

CONTINUITY AND CHANGE

A Geographical Analysis of the Urban Fringe of Shillong
Urban Agglomeration : A Case Study of Mawsbuit

Abstract

H. B. MAHANTA

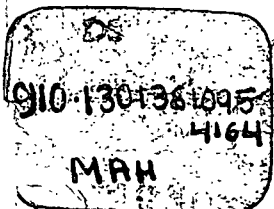
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IN
PARTIAL-FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF
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DEPARTMENT OF GEOGRAPHY
SCHOOL OF ENVIRONMENTAL SCIENCES
NORTH-EASTERN HILL UNIVERSITY
SHILLONG, MEGHALAYA

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ABSTRACT

Study of rural-urban fringe has been a vital concern to Geographers. The concept of 'rural-urban fringe' differs from the concept of 'hinterland' and 'Umland'. The distinctiveness of the characteristics of rural-urban fringe varies in different level of analysis. The processes of development of fringe area as well as its characteristics which emerge from the processes of development, are different according to socio-economic condition of the country, the rank and size of the city in the whole national urban system, trend of urbanisation in the city and according to the peculiarity of location of the city and its fringe area. Exploration of the universal and the unique characteristics of the urban fringe will enhance the understanding of the dynamics of the fringe as well as the scope of planning integration of the fringe with the city.

The inadequate analysis of the characteristics of fringe areas and the uniqueness of the study area (fringe of Shillong) are the two main motivating forces

behind this study. The main objectives of the study are -

- (a) To identify the demographic, economic, social and morphological characteristics of urban fringe of Shillong.
- (b) To understand the temporal changes of these characteristics of the fringe area.
- (c) To analyse the universality and uniqueness of these characteristics, and
- (d) To identify the degree and pattern of harmony between Shillong and its fringe.

Research Questions and Hypotheses

A. Research questions:

The objectives of the study dictate certain research question to be investigated. They are:

- (a) What are the directions and dynamics of change in the fringe area of Shillong? These changes could be categorised as:
 - (1) demographic structure,
 - (2) occupational structure,
 - (3) Morphological structure.
- (b) Whether there exist significant differences between the urban fringe of Shillong being located in a tribal and hill area compared to other cities of similar size in terms of the fringe characteristics?
- (c) What is the pattern and intensity of rural-urban interaction between Shillong and its fringe?

B. Hypotheses:

With the help of the studies available and the broad theoretical framework developed for the study, the research questions may generate certain preliminary hypotheses.

- (a) The rate of growth of population in the fringe area of a city is more than the surrounding rural areas as well as the city.
- (b) There is an unfavourable sex-ratio in the fringe area due to sex selective inmigration.
- (c) The dependency ratio (in terms of number of non-workers to per 1000 workers) is lower due to inmigration of large number of people of working age group (age selective in-migration)
- (d) That there is a significant change in landuse which is fast acquiring urban characteristics and undergoing orientation to cater to urban needs.

An attempt has been made in this study to explore these objectives and research questions and test the hypotheses with the help of secondary and primary data. Using five indicators, viz. population growth, sex-ratio, literacy rate, share of non-agricultural workers in total workforce and dependency ratio and with the help of the analysis of secondary data, obtained from Census of India 1971 and 1981, one village, Mawsbuit has been identified for detailed primary study out of twentyfive

fringe villages of Shillong.

A fifty per cent sample survey has been conducted in the village, Mawsbuit for detailed investigation. Primary data collected from the field survey have been analysed through several indicators, viz. age and sex pyramid, sex-ratio, literacy rate, share of non-primary workers, level of skills among workers, occupational diversification, dependency ratio, size of landholdings, crops grown and their coverage, number of daily commuters and commodity flows. To understand the dynamic characteristics at these variables, an indirect method has been adopted. Age-structure analysis provides a suitable indirect method. Age-structure analysis for each variable has been carried out, assuming that, the elder groups of people will be less oriented towards urban economy than the younger generations, who have a greater degree of exposure to the urban influences. The study of the fringe village, "Mawsbuit" reveals following characteristics of the fringe area.

A. Morphological Attributes:

- (1) There is a change in the mode of cultivation from shifting to permanent agriculture and a decline in the area devoted to subsistence crops. More area is devoted to urban-market

oriented crops, which is mainly the vegetable gardening.

- (2) The degree of improvement in infrastructural facilities is disproportionate to the growing needs of the village.
- (3) Existence of mass poverty and health problems along with superimposed modernisation is the cost that the fringe village has to pay for its transitional nature.

B. Demographic Characteristics:

- (1) The rate of growth of population in the village is higher than Shillong Municipality and roughly equal to that of Shillong Urban Agglomeration.
- (2) The age and sex pyramid goes in favour of the male population and that too for the people of working age group.
- (3) There is a decline in sex-ratio from 1017 in 1971 to 895 in 1985.
- (4) The dependency ratio is lower than other villages.
- (5) The demographic structure of the village is greatly affected by the age and sex specific immigration. Immigrants constitute 11.06 per cent of the total population surveyed.

C. Social Attributes:

- (1) The literacy rate (30.33 per cent) of the village is lower than the city.

- (2) There is a degree of heterogeneity in terms of ethnic origin and languages spoken, among the people of the village.

D. Occupational Structure:

- (1) Although the economy of the village is not dominated by the non-primary sector, the primary sector is more urban oriented. Workers engaged in primary sector constitute 58.40 per cent of total workforce.
- (2) There is a degree of occupational diversification in the village. the younger generations of the people are adopting more urban oriented occupations.
- (3) The level of skills among workers has increased with younger generations.

E. Elements of Interaction:

- (1) The villagers depend on the city for most of their retail needs and the village supplies milk, vegetables and forest products to the city.
- (2) The passenger traffic is dominated by students, office-goers and those engaged in petty-business.
- (3) There is a degree of discrepancy in the prices that the villagers get for their produce and what it fetches in the urban market, due to the presence of intermediaries. This has led to a situation of near stagnancy in the level

of income of the people, despite of a considerable change of cropping pattern towards market gardening.

The understanding of the characteristics of a fringe village of Shillong will be significant in planning for the greater Shillong. The study of the fringe area is important both point of view of town planning as well as regional development.

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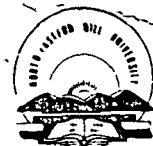
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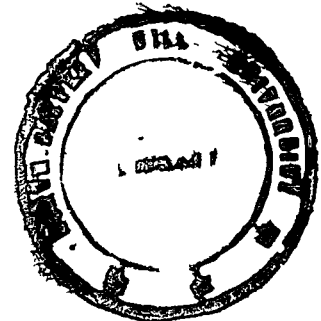
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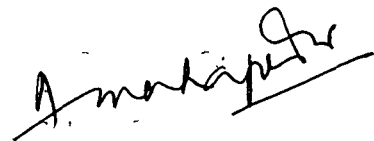
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CERTIFICATE

This is to certify that the dissertation, entitled "**Continuity and Change — A Geographical Analysis of Urban Fringe of Shillong Urban Agglomeration - A Case Study of Village, Mawsbuit**", submitted by **Shri H.B. Mahanta**, in partial fulfilment of the Degree of **Master of Philosophy in Geography**, to the Department of Geography, School of Environmental Sciences, North-Eastern Hill University, is a bonafide study to the best of my knowledge and belief. Quotations and references of other reputed studies have been duly cited and acknowledged in the text. The study may now, be placed before examiners for due evaluation. .

Shillong,
31st March 1986



(Dr. A. C. Mohapatra)

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ACKNOWLEDGEMENT

The study of urban influences upon the fringe areas has been an interesting among Geographers. The focus of this study is to explore the influences of Shillong Urban Agglomeration upon its fringe areas. The first part of the study deals with the identification of fringe villages of the city with the help of secondary data. The second part is devoted to investigate the characteristics of different attributes with the help of a case study.

I am deeply indebted to Dr. A.C. Mohapatra, Reader, Department of Geography, North-Eastern Hill University for his constant encouragement, inevitable assistance and affectionate advice in completion of this study. I am also grateful to Miss Junu Maya, the daughter of the village headman of the village, Mawsbuit and a research scholar in the Department of Khasi language, NEHU, for her helping hand as an interpreter during the field survey of the village. I feel obliged to Mr. D.P. Khobragade, Deputy Director of Census Operations, Meghalaya who cordially gave me access to the unpublished records of Census of India. Mr. H.K. Mazhari, Director of Town and Country Planning, and Mr. B.K. Panda, Associate Town Planner, Meghalaya, helped me in procuring the maps of the area. I owe my deep gratitude to both officers.

Finally, I wish to thank Mr. N.K. Paul Choudhury for his neat and accurate typing of the following pages of this dissertation and also thank to the teachers and friends of the Department of Geography, NEHU, who helped me in several ways in the pursuit of research work.

*Shillong,
March 29, 1986*

HEMANTA BIJOY MAHANTA

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Supervisor's Certificate

Acknowledgement

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C H A P T E R - I

INTRODUCTION

Importance and Scope of Urban Studies

Industrial Revolution sparked off another revolution in the world i.e. the 'Urban Revolution'. While Industrial Revolution necessitated Urban revolution. The Transport revolution facilitated it. Industrial Revolution added a completely new character to the urban centres. For the first time the urban centres became primarily centres of production of goods and services. The new role of production created various kinds of occupations in an increasing manner. Occupational diversification in these centres attracted more people from other areas, leading to large population concentration. Population of these urban centres increased by the twin processes of migration and natural increase. In due course of time, higher degree of population concentration, industrial development, development in transport and communication forced urbanisation process to expand 'horizontally' and 'vertically'. The higher degree of physical expansion is faced by many of the cities of present day's industrialised countries, have resulted in urban sprawl.

The explosive increase in population and

the sprawling urban growth yield many socio-economic and political problems. The problems of urbanisation faced by the world today is so amazing that it is often termed as 'Urban Crisis'.

The urban crisis is getting increasingly acute all over the world, especially in the 'developing countries'. Understanding of the problems faced by the fast urbanising societies has become of utmost importance. The challenge is responded by the urban geographers, too. There are a number of theoretical formulations and models apart from numerous empirical studies on specific aspects of urbanization. These studies have touched, broadly, four dimensions of urbanisation.

Dimensions of Urban Studies

(a) Historical Growth of Urban Centres -

Cities of present day carry the imprint of an evolutionary past. Cities and metropolises have grown from small urban settlements. The forces of change are generated by the technological changes in the society. Along with change in technology, inevitable changes in the economy lead to the acceleration of the urbanisation process. Hence, every city of today has an evolutionary history which has been an

interesting area of research for a long period. Sir Patric Geddes's (1951)¹ study 'City in Evolution' was a pioneering work in this field. He put forward the concept of an aggregate of closely spaced and functionally interrelated towns, extending far beyond the boundaries of their administrative divisions and coined it as 'connurbation'. He realised the process of regional urbanisation and called for a common planning in order to solve their problems of infrastructure and governance.

(b) Urban Morphology

While evolutionary history explains the present size and function of activity, the study of internal structure provides picture of landuse pattern within the city.

"Urban morphology is concerned with the physical qualities of the urban environment, identifiable in the plan or layout of a city, composed of streets or channels of movement, plots or blocks of space or structure, and individual buildings."²

¹Patric Geddes, 'Cities in Evolution', William Norgate, London, 1949.

²David Herbert, 'Urban Geography - A Social Perspective', Douglas David & Charles Limited, Vancouver BC 1977, p.64.

Internal morphology of cities have been studied by many scholars. Some of them are analytical studies according to functional areas, whereas others discuss the more formal regions within a city in relation to broad morphological characteristics.³

Burgess's (1925)⁴ 'Concentric Zone Theory' illustrates the typical process of the expansion of city by a series of concentric circles. He numbered these circles to designate both the successive zones of urban extension and type of areas differentiated in the process of urban expansion. His model represents the outward expansion of city from CBD in following concentric circles - (1) The loop of the Central Business District (2) The Transition Zone of Business, light manufacturing and deteriorated housing (3) The Zone of industrial workers house (4) The zone of high class apartment buildings or of exclusive 'restricted' district of single family dwellings (5) The commuters zone - Suburban areas or satellite cities.

³Studies on internal morphology is conform to the present study in the sense that urban fringe can be located in the models of internal structure of the city. The landuse relation also reflects light on the matter.

⁴E.W. Burgess, 'The Growth of the City' in R.E. Park, E.N. Burgass, R.D. Mckenzie's 'The City'. University of Chicago Press, 1925.

Homer Hoyt (1939)⁵ proposes the 'Radial Sector' theory of 'residential neighbourhood' and holds that the different income groups of American cities tend to be^a located in district areas which could be thought of as Sectors of a circle focussing on the CBD.⁶ Through his investigation he generalised certain common tendencies as the following: (1) A tendency towards segregation of areas according to income groups and social positions. (2) Residences of varying income groups would arrange themselves like wedges along radial lines from the centre to the fringe. (3) Sectors in the use of low or middle income group residences tend to remain perpetually so. (4) High class residences move outwards from the centre in the same sector.

The third classic model was forwarded by C.D. Harris and E.L. Ullman,⁶ which they termed as 'the multiple nuclei model'. Its main distinctive quality is its abandonment of the Central Business District as a sole focal point, replacing it by a number of discrete nuclei around which individual landuses were geared. As the conditions for the location

⁵H. Hoyt, "The Structure and growth of Residential neighbourhoods in American Cities", Washington 1939.

⁶C.D. Harris and E.L. Ullman, 'The Nature of Cities', The Annals of the American Academy of Political and Social Science, Vol. 242, 1945, pp.7-17.

of these nuclei may vary, There was no one generalised spatial form which could be suggested.

These theories of urban morphology generalised the processes and patterns of the ecological changes based on the struggle of different functions for the use of land. These theories are based on American cities and they have limited applicability in developing countries.⁷ But the 'Zone of Transition'⁸ in all the

⁷Studies on internal structure of Indian towns and cities show that three broad generalisations on American city morphology are not applicable in Indian context. S. Manzoor Alam's (1965) study on 'Hyderabad-Secunderabad' and K.V. Sundaram's (1977) study in 'Urban and Regional Planning in India', on Madurai, Moradabad, Tirruchirapalli and Coimbatore pointed out to the lack of any cultural continuity and clear cut functional zones in the Indian cities, where city cores are of mixed functions and peripheries are characterised by unplanned development and slums.

⁸The term 'zone-in-transition' applies to that part of the central city which is contiguous with the CBD is characterised by ageing structures and derives many of its features from the fact that it has served as a buffer zone between the CBD and the more stable residential districts of the city. The American zone-in-transition is typified by change and instability affecting both the use of land and the resident population. Initially, in the early stages of urban growth, the high income groups occupied space close to the central area within easy access of their place of business. As the city grew, so demand for central space increased and commercialisation and congestion led to a reduction in the residential attractiveness of inner city locations. Land value decreased towards periphery. Advances in transport technology helps the higher income groups to opt for low-density residences in suburban locations. Thus subsequently with movement of lower income-group people also a vacuum appeared in the zone-in-transition, where obsolescent structures became occupied by the income groups incurring low transport costs but occupying high value land at high densities.

three theories may reflect the location of slums and suburbs. Development of such sub-urbs are not common in the cities of developing countries.

R.E. Dickinson (1951)⁹ classified the internal morphology of West European cities in terms of 'historic centre of growth'. The three concentric morphological zones are (1) the central fully built up zone which is the core of the modern city, (2) the compact and fully built middle zone that was erected mainly during the 19th century, (3) the outer, partly built up zone in which urban and rural areas are mixed and to which urban areas have penetrated.

The city grows outward from the historic core, even the commercial core of the modern metropolis evolved out from it. Thus, the core can maintain its cultural association with the growing metropolis.

These studies not only explain the landuse pattern within a city but also throw light on the differences in the city morphology of developed and developing countries. In the developed countries the urbanisation process has reached such a stage where the core has become over-crowded and high-income group

⁹R.E. Dickinson, "City and Region : A Geographical Interpretation" Rutetrdge and Kegal Paul Ltd. London, 1944.

of people tend to move out of it. On the contrary, in the cities of the developing countries, city cores are still occupied by the higher income group people. "The gradual depopulation of the central city, evident throughout this century in western society, is not a feature in the non-western world and central densities increase as cities grow."¹⁰

(c) The City System

The third dimension of study in urban geography is the city system, where city is studied as a part of whole urban system.

Cities vary from each other in their various aspects of demographic, economic, functional and their infrastructural attributes. These variations dictate the present functions of the city, the services and goods that these cities can provide and the overall urban influence that it can generate. Because of such a situation, cities of a region form a hierarchy. Each city performs its individual role in the system of hierarchy. Analysis of the nature and function of these city systems forms an important dimension of urban geography. This aspect of city is dealt with

¹⁰David Herberd (1977), Op.cit., p.118.

taking city as an unit of settlement.¹¹ Similar settlements form a system, where different parts of the system are interlinked.

(d) The City - Hinterland Relationship -

While study on evolution of city, internal morphology and the city system reflects problems of urbanisation from three dimensions, the fourth aspect of urbanisation is the city-hinterland relationship. A city needs a large hinterland with primary production to cater to the needs of its population, engaged in non-primary occupations. In return the city provides impulses of modernisation, means of technological development, industrial products, administrative services and a market for the products of rural hinterland. Thus, a mutual interdependence emerges out of city-hinterland relationship.

The city-hinterland relationship is viewed from two angles. One group of studies explains the distinction between rural and urban settlements as rural-urban dichotomy. This view has been put forward

¹¹David Harvey, 'Social Justice and the City', Edward Arnold, London, 1976.

mainly by sociologists . Lampard (1965)¹² saw differences the sociological, structural and demographic characteristics between the rural and urban settlements. Wirth (1978)¹³ emphasised the process of polarisation and the direction of modernisation in two divergent ways, the urban and the rural. Rural-urban dichotomy explains the contrasts between them.

On the other hand, many geographers view this relationship as a 'continuum', which means, city as the stage of development and continue beyond the city limit. This relationship is symbiotic; both co-exist and collaborate with each other. "The traders, administrators, craftsman and service seekers live on the surplus of the countryside produces and in exchange they serve a large farming community through their urban amenities and services."¹⁴

Geographers dealing with the problem of city-hinterland relationship, denote many terms such as

¹²E.E. Lampard; 'Historical Aspects of Urbanisation', in P.M. Hauser and L.F. Schnare (Ed), 'The Study of Urbanisation', New York, 1965.

¹³L. Wirth; 'Urbanism as a way of Life', American Journal of Sociology, Vol.44, 1938.

¹⁴C.D. Deshpande; B. Arunachalam; L.S. Bhat; 'Impact of a Metropolitan City on the Surrounding Region', Concept Pub. Co., New Delhi, 1980, p.3.

'Complementary Regions', 'Urban-sphere of influence', 'Umland', 'Urban-field', 'City-region', 'Catchment area' etc., to the area surrounding a city, which is socially, economically and culturally linked with it. All these approaches aim at the problem of delimitation of the surrounding zones of a city in terms of services and goods under the assumption that all the services and goods have their own sphere of influence and people will travel to the nearest place at which goods and services are available.¹⁵ Studies done by Smailes (1947)¹⁶, Galpin (1925)¹⁷, Mukerji (1962)¹⁸, Singh (1955)¹⁹ demarcated the area as a composite service area, taking all the indices into consideration. But the choice is arbitrary, and "the resolution of

¹⁵W. Christaller; "Die Zentrale Orