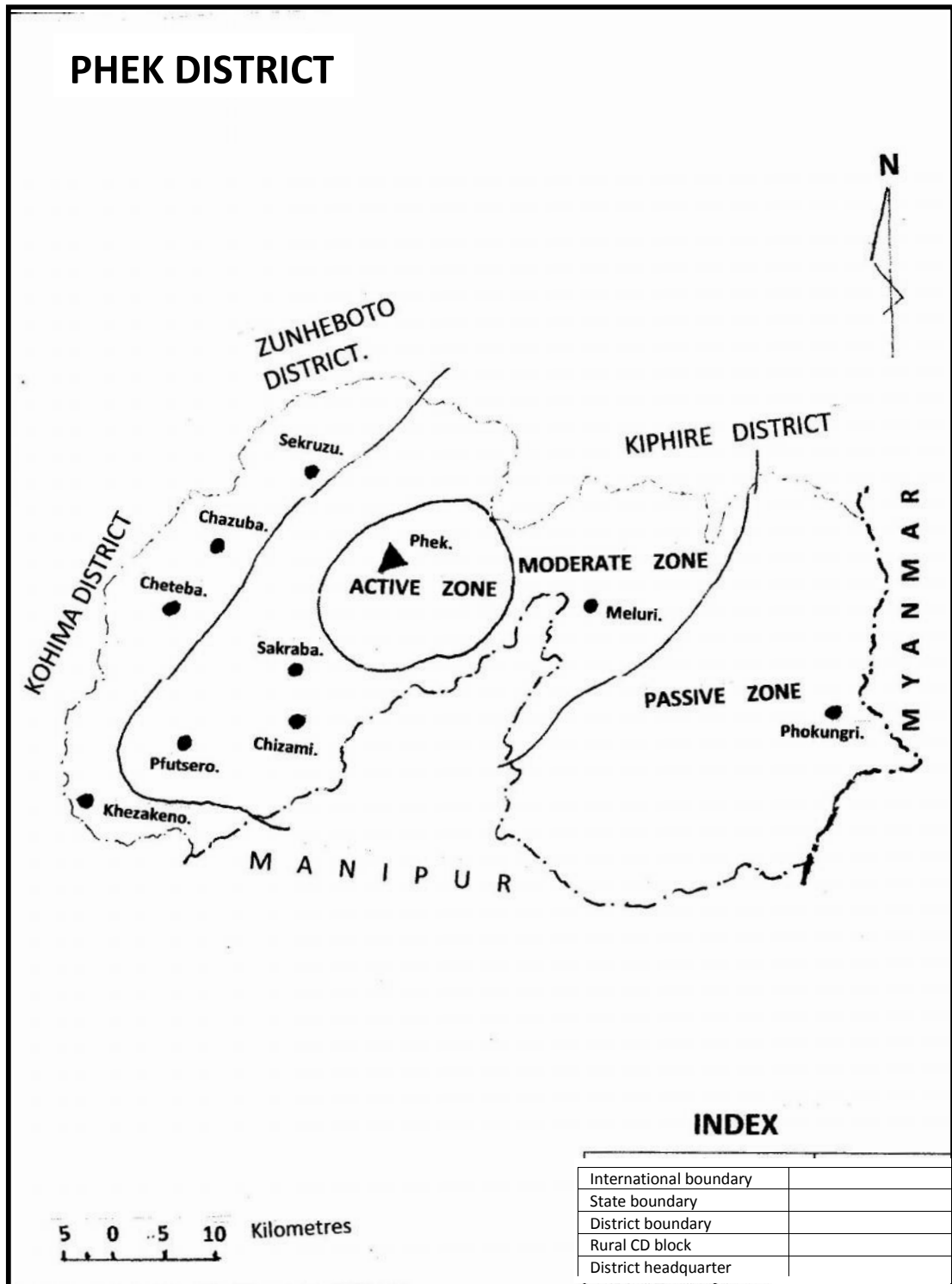


Fig. 3.18. Map showing Demographic volume and Interdependency Zone in Phek district.

3.3.8. KOHIMA DISTRICT

Table 3.19. Demographic volume and interdependency in Kohima district

Kohima – 12864 population

C.D. block	Total population	Distance from district H.Q. in km	Volume of attraction in '00000 population/sq km
Tsemenyu	52864	50	374
Chupopozou	24333	30	287
Kizocha	12216	46	94
Jakhama	23987	15	566
Kohima Sadar	14052	7.5	710
Sechu	14836	16	328
Pedi	8411	78	38
Jalukia	23274	90	91
Athibung	12311	104	42
Nsong	8171	166	17
Tening	29739	156	67
Pperen	8861	114	28

Based on gravity model – Data source - Census of India, 2001.

The whole of Kohima district can be simply divided into two segments- northeast segment consisting of Rengma and Angami areas and southwest segment of Zeliang area. Both the active and medium interactive zones of high and medium volumes of population are identified in the northeast segment of the district. In the core district the volume of interdependency is about 710 lakhs of people

participation. The medium is revealed as Tseminyu 3,74,00,000, Chopophozu 2,87,00,000, Sechu 3,28,00,000, Jakhama 5,66,00,000 people. The participation is high because of the presence of two national highways passing through these blocks i.e., national highway 61 and 39. Here the interaction is more or less uniform. Distance to in these block is not that long and every block has more than 10,000 rural populations.

Another feature of interdependency in this district is that the south-west segment is identified to be low volume of interdependency. The volume in all the blocks are below 100 lakhs of people as Jaluki 91, Pedi 38, Athibung 42, Peren 28, Tening 67 and Nsong 17 lakhs of people, where the distance to be covered is as high as 90km, 78, 104, 114, 156 and 166 kms respectively. Besides, it is characterized by presence of alternative urban centers for interaction as the south- west segment has more interaction with Dimapur urban core whereas in the north east segment the interaction is with Wokha. As a result, the interaction is radiating and decreasing toward south – west and north – east direction from Kohima town. However in the north east segment low volume of interdependency zone is not noticed. (Fig. 3.19)

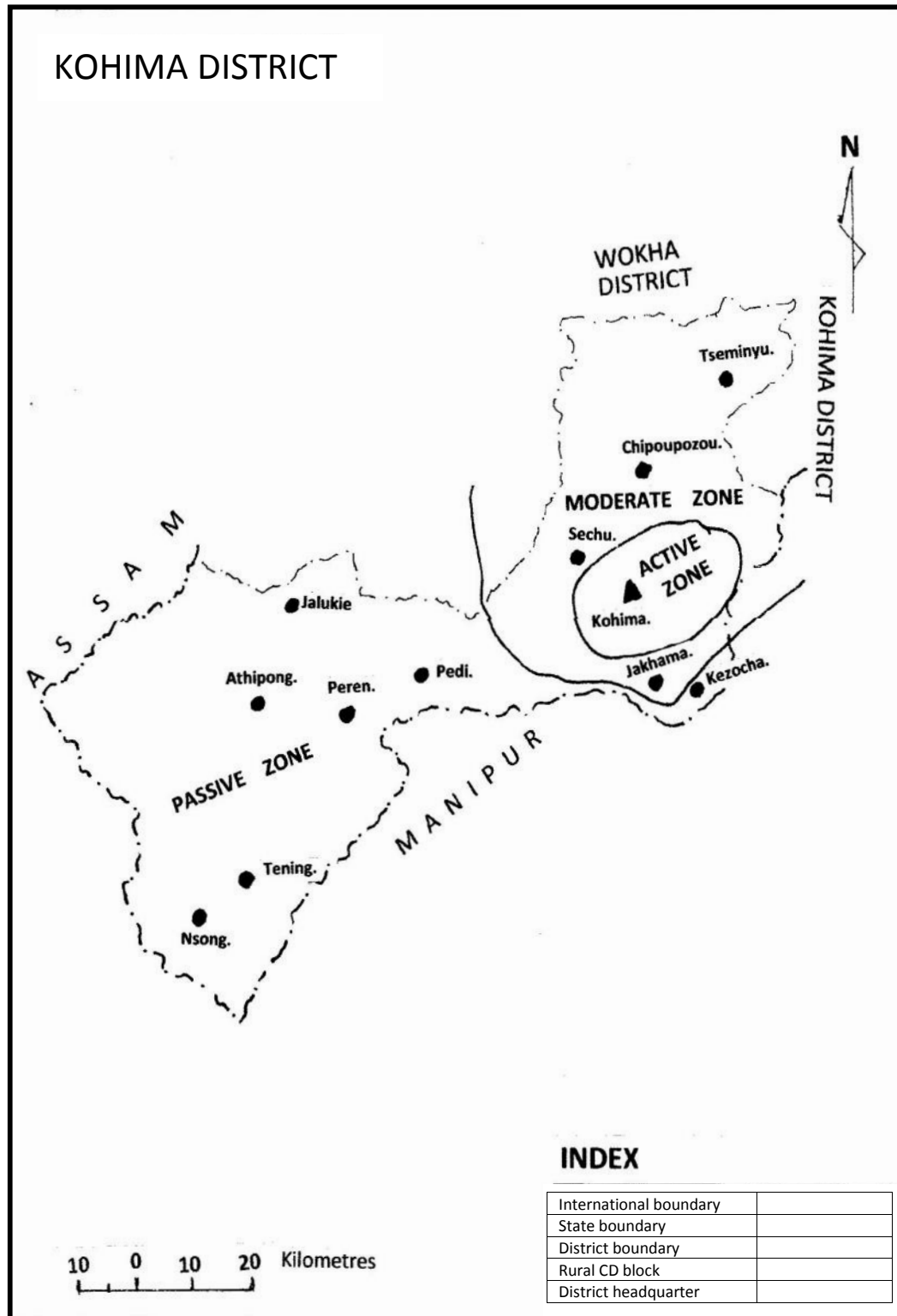


Fig. 3.19. Map showing Demographic volume and interdependency Zones in Kohima district.

3.4. SOCIO-CULTURAL AND ECOLOGICAL COMPONENT OF RURAL-URBAN INTERDEPENDENCE PATTERN OF NAGALAND.

The socio-cultural and ecological aspects act both as a driver and component of interdependence between rural and urban places. In case of Nagaland state, all the district headquarters are regarded as urban and the villages are clubbed together within particular rural- C.D. block and study on their interface are focused. In this aspect both the spatial and sectoral interdependent are considered. In this chapter only the overview or in other words, the bird's eye view of these interdependence are considered for Nagaland state.

3.4.1. SPATIAL LINKAGES

This is the interaction considering the space which include flow of people, flow of goods, flow of idea and information and flow of funds between rural and urban area depending on the social, culture and ecological phenomenon.

As far as the 'flow of people' is concerned, it includes both migration and commutation. Another important thing to be focused is that migration means permanent and temporary and rural-

urban, urban-rural, rural-rural and urban-urban. In Nagaland urban to rural migration is said to be negligible or nil rather rural to rural is noticed significantly. In -migration is generally found in urban area, rural-urban and urban- urban. Growth of urban population is said to be contributed mainly due to migration- both pass and current. Dimapur recorded the highest concentration of urban population 1,23,892 followed by Kohima 78,584, Wokha and Mokokchung 37,696 and 31,204 respectively and lowest is recorded in Phek 12,863, (statistical handbook of Nagaland, 2003). It indicates that in- migration is high in Dimapur. The purpose of migration to urban places is due to employment in non-agricultural sector or the occupation other than primary activities. This said segment of migration generally comprises rural – urban migration. In the service sector, where the incumbents both in private and public sector are transferable, they generally migrant from urban to urban places or inter-district migration, however this segment of migration is generally temporary. Besides commutation from rural-urban is identified up to limited distance of 15 to 20 km in Nagaland which is noticed in every district. But it is determined by the intensity of means of transport available. Besides, the flow of people from rural to rural is permanent which is due to

inter marriage or establishment of new villages. In the former cases, Mon district represents it as among Kongyak, Angh has a nature or cultured to marry as many as women he can and this is usually wed from other village to have better tie up or strengthen peaceful relation with other village or cessation of hostility with particular village or clan. Besides, as far as later case is concern, Sumi in Zunheboto district practice multiplicity of village or in other words, setting up of new village as they have a tradition that the one who led and establish a new village, the very village is name after him and gradually, attract other settler from neighboring villages.

Another component of spatial linkage between rural and urban is 'flow of goods' in this component agro-forest product occupies an important place.

Table 3.20. Showing production of principal agricultural crops in Nagaland (production in M.T)-2003.

District	Cereal	Pulses	Oilseeds	Commercial crops
Kohima	41890	2430	6970	15670
Phek	55760	3180	8120	1220
Zunheboto	34520	3020	11840	16740
Wokha	45240	4050	10960	21170
Mokokchung	40530	3380	8210	19170
Tuensang	38130	3280	6960	6830
Mon	36190	2940	7120	21710
Dimapur	67560	5720	14820	40910

Source – Statistical Handbook of Nagaland, 2004.

The above mentioned table shows the production of agricultural crops. Here the logic is that higher the production more is the interaction or flow of these commodities to the urban district headquarters. In all the districts, APMC depot is set up and these crops are marketed through this agency. In the marketing of all the commodities, Dimapur led the interdependency. Apart from the marketing through APMC, farmer and vendor do locally marketed the products. However, one of the important features in marketing locally by the farmer is that they have a limitation of interaction depending on the distance. In other words, up to the proximity of 15 – 20km range in radius from the urban headquarter, they flow-in these products and sells in local market in the headquarter. Beyond this limited distance, the marketing is done in the road side market shed for cheaper price because cost of transportation is nil. As far as the forest product is concern, firewood and other local building material that obtain from forest, flow-in is depend on the forested area coverage or rate of deforested area within the district. In Tuensang total forested area is 77,467 hectares and Dimapur is 812 hectares (Statistical handbook of Nagaland – 2004), consequently, the

interaction in this aspect is up to 5-10 km and 70 - -80km radius of proximity in Tuensang and Dimapur respectively.

As a matter of give and take, the rural area receives flow-in of goods from urban headquarters. In all the district rural places need certain goods which cannot be obtained from its own sources. Apart from the agro- forest product, the goods like essential commodities, consumer goods, Luxury goods, building materials are supplied by the urban headquarters. But one thing we have to keep in mind is that the area of less rate of interaction and less volume of interdependence, where distance to be covered is long, they don't acquired those goods from district headquarter, rather go to nearby neighbor other urban headquarter. For instance, in Tuensang district, Yongya rural C.D. block is fall under the zone of less interactive/ passive interactive where 188km to be covered from its urban headquarter, as a consequences opt for alternative urban centre, as such, Mokokchung is nearer which is only 70km and more developed which make them fulfill all their concern needs.

Thirdly, the 'flow of ideas and information' is another component of spatial rural-urban interdependence. These aspects are flow-in through mass media, telecommunication, internet and various

government agencies. Banning of wildlife hunting, demarcation of particular zone as protected forest, policies on forestation, diversion of jhum land to orchard farm and plantation, switching on to the occupation of food preservation, handloom and handicraft as means of livelihood are disseminated among rural folk through this means of communication from the urban headquarters. Besides, other information on important law and order are flowing in to rural mass through CIC of e-governance as well as village G.B's traditionally. In return the urban headquarter is fed by rural tradition, culture and custom in the field of administration as Nagaland is a tribal state where customary law is practice in the district administration and judgments. This is because in Nagaland, the village council and tribal Hohos are another platform of alternate administration in the districts.

The 'flow of funds' between rural and urban centre is another phenomenon of interdependency. In Nagaland this aspects are also noticed significantly. Funds are generated and flow-in from own district headquarter though different agencies. Governmental funds are remits through R.D. and different funds are in-flow from district headquarter to V.D.B. for rural housing, sanitation, drinking

water, health facilities, BPL schemes etc. Besides, cooperative societies both multipurpose and particularized are funded through cooperative bank, rural bank. S.H.G. of rural women for income generation is setup through agencies like AIDA which are financed by different banks. Even the nationalize commercial bank funds rural folk with different scheme. For instance financing of housing loan in tribal area in Nagaland through 'tribal plus' scheme is another functionary of flow-in of funds to the villages. Besides, flow of funds is also performing within the individual circles. In the active or highly interactive zone of the district people connect and bring money from urban core. Some pensioner do settled in rural areas and flow-in the funds from urban headquarters. In some cases urban earner remits money to village dwellers as wages or donations. Another example is that rural churches in Nagaland are funded and financed by means of offerings or donations that remitted from urban areas of which the funds are utilized for the welfare of the villagers.

'Flow of culture' is another important component that worth taking into account. Nagaland is a tribal state and is a multi – cultured society especially in the urban areas as it is mixed culture. Every tribal unit has its own culture, which is diffused in urban centers

and these mixed culture is flow-in to village and transform the society to oneness as Nagas. The present Naga society is that in the interior Ao village, Akhoni (a fermented soya generally used by Sumi tribe) dish is favored where as a Sumi family dinned with Aneshi (made up of yam leave used by Ao tribe) curry, at the same time in the extreme east a Kiamnungam family has a lunch with Sampar when a Lotha family enjoyed khallo (a dish of Angami tribe) and for all of them nagamese is medium of conversation. Here the direction of flow is that culture is out from a village and diffused in an urban centre and then put into another village of another community. Inter-communal on tribal web marriage is the main driver of this cultural interaction and diffusion between rural and urban places in Nagaland.

3.4.2. SECTORAL LINKAGES

The practice and exchange of one another activities between rural and urban areas is the sectoral linkages. In other words, practice of urban activities in rural and rural agrarian activities in urban areas. Urban agriculture is mainly practiced in the eastern part of urban centers in Nagaland. Whereas in western corridor, villages adapting urban culture like working in mini saw mills, small scooter workshop, presence of a barber shop, a grocery shop and a furniture

shop characterized the interdependency. In Dimapur, Kohima and Mokokchung people have adopted the practices of urban agricultural type by planting crops in pot on the top of the building roof and within the backyard of the house as kitchen gardens.

3.5. CONCLUDING STATEMENT

To conclude, it is necessary to quote that in Nagaland all the district headquarters are considered as urban centers and it has a linkage with its rural C.D blocks. The interactions are identified as high / active, medium/ moderate and low/ passive rate of interaction/volume of potentiality zones. These zones are determined mainly by distance between them and size of population and quantity of socio-economic amenities. More facilities with longer distance have a record of low zone and more facilities with shorter distance has higher rate. Lesser interaction with district headquarter and having no alternative neighboring urban centers said to be remain backward in terms of development where as villages having alternative though far from its own district headquarter is said to be in sound development. Active interaction with urban centre led to accelerate developmental activities. The size of the district matter as the smaller district shows larger degree of interaction between rural and urban areas.

Availability of roads, whether highways or kachas, determine the level of interactions. The socio – cultural and ecological components of rural and urban interdependence are associated with the flow of people, goods, ideas and information, funds and culture between rural C.D blocks and urban district headquarters of Nagaland. In some cases interdependence happen without involving the space as disgrarianisation in rural areas and urban agriculture. In case of Nagaland, the eastern part of Nagaland do practice urban farming as they have more space within the proximity of town and western rural areas have urban activities as they are in the process of development. Eastern most rural areas have no alternate urban center except to its district headquarter for interdependency. So as far as the dynamics of rural urban interdependence is concerned, it is equally affected, related and dependent.

CHAPTER 4
RURAL-URBAN INTERDEPENDENCE IN
MOKOKCHUNG DISTRICT

4.1. INTRODUCTORY STATEMENT

Based on the availability of facilities and population, Mokokchung district has 3 zones of interaction – high, medium and low interactive. A particular village is selected from each zone so as to have a detail study where primary data are obtained. A correlation is studied to see the relationship of the facilities available and the numbers of population has been categorised depending on the distance from the urban headquarter. Types and pattern as spatial and resultant interaction are depicted in detail basing on the data collected. Further, in deep study of selected villages, over all the district pictures are also revealed through the analysis of the primary and secondary data. Controlling factors such as socio – economic, socio- cultural and ecological are also digested in detail. Besides, one important thing to be noted is that all the data figures that are tabulated in this chapter are converted to percentage in which all the decimals and fractions are rounded to a solid figure.

4.2. ZONES OF RURAL – URBAN INTERDEPENDENCE IN MOKOKCHUNG DISTRICT

The whole of Mokokchung district is divided into 3 zones as high rate / potential, medium rate / potential and low rate / volume of potential interaction. Rate of interaction is divided basing on the availability of socio – economic amenities that are determined by the distance between the rural and urban centres depending on the geographical locations. Similarly, the volume of potentiality and participation of the people in interaction is classified which is determined by the distance depending on the location. At the first stage the correlation of these two aspects are focused to have a clear confirmation that which of the zone that had already divided can be used that divided the zones using different indicators. The following calculation of correlation test shows the similarity and superimposition of these two maps of zones of interaction that is being prepared based on socio-economic amenities and volume of population, so that any one of the map can be used for this study.

Table 4.1. showing the number of amenities and population with number of villages.

X = size of amenities, y= size of population

Y \ x	0-2	2-4	4-6	Total
0-3000	7	26	10	43
3000-6000	1	10	11	22
6000-9000	0	8	21	29
Total	8	44	42	94

Data Source:- Census of India 2001 and village development indicators 2000.

y \ x	x			f	fv	fv ²	fuv
	1	3	5				
	u						
	v						
1500	-1	7	-10	43	-43	43	-3
4500	0	0	0	22	0	0	0
7500	1	0	21	29	29	29	21
f	8	44	42	94	-14	72	18
fu	-8	0	42	34			
fu ²	8	0	42	50			
fuv	7	0	11	18			

$$= \frac{\sum fuv - \frac{1}{n}(\sum fu)(\sum fv)}{\sqrt{\sum fu^2 - \frac{1}{n}(\sum fu)^2} \sqrt{\sum fv^2 - \frac{1}{n}(\sum fv)^2}}$$

$$= \frac{18 - \frac{1}{94}(34)(-14)}{\sqrt{80 - \frac{1}{94}(34)^2} \sqrt{72 - \frac{1}{94}(-14)^2}}$$

$$= \frac{18 - \frac{-476}{94}}{\sqrt{50 - \frac{1156}{94}} \sqrt{72 - \frac{-196}{94}}}$$

$$= \frac{18 - (-5.06)}{\sqrt{50 - 12.30} \sqrt{72 - (-2.10)}}$$

$$= \frac{23.06}{\sqrt{37.7} \sqrt{74.10}}$$

$$= \frac{23.06}{6.14 \times 8.61}$$

$$= \frac{23.06}{52.87}$$

$$= +0.44$$

The correlation solution reveals that there is positive relation of the amenities and the population. It means higher the population more is the number of amenities and lesser the population less is the number of amenities available in a particular village of Mokokchung district. Therefore, for convenient any of the map for Mokokchung district that is already analyzed in the previous chapter regarding the zone of level of interaction can be used in the preceding chapters. In this chapter the classification has been done using the number of population as indicator that is determined by the distance covered. Consequently, for the in-depth study, 4 villages are selected from each zone as Ungma in high interactive zone, Akhoya is the medium and Lirmen and Satsuk for the less interactive zones. (Fig 4.1)

Table 4.2. Showing the level of interaction and interdependency of the selected villages in Mokokchung district.

Village	Total population	Distance from MKG.	Population/Km ²	Category
Ungma	2565	4	200 Lakhs	High
Akhoya	269	40	2 Lakhs	Moderate
Lermin	295	107	90,000	Low
Satsuk	286	95	90,000	Low

Source:- Field survey, 2010.

It is revealed from the table that in Ungma out of 1320 household, 530 household is interviewed which shows 2565 population means 40.15% households are being interviewed. As focused to the volume of interaction with Mokokchung town, 200 lakhs of people is involved which confirmed that it lies in the high interactive/ interdependency zone. Similarly, Akhoya which lies in the moderate/ medium zone also testified with primary data. Out of 216 households 90 are being interviewed which is 41.7% that indicate a total population of 269. In regard to determination of interaction level it is revealed that 2 lakhs people are involved meaning that Akhoya lies in medium interactive or interdependency zone. As for the less interactive zone two villages are taken into account. Satsuk is located near a highway to Mokokchung and Lirmen which is located in Assam border that remains remote to Mokokchung as the village is not with the influence of any highway to Mokokchung. In Satsuk 71 households are taken into account which revealed a population of 286

people. In determining the rate of interaction it shows 90,000 people as volume of interdependency. Similarly, in Lirmen out of 216 household 90 are considered that has depicted a population of 295 with 90,000 people involvement as the volume of interdependency. Both the villages are in the low interactive zone as the distance between them and Mokokchung urban centre is longer which reveals that the distance really matters a lot. (Fig 4.1)

4.3. ANALYSIS OF TYPES AND ITS NATURE ON RURAL – URBAN INTERDEPENDENCE IN MOKOKCHUNG DISTRICT

With regard to the types and feature it is being depicted that different characteristics of interaction are revealed through the analysis. The types are in relation to space or in other word space dimension is involved in the description of types which can be term as spatial rural- urban interdependence. Secondly, the other types is that space is not considered but inter – exchange of different activities are involved which is called sectoral interdependence.

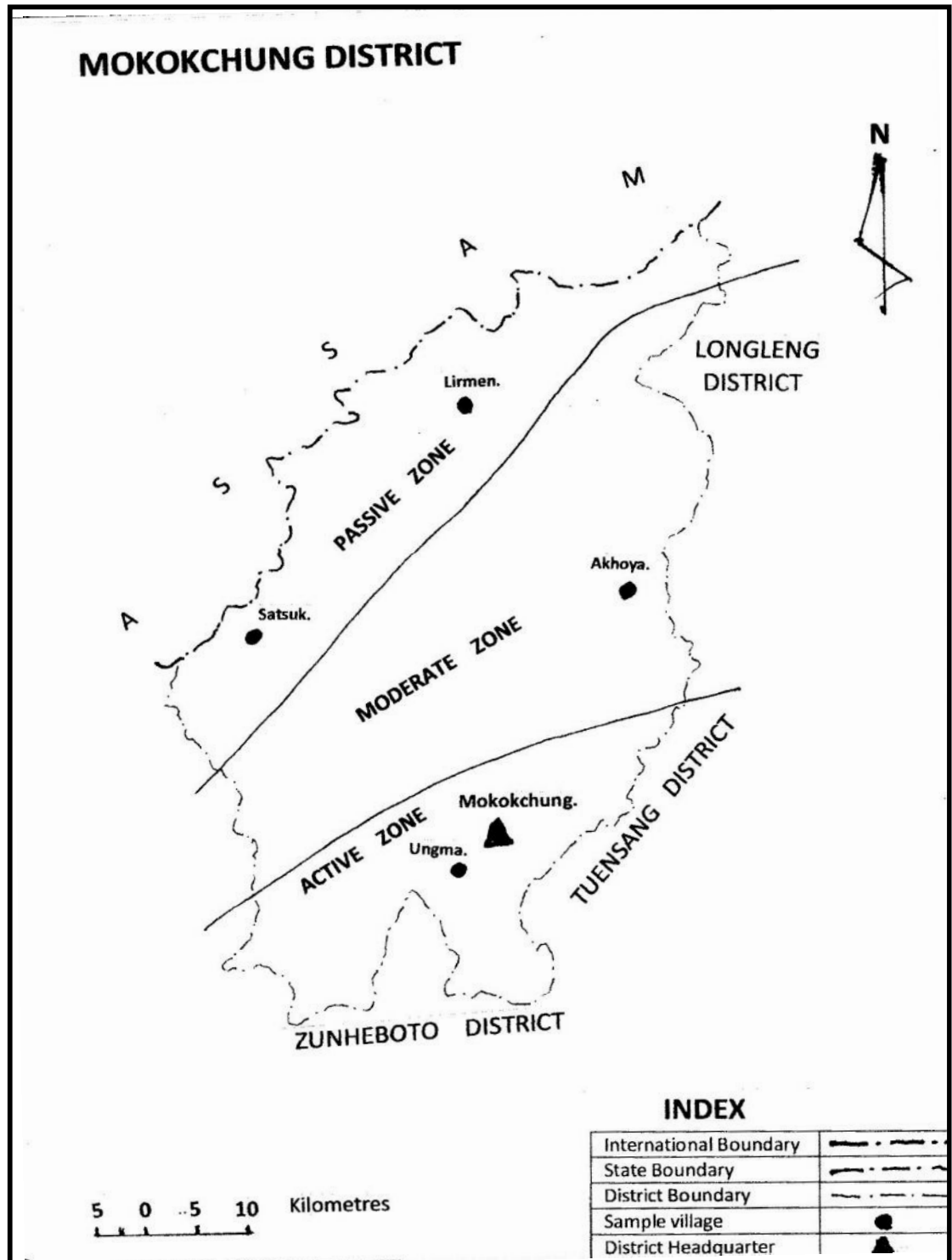


Fig. 4.1. Map showing Location of Sample villages within Demographic volume and interdependency Zones in Mokokchung district

4.3.1. SPATIAL INTERDEPENDENCE

This type of category has several components to be focused in which different flows that inter - exchange between rural and urban areas. They are the flow of people, flow of goods and services, flow of idea and information, flow of funds and services and flow of culture.

4.3.1.1. FLOW OF PEOPLE

In this type movement of people is considered, both migration and commutation. Migration can be permanent and temporary, commutation is on daily basis. The former is identified in all categories of zones whereas the later is found only in the active / high interactive zone, where shorter distances are covered with the availability of enough means of transportation. Inflow of people to Mokokchung is inevitable as it is a mixed society. People settled in Mokokchung are engaging in different activities of work. More than 400 households from Ungma, and above 50 each households from Akhoya and Lirmen are settled in Mokokchung which reveals that more the interaction greater is the number of migrants to the township. Besides, intermarriage with other villagers and communities is also a driving force for migration as it is found that in Ungma out of 2565 population, 21 persons are happened to be from

other villages and communities that migrated through marriage in which majority are females. In Akhoya too, out of 90 households 7 spouses are from places other than the village which is also migrated through marriages. 26 households in Ungma is found to be non – villager who were migrated for business and employment in the services and in Akhoya 5 households are found to be of same category. As far as the inflow of people through migration - both permanent and temporary – from the data collected for 5 wards viz, Alempang, Marepkong, Artang, Sungkomen and Sangtemla ward, as 50 each of households (that is 250 households), Ungma occupies 21%, Mokokchung 20%, Longsa 19%, Longkhum 13%, Khensa 9% and others 18%.

The interaction of selected villages with Mokokchung by movement of people depicts an interesting picture. The interaction is high with Ungma as it involves more of daily commuters because the distance to be covered is only 4 kms. About 59% of the households commute daily to Mokokchung. The purposes of daily movement of people are marketing, attending of office and business etc. Besides, 34% of the household visit Mokokchung within weekly basis but only 4% opined that they visit only sometimes, whereas the

people of Ungma have no alternate place to visit for the purpose which shows that Ungma and Mokokchung interact very actively through movement of people. Akhoya and Mokokchung shows a very interesting picture that daily commuters are only 4% but 29% of the households visit Mokokchung town weekly and 47% compelled to go in a month. Only 8% of the households opined that they visit sometime as and when situation demands, at the same time they have alternative places like Changtongya and Halwading (Assam) to visit as the distance to Changtongya is 5km and Halwading is 50kms. Lirmen and Satsuk, as they lies on the less interactive or low volume of potentiality zone their daily interaction to Mokokchung is nil and only 6% and 9% respectively visit Mokokchung on a weekly basis. Out of 90 households in Lirmen 33% opined that they go to Mokokchung as and when needed and 29% out of 71 households in Satsuk also visit mokokchung depending on demand and needs. Lirmen and Satsuk have alternate place that is Assam as they are closer to it where they interact, as is being revealed by 34% and 36% respectively go to Assam for many a time. (Table 4.3)(Fig.4.2)

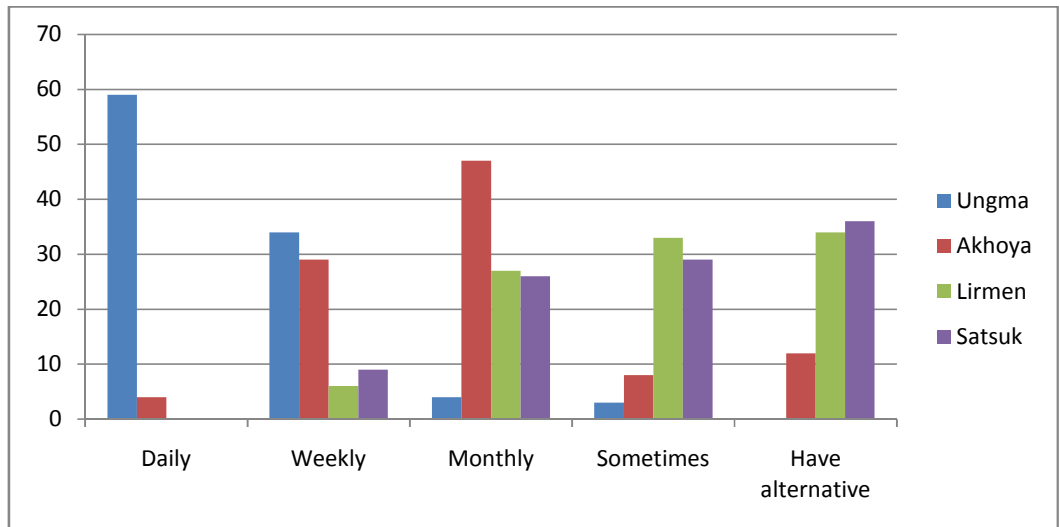


Fig.4.2. Bar diagram showing frequency of visit to Mokokchung by households of sample villages in Mokokchung district (in %)

Table 4.3. showing the detail on frequency of visit to Mokokchung by households.

Village	Interval of visit to mokokchung (in %)				
	Daily	Weekly	Monthly	sometime	Have alternative
Ungma	59	34	04	03	-
Akhoya	04	29	47	08	12
Lirmen	-	06	27	33	34
Satsuk	-	09	26	29	36

Source: - Field survey, 2010.

The flow of people between the selected villages and Mokokchung town is governed by the flow of means of transport between them. In case of Nagaland, the only means of transport is vehicles on the road where both private vehicles and commercial buses and taxis play vital role.

Table 4.4. Showing flow of passenger vehicles to and from Mokokchung on monthly basis

Village	No of flow			
	Private	Taxi	Buses	Total
Ungma	4500	3120	624	8244
Akhoya	260	182	130	572
Lirmen	78	52	-	130
Satsuk	39	26	-	65

Source – Field survey, 2010.

It is being found that the interaction between Mokokchung and Ungma is high which is driven by the flow of vehicles between them. Flow of vehicle is as, private 4500 trips, Taxi 3120 trips and Buses 624 trips where overall total is 8244 trips which led to daily, weekly and monthly movement of people as revealed by table 4.4 and fig.4.3. Akhoya, as located in moderate zone the movement, the flow of people is driven by the flow of 572 trips of vehicles. However, in case of Lirmen and Satsuk the flow of vehicle is 130 trips and 65 trips respectively as the location of these two villages in less interactive zone is justified which show that flow of people to Mokokchung is very low.(Fig.4.3)

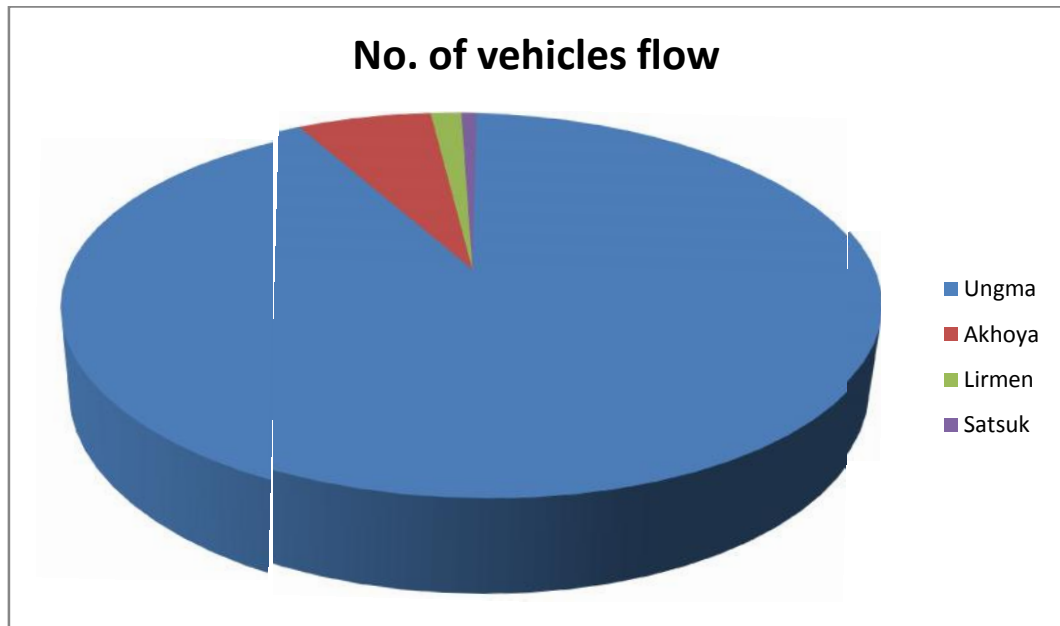


Fig.4.3. Pie diagram showing Number of vehicles flow from the sample villages within a month in Mokokchung district

4.3.1.2. FLOW OF GOODS

As far as the flow of goods are concerned urban Mokokchung is fed by the rural area specially in agro-forest products like fuel wood and charcoal, vegetable – both agricultural product and forest product – building materials of forest product like log, timber, bamboo and bamboo products. In this regard, the inflow is within the proximity of 15 – 20 kms radius range. Vegetables of agro and forest products are marketed at Mokokchung within this proximity or in other words within the range of highly interactive zone. Important feeder villages transport these products and wholesale to vegetable vendors and finally disposed at local market of

Mokokchung. These products are seasonal in nature and different varieties of vegetables are found in the market at different intervals of time within a year. One of the important examples of this aspect is that seasonal local chilly from Longsa village and tomatoes from Longkhum village dominate Mokokchung vegetable market, a period during the season within a year. Evaluating this aspect in Ungma, out of 530 households 68% do engage in agro-forest activity that is 360 households, out of which 28% maintain farm and plantation that is 101 households, of the remaining 259 households, 68 household engage in cultivation and collection of vegetables of forest products and the rest is engaged on wood cutting, logging and production of local building materials. Out of the 68 households engaged in cultivation, 23% commute to Mokokchung and sell its product in local market, and 30% do not sit in the market but sold out to the vendors and the rest do for own consumption and do sells within the village.

In this regard, the village located in the medium and less interactive zone do not flow it in to Mokokchung but they dispose it in the roadside/ wayside marketing shed at cheaper rate. As proceeding towards Mariani road, a bunch of vegetable which cost Rs. 30 at Mokokchung is sold for Rs. 20 at Satsuk junction and for Rs.10 at

Aosenden roadside marketing shed. Besides, villagers do not transport it to Mokokchung but they supply it to the local roadside marketing shed where they dispose. Satsuk is a small agricultural village where 71 households are engaged casually in agro – forest products that they dispose off at Satsuk junction of Mariani road marketing shed as such there is no permanent household that occupy the market shed. The reason why they could not flow it in to Mokokchung market is the burden of cost of transportation.(Plate.4.1)

Besides, taking Akhoya for instance, engaging casually in this activity is very less as out of 90 households only 11 households are noticed rather they engage in other activities for means of livelihood. In regard to inflow of fuel wood, log for mini saw mills and local building materials like bally post, Bamboo etc., Ungma is a major contributors as it alone accounted a major segment of households that are totally inclined in this activity, and also the other village that located within the zone of high interactive. Besides, it is worth mention that Longkong village is the main supplier of charcoal to Mokokchung which produce



Plate.4.1. Disposal and sale of Agro-Forest product vegetables at Roadside market shed of less interactive zone in Mokokchung District.



Plate.4.2. Disposal and sale of agro-forest product vegetables at roadside market shed in moderately interactive zone of Mokokchung District.

high quality charcoal and the village alone account about 80% of its input.

Akhoya is located in zone of moderate interactive, where 90 households are accounted of which 10 households do vegetables vendor of agro – forest products. One of the important and interesting features that notice here is that it is a weaver village and they do interact with Mokokchung in this aspect. It is done among the womenfolk in such a process that raw yarns is brought from Mokokchung and send the finished products to its district headquarter and several other places. They do supply finished products on wholesale basis too. The man folk engage in activities of quarrying, wood cutting, logging, collection of local building materials of wood and bamboos. However, they have less or nil interaction with Mokokchung in this aspect. Weaving by the women folk is that out of the remaining 79 households, at least one women of 90% households is a weaver however, they do loom for someone who is a wholesaler, on per shawl basis or in other words they weave for 7% of household who dispose the finished products to Mokokchung and Dimapur.(Plate.4.3). Even if they seldom interact in other aspect, tying up in this activity from this village is very strong. One thing worth note



Plate.4.3. Rural livelihood and its product in which urban centers are dependent in Mokokchung District.

taking is that as the present century lot of people are trying to do away from the bad practice of jhumming rather they preserve forest and let ecosystem rejuvenated by means of adopting other activity for livelihood.

Besides, the inflow of goods to Mokokchung irrespective of zone i.e., highly, moderate and less interactive zones, APMC is trying to centralize its agro – forest products in Mokokchung even from far flung areas of longer distances where burden of cost of transportation is involved. APMC Mokokchung has already set up its depot in Mokokchung so as to dispose-off to other places from Mokokchung.

Apart from the flow of goods from the rural areas, Mokokchung town has also having the carrying capacity to feed the rural areas by means of interaction. Some of the components that is supplied by Mokokchung town are consumer goods, clothing, hardware, medicine and building materials like iron rod, cement, bricks etc. The rate of intake by the villages is also on the basis of the zone of interaction. Highly interactive zones are the major receiver as it is decreases away to the moderate and further to less interactive zone.

Table 4.5. Showing marketing of goods in Mokokchung and outside (in %)

Village	Items / goods														
	Consumer goods			Clothing			Hardware			Medicine			Building material		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Ungma	99	01	-	58	42	-	96	04	-	98	02	-	9	64	27
Akhoya	05	95	-	86	14	-	57	43	-	56	44	-	-	11	89
Lirmen	-	100	-	11	89	-	-	100	-	2	98	-	-	39	61
Satsuk	03	97	-	21	79	-	03	97	-	02	98	-	-	7	93

Source: - Field survey, 2010.

INDEX	
1	Mkg
2	OTRER
3	DON'T BUY

From the table above it is being found that as Ungma is located in the active zone and it receives all goods that are supplied by Mokokchung. Goods that received by 90% and above households are consumer goods, hardware and medicines. Getting of consumer goods, hardware, medicine and building materials from a place other than Mokokchung town is negligible as 01%, 04%, 02% and 09% household respectively and cloths and garments are equally shared between Mokokchung and other places. However, about 64% get building materials from outside in Ungma. While glancing at Akhoya 86% households, 57% households are the receiver of cloths and garment and hardware respectively from Mokokchung whereas the

percentage of households opt for building material like iron rod, cement, sand, bricks etc., is nil. As far as the consumer goods are concerned, only 5% of the households go to Mokokchung for the same. In case of Lirmen the household receive consumer goods, hardware and building materials are nil and only 2% of household obtain medicine from Mokokchung which is negligible. For consumer goods and hardware they depend totally on other places in Assam. Satsuk interact with Mokokchung as consumer goods, hardware and medicine are received by 03%, 03% and 2% of households respectively. In regard to this village 21% of households receive cloths and garment from Mokokchung which is also negligible. For building materials like cement, iron rods, sand, bricks; Lirmen and Satsuk totally depend on a place other the Mokokchung which is also 39% and 7% respectively and the rest do not go for it. (Fig.4.4)

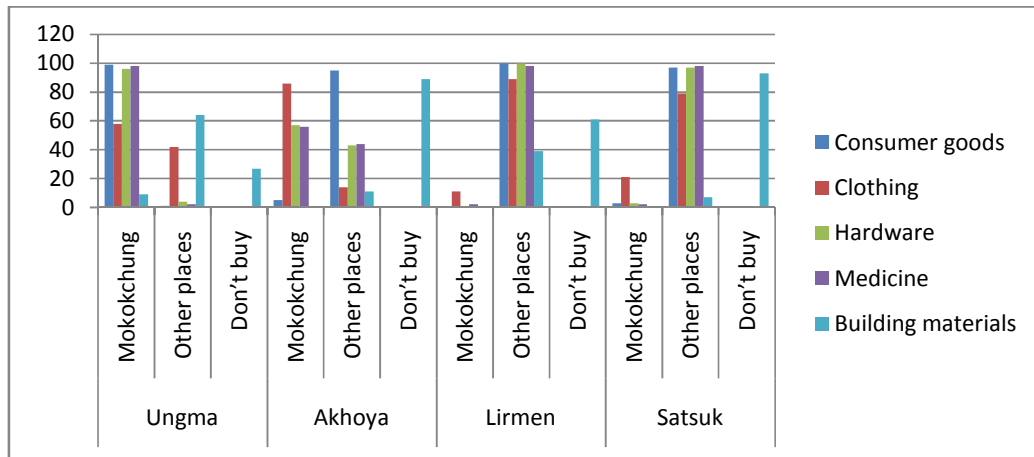


Fig.4.4. Bar diagram showing marketing of goods by households of sample villages in Mokokchung district (in %)

4.3.1.3. FLOW OF IDEA AND INFORMATION

Another component of rural – urban interaction types are flow of ideas and information. Flow of these aspects is generally disseminated from the urban hubs of Mokokchung. Ideas are generally the knowledge on environmental awareness like preservation and conservation of environment, adverse effect of jhuming, setting up of plantation such as rubber, tea and coffee, bamboo and tree plantation and also protection of wildlife of both terrestrial and marine. Regarding the flow of information, it is implicated mainly with the process of administration which is centralized at Mokokchung. It flows-in to rural area directly from Mokokchung and also through channel of administrative circles.

Components of this aspect are like information on administrative process that is law and order, orders on conservation and protection of environment like total or seasonal banning of hunting and fishing of wild animals or forest fire, prohibition on sale of liquor and narcotics. In the month of July 2013, the Mokokchung DPDB meeting resolved to ban on hunting in the entire district where Deputy Commissioner was asked to call a meeting of all the village councils and ward councils to pass on the information and finally execute the resolution of D.P.D.B, meeting. Besides, information on the awareness of healthcare like HIV/AIDS, TB, leprosy, family planning and cleanliness and nutritional programs and educational programs like non- detention policy, mid-day meal program and other program like preparation and preservation of nutritional food items like agro products, forest products and fruits are also flew-in from government departments, agencies and various NGOs.

It is important to analyse the sample villages is based on the ecological factors such as climate, soil and topography. As far as the plantation is concerned, rubber, tree, bamboo, tea and coffee plantations are done where geographical and climatic conditions do suits. Rubber and teak plantation are mostly done in Lirmen village as

it comes under humid climatic zone. Afforestation programs are funded by government department from Mokokchung, whereas ideas on rubber plantation are done and also partially financed by Rubber Board headquartered at Jorhat. It indicates that this village lies on the less interactive zone of Mokokchung district. About 80% of rubber grower of this village obtained subsidies loan from the board. Government agencies and departmental headquarters at Mokokchung assist projects on tree plantations. Secondly, in the moderate interacted zone Akhoya also shows that geographically this is in temperate zone as govern by an average altitude of 900m above main sea level. Similarly, bamboo plantation and coffee plantation are suited in this zone. In this village bamboo grower association is formed and received financial aid from Bamboo Mission and also Coffee Grower Association that assisted by Coffee Board stationed at Mokokchung. In these villages people do as wage earners in these projects because the people have shifted their activities from jhumming as discouraged, (Plate.4.4), which is the ideas that flow-in from district urban centre. Thirdly, an example of flow-in of idea to village on preservation is that in Ungma village jurisdiction there



Plate.4.4. Converted jhumland to forested land through tree plantation in Akhoya village within moderately interactive zone in Mokokchung District.

is a project which is called “Dikhu Green Zone” where all forest based activities are banned. A particular definite area is demarcated within

the territory of two villages (Ungma and Longsa) and hunting, fishing and collection of forest product is prohibited where an amount of Rs.50,000 is fined to the defaulter that considered as income to the management committee.

As far as the flow of information and services is concerned, Mokokchung based government agencies, NGOs reach out the nearer villages for more number of times. At the same time the villagers also get information from Mokokchung depending on the number of their visit of their friends and relatives.

Table 4.6. Showing the receiver of information on different aspects through government, NGOs, friends and relatives from Mokokchung and others by households (In%)

Village	Environment like- global warming/ pollution/soil erosion/wildlife destruction/ forest fire etc			Healthcare like-HIV AIDS/TB/Leprosy/ STD/ Malnutrition/ family planning etc			Social evil- extortion/ kidnapping/ Rape/ murder/ robbery etc			Disaster like earthquake/ storm/ fire		
	mkg	other	Don't know	mkg	other	Don't know	Mkg	other	Don't know	Mkg	other	Don't know
Ungma	81	19	-	86	14	-	85	-	15	90	3	7
Akhoya	55	25	20	94	2	4	84	-	16	91	-	9
Lirmen	45	20	35	51	36	13	56	30	14	49	31	20
Satsuk	42	36	22	55	39	6	49	42	9	57	33	10

Source: - Field survey, 2010.

To analysis the flow of information and ideas, the data show the information that is being received by the villagers within the village which is directly brought from either of Mokokchung or others through seminars, workshop etc. The villagers also obtained information and ideas from outside of the village. More percentage from Mokokchung means more interaction with it that either brought into the village through government agencies and NGOs or they received during a visit to Mokokchung from government agencies, NGOs, friends and relatives. Ungma shows higher interaction with Mokokchung as 71%, 86%, 85% and 90% of households received from Mokokchung on environment, health care, social evils and disaster respectively. The data reveals that in case of Akhoya, information received for healthcare, social evils and disaster are more from Mokokchung as 94%, 84% and 91% respectively. In Lirmen, out of 90 households that accounted, 51% about health care, 45% about environment, 56% of social evils, 49% of disaster is received from Mokokchung in either ways. Satsuk also show similar picture as out of 71 household interviewed, 42%, 55%, 49%, 57% received information and services from Mokokchung about environment, health care, social evils and disaster respectively. In these two cases (i.e., Lirmen and

Satsuk); they received information and ideas from other places equally with Mokokchung. Therefore, this aspect also shows that shorter the distance more is the interaction as Ungma, Akhoya, Lirmen and Satsuk and their interface with Mokokchung is depend on their location as the zones of highly interactive, moderate and less interactive. Here one thing is clear that information and services receive by the village is not only that directly flow in from Mokokchung but also that obtain during a visit to Mokokchung by the villagers in which they are dependant.(Fig4.5)

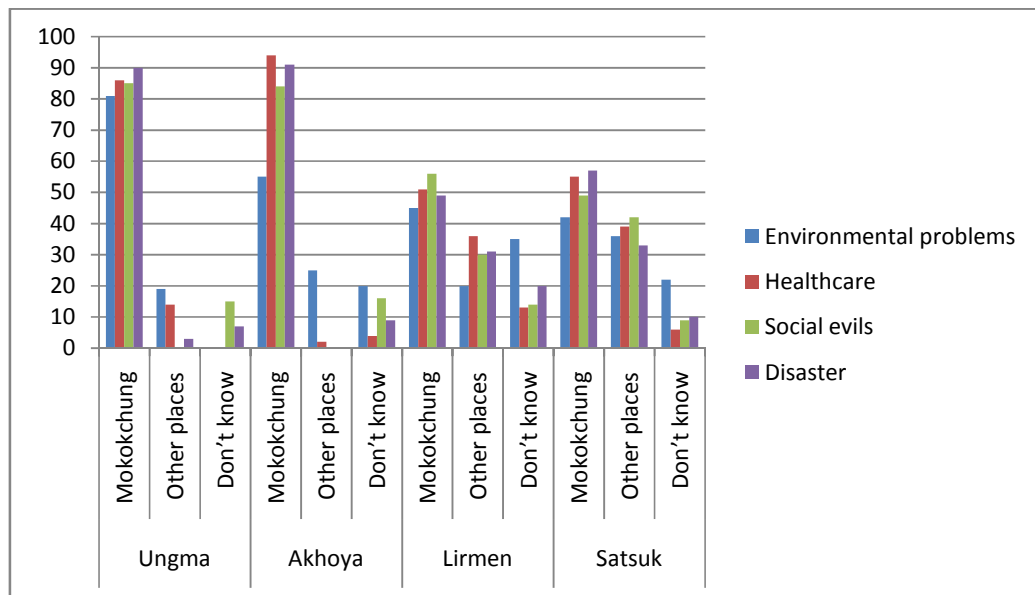


Fig.4.5. Bar diagram showing receives of information by the households of sample villages in Mokokchung district (in %)

4.3.1.4. FLOW OF FUNDS

The flow of funds is one of the important components of the rural – urban independence and also can be termed as one of the types of it. In this study, flow of funds indicates financial received by the rural areas from Mokokchung and also remittance of it includes as the funds from government, banks, co-operative societies, NGOs where church is also one, and even from friends and relatives. The urban area also receives it from many sources. Government also remits it through Village Development Board (V.D.B) funds, BPL cards, ration cards, kerosene cards etc. Even nationalized bank and co-operative banks remits a subsidized loan to different co – operative societies and SHGs. Remittance is also done through churches especially in Nagaland as tithes, donations and offerings from urban centers which are utilized by church for the welfare of the villagers. Friends and relatives also financially assist households as goodwill donations especially during the time of hardship faced by the villagers. There is existence of kins, clans and family groups which are generally being financially supported by urban dwellers. During special occasions within the village like celebration of traditional festival of Moatsu and Tsungremmong, Christmas and other anniversary/celebrations in the villages, a lot of funds flow-in to the villages from

different source by means of contribution, donation and gifts. Sometimes villagers remit money to their relatives in the urban center as the urban counterpart look after their children for education. From the table below it is understood that how a rural area receives funds from Mokokchung and other sources and reached out to their households as a consequence the intensity of interaction with its urban headquarter is determined. Here the fund is inclusive of government, NGOs, financial institution and friends and relatives.

Table 4.7. Showing the percentage of households that receive fund from Mokokchung and others inclusive of all sources (In %)

Village	Percentage of fund recieve		
	Mokokchung	Others	Within village
Ungma	52	11	37
Akhoya	32	12	56
Lirmen	20	34	46
Satsuk	23	36	41

Source: - Field survey, 2010.

To analyse, it is necessary to see the flow of funds between Mokokchung and Ungma. Out of the 100% fund receive 52% household in Ungma get from Mokokchung and also 37% of households get their income from the total income generated within their own village and 11% of households obtain from other places. It is revealed that 276 households in Ungma gets more than 50% of their

income from Mokokchung and only 58 households obtain from places other than Mokokchung and its own village. Besides, income accounted from village is as 196 households. So with regard to this analysis Ungma depend less on other places rather rely more in Mokokchung and its own village.

Akhoya also depict a suitable picture on its interaction with Mokokchung which proves that it lies in the moderately interactive zone of the district. Out of the total amount of the funds, 32% of households receive from Mokokchung. Akhoya does not get higher income from Mokokchung because 56% of households get from its own village. Besides, only 12% of the total households depend on places other than Mokokchung. Out of the total income generated in the village through different means based on agro – forest activities 56% of the households obtain from its own village. In Akhoya village out of 90 households, funds recieved from Mokokchung accounted 29 households, and only 11 households get more than 50% of their income from places other than Mokokchung excluding their own village rather they depend more on their resources as 50 households earn from their own village.

Lirmen and Satsuk show that their dependability in Mokokchung is 20% and 23% of households respectively which is low. They have equal share of fund receive from other places which accounts for 34% and 36% of the households respectively. One important feature observe here is that as they depend less on Mokokchung and depend more on their own generated income as 46 households out of 100 and 29 out of 71 households in Lirmen and Satsuk, get income from their own generated resources. It is understandable that as these two villages located at the zones of low interactive of rural and urban interdependence in Mokokchung district, they show less tie up with Mokokchung as they receive less fund from Mokokchung which is 20% and 23% respectively i.e., inclusive of all sources.(Fig 4.6).

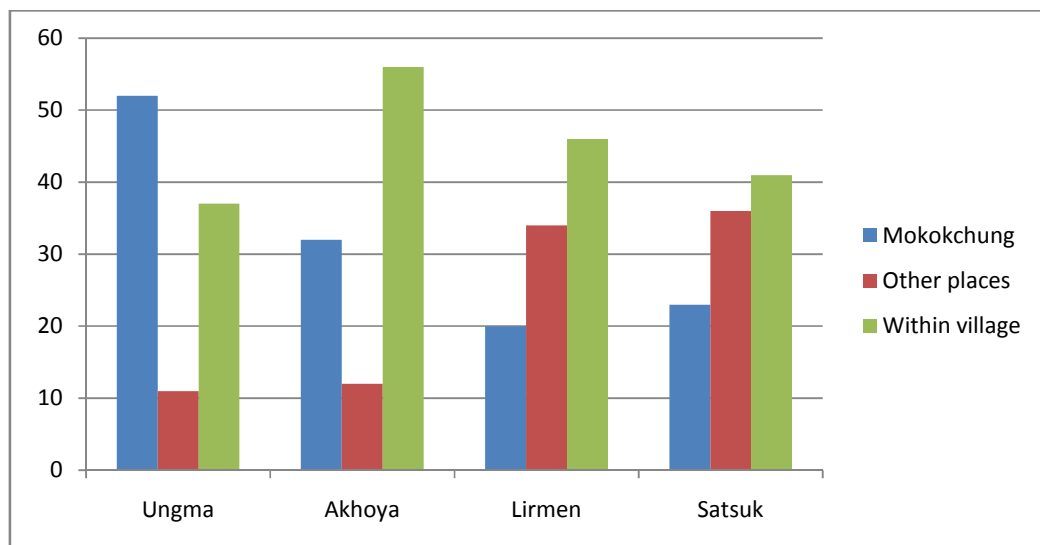


Fig.4.6. Bar diagram showing receive of funds by the households of sample villages in Mokokchung district (in %)

As far as the flow of funds to the villages of Mokokchung district from government through Rural Development Department concerned, it is being disbursed by DRDA under Swarnjayanti Gram Swarozgar Yojana (SGSY) for the year 2009 – 2010 for Mokokchung district is 74.31 lakhs where the total expenditure is 64.96 lakhs in which 72 individuals are assisted. Besides, under Indira Awaas Yojana (IAY) total allocation is 298.57 lakhs out of which 267.86 lakhs released, under Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) 28927 job cards were issued and 100% employment is provided out of which 26034 has completed 100 days work. Apart from this under Grant – In – Aid (GIA) Mokokchung received Rs 852961 for approach road, 1832623 for soiling and metalling of road, Rs 940245 for cash crops, Rs 41292 for social forestry, Rs 2705104 for footsteps, Rs 686807 for culvert/drainage, Rs 1549641 for play ground, Rs 441425 for water tank, Rs 125699 for rural housing, Rs 622216 for marketing/resting shed, Rs 691037 for purchase of vehicles, Rs 645440 for piggery, Rs 259749 for fishery and Rs 162050 for weaving and handicraft etc, where total funds credited

to VDBs are Rs 2,61,91,000, in Mokokchung district. (Statistical Handbook of Nagaland, 2010). On random evaluation of this for the selected villages, some households are found to be ever benefited at least either by rural housing scheme where one unit of CGI sheet are distributed or by MRNREG scheme by means of availing job card and man days employment.

4.3.1.5. FLOW OF CULTURE

Generally urban set up is a multicultural society with components like language, religion, marriages, food habits, clothing fashion etc., where these culture is diffused as it flow-in to a particular village by means of interacting with a particular community that is being exists in the urban center. Cultural interdependency among AOs is a practice since historical point of time as many villagers has a particular distinct culture like design of shawl, cloth, basket etc., which was exchanged in the olden days that still exist a regular practice. At present these exchanges as their interdependency is a practice not only among the AOs but with other communities of Nagaland, India and even worldwide. Mokokchung is a multicultural place, so it has the potentiality to disseminate and finally became dependable to its culture by the rural areas basing on the distances between them. It is

to be noted that this process of cultural flow is not only with the Mokokchung and its rural area in the district but even with other places which is clearly comprehend by analyzing the level of interaction or interdependence of Mokokchung and its villages. For instance, in an Ao village the people enjoys a Bengali dish or a south Indian dish whereas in Mokokchung a Marwari wear 'Tsongko su'(Tsongko shawl woven for manfolk) or a Garo lady put on 'Watsu mekhala'. So for the village to prepare a particular non Ao dish the component is flown-in from an urban centre both abstract and concrete. Similarly, within the 'Tsongko su' or 'Watsu mekhala,' it is woven in a village and flow-in to Mokokchung urban centre. Besides, a beautiful cultural troop walkout from a village to Mokokchung to make a presentation during a visit of central government dignitary on the occassion of moatsu festival and also an Ao Naga dao was presented to him as a gift. Besides, on commercial purpose the exchange and interdependence of their cultural items is going on. Akhoya one of the sample villages for the study where at least one in the 90% of the household is a weaver, and they weave several cultural shawls, mekhala, longi, bags etc., and send it to Mokokchung and places other than Mokokchung for various purposes. In Ungma

different kind of woodcraft are produced which is an end commodity in Mokokchung. Besides, a Sumi speaks Ao dialect in Mokokchung and an old lady of an Ao village speak nagamese whereas a maths teacher of a school in a village teaches in English medium. So it reveals that culture is exchanged and very well fabricated in Ao society of which 50% of credit is taken over by Mokokchung urban headquarter.

By analyse the level of interaction and interdependence of Mokokchung and its rural settlements, the component of cultural interaction of its people is worth understood. By means of interaction with others make diffused culture and finally resulted to flow of it.

Table 4.8. Showing different community ever interacted mostly by the head of the household in Mokokchung and other places. (in %)

Village	Place where meet	Communities			
		Aos other than villager	Nagas other Than Aos	Indian other than Nagas	*Foreign nationals
Ungma	Mokokchung	100	100	99	2
	Other	-	-	-	3
	Village	-	-	1	-
	Never	-	-	-	95
Akhoya	Mokokchung	9	81	4	-
	Other	91	19	96	5
	Village	-	-	-	-
	Never	-	-	-	95
Lirmen	Mokokchung	11	46	9	-
	Other	87	51	39	4

	Village	2	3	52	-
	Never	-	-	-	96
Satsuk	Mokokchung	12	39	27	-
	Other	87	57	2	3
	Village	1	4	71	-
	Never	-	-	-	97

Source: Field survey, 2010.

****Foreign nationals exclusive of Bangladeshis and Nepalese.***

Analyzing the aspect, interaction by the people of the selected village the data reveals that Ungma as it is only 4kms away from Mokokchung they have constant tie up with it and the inflow of different culture is very active. They interact with different communities mainly from Mokokchung i.e., 100% of the households, 100% of the households and 99% of households with Aos other than Ungma, Nagas other than Aos and Indian other than Nagas respectively. Akhoya, from the table above reveal that

interaction with Aos, other than Akhoya in Mokokchung is only 9% of the households as they have alternative Changtongya town which account 91% of the households. However, in case of other Naga tribes, they meet them mostly in Mokokchung by 81% of the households. Indian other than Nagas whom Akhoya interact is 96% from place other than Mokokchung that is Changtongya town. In case of Lirmen, even Aos are meeting from places other than the Mokokchung like Mangkolemba, Dimapur and neighbouring villages which account for 87% of the households. About 51% of households interact with other Naga tribes in several other places rather than Mokokchung. One of the interesting features here is that the Indian community other than Nagas is being mostly interacted by 52% of the households within the village as these communities are residing in the village because the village is bordering with Assam. Satsuk is one of the interior villages located in less interactive zone where 87% of households interfaced with Aos in a place other than Mokokchung. But interestingly 71% of the households have closed tie up with the community of India other than Naga within the village itself as the said community is residing in the village itself. Based on the above, it is being revealed that the zone of

interdependency is operational even in case of cultural flow between Mokokchung town and its rural settlements (Fig.4.7).

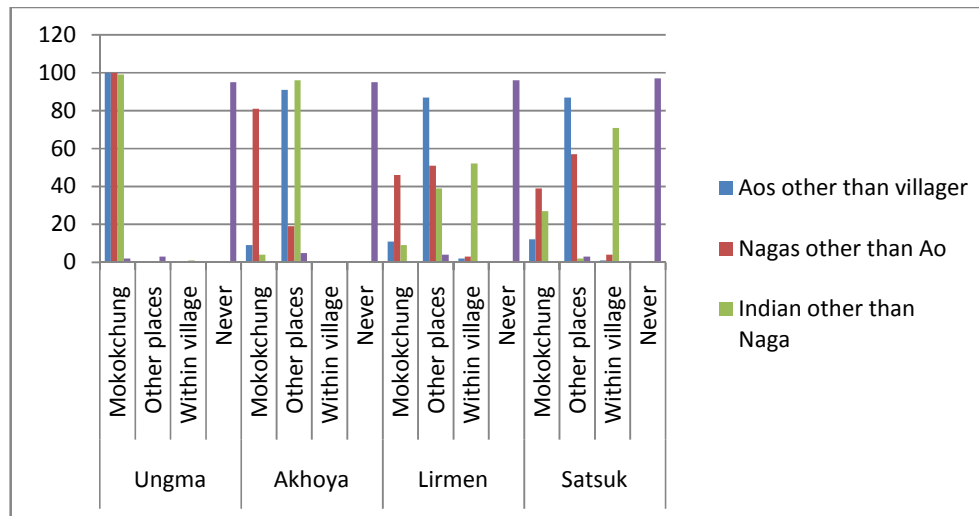


Fig.4.7. Bar diagram showing different community ever interacted mostly by the heads of the household of sample villages in Mokokchung district (in %)

4.3.2. SECTORAL INTERDEPENDENCE

With the process of civilization and pressure of population to the limited area, its people are compelled to practice any kind of activity which is identified as the sectoral interdependence between rural and urban settlement. In this category the practice of agriculture and its related activities by urban dwellers and non agricultural activities done by rural people is considered which is identified as urban agriculture and rural

culture in urban area, and rural industries and urban culture in rural places. Urban habitat practices it as quoted above because of poverty among poor urban dwellers and also price rise in urban areas especially in agricultural products like vegetables. In a congested urban Mokokchung the inhabitants practice it as kitchen garden and growing of vegetables on the roof top in the pots.(Plate.4.5). It is being found that one lady from Longsa in Artang ward of Mokokchung raise motor, beans, chilly, tulsi, cabbage, brinjal in the pots on the top of the roof and backyard of the building. Besides, in urban Mokokchung, there is proto types ward council which machinery is similar to that of village council is observed as rural culture. Social norms and habits which have a rural origin are also practiced by urban dwellers in Mokokchung. Many households have a few fruit trees planted by the side of the building in Mokokchung town which is harvested and locally marketed in Mokokchung.



Plate.4.5. Sample of urban agriculture in Mokokchung Town as sectoral interdependence.

As far as the rural places in Mokokchung district is concerned, the selected villages reveal the practice of urban activities within the village jurisdiction.(Plate.4.6). For instance, in Ungma village presence of 3 mini-saw mills, 10 stone crushers, 2 tyre workshops, 2 scooter workshops, 5 rice mills, a good number of crockery shops, 1 barber shop, 1 pharmacy etc., are noticed. Practice of urban culture like food habits, spending a leisure time entertaining with cable television, speaking nagamese by youngsters, spending time watching video of hindi, English and Korean movies are also noticed. It is being revealed that 89% of total households are installed with cable and dish TV in Ungma village. Secondly considering Akhoya village, activities of urban in nature is comparatively lower; however, it is being observed that the village has few crockery shops and rice mills. Besides, urban culture practiced here are food habits, entertainment through TV and watching video of Hindi, English and Korean movies and programs through dish TV and DVD player are also noticed. Rural industries like presence of loom and shuttle loom are noticed too. In Lirmen as it is located in the low lying area bordering Assam, the village has 4 rice mills, 3 stone crushers, 1 cycle and 1



Plate.4.6. Sample of diesel powered mini saw mill and stone crusher as the rural industries in the villages of Mokokchung District.

scooter workshops, urban food habits and entertainment through dish TV and DVD players are noticed as mixed with rural industries and urban culture within the village. Within the village they even have conversation through Nagamese and Assamese. They also practice the activities like poultry and piggery in almost all the villages. Comparing Ungma and Lirmen, in the former case the influence is mainly due to Mokokchung where as in the later case it is mainly because of Assam as it bordered with.

4.4. FACTORS THAT EFFECT RURAL – URBAN INTERACTION

The controlling factors are very important which generally affect the process and consequent of the rural and urban interaction within the district. The traditional aspects of the society, political, social, economic, cultural and ecological drivers lead to the resultant of interdependency. One thing that noted is that these factors are inter- related to each other as for instance, ecologically discouraging to keep away from the unscientific practice of 'jhumming' lead to another factor which take the people to adopt alternative activity so as to obtain their livelihood, consequently, compelled to emphasize on a politico – economic factor which

control over the interdependency. The factors that effect the interaction are as follows:-

4.4.1. TRADITIONAL FACTOR

Traditional aspects like the history of migration, territorial space that is already occupied and the ownership of the land are the drivers as well as the components that control the interaction within the district. Migration in the past between the villages and to urban Mokokchung gives the resultant of interdependencies. Migration from a particular parent village to another village or township in which its culture transferred is vested with inherent responsibility with the parent village. During the time of trouble the parent village from which it has been migrated out is compelled to shoulder the risk of responsibility. Besides, the territorial space that is occupied by Mokokchung district as its jurisdiction is determined by the rate of interactive zones because, basing on the space, shorter the distance between Mokokchung and its villages the more is the interaction and interdependence. That is why the identification of the zone of interaction gives a clear picture of the position of Ungma, Akhoya, Lirmen and Satsuk villages as their interaction with Mokokchung town is revealed.

Another aspect is that control over the land by a particular group of people or village gives a clear picture of their interdependency with a distinct component of the interaction as economic, social, cultural and political aspects. So it is being understood that the traditional component and phenomenon control over the mechanism of interdependency.

4.4.2. POLITICO – ECONOMIC FACTOR

Politically aggravated economic factor that the existence of agro- forestry activities, trade between the settlements, development of amenities, capability of funds, land use pattern, governmental directives etc., play its role to control over the operation of the interdependency between Mokokchung and its rural settlement. Agro-forestry activities in which the people engaged and its productivity in the villages of Mokokchung district control the flow of these goods to Mokokchung urban centre, it also control the trade between urban Mokokchung and its rural settlements. The availability of the amenities in the village also controls the rate of interaction as the zone of interactive is already identified. If the availability of amenities is more, then the availability of a particular activity in the village do not encourage to

be dependable on Mokokchung for the same. Funds are flowing between Mokokchung town and its rural places which determine and control the interaction between them. More the fund flow from Mokokchung to a particular village makes it more dependable to Mokokchung and vice versa. Another aspect is land use pattern of a particular village, if the land use is more on agriculture then the village become more dependable on agri related items like fertilizer, pesticides, tools and implement etc, from Mokokchung. Finally the directive and policy of the governance from the urban centre control the entire machineries of the process of interaction, as for instance emphasizing on agriculture make the interaction of an agro based and so on.

4.4.3. SOCIO – CULTURAL FACTOR

Socially motivated cultural factor like diverting importance on kin and clan set up, social norms like marriage and divorce, inheritance of wealth and property, gender recognition and desire to migrate or commute also control over the level of interaction. Motivated in kin and clan oriented culture of a particular clan set up in Mokokchung town seek assistance from its local rural origin, because its unwritten formal procedure is the final

verdict and so make urban Mokokchung dependable to its rural areas. Norms for marriage and divorce make its culture to assist its urban set up too. Similar case is also with the inheritance as it has particular norm to settle these issues as the local urban dwellers are socially motivated and cultured. Gender recognition is also an important factor as Ao society is a patrilineal society where male folk verdict is final and the dependency of all these aspects are finally vested in the hands of male but not female. The best example of this functionary in the detailment of Dobasis in the district customary court of Mokokchung where all these norms are judged by them which is final verdict and thus Mokokchung became dependable to the villages in this aspects. The personalities and officials who handle these norms has a tendency to migrate or to commute to Mokokchung to assist and work in customary court which also control the interdependency or interaction between Mokokchung and its villages as it effects the flow of people, flow of culture etc.

4.4.4. ECOLOGICAL FACTOR

Viewing ecologically, the nature and status of land and water, availability of other resources, status of deforestation and nature of pollution control over the dependency between Mokokchung and its villages are vital. Fertile soils and plain cultivable area are encouraged for cultivation and thus practice cultivation. For instance Changki plain and the villages bordering Assam practice cultivation which controls the interdependency as they depend on Mokokchung and other urban places for their fertilizer, pesticides, tools and implements etc. Nature of water within the river leads to flow of its product to urban Mokokchung basing on the zone of interaction which is already identified. Availability of resources within the village controls the entire flow of goods between Mokokchung town and the villages. Identification of deforestation leads to dissemination of ideas on ecological preservation and conservation by discouraging the practice of jhumming which turns to particular state of interdependency for livelihood of rural poor. Pollution also leads to flow of goods between Mokokchung and the villages within the district. For instance, the entire perennial streams within the Mokokchung especially upper course of Milak River and its tributary

streams are polluted so Mokokchung has to depend on the water supply from the neighboring villages depending on the zone of interaction. (Plate.4.7.)

4.5. CONCLUDING STATEMENT

In the previous chapter, the pattern of inter-relation between urban district and its rural settlement have been studied which has depicted that every district has 3 zones of interaction as highly interactive or dependable, moderate interactive or dependable and less interactive or dependable. Mokokchung is not exception to that as based on the availability of amenities and also volume of population revealed the same. To have a test, a bivariate coefficient of correlation is done between number of amenities and volume of population in respect of Mokokchung district which has a confirmation of the similar 3 zones. Four villages have been selected for in-depth study as Ungma in highly, Akhoia from moderately and Satsuk and Lirmen within less interactive or dependable zones. In every village about 40% of the households were interviewed through questionnaire. From the execution of the data collected from the field, it is revealed



Plate.4.7. Showing the dependency of Mokokchung Town to its rural areas within highly interactive zone for water supply during dry season.

that how interactive, in different zone with the selected villages have been taken into account. Through this it is being revealed that

in all aspects like spatial interdependence and sectoral interdependence, the flow of goods, people, idea and information, services, funds and culture and urban activities in rural, rural activities in urban, are high in Ungma, moderate in the case of Akhoya and less in Lirmen and Satsuk. It is also being depicted that the distance between them governed the entire picture of interdependence. One of the important features depicted is that the villages located far away from Mokokchung bordering Assam has rather better interactive with neighboring towns in Assam. This conclusion is fully supported by the analysis of data already collected from the field.

The determining factors which really effect the rural-urban interaction in Nagaland is politically aggravated economic factor which include emphasized on agro – forest activities, operation of trade among the settlement, development of activities, capability of funds flow, land use pattern and directive of government. Secondly, traditional history, territorial occupation by the village, land ownership also effects the inter – relation between Mokokchung and its rural places. Thirdly, cultural factors motivated by society at large also effects it giving importance to kin and clan

set up, social norms, inheritance of property, emphasizing on male gender, desire of migration influenced by the socio – cultural norms of strength in Mokokchung administration and finally the ecological factor like nature of land and the rivers, utilization of resources available, nature of deforestation and pollution were also considered as the driving force that effect the rural urban interaction in Mokokchung. From the study, it is being revealed that the interaction between Mokokchung and its villages is a constant process where over all factor that govern the phenomenon is the distance between Mokokchung and the villages.

CHAPTER 5
RURAL-URBAN INTERDEPENDENCE IN
ZUNHEBOTO DISTRICT

5.1. INTRODUCTORY STATEMENT

The second case study area is Zunheboto district which is exactly located at the center of Nagaland. The whole of zunheboto district has depicted a picture of having 3 zones of interdependence viz., highly interactive, moderately interactive and passive interactive zones. These zones are calculated with the help of a gravity model based on the availability of social amenities and the demographic volume of population. Particular villages are selected for detail study as Natha Old from highly interactive zone, Aotsakali from moderately interactive zone and two villages viz., Sumi Shitsu in the north and Tsutoho in the south of less interactive zone. Taking into consideration of socio-economic, socio-cultural and ecological aspects, analysis on spatial and sectoral type of interaction and interdependence are discussed. A calculation on bivariate coefficient of correlation has tested the number of amenities and population where a positive correlation is confirmed. So it is obvious that the division of zones based on either social amenities or population is applicable for the present study. The dynamics of interdependence is controlled by certain drivers like traditional, politico-economic, socio-

cultural and ecological factors. The analyses of the above quoted aspects are depending on both secondary and primary data sources.

5.2. ZONES OF RURAL AND URBAN INTERDEPENDENCE IN ZUNHEBOTO DISTRICT

To consider the applicability of zonal divisions of the whole district as highly interactive or potential zone, moderately interactive or potential zone and passive interactive or potential zone, a coefficient of correlation of bivariate calculation is needed. The solution test to be done between the number of amenities and the volume of population is given below:-

Table.5.1. Bivariate data of social amenities and the volume of population in Zunheboto district.

X = number of amenities, y = volume of population.

Y \ x	0-2	2-4	4-6	Total
0-500	6	59	2	67
500-1000	8	66	3	77
1000-1500	2	11	14	27
Total	16	136	19	171

Data Source: - Census of India 2001 and village development indicators 2000.

y	x			f	fv	fv ²	fuv
	u	v					
250	1	3	5	67	-67	67	4
750	-1	0	1	77	0	0	0
1250	6	59	2	27	27	27	12

f	16	136	19	171	-80	74	16
fu	-16	0	19	3			
fu^2	16	0	19	35			
$fu v$	4	0	12	16			

$$= \frac{\sum fuv - \frac{1}{n}(\sum fu)(\sum fv)}{\sqrt{\sum fu^2 - \frac{1}{n}(\sum fu)^2} \sqrt{\sum fv^2 - \frac{1}{n}(\sum fv)^2}}$$

$$= \frac{16 - \frac{1}{171}(3)(-80)}{\sqrt{35 - \frac{1}{171}(3)^2} \sqrt{74 - \frac{1}{171}(-80)^2}}$$

$$= \frac{16 - \frac{-240}{171}}{\sqrt{35 - \frac{9}{171}} \sqrt{74 - \frac{6400}{171}}}$$

$$= \frac{16 - (-1.40)}{\sqrt{35 - 0.05} \sqrt{74 - 37.4}}$$

$$= \frac{17.4}{\sqrt{34.95} \sqrt{36.6}}$$

$$= \frac{17.4}{5.91 \times 6.04}$$

$$= \frac{17.4}{35.7}$$

$$= +0.487$$

On being positive product is obtained, zones based on volume of population are considered.

Table. 5.2. Showing volume or potential of interaction for the selected villages in Zunheboto district.

Village	Total population	Distance in Km	Volume/potential interaction in '000 popn	category
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Natha Old	296	4	17,00	High
Aotsakali	222	22	200	Medium
Sumi Shitsu	218	58	86	Low
Tsutoho	265	85	76	Low

Source – Field survey 2008.

Natha Old village is located in the highly interactive zone of Zunheboto district which is only 4 Kms away from its district headquarter. Out of 112 households from the recorded source, 53 households are interviewed and obtained 296 population. From the moderate zone, Aotsakali village which 22 Km away from Zunheboto toward the north is selected and out of 115 households 55 are considered where 222 population are obtained. Finally, Zunheboto being located in the center of the district, two villages as one each from north and south of less interactive zones are selected. Sumi Shitsu which is 58 Km away from Zunheboto is selected from north where out of 106 households, 40 households are accounted and obtained 218 population and from the south Tsutoho village which is 85 Kms away from Zunheboto is selected, where out of 113 households are recorded, 45 households are taken into account and obtained 265 population. So based on this, the villages are selected as Natha Old in highly interactive zone, Aotsakali in moderately interactive zone and Sumi Shitsu and Tsutoho from less interactive zone (Fig.5.1). Besides, the volume or potential of interaction or

interdependence tabulation is mainly done based on the distance between Zunheboto town and the respective sample villages (Fig. 5.1)

5.3. TYPES OF INTERDEPENDENCE BETWEEN ZUNHEBOTO AND ITS VILLAGES

In the case of Zunheboto also, the types of interactions are identified which are focused on the basis of socio-economic development, socio-cultural and ecological aspects. Firstly 'spatial interaction' is considered where movement of people, goods, idea and information, culture and funds are considered. Secondly, 'sectoral' without involving the space dimension rather the interexchange of activities between Zunheboto and its villages has been taken into account.

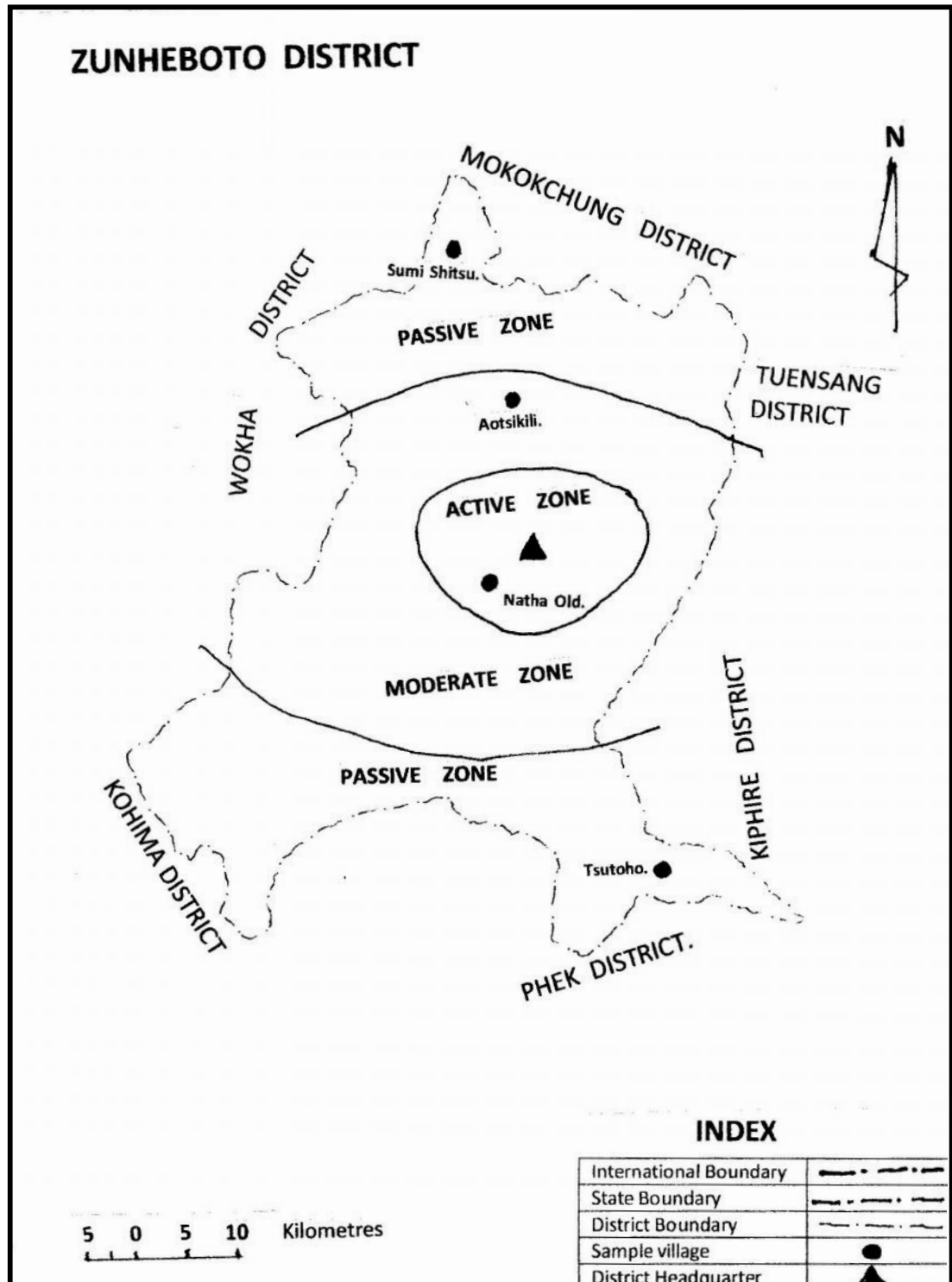


Fig. 5.1. Map showing Location of Sample villages within Demographic volume and interdependence Zones in Zunheboto district.

5.3.1. SOCIO-ECONOMIC INTERDEPENDENCE

The interdependency and interaction of Zunheboto and its rural areas in socio-economic aspects depicts an interesting feature. In the interior less interactive zone, though the participation volume of the people in the process of interaction is low, the villagers have no option but to depend on the sole urban center that is Zunheboto. These aspects will be critically analysed in detail in the process of explanation but it is imperative to identify some of the types involve in this category of interaction.

The 'flow of goods' between Zunheboto and its rural area is very important to understand the aspects of the interdependency. In socio-economic aspect the goods include economic goods like the availability and obtaining of consumer goods, clothing, hardware, medicine and building materials other than locally available materials. The data collected reveals how the selected villages interact with zunheboto in these aspects.

Table5.3. Procurement of economic goods by the households of selected villages in Zunheboto district (in%)

Village	Items/Goods														
	Consumer goods			Clothing			Hardware			Medicine			Building material		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Natha Old	100	-	-	81	19	-	82	7	11	100	-	-	31	12	57
Aotsakali	51	49	-	71	29	-	68	20	12	80	20	-	21	7	72
Sumi Shitsu	10	90	-	30	70	-	10	78	12	8	92	-	6	14	80
Tsutoho	86	14	-	91	9	-	77	11	12	94	6	-	12	7	81

Source – Field Survey 2008

INDEX

1 = Zunheboto

2 = Others

3 = Don't Buy

To analyze the flow of economic goods between Zunheboto and its rural places, it is found that dependability of villages on Zunheboto is based on the zones. In the highly interactive zone at the proximity of 10 – 15 Km radius the village is totally dependent on Zunheboto town. Secondly, in the moderately interactive zone the villages do depend on its urban headquarter, yet they have other alternate urban center from where these economic goods are obtained. Besides, as focusing in the low interactive zone of both northern and southern part of the district, in the northern part bordering Mokokchung district as they react little with Zunheboto but alternately depend on Mokokchung, because it is comparatively more developed than Zunheboto. But in the southern part of the district, a very interesting feature is being revealed that the

villages are no doubt interact little with Zunheboto, however, being no other alternate urban center, they are forced to depend on Zunheboto though the interval of flow is less and less interactive. From the table 5.3, it is revealed that in the highly interactive zone where Natha Old is located, out of 53 households taken into account, 100% of the households gets consumer goods from Zunheboto without interacting with any other urban centers. About 81% of the households depend for clothing, 82% for hardware with 7% from alternative place, 100% for medicine from Zunheboto. As far as the building materials are concerned, these goods are flown in from Assam covering a long distance, yet 31% of the households get it from Zunheboto, 12 % brings directly from Assam and higher rate as 57% do not go for it at all. So from the data it is being revealed and supported that Natha Old is fall under highly interactive zone and has a highly dependable in Zunheboto town. Secondly, as analyzing Aotsakali which is located in the moderate interactive zone with 22Km away from Zunheboto and located between Mokokchung and Zunheboto, they have interaction with both the urban centers. For Aotsakali the other place from where they obtain these goods is Mokokchung and places other than Zunheboto. As far as the consumer goods for Aotsakali is concern, 51% of households depends on Zunheboto

and 49% that is perhaps Mokokchung which is more or less equally reactive by this village. For clothing, hardware and medicines 71%, 68%, and 80% of households respectively depend on Zunheboto and 29%, 20% and 20% of households get for clothing, hardware and medicine respectively depend on other places which show that comparatively more dependable on Zunheboto. As such it is being resulted that though they have other alternate places, dependable or interaction with Zunheboto is little more which indicates that Aotsakali is moderately interactive or dependable on Zunheboto. In regard to the interactive zone it is found in both the north and south district of Zunheboto. In the North, it is represented by Sumi Shitsu Village which is about 58 kms away from Zunheboto and about 11 kms away from Mokokchung, has lesser tie up with Zunheboto and rather takes Mokokchung as alternative means. They even sell or dispose their products quite often at Mokokchung Town. Out of the 55 households taken into account, only 10% gets their consumer goods from Zunheboto Town and 90% depend on other places like Mokokchung and others. For clothing 30%, hardware 10% and medicine 8% of the households depends on Zunheboto and the rest rely on other places. This phenomenon clearly indicates that Sumi Shitsu and Zunheboto are less interdependent or interactive and being

located in low interactive zone. However, Tsutoho, though located in the low interactive zone based on the long distance between Zunheboto and the villages, it has no other alternate urban centres except to interact with Zunheboto Town. One thing to be noted in this case is that though fully dependent on Zunheboto for their needs, the interval of visit to Zunheboto by the villagers is low. The interval of visit is quite high, means the household do visit Zunheboto at higher interval of time. However, dependence is high as 86% of households get their consumer goods from Zunheboto, 91% for clothing, 77% of households for hardware and 94% of households obtain medicine from Zunheboto. So it is being depicted that for the interior places where no alternate urban centre is found, their dependence on its District headquarters is more. However, the frequency of interaction is low, or in other words active tie up is quite low basing on the nature of transportation. From the study it is revealed that Tsutoho villagers leave for Zunheboto with more stock of goods during their seldom visit to Zunheboto and yet obtain their needs from small shops stocked within village and neighboring villages also (Fig. 5.2).

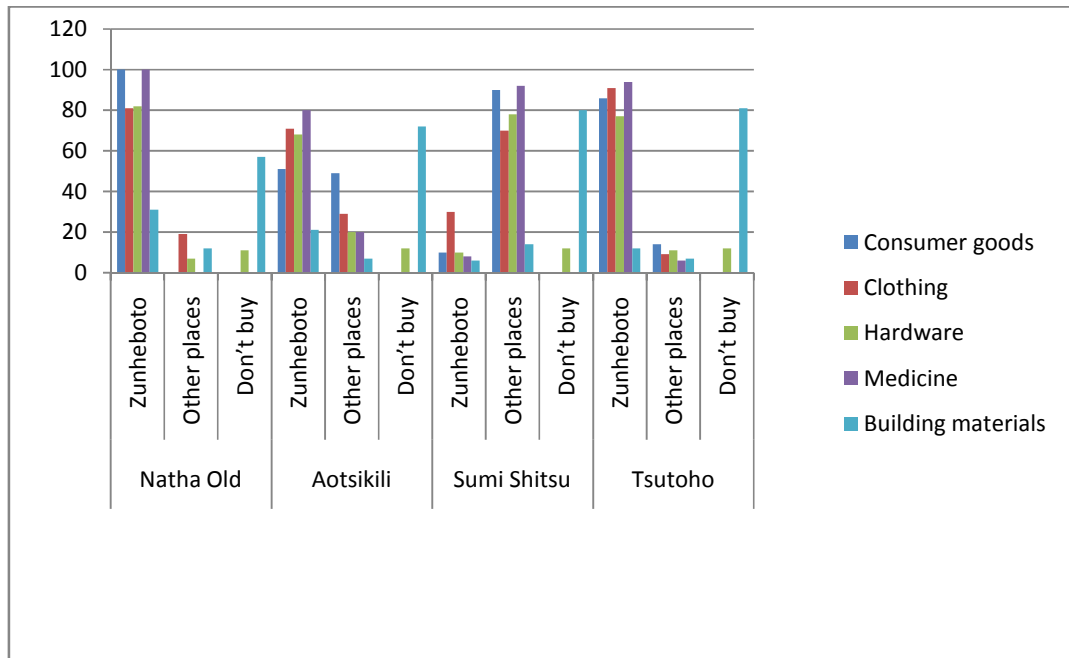


Fig. 5.2. Bar diagram showing marketing of economic goods by selected villages from Zunheboto and other places. (in %)

Another type of socio-economic interdependence or interaction is the flow of funds. The flow of funds to the villages from different agencies does not reflect to the zone of interaction or in other words, it does not mean that higher the interaction more is the inflow of funds and vice versa, but inflow of funds through trade interaction do matter for the purpose. Funds are generally in flow to the villages from Government through different departments to Village Development Board (VDB), co-operative society, association, SHGs, rural banking etc. Besides, money is entered to the villages as aid and donations to the churches, clubs and organisation etc., which remits from the urban

dwellers. However, though trade of agro-forest products from the villages to Zunheboto Town, money are flown in to the villages as an exchange with goods that are sold in the urban centre. So, the flow in of funds to the villages do reflect the zone of interaction or interdependency as higher the interaction more is the flow in of funds to the villages and vice versa. Depending on the zones that are being identified, the important trade the villagers are doing so is that womenfolk buy soya bean from Zunheboto Town and in the villages they ferment the cooked soya and makes a foodstuff called “*Akhoni*” which is much fond of among Sumis. They sell it in the Zunheboto market. Besides, they sell agro-forest product vegetables in Zunheboto market. In return, they buy pork which is cooked with *Akhoni* as a special Sumi dish. After selling the village products, they get money which is taken to the villages as an inflow of funds. It is pertinent to analyze a bit on the quantity of inflow of money to the households of selected villages from all the sources depending on the zones that they interfaced.

Table 5.4: The receive of more than 50% fund by each household from all sources (In %)

Village	Source/ Receive of Funds		
	Zunheboto	Others	Within Village

Natha Old	59	12	29
Aotsakali	36	25	39
Sumi Shitsu	29	37	34
Tsutoho	21	27	52

Source: Field Survey 2008

Interpreting this aspect by viewing the scenario of the selected villages, Natha Old revealed that it receive more fund from Zunheboto where 59% of the households account for the same. 29% of households get their income from the source generated within the village. Sources from other place are received by only 12% of the households. From the above analysis, it is depicted that Natha Old has an active interface with Zunheboto as it is the nearest urban centre. Secondly, the percentage of the households receiving fund from different source in Aotsakali is more or less uniform as 36%, 25% and 39% of households from Zunheboto, places other than Zunheboto and within village respectively, which support the stand that it falls under moderate zone of interaction. Thirdly, the villages of Sumi Shitsu and Tsutoho show that only 28% and 21% of households account Zunheboto as their source for inflow of money. But one feature to be noted is that funds from other place, Sumi Shitsu indicates is exceeds by 10% than Tsutoho, because it

has a nearer and comparatively more developed urban centre nearer than Zunheboto that is Mokokchung which is only 11 km away compared to Zunheboto (59 km). As a consequence, they are more interactive with Mokokchung. But one of the important points is that district wise allocation of different funds from Government source is not remitted to this village from Mokokchung because the village is not under Mokokchung district. But in the case of Tsutoho, income received from their own generated is more, specially based on primary activities, which accounts for 52% of households compared to 34% of households in Sumi Shitsu. So it is being revealed that both are less receivers from Zunheboto, and Tsutoho has no other alternate urban centres for dependence for the same purpose, rather more of its households depend on the poor quality of own generated sources. However, both the cases show that they are located in the less interactive zone (Fig.5.3).

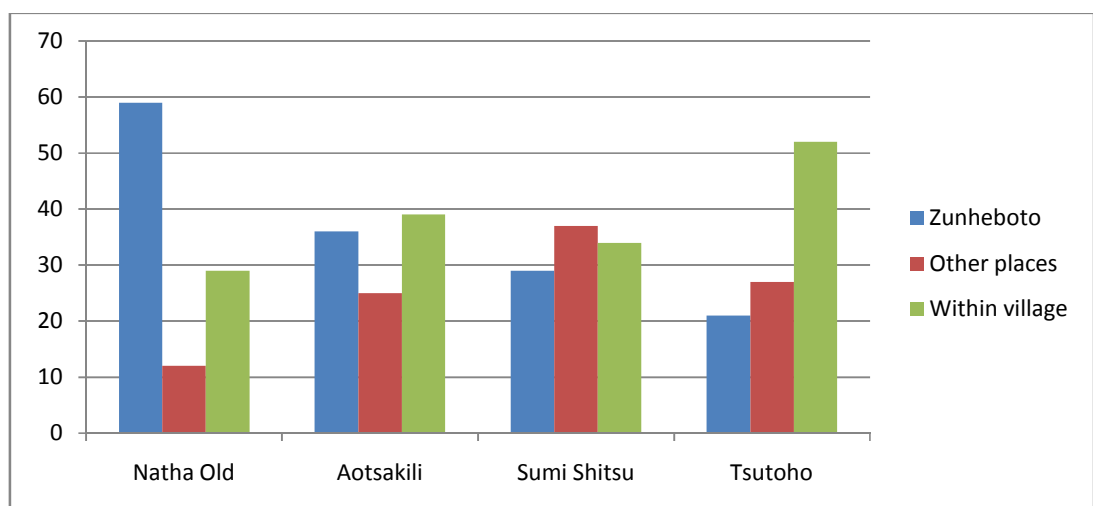


Fig.5.3. Bar diagram showing the receive of more than 50% fund by each household from all sources in the sample villages of Zunheboto district (In %).

With regard to the flow of funds remitted from Government source through rural development department to the villages, it is being revealed that number of beneficiaries in Zunheboto district during 1997-2000 under Integrated Rural Development Programme (IRDP) are 373, and under Jawahar Rozgar Yojna during the same year is 1.00 lakh mandays, under EAS (Employment Assurance Scheme) is 2.35 lakhs mandays. Road constructed is 32.50 lakhs, housing scheme 715 units. The current rate of inflow of development to villages are indicated as the fund flow to Zunheboto DRDA under Swarnajayanti Gram Swarozgar Yojana during 2009-2010 as total allocation is 97.85 lakhs where 70 SHGs and 178 individuals are assisted, under Indira Awaz Yojana total allocation was 242.98 lakhs and 221.13 lakhs have been released, under MGNREGS altogether 29,978 households were provided employment of 29,978 job card holder and those completed 100 mandays work are 22,472. Besides during the same year fund inflow to Zunheboto district through DRDA for different scheme under Grant-In-Aid (GIA) as approach road Rs 47,44,914, for soiling and metalling of road Rs 1,22,435, for cash crops Rs 4,04,116, for horticulture crops Rs 10,24,295, for social forestry

Rs 10,94,274, for construction of building and halls Rs 10,84,567, for footsteps Rs 3,75,444, for culvert and drainage Rs 9,96,055, for Playground Rs 10,22,791, for water tank Rs 4,54,024, for rural housing Rs 95,653, retaining wall Rs 3,86,543, Latrine Rs 4,40,214, for marketing shed Rs 1,93,253, bee-keeping Rs 58,311, irrigation/canals Rs 7,29,319, purchase of vehicle Rs 78,260, floriculture Rs 28,365, rice mill Rs 33,759, piggery Rs 1,02,765, fishery Rs 28,272, dairy Rs 36,317, weaving and handicraft Rs 12,276, educational tour Rs 69,606 etc.

In view of these aspects, from the study it is revealed that the scheme which benefitted the households at the most is through housing purpose where 1 unit of CGI sheet is distributed per household. In Natha Old, 53 households are taken into account, 23 households are reported to be beneficiaries, Aotsakali of 55 households 17 households are beneficiaries, and Sumi Shitsu and Tsutoho reported 11 and 13 households, out of 40 and 45 households respectively are included as beneficiaries . These reported figures are not as beneficiaries of current year only but are ever benefited households. These funds which are flowing into the villages directly from Government is remitted from Zunheboto headquarter, however, their inflow of fund does not reflect the zone of interaction rather support the dependability of rural areas on

Zunheboto. The inflow of funds which reflects the zone include are being generated by the participation of population in different activities of interaction between the urban and rural areas of the districts.

5.3.2- SOCIO-CULTURAL INTERDEPENDENCE

In this analysis the socio-cultural component, like the demographic structure and its flow, availability and feasibility of cultural and social amenities by the people of the towns and villages are included. However, except in cultural component, flow of people and availability and dependency on social amenities is subjected mostly to the rural areas.

To analyse, firstly flow of people between rural and urban places of the Zunheboto district is to be visualized. This phenomenon clearly reflects the zone of interaction as the distance to be covered is the main driver. The flow of people is higher within the highly interactive zone which is tabulated as to the proximity of 15-20 kms radius from Zunheboto town. In this zone, the frequency of the visit to Zunheboto by the rural folk is more than the people of moderate and low interactive zone. As far as the movement of people is concerned, the flow-in of rural folk to Zunheboto is being detected. It includes migration and

commutation; however, high rate of commutation is experienced in highly interactive zone. Zunheboto is also dominated by temporary migrants for obtaining better quality of children education in Zunheboto town than the villages. For instance, taking example of a household, mother and children stay in Zunheboto town for an academic year, where children are sent to school and are looked after by mother and perhaps father works in the village, and remits money every month and by the end of the year they return to native village. The same is being practised by the interior villagers of less interactive zone. To understand the nature of the movement of the people it is important to view in detail on the selected villages. But one thing to keep in mind is that movement from village to the urban headquarter is obvious, yet flow from urban to rural is seldom or nil.

Table 5.5- Movement of people of the households to Zunheboto from selected villages (in %).

Village	Daily	Weekly	Monthly	Sometime	Have Alternative
Natha Old	49	22	19	10	-
Aotsakali	23	27	17	11	22
Sumi Shitsu	-	11	28	44	33
Tsutoho	-	08	37	45	10

Source: - Field survey 2008.

The above table reveals a striking pattern of flow of people between Zunheboto and the selected villages. Out of 53 households in

Natha Old at least one member of 49% household commute daily to Zunheboto, 22% and 19% of household visit Zunheboto weekly and monthly respectively, however, they show no alternative which indicate their interaction and dependency on Zunheboto for various purposes is high as it is located at highly interactive zone. The villagers of Aotsakali show that 23% of household out of 55, i.e., 12 households do go to Zunheboto daily. More number of households visit weekly which accounts for 27% of household. Besides, 22% of households do visit alternate place, i.e. Akuluto. Visiting of Zunheboto and alternate place is uniform 23% and 22% of households, which reveals that interaction and dependency on Zunheboto is moderate. The two other villages, Sumi Shitsu and Tsutoho, which are farther from Zunheboto, show that the daily commutation is nil and those who visit once or twice in about a month is 28% and 37% of households respectively, 44% and 45% of household of Sumi Shitsu and Tsutoho also visit when needed to do so. But in both the cases, they have alternate places to visit, as Mokokchung for Sumi Shitsu which is only 11 kms away and Satoi for Tsutoho, (Satoi is a rural market centre). In both the cases, they have lesser interactive with Zunheboto as they are located in that particular zone. In this aspect, the

daily commuters comprise agro-forest product vegetable sellers, service workers and business occupation set up at Zunheboto. (Fig.5.4)

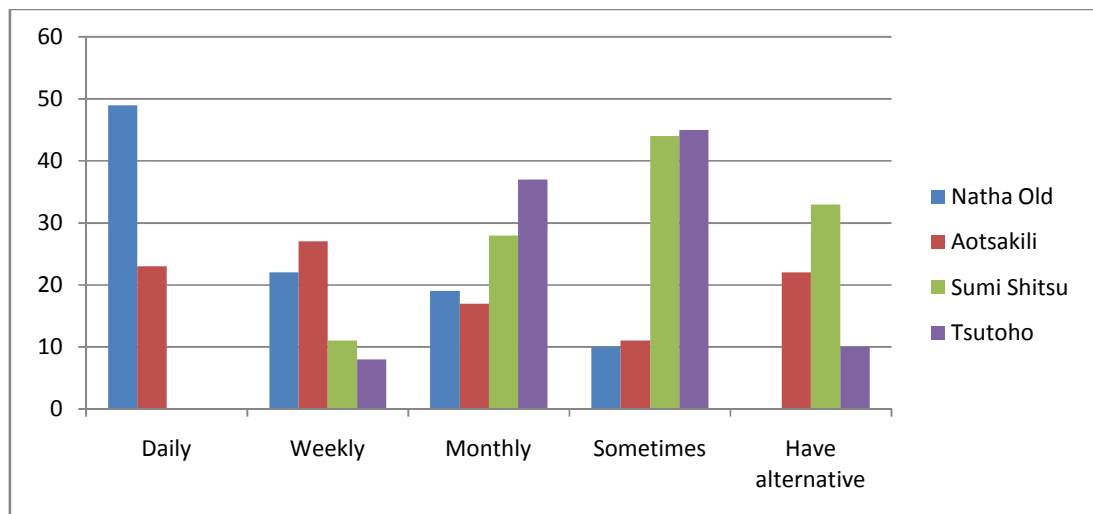


Fig.5.4. Bar diagram showing movement of the households to Zunheboto from sample villages in Zunheboto district. (in %)

Besides, flow of people is also dependent on the availability of social amenity services at Zunheboto and others, or in other villages move out of their homes in search of service. However, the villages located at the high zone depend mostly on the services available in Zunheboto urban headquarters.

Table 5.6- Availability of services dependable by household (in %)

Village	Places depended on	Hospital	Education	Electronics Repairing	Cobbler/ Barber	Tailor
Natha Old	Zunheboto	100	56	59	100	95
	Other places	-	12	20	-	-
	Within village	-	23	-	-	-
	Not Available	-	9	21	-	5

Aotsakali	Zunheboto	79	37	47	90	87
	Other places	21	21	41	5	10
	Within village	-	30	-	-	-
	Not Available	-	12	12	5	3
Sumi Shitsu	Zunheboto	41	21	41	33	31
	Other places	59	32	51	57	59
	Within village	-	40	-	-	-
	Not Available	-	7	8	-	10
Tsutoho	Zunheboto	98	30	91	33	51
	Other places	02	12	5	67	39
	Within village	-	50	-	-	-
	Not Available	-	48	4	-	10

Source: - Field survey 2008.

By analyzing the aspects that availability of services in Zunheboto and other places in which the villages fully depend, it is clear that the interaction and interdependence between urban headquarter and its rural area is much closer. The services like health facilities, education, repairing of electronic items, services of cobbler and barber and tailoring are available in Zunheboto Town and the smaller township in which the rural places are depending. From the data above, it is being revealed that Natha Old village has higher level of dependency as the interactive is high, or in other words, as Natha Old is located in highly interactive zone, it depends mostly on the availability of services in Zunheboto Town. As far as health services, i.e. hospital, 100% of household out of 53 are dependent on Zunheboto. In the availability of educational services about 56% are

dependable on Zunheboto and only 12% of households go to places other than Zunheboto, repairing services of electronics is also 59% and 20%. For cobbler and barber services, Natha Old fully rely on its urban headquarter, and 95% of households avail the service of tailoring from Zunheboto. Secondly, the selected village- Aotsakali, 79% of household avail from Zunheboto for health services and only 21% gets from other places. As far as educational places are concerned, 37% gets from Zunheboto and 21% avail from other town. As for repairing of electronic items 47% of the households receive from Zunheboto and 41% from other places which clearly indicate that this village equally avails from Zunheboto town and other places. Besides, in case of Sumi Shitsu and Tsutoho, it is being found that the former has less dependence than the latter. About 59% of households get from other places, whereas the households dependent on Zunheboto is only 41%. Educational facilities is also 21% from its urban headquarters, repairing of items 41%, cobbler and barber service 33% and service on tailoring is 31% of the households are dependable on Zunheboto which are less than the number of households dependable on other places as 32%, 51%, 57% and 59% of households respectively for the same services. It indicates that the overall quantum of interaction with Zunheboto is less. Tsutoho shows that it depends both on Zunheboto as

well as other places at the same time. It is being depicted that in case of hospital facilities, educational facilities, repairing of electronic items, and tailoring, it mostly relies on Zunheboto as 98%, 30%, 91% and 51% of households respectively. But in case of the services like barber and cobbler, Tsutoho depends mostly on other places i.e. 67% of the households. From the above discussion, it is being revealed that zones of level of interaction and interdependency is fully justified as Natha Old within highly interactive zone, Aotsakali in moderately and Sumi Shitsu and Tsutoho in less interactive zone of Zunheboto district with an exception that Tsutoho though it is located in less interactive zone, as an interior village without having alternate places, it depends on Zunheboto with interval of interaction (Fig.5.5).

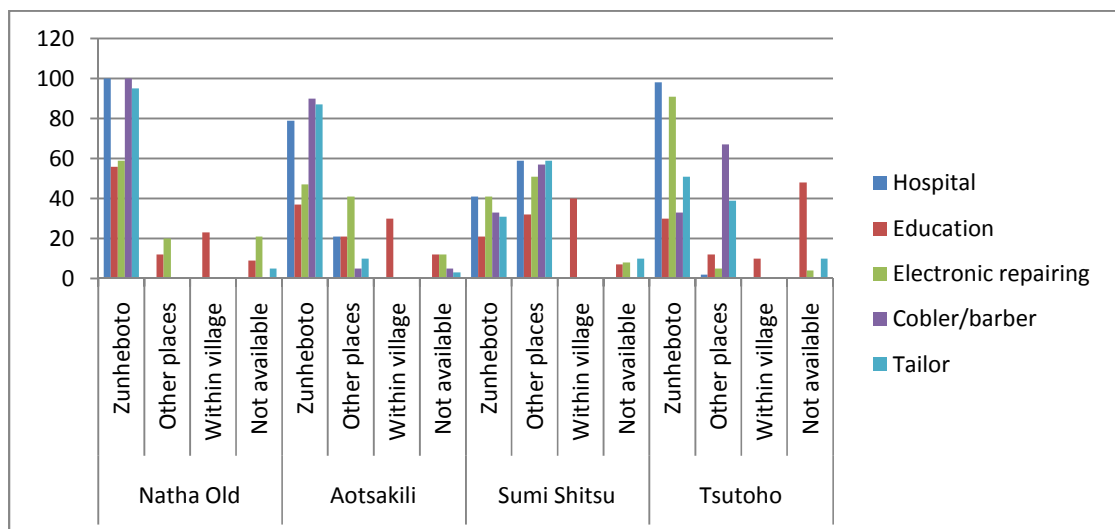


Fig.5.5. Bar diagram showing availability of services dependable by households in sample villages of Zunheboto district. (in %)

Regarding the flow of culture between Zunheboto and its villages, it is reflected that the urban headquarters is more dependable on villages. However, the inflow of culture like food habit, clothing fashion, and the diffused language or dialect, they speak are more or less similar. As compared with Mokokchung, Zunheboto is not that multi-cultured or culturally fabricated rather more or less dominated by Sumi culture as Mokokchung is little more developed than Zunheboto. However, it is worth mentioned that every village of a Naga society has a distinct culture which is no exception in case of Zunheboto district. Even the Sumi dialect spoken is varied in different regions with different tunes, slang etc., as for instance the same dialect spoken in Pughoboto, Satoi and Aghunato ranges do varies which is well fabricated in Zunheboto town. Traditionally, even in food preparation, the southern Sumis have a food dominated by corn as an ingredient whereas toward the North, it is rice; the reason is that rice is not grown in the southern part. However, with the fabrication of culture in modern society, rice became the dominant food for the whole of the district in which all the villages are dependent on Zunheboto Town for its supply. Besides, for the Preparation of *Akhoni* (fermented soya), raw soyabean is obtained from Zunheboto market. Another feature of culture-

flow is the food habit, and clothing fashion is disseminated to the villages as they interact with Zunheboto town. In the villages, the locals can prepare South Indian or Bengali dish which is a fried dish and they can also converse in Nagamese and even English, or Hindi in some cases.

In case of traditionally originated culture, it is being found that Zunheboto is mostly dependent on villages. These issues have already been discussed in the previous chapter too. Nagas have a norm of having customary court in the district headquarters. Besides, tribal *hohos* are part and parcel of district administration too. So in every district, *Dobashis* are appointed from the rural places. The administration and execution of customary laws are based on the customs and culture which are traditionally originated. In this regard, Deputy Commissioner of the district is just a titular head. So for this aspect, it is found that urban headquarter is fully dependent on villages.

To have a glance on the zones of interaction and interdependence between Zunheboto and its villages, the selected villages give a clear picture to justify the aspects. The data reveals that the villagers interacting with a community other than Sumi is more within the higher interactive, moderately interactive zones and even less interactive zone of Northern Zunheboto district bordering Mokokchung district which

is comparatively more advanced. In all the cases, more than 80% of the households have ever interacted with other communities and became dependent for various cultural aspects. However, there is an exception in the Southern part of less interactive zone, Tsutoho, reveals that as it is located in the interior place, the chances of interaction is less where their own culture occupies a bigger share of dominant-other culture. For instance, out of 45 households accounted with 265 populations in the village, it is revealed that 172 people are single linguist i.e., Sumi, in other words 172 people can speak only Sumi dialect and this segment of population is mostly of women and children. The reason of this backwardness is mainly due to means of transportation, as it is being observed that even EAC of Satoi (Satoi is an EAC headquarter) used to send back his official vehicle to Zunheboto from half way on his journey to his work place and continue his journey by a Nissan mini truck.

5. 3. 3- ECOLOGICAL INTERDEPENDENCE

The interaction and interdependence of Zunheboto and its rural areas on the ecological phenomenon has some interesting features. In these aspects the generation of dependency through flow of ideas and information for the preservation of forests and related resources, and the

interdependency on agro-forest products are being considered. Through the inflow of different Government policies and regulations, certain livelihood options are generated where people have already started to interact and consequently dependent on each other especially between rural areas and urban Zunheboto. For instance, through Government agencies and NGOs propagate the diversion of *jhum* land to protected forests and plantation farm lands, the villagers have to seek other options to be dependent for their livelihood. For these purposes, government initially bears the burden in which urban dwellers; land owner start planting trees and fruits, where poor rural dwellers are engaged for labor force on daily wage basis. In due course of time, natural ecological phenomenon has been set up where the villagers obtain forest based product for further disposal to Zunheboto as means of earning. So the interaction on the flow of ideas and information is found to be important one.

Therefore, inflow of ideas and information and its service from where it has its basis are worth considered. To have an analysis, the sample villages are viewed and got the answered on the queries of the rate of inflow giving a justification to the zone of interaction or interface.

Table 5. 7- Sources of the inflow of ideas and information to the households of selected villages in Zunheboto district (in %)

Village	Environment problems Like Global Warming, Pollution, soil erosion etc.			Adverse effects of jhumming and deforestation			Natural and man-made Disasters like earthquakes, Storms, fires etc.		
	Zunheboto	Others	Don't Know	Zunheboto	Others	Don't Know	Zunheboto	Others	Don't Know
Natha Old	57	23	20	49	22	29	27	17	56
Aotsakali	47	24	29	37	34	29	27	19	54
Sumi Shitsu	43	44	13	33	32	35	23	17	60
Tsutoho	41	9	50	32	9	59	31	05	64

Source:- Field survey 2008.

Flow of ideas and information on ecological aspect, viewing the selected villages in detail, Natha Old, out of 53 households considered, 30 households i.e. 57% opined that they receive some information on Global Warming, pollution, soil erosion and ideas for further rejuvenation of it from Zunheboto, whereas only 23% of households get it from places other than Zunheboto and 20% of the household is ignorant. Regarding the adverse effects of jhumming 49% of households depend on Zunheboto for its ideas and information and in regard to disaster 27% of the households receive the information from Zunheboto. Therefore, based on this analysis, Natha depends more on Zunheboto than other places which indicate that the interaction is high. As for Aotsakali, about 47% of the households and 24% of the households receive information on environment from Zunheboto and places other than Zunheboto

respectively. Regarding the information on adverse effect of jhumming 37% of the households get from Zunheboto and 34% from places other than Zunheboto which reveals that it is more or less uniform; as a consequence of which location of Aotsakali in moderate zone is justified. In Sumi Shitsu 43% of households is dependent on Zunheboto whereas 44% learn about environment from places other than Zunheboto which show that the latter is higher than the former means this village is more dependent on others rather than Zunheboto. As for Tsutoho, ignorance about the matter is more as 50%, 59%, and 64% of the households out of 45 households are completely ignorant about environment, adversity of jhumming and danger of disasters respectively. So considering the nature of Sumi Shitsu and Tsutoho, both are falling under the zone of less interactive in Zunheboto district where the former has an alternate urban centre i.e. Mokokchung whereas the latter has a rural market i.e., Satoi. That way their inactivity of interdependency with Zunheboto is justified.

(Fig.5.6)

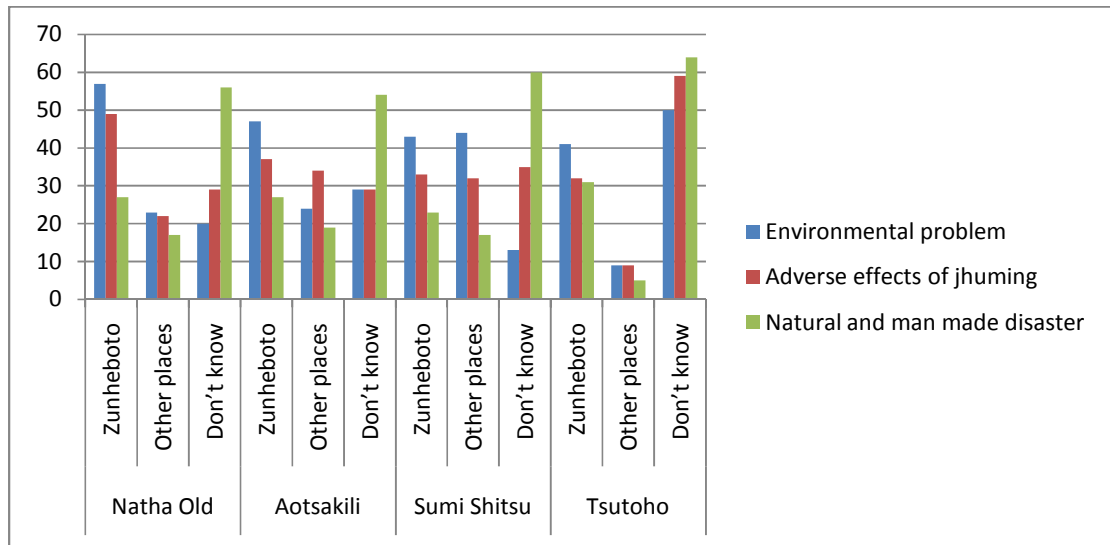


Fig.5.6. Bar diagram showing sources of the inflow of ideas and information to the households of sample villages in Zunheboto district (in %)

As a matter of fact, the phenomenon of interaction of ideas and information consequently turn to flow of agro-forest products between rural and urban areas. The flow of this products clearly visualize the zone of interaction in Zunheboto district as within the proximity of 10 – 15 Kms the active flow is indicated as Zunheboto town is dependent on the villages like Sukhalo, Shiepu, Baimho, Asukhomi, Yiemshe and not forgetting Natha Old and Natha New that all are located within zone of highly interactive in Zunheboto district. They are the feeder of fuel wood, agro forest based vegetables, local building materials, and charcoal as Zunheboto is a cold place, drinking water during dry season; to zunheboto town. The villages also do supply the items like yam, potatoes, maize, and

even fresh river fish, crabs, frogs and prawn to Zunheboto town dwellers. All the villages under Atoizu block, Satakha block and Aghanato block falls under the moderate zone of interaction between Zunheboto and its villages. Besides, villages under VK block, Akuluto block and Suruhuto block in the northern part of the district and the villages of Satoi block, Poghoboto block and Ghatashi block in the southern part of district are falls under the less interactive zone of Zunheboto and its villages. But one striking feature to be noted is that all the villages in the northern less interactive zone of Zunheboto district has alternate place to react as they are located in the region bordering developed Mokokchung district, whereas as the southern villages does not have a favorable urban center to interact except the villages of Poghoboto block with Kohima and Aghanato with Kiphire.

Table. 5.8. Places of disposal or sell of agro-forest products by the households of selected villages (in %).

Villages	Place where Dispose/sell	Agro-Forest Products	Fuel Wood	Local Building materials	Charcoals etc.
Natha Old	Zunheboto	61	42	43	19
	Other place	-	-	-	-
	Don't sell	39	58	57	81`
Aotsakali	Zunheboto	31	27	29	28
	Other place	12	22	08	-
	Don't sell	57	51	63	72
Sumi Shitsu	Zunheboto	-	-	08	-
	Other place	44	47	21	19

	Don't sell	56	53	71	81
Tsutoho	Zunheboto	-	-	29	30
	Other place	33	30	08	-
	Don't sell	67	70	63	70

Source:- Field survey 2008.

The villages of Zunheboto district dispose or sell out their products in the different outlets. For instance, Natha Old in highly interactive zone do sell agro-forest vegetables at Zunheboto by 61% of the households, fuel wood by 42%, building materials by 43% and charcoal by 19% of the households. The data does not show any sale in places other than Zunheboto. Aotsakili sell and dispose the agro forest products in zunheboto as well as in the places other than Zunheboto, as in cases of vegetables 31% dispose at Zunheboto and 12% at other places whereas 57% do not sell vegetables. In regard to fuel wood 27% and 22% of households dispose at Zunheboto and other place respectively whereas 51% of the households do not engaged in this deal. Also, in Aotsakali 29% of the households sell building materials like bally post, timber, log etc., at Zunheboto and 8% dispose at other place and 63% is not in the deal. Sumi Shitsu and Tsutoho do not dispose vegetables, fuel wood and charcoal at Zunheboto rather deals with places other than Zunheboto. However, this cases are little different as Sumi Shitsu has other place to dispose whereas Tsutoho is the distance factor. But in both the cases especially Tsutoho,

being located in interior place disposes only building material timber at Zunheboto. Therefore, from the above quoted analysis, Zunheboto is more dependent on villages in regard to agro-forest products on the basis of the different zones that are mostly governing by the distance they cover (Fig.5.7). (Plate.5.1). Besides, villages in the moderately and less interactive zone do sell their agro-forest products at the roadside market shed at low price too (Plate.5.2)





Plate.5.1. Forest products ready to dispose and sell at urban center within the moderately interactive zone in Zunheboto District.





Plate.5.2. Disposal and sell of agro-forest products at roadside market shed within less interactive zone in Zunheboto District.

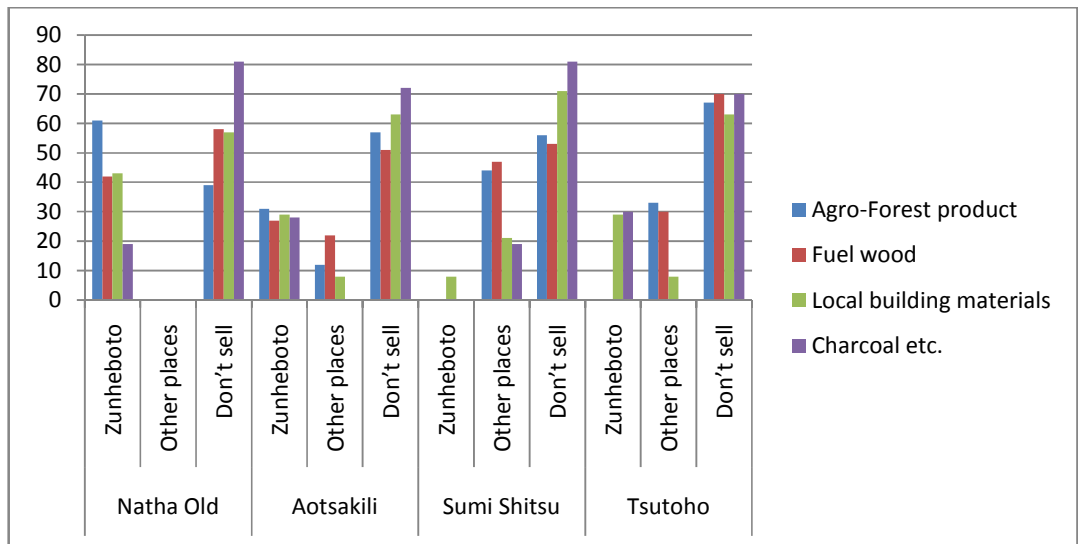


Fig.5.7. Bar diagram showing places of disposal or sell of Agro-forest based products by the households of the sample villages in Zunheboto district(in%)

5.3.4. SECTORAL INTERDEPENDENCE IN ZUNHEBOTO DISTRICT

Zunheboto is one of the smaller town in Nagaland with enough space for its expansion and also climatically cold and wet. So with the influence of geographical factors, as the infertility of soil where top soil are eroded away by torrentia rain, the urban agriculture is not suited and practice by the people except a little kitchen garden practice by few households where they raise squish and maize. Presence of fruit trees in the backyard and in kitchen garden is not noticed as the geographical factors does not favor it. Urban dwellers do not plant or raise vegetables and fruits within the town area; however they have enough space within the surrounding of the town where they do farming in which they raise yam, potatoes, beans, maize etc. The agrarian activities in urban areas are not practice in urban areas but they do engage in agricultural activities which are done in the peripheral areas of the town. As far as the urban culture and activities in rural areas are concerned, rural people fully depend on urban center for these purposes. However, in few cases a grocery shop, pan shop, a rice mill or a corn mill is noticed within the village. Besides, services like teaching and health services through 'Asha' is being practice in the villages of Zunheboto district. Therefore it is revealed that sectoral interdependence is rather negligible in Zunheboto district.

5.4. CONTROLLING FACTORS THAT EFFECT RURAL-URBAN INTERDEPENDENCE IN ZUNHEBOTO DISTRICT

The factors which control over the interdependence between Zunheboto and its rural areas are because of location, history, economy and culture of the Sumis. However, the factors like traditional aspects, politico-economics, socio-cultural and ecological determined it, these are the elements of the dynamics of rural-urban interaction. Zunheboto is the land of Sumis with their own traditional culture and social norms. To analyze the controlling factors, the following are needed to be focused.

5.4.1. TRADITIONAL FACTORS

The inhabitation of the whole district is due to migration of the people. One thing to be noted here is that Sumis are very much fond of setting up of new villages. The reason behind this is that the one who lead and occupy a particular land and create a new village is named after him. In other words, the village itself is his own village where he is the chief, now days called Chief Gaon Bora or Gaon Bora. The inflow of culture, tradition, norm and diplomatic relations are fabricated basing on the history of their migration because all the villages have a parent village

to which they are dependant. And those villagers are migrated, for many reasons, to Zunheboto and settled where assistance of the parent village is required many a times. In the multi village society of Zunheboto the concern villagers are normally dependent on their parent village in all the situations both in times of peace and hostile. Further, during the process of migration they moved with a particular social and cultural norm and trait to the new place to flourish and grow, while exercising these norms consultation to the parent village from where they have migrated is inevitable (migration both in rural-rural and rural – urban). In the time of conflicts and trouble a particular villager or society of the town seek protection from the parent village. So the histories of migration is no doubt control the dependency of a particular human settlement on another settlement in Sumi society. Besides, the jurisdiction and terretorial space covered by a particular village is also an element of controlling factor. Bigger the territorial space more is the population which led to larger number of developmental amenities, and as a consequence higher is the interaction and interdependence. In other words, the size of the village do matter as bigger the village more is the volume of population that participate in the process of interaction and interdependence with Zunheboto though the distance to be covered is

longer. The land ownership also plays its role to control over the dependency of a particular settlement to its owner of the land. For instance the territory of Zunheboto town is mainly carved out from the Land of Natha village, as a result, even the district administration and town council is compelled to be dependent on the land owners of the Natha village. The village even taxed and direct norms to the urban dwellers within their land though it falls under Zunheboto urban jurisdiction.

5.4.2 POLITICO-ECONOMIC

Politically legislated economic management in the state in general and Zunheboto district in particular do control the process of interdependency. Through formulated agencies and NGOs propagated to do away from the practice of farming and encourage toward forestry, plantation farming and horticulture etc. As such government bore the burden initially in the process of stepping into new system in which the rural poor avail and become dependent on the urban dwellers that set up their farm in the villages. Thus the funds flow in from the government as well as the urban dwellers in Zunheboto. In due course of time, these rural poor do engage in agro-forest activities in which the urban headquarter become more dependent. As a consequence, trade emerges as an activity in which the urban headquarter and its villages continue to interact.

Availability of amenities led to interdependency of different settlements as more the amenities available with a particular village stay away for dependency on the urban headquarter which is experienced in the Zunheboto district. Availability of funds as more riches in the town remit funds to the villages for different purposes and also different funds are remitted by government toward the villages considering the source from the district headquarters that is Zunheboto. Land use in Zunheboto district is mostly covered by forests which lead to interaction between Zunheboto and its villages based on forest products. As such timber is flown in to Zunheboto town even from faraway areas of the district. Aghunato, Satoi and Ghatashi ranges are the chief suppliers of timber of all classes to Zunheboto headquarter town. Above all, the policy and method of governance controls the entire process of the rural-urban relationship in the district.

5.4.3 SOCIO-CULTURAL FACTORS

Kin and clan do matter here, as the urban dwellers of Achumi clan get assistance from the same clan of a particular village in the blurred delivery of its norms in the urban area as Sumi society is also based on customary norms and procedures. In this case the urban dwellers become

more dependable on the rural counterpart. The above said situation is gradually experienced during the delivery of customary know how within the district administration. Besides for the implementation of various government schemes, consultancy and permission of village G.B is necessary as such the governmental organization become more dependable as village chiefs for the execution of the same. Inheritance is passed on to male gender both cultural and material and one thing to be noted in this aspect is that it has norm and formalities. So consequently, urban settlers are the recipients of assistance in this matter from strong hold rural culture. Even the district administration does seek these processes from G.Bs and DBs. In other words, the contended, cultured habitants are the sharpening stone of social norms and customary ethos for the residents of urban headquarters in the district. Besides, the tendency to migrate or commute between rural place and urban headquarter do effect the volume of flow of people between the centers.

5.4.4- ECOLOGICAL FACTOR

This is one of the important factors of the interaction between rural and urban set up. Ecologically Zunheboto and its villages interaction are affected. The flow of agro-forest products is determined by the

availability of land and water resources, other natural resources, the status of forests, the nature of deforestation and the state of pollution. In case of availability of land and water, Zunheboto district is a forested district where Alder trees are very common within the highly interactive zone. This is used as fuel wood whereby Zunheboto town is dependent on this for the purpose. One plus point here is that rejuvenation is caused after cutting down the branches of alder trees as bushes return to more stronger branches of the same tree. Besides forest based vegetables, especially a local name called "Chie" is abundantly available in the forest which dominate the Zunheboto local market. Besides, small conserved streams are available all around the district which makes for habitats of crabs and fishes. The forest based products are being availed due to conservation done by the villagers because of politico-economic factors through the governance of state government and the village authority. Inflow of ideas and information from Zunheboto lead to this phenomenon. One important example of this is within the highly interactive zone a stream called ' Langki' is located where village council used to imposed ban on use of chemicals in the water, however one can catch fishes, crabs, frogs and prawns naturally and traditional way of fishing. These products are disposed at Zunheboto market by local villagers. Other forest products

are timber, log etc., which are brought to Zunheboto even from the far flung remote rural areas bordering Kiphire and Phek districts. Deforestation is continuous activity within the district but due to low pressure of people on land and different preservation policies from the government it is negligibly noticed. However, one thing to be noted is that these factors are still subjected to the distance between Zunheboto town and its villages.

5.5. CONCLUDING STATEMENT

Zunheboto, the homeland of Sumi tribe of Nagaland shows a peculiar pattern of interaction. By taking the social amenities and demographic volume, this district is found to be circular centripetal pattern of interaction and interdependence that determined by using gravity model based on distance. To select either one of the concept, a bivariate co-efficient of correlation has been tested which is proved to be positive. So the classification of zones of interaction has been selected and applied for the present analysis of the interaction between Zunheboto and the village which is based on the volume of population. Natha Old village is selected in highly interactive, Aotsakali in moderately, Sumi shitsu and Tsutoho in the less interactive zone of northern and southern part of the

district respectively. Natha and Zunheboto are proved to be highly interactive in all the aspects. In the socio-economic aspects, flow of economic goods, flow of funds and services are analysed where zone of interaction has been justified. In socio-cultural type of interaction flow of people, flow of culture has been examined and finally the flow of agro-forest products, flow of ideas and information has been investigated and evaluated as ecological type of interdependence where all the elements of dynamics have proved and justified the zone of interaction. In regard to zone of less interactive, toward the northern part of the district all the villages are located bordering a comparatively developed urban center as Mokokchung town which is the alternate center of their interaction and interdependence. This phenomenon is proved by case study of Sumi Shitsu village. Towards the southern part of the district within the less interactive zone Tsutoho is selected for the case study which revealed that this region is not bordered with any developed urban center. To interact this region does not have any nearer alternate urban center to interact. As a result they are forced to interact with Zunheboto town though not in short interval of time, however, this region remains interior and backward because of distance factor. However, it is being proved that the zone of interaction as highly, moderately and less interactive and dependency is

found to be valid based on this case study where all its dynamics of interdependence is operational.

CHAPTER 6
SUMMARY AND CONCLUSIONS

6.1. COMPARATIVE ANALYSIS OF MOKOKCHUNG AND ZUNHEBOTO DISTRICTS

In the analysis of rural and urban interdependence in Mokokchung and Zunheboto districts, as geography deals with the areal differentiation of phenomenon, both the district reveal the identification of 3 zones of dependencies. Chapter 3 deals about the zones of interdependence of all the districts in Nagaland, where an overview of the aspects based on the availability of amenities and volume of population is considered in which a gravity model has been used. In case of Mokokchung and Zunheboto districts a bivariate co-efficient of correlation test between the number of available amenities and the volume of population is done where a positive product has been determined as 0.44 and 0.48 for Mokokchung and Zunheboto respectively. So in both the cases, zones determined on the basis of volume of population is conveniently used and similar zones are identified for the selected villages using gravity model through the primary data collected Through sample survey. In Mokokchung the analysis of the types and pattern of interaction as spatial interdependence such as flow of people, flow of goods and services, flow of ideas and information, flow of funds and flow of culture; and sectoral

interdependence such as urban agriculture, rural industries, urban activities in rural areas and rural activities in urban areas are found. Concerning the same aspects in Zunheboto, it is being inclined from a different perspective on the types and patterns such as socio-economic interdependence, socio-cultural interdependence and ecological interdependence. Also the sectoral interdependence where similar components has been analyzed and found to be similar concept to each other as flow of people, flow of goods and services, flow of funds, flow of ideas and information, flow of culture. In both the cases, the products are similar to each other where the main driver is the distance between the urban headquarters and the selected villages and the same feature is reflected in the C.D.blocks.

As far as the types of interdependence are concerned, in both the districts migration and commutation are the main components of the flow of people. Historical aspects of setting up of new villages are found to be strong. However, migration based on the said purpose is more active in case of Zunheboto because of a socio-cultural norms, as a result zunheboto has 171 villages as compared to 94 villages in Mokokchung district. The socio-cultural norms is that among the Sumis while setting up of a new village the nomenclature of the village is named after the

one who lead for the purpose and he become the chief of the village or the Head G.B at present context. However, as focused at the size of the villages, the population of the village in Mokokchung district is ranging up to 9000 persons, whereas in Zunheboto district the villages are smaller in size to the maximum of 1500 persons. For instance in Ungma village of Mokokchung district the total population as per 2001 census is 7189 persons with total households of 1320. On the other hand, in Zunheboto district Natha Old village has a total population as per 2001 census is 749 persons with 112 households. That is why it is confirmed that involvement of people in the process of interaction between urban headquarter and villages in Mokokchung district is bigger as 200 lakhs of people/sq.Km as potential and volume of interdependence for ungma village with 250 households and 2565 population whereas in Zunheboto district for Natha Old, it is only 17 lakhs of people with 53 households and 296 populations which is 40% of the households out of the figure as per 2001 census in both the villages. Obviously, the volume of migrants and commuters are higher in Mokokchung than the villages in Zunheboto district.

Another segment of the permanent migrants are due to intermarriages and rural to urban migrants in search of better means of

livelihood. Permanent migrants through intermarriage as rural-rural are generally observed more in Zunheboto district, whereas in Mokokchung district migration through intermarriages is generally done in the urban areas as the society is well fabricated with various culture between different villages among Aos and others. It is being found that in Ungma village of Mokokchung district out of 2565 population, 21 persons are happened to be from other village of which majority are females. Similar case is found in Zunheboto district also, as in Natha Old village out of 296 populations 7 are from an origin other than its own village. In both the districts, another aspect of flow of people is that the intervals of visit to their urban headquarter by the households. In Mokokchung district it is being revealed that Ungma as located in the highly interactive zone, segment of daily commuter is more (59% of the total households interviewed). Similarly in Zunheboto district also, Natha Old village has 49% of 53 households which are being interviewed are daily commuters. Whereas in both the cases, in the less interactive zone the daily commuters are nil in which Satsuk and Lirmen villages of Mokokchung have no daily commuters and also Sumi Shitsu and Tsutoho villages of Zunheboto district shows that the rate of households who commute daily to Zunheboto town is nil. However, in both the districts the villages under

less or passive interactive zones have other alternate urban centers to interface and depend upon. Besides, with regard to the movement of people, the volume of population do matters and contribute a lot as in case of Ungma and Mokokchung, there is good means of transportation and huge volume of population, 7189 persons with 1320 households so movement is high whereas in Natha and Zunheboto the movement is generally done on foot as the distance is only 5 kms and the population is only 749 Persons with 112 households. As a result the overall movement of the people is comparatively low though the village is located in the highly interactive zone of Zunheboto district.

Another aspect of the type of interdependence is the flow of goods. Both Mokokchung and Zunheboto show that within the zone of highly interactive the feeder villages do supply specially the agro-forest products. In the moderately interactive zone their products are disposed at their district headquarters as well as in other alternate urban center and also at roadside marketing shed of the respective villages. In regard to less interactive zone, Mokokchung district has a peculiar feature that the villages within this zone do not feed their urban headquarter rather dispose off these products at the roadside market sheds and in alternate urban centers of Assam located at Nagaland border. For instance, Lirmen

and Yajang villages of this zone sell their agro-forest products like vegetables, betel nuts, pan leaves, fruits, tea leaves, logs etc., that produced in their village at Mariani, Amguri, Halwading, and Char Ali Town of Assam. On the other hand, Zunheboto district has a different feature that the villages of less interactive zone of the north and south of the district show a different picture. Toward the north, no doubt their interaction with Zunheboto is nil, however their products are disposed at their roadside village market sheds and also alternate urban center Mokokchung as revealed by Sumi Shitsu that the major product they dispose are fire wood, bally post etc. But towards the southern part of the district, Tsutoho gives another feature that it is no doubt located in the less interactive zone yet their products specially timber and logs are transported to Zunheboto town and also dispose at rural market of Satoi.

For various developmental funds the villages are dependent on their district headquarters both in Zunheboto and Mokokchung districts. Both Ungma and Natha lie in the highly interactive zone of their respective districts, showing that 99% of households in Ungma and 100% of households in Natha Old are dependent on their district headquarters for their consumer goods. Besides, Ungma shows an interesting picture that dependency for clothing is equally share between Mokokchung and

other places as 58% and 42% of the households respectively. Whereas, Natha shows its dependency on Zunheboto which is 81% of the households. For hardware and medicines Ungma shows that more than 90% of the household are dependent on Mokokchung. Whereas, Natha Old shows the dependency on Zunheboto as 82% and 100% of the households for hardware and medicines respectively. However, for building materials such as rod, cement, bricks, sand, etc., only 9% of the households out of 73% who go for it, depend on Mokokchung in respect of Ungma village whereas, out of 43% of the household who used to go for it in Natha Old, 31% is dependent on Zunheboto town. So in this regard, Natha is more dependent on its district headquarter for building materials. As compared to Akhoya of Mokokchung district, Aotsukali of Zunheboto is more dependent on its urban headquarter as 51%, 71%, 68% and 80% of the households for consumer goods, clothing, hardware and medicine respectively. In case of building materials in Aotsukali out of 28% who go for it, 21% of the households are dependent on Zunheboto town whereas in Akhoya out of 11% who go for it 100% i.e, 11% of the households are dependent on a place other than Mokokchung. Similarly, in the less interactive zone, as compared to villages of Mokokchung district, Sumi Shitsu and Tsutoho of the

Zunheboto district are more dependent on its district headquarter for consumer goods, clothing, hardware, medicine and building materials, because of its remoteness than the villages of Mokokchung district. Apart from this, the volume of population involve for the purpose is more in Mokokchung district that is why more active interaction is noticed in Mokokchung and its villages.

Further, looking at the aspect of the interaction on the flow of ideas and information of environment, healthcare and others, Mokokchung disseminates more to its villages. Ideas to preserve environment specially to keep off of Jhumming and materializing the matter is higher in case of Mokokchung district. In Mokokchung within the highly interactive zone, Ungma depend more on Mokokchung as 81%, 86%, 85% and 90% of its households for environment, healthcare, social evils and danger of disaster respectively and in case of Zunheboto district, it is being revealed that 57%, 49%, 27% of the households, for environment, adverse effect of jhumming, natural disaster respectively depend by Natha on its district headquarter and 20%, 27% and 56% of the households are ignorant about environment, adverse effect of jhumming and natural disaster respectively. Besides, in Mokokchung district, the villages of the less interactive zone also depend on

Mokokchung and the rate of ignorance is less as Lirmen account for about 45%, 51%, 56% and 49% are in the aspects of environment, healthcare, social evils and disaster respectively which is more or less equal to the rate of dependency by the villages of highly interactive zone of Zunheboto because of the more rate of households who are ignorant about these issues in Zunheboto district. The rate of dependency for the said aspects by the villages of low interactive zone of Mokokchung and highly interactive zone of Zunheboto district is more or less same as more of the households of the Zunheboto district are not aware or ignorant of the issues at all due to remoteness and less interactive programs by different agencies that are responsible for the same. It is worth mentioning here that Mokokchung is comparatively more interactive with its villages than its counterpart Zunheboto and its native villages.

The flow of funds between urban and rural places is other types of interdependence. There is remittance of funds in both rural-urban and urban to rural; however, urban to rural remittance is more common than the others because from Government agencies, NGOs and even private individual remits it usually from urban places or headquarters. In both Mokokchung and Zunhoboto districts, it is being found that Government remits different funds through DRDA. Besides, in

the events of different occasions of social gathering even the individual urban dwellers send money to their respective villages specially in the event of performing church activities, kin and clan activities celebration of various jubilee and traditional festivals like Moatsu and Tsungremmong of the Aos, and Tuluni and Ahuna of the Sumis. In some cases, both the district experiences the sponsorship of Christmas event of particular village by some rich individual urban settlers during few occasions. As compare the flow of funds to the villages from the respective headquarters of Mokokchung and Zunheboto districts, the picture of both is quite similar to each other. For instance, Ungma in the highly interactive zone of Mokokchung receives fund from Mokokchung town by 52% of households as 59% of households by Natha Old of highly interactive zone of Zunheboto district which are within a range of 50 – 60% of the households. With the moderately interactive zone it is 32% of households by Akhoya in Mokokchung district and 36% by Aotsakali in Zunheboto district. Further, in the less interactive zones of both the districts, Lirmen and Satsuk of Mokokchung is 20% and 23% respectively and 29% and 21% of households by Sumi Shitsu and Tsutoho respectively of Zunheboto district which reveals that in both the districts it is more or less uniform as in the case of moderate zone it is in range of

30 – 40% and in less interactive zone it is 20 – 30% range. Analysing funds from Government in Mokokchung SGSY for 2009-10 Mokokchung is allotted Rs 74.31 lakhs and Zunheboto as allotted with Rs 97.85 lakhs, under IAY Mokokchung got an allotment of Rs 298.57 lakhs and Zunheboto Rs 242.98 lakhs, under MGNREGS in Mokokchung 28927 job cards are issued and in Zunheboto 29978 job cards are issued and under GIA total funds credited to VDBs are Rs 2,61,91,000 in Mokokchung district and Rs 2,34,89,00 in Zunheboto district. So except for fund allocation under SGSY, receive of funds by 94 villages in Mokokchung district is more than 171 villages of Zunheboto district. But it is worth noted that as quoted earlier the size of villages is much bigger in Mokokchung district as the total rural population of Mokokchung is 200,871 persons against 130,874 persons in Zunheboto district.

The flow of culture between rural and urban areas is another component of the interdependence which includes language, religion, marriage, food habits, clothing fashion etc. Cultural diffusion and fabrication is more dominant in Mokokchung rather than Zunheboto district. This diffused culture that well fabricated in Mokokchung town is finally flow-in to the villages. It is being revealed that as far as the dependency is concerned, the villages are solely dependent on

Mokokchung in which this culture is practiced by the recipient villagers. In this aspect Zunheboto district is no exception even if the diffusion of culture is not active or in other words, unwell limited fabricated culture of Zunheboto town is absorbed by the villages and practiced. Besides in both the districts traditional culture are originated in the villages in which their urban centers are turn to be dependent. For instance, culturally designed women shawls and mekheles in the villages of Mokokchung and Zunheboto districts are sent out to their urban headquarters as an end products which also justify that the urban places are solely, dependent on their aspects. Apart from this in both the districts beautiful cultural troupes used to walk out from the village during *Moatsu* and *Tsungremong* of Aos and *Tuluni* and *Ahuna* of Sumis, to Mokokchung and Zunheboto respectively which also support that the urban centers are dependent of the villages in this respect. However, in case of the processes of these aspects, the material components needed are supplied to the village communities of urban dwellers by their respective villages which reveal their active interdependency to each other. In this regard one thing which is noted clearly is that the dependency is based on the zone of interaction because as quoted earlier, the villages in the less interactive zone has other alternate urban centres to actively

interact. However, in the process of flow of culture as interdependency, the relationship of both the villages and their towns in both the districts cannot be denied.

Sectoral interdependence is another major component which operates in rural and urban places of both the districts. As a matter of fact, Mokokchung district shows a better picture than Zunheboto district. As far as the urban activities in rural areas is concerned, in Ungma village of Mokokchung within the highly interactive zone, it is found that the village has 3 mini saw mills, 10 stone crushers, 1 scooter workshops, 5 rice mills and 3 tyre workshop. Besides, it has 1 pharmacy, 8 grocery shops and number of small *paan* shops. Besides Lirmen in the less interactive zone, is having 2 mini saw mills, 5 rice mills, cycle workshop and number of grocery and *paan* shops. The case of Zunheboto district is different, the activities in the villages are comparatively less as in all the selected villages of different zones of dependency, only 1 or 2 rice mills are noticed with no other additions. However, as far as the urban culture in rural areas is concerned, in both the districts, it is very active because, they speak atleast Nagamese, has food habits other than indigenous, clothing fashion other than their traditional etc. Besides, urban areas of both the districts is having rural activities and culture, however

Mokokchung Town shows more active in this aspects. For instance, as far as the urban agriculture is concerned, in Mokokchung Town, people practice kitchen gardens of various vegetables, nourishment of fruit trees in the backyard and even raising of vegetable on the pots where space and fertility is less, whereas the practice of these activities is very negligible in Zunheboto Town, the reason being enough supply from neighboring villages at comparatively cheaper price. However, the reason for the above quoted activities in Mokokchung is the high price in the local market. It is further to quote that, indeed, both the districts are identified of having practicing sectoral interdependence in which case Mokokchung district is comparatively more active.

6.2. POLICY IMPLICATIONS AND RURAL LIVELIHOOD STRATEGIES

Nagaland is a tribal land of farmers since time immemorial. Before and after attainment of statehood under Union of India on 1st December, 1963 as the 16th state of Indian Union, the main occupation of its people remain confined to agriculture where *jhum* cultivation is practiced widespread till late '80's and early '90's. Shifting cultivation remains dominating the entire economy of the people which still continues as *jhuming* is still the dominant form of cultivation in Nagaland.

However, in many places of the state people with certain options to have started shifting from the practice of this occupation. This is generally done as the government agencies and various NGOs propagated the evil and adverse effects of *jhumming* from the ecological perspective. As such various centrally and state sponsored schemes and programs alternate the means of livelihood and upliftment of the lifestyle of rural poor has flown which is still a continuous process. Numerous policies and programs were introduced where by the main programs which had became popular are through the department of Forests, Ecology, Environment and wildlife for the preservation, conservation and rejuvenation of ecological setting in the state and also through Rural Development Department which support the livelihood diversion of the rural poor with poverty alleviation programs. There are number of Acts regarding the preservation and conservation of forests and ecology in the state. Some of them are Nagaland Forest Act, 1968 which is still operational within the whole state since 1st April, 1968; also Nagaland Jhumland Act, 1970 which is also applicable to the whole state since April 12, 1974. This Act has broadened the meaning of forest. Forest means any land except the land which has been put to terrace cultivation of both permanent and semi-permanent or any land under dwelling house.

It also brought *jhum* land under the ambit of Forest Department as forested area. Besides, in consonance with the objective of National Forest Policy, 1988, the state has designed a policy as

1. Convert *jhum*land areas into economically and ecologically sustainable woodlands.
2. Regulate harvesting of forest resources on principles of sustainability.
3. Protect and conserve fauna and flora, including endangered species.
4. Protect, conserve, and manage Bio-diversity in and outside reserved forest and sanctuaries based on sound scientific principles for in-situ conservation.
5. Raise and develop commercially important species.
6. Bamboo policy with valuable and active input from the department.

As far as the management of the forest is concerned, there is one unique feature in Nagaland that is the land ownership. Most of the land in Nagaland is owned by private individuals, by a clan within the village in which these owners have every right based on customary laws and this law is in the hands of Village Council. However, the Forest

Department of the State Government owned certain areas that are classified as Reserved Forests, Protected Forests, Wildlife Sanctuaries, National Parks, Nurseries and Botanical Gardens. And yet wood harvesting in private plantations is regulated according to “Nagaland Tree Felling Regulation Rules, 2002”. According to these rules, it facilitates felling/selling of timber by villagers from private plantations under the supervision of the department through Transit Permit which also covers felling of trees for non-forest areas including tree plantation in non-forest areas; ban on export of round logs below 4 feet in girth; ban on issue of Free Permits on timber in order to plug leakage of Government revenue.

On being encouraged to plant trees in the *jhum* land, State Government also followed the National Afforestation Programme(NAP) with the objectives as:

1. Effective utilization of jhumland.
2. Ensure supply of fuel wood and small timber.
3. Checking of land erosion through soil conservation measures.
4. Maintenance of ecological integrity of the region.
5. Generation of income and employment.
6. Development of common property resources.
7. Conservation and promotion of non-timber forest produces.

8. Improve quality of life for the forest dependent community.
9. Capacity building.
10. Use of improved technologies.

Besides, inconformity with the National Forest Policy, State Government through Government notification vide no. FOR-153/80 (Vol-III) started joint forest management with the following objectives:

1. To elicit active participation of villagers in a) creation b) management and c) protection of plantation.
2. To achieve ecological needs consonant with sustainable productive forests.
3. To create a rural-based economy for the people.

And the areas to be covered were included as:

1. Non-Government land that can be put into use for forestry.
2. Non-Government virgin forests.
3. Any other land of the state, which may be managed under JFM.

On being implementation of the above quoted policies, acts and regulation of the Government, the present status of the forest in Nagaland is that out of the state's total geographical area of 16,579 sq Km, forest occupies an area of 8629.30Sq Kms.

Table 6.1. Showing the ownership of forest in Nagaland (Sq Km).

OWNERSHIP	FOREST AREA
<i>Government owned Forest</i>	
Reserved Forest	62.26
Purchased Forest	192.47
Protected Forest	34.69
Wild life Sanctuaries	202.02
<i>Government controlled(Private owned) Forest</i>	
Protected Forest	516.79
<i>Village/Private owned</i>	
Virgin Forest	4778.27
Degraded Forest	2842.80
TOTAL FORESTED AREA	8629.30

Source:- Department of Forest, Ecology, Environment and Wildlife: Nagaland: Kohima – 2012.

In the implementation of these programs, while drifting away the villagers from the practice of *Jhumming*, the initial burden is shouldered by Government as almost all the workers are employed as daily wage earners in the process of afforestation programs in which state Government spent about Rs 4019 lakhs under plan and Rs 4047.16 lakhs under non-plan expenditure during 2011-12 against Rs 124.24 lakhs under plan and Rs 303.79 lakhs under non-plan during 1992-93, that indicates the implementation of the programs in progress. As such, during the interview of the households of the sample villages, it is being revealed that 50 – 70% of the households having being reported of having at least one or two bighas of land under tree plantation. At

present in many parts of the state forest are grown to its mature stage where villagers are engaged on wood based economy for their livelihood. This economy has created the process of interdependency between rural and urban areas which is already discussed in the present study.

Apart from this, policies and schemes are introduced through Rural Development Department which also facilitates the rural populace for their livelihood. Some of the important programs are Integrated Rural Development Program/Swarnajayanti Gram Swarozgar Yojana that introduced in 1978-79 and universalized from 2nd Oct. 1980 of which on 1st April 1999, the IRDP and allied programs were merged into a single program known as Swarnajayanti Gram Swarozgar Yojana (SGSY) in which Nagaland Government spent Rs 631.18 lakhs during 2009-10. Besides, as for wage employment programs, The National Rural Employment Program (NREP) and Rural Landless Employment Guarantee Program (RLEGP) were started during 6th and 7th plans of which later in April 1989 merged under Jawahar Rozgar Yojana (JRY) and later again bifurcate as Indira Awaas Yojana (IAY) in the year 1996 where state Government spent about Rs 3139.32 lakhs during 2009-10 for Rural Housing. Another Employment Assurance Scheme (EAS) was launched on 2nd Oct 1993 meant for drought prone, desert, tribal and hill areas to provide

employment in the form of manual work in the lean agricultural season. This program became Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in 2006-07 where an amount of Rs 49945.76 lakhs was spent in the state during 2009-10. Besides, under Grant In Aid (GIA) and Backward Region Grant Fund (BRGF), the state Government spent Rs 25.26 and Rs 5886.44 lakhs respectively during 2009-10. So base on these programs, the rural poor are getting alternate ways and means of livelihood as leaving the practice of shifting cultivation. These aspects are also minutely analyzed in the previous chapters of the present study.

Thus numerous programs and schemes are introduced for rural livelihood, out of which programs, schemes and policies under Forest and Rural Development are more relevant and as such, in case of Nagaland, as the people are transforming from the practice of Jhuming to other activities, the rural populace are engaged for their livelihood. The activities that make them employed through different rural development Program are mason, carpentry, quarrying, woodcraft, handloom and handicraft etc. Besides, the other means of livelihood through ecological programs are forest based activities like wood cutting of fuel wood and local building materials such as bally post, bamboo etc, charcoal trade,

logging, forest based wild vegetables and fruit vendors etc. Within the western tract of foothills of the state other activities like mining, orchard farming, plantation of rubber, tea, agar, coffee etc are source and means of their livelihood. Thus it is being understood that the policies and programs which flow in to the rural folk determined their livelihood that create the dynamics of interdependence between rural and urban places based on the volume of population and the distance between the settlements which form the zones of interdependence.

6.3. CONCLUSIONS

The rural and urban places have unique features which are independent to each other however, as far as the survival of these settlements are concerned; they need to depend on each other to meet their various needs. The dynamics of elements like flow of people, flow of goods and services, flow of ideas and information, flow of cultures and flow of funds are changing rapidly. Viewing at their activities, rural areas has agro forest based activities and urban areas have non-agricultural activities. In case of India as defined by the Census of India, a village is a settlement with one or more hamlet as surveyed and revenue village. However, unsurveyed village in forest with locally recognized boundaries is also considered a village. On the other hand, an urban area is a place

which has a maximum population of 5000 persons with 75% of male population is non agriculturist and a density of at least 400/Sq Km.

The present study reveals that the increase of population is purely of natural. The interaction and interdependence are tested with both the development and availability of amenities and the volume of population, where it is depicted that they are correlated to each other. It is finally found that larger the volume of population more is the active in the process of interaction and interdependence based on the distance between the rural and urban places. Besides, it is being proved that the components like flow of people, goods and services, ideas and information, cultures and funds due to socio-economic, socio-cultural and ecological factors make a complexity of society that is culturally fabricated which depict the nature of interdependency. Ecological rejuvenation policies divert the rural livelihood as discouraging the practice of jhumming which has lead to adopt other means of livelihood for the rural folks. It is being revealed that sectoral activities are due to various politico-economic factors and science and technological advancement as in villages where electricity is irregular, diesel powered run mini saw mill are installed as emphasizing on forest based activities due to conversion of jhumland to forested land.

The geographical framework of the study area also depicts a clear feature in respect of Nagaland as a whole and Mokokchung and Zunheboto district in particular. As far as the overall framework of Nagaland is concerned, for the convenience of administrative purpose, Nagaland has 11 districts where every district is a home of particular tribe or tribes. Each district has various sub-divisions and circles where administration is carried on. Physiographically, Nagaland is divided into 3 ranges basing on the altitude above main sea level as the foothills of the west, the lower range of the middle and high hills and mountainous region. These regions run parallel to each other stretching from North to South direction. The other climatic region and vegetative region is identified considering the physical region. In other words, the climatic and vegetational cover and geologic region are based on the division of the physical region. The climatic region of warm sub-tropical climate and sub-tropical evergreen hill vegetation is prevailing over the foothills region of the west. Similarly, humid sub-tropical climate and broad-leaved temperate evergreen rainforest is found within lower range of the middle Nagaland. Besides, humid continental climate of mountainous and high hill region and coniferous vegetation are found in high hills and mountainous region of physiography. As far as the drainage system is

concerned, the Brahmaputra drainage system dominates western part and lower portion of the state whereas, the Chindwin drainage system occupies the easternmost part of the state. The Meghna drainage system is found in a small patch of southernmost tip of Nagaland. As far as the economy of the people of Nagaland is concerned, originally Nagas are farmers. However, in present context they adopt various other activities rather than cultivation.

In the analysis of rural-urban interdependence of Nagaland as a whole, an overview study taking the district headquarters as urban centre and C D blocks as rural areas is considered. It was important to consider the accessibility of amenities and volume of population viewing the nature of rural and urban interdependence. It is being found that distance between the urban centre and rural area is the main basis which determines the level of interaction. As such, different zones of interaction and interdependence are identified for each and every district headquarters and its rural CD Blocks. The division and identification of zone is based on the calculation based on gravity models that are already tested for other aspect of the study. It is being revealed that region of rural areas with longer distance from its urban centre lie in the zone of less interactivity or interdependence. However, even if a place is located

in less interactive zone having an alternate urban centre to interact are to be more developed than a place without alternate town to interact which remains backward in terms of development and civilization. Apart from the availability of amenities, connectivity through motorable road and intensity of vehicular flow also contribute a lot to the degree of interaction and interdependence. Besides, the region with more developed and higher volume of population are identified to be more active in respect of both spatial and sectoral interdependence. Moreover, in case of Nagaland as a whole it is being found that in the western part of the villages in the less interactive zone are comparatively more developed than the eastern part. That is why the eastern part bordering undeveloped Myanmar remains backward and interior in every aspect. It is also depicted that the process of development is governed mainly due to participation of the people in active interaction of urban district headquarters and other urban areas with villages.

For an in-depth study, Mokokchung district is also selected and analyzed in detail. After being detected that each and every district of Nagaland the zone of interaction is highly interactive, moderately interactive and less interactive that based on the availability of amenities and number of population through a gravity model, a test is executed for

Mokokchung district. To continue the process of study, the population component is selected through a bivariate co-efficient of correlation test. Based on the primary data of population similar zone is tested with selected villages which give a satisfactory result as Ungma is high, Akhoya is moderate and Lirmen and Satsuk are in less interactive zone. Both spatial and sectoral interdependence is analysed for the selected villages which prove the interaction and interdependence in different zones are justified depending on the distance and availability of road connectivity with volume of population that induced by various factors like Traditional aspects of migration history, occupation of terrestrial space etc, political-economic; cultural and ecological. Based on these processes, it is revealed that as far as developmental aspect is concerned Mokokchung and its villages are interacting satisfactorily as even in the less interactive zone villages have other urban places in Assam to tie up. This is the reason why Mokokchung is comparatively more developed district in the context of villages of Nagaland. Similar case is for Zunheboto district as well, where 4 villages are selected as Natha Old in the highly interactive zone; Aotsakali in moderate; Sumi Shitsu and Tsutoho in the less interactive zone. However, unlike Mokokchung district, Zunheboto is located at the centre of the district so the villages selected in less-

interactive zone is one each for Northern and Southern part of the district. And it is being revealed that northern part is more developed than the south. Besides, even if the numbers of villages are more than Mokokchung district the size of the villages is smaller as a result the volume of population is low. Consequently the interdependence between Zunheboto Town and its villages is comparatively less interactive than Mokokchung district. Toward the north the villages in less interactive zone, Sumi Shitsu is found of having an alternate nearer urban centre that is Mokokchung. However, in Southern part, Tsutoho has no other alternate urban centres which solely depend on its district headquarters though interaction is less.

Finally, the nature, forms, types of interdependence between rural and urban areas are discussed in which it is depicted that there is positive relation between the level of development based on availability of amenities and the potentiality of interaction based on the volume of population. Further investigation by means of correlation test shows that migration, flow of goods and services, ideas and informations, flow of culture and funds are due to positive product between demographic and economic components that affects the rural – urban interdependence in Mokokchung and Zunheboto districts. The volume of people generally

leads to participation in the process of interaction in socio-economic, socio-cultural and ecological components which are also factors. The different policies of Government lead to drive away from the practice of jhumming among rural populace and consequently to the development and the modernization of rural areas by adopting a means of livelihood other than jhumming. Comparative study of Mokokchung and Zunheboto districts revealed that their degrees of activities in the process of interdependence and level of development of the two districts. As such the dynamics of rural and urban interdependence in Nagaland is determined by the level of development and the volume of people participated in the process within the districts as driven by distance between the urban and rural settlements where it is being depicted that Mokokchung district is comparatively more advanced and active in all the processes rather than Zunheboto district.

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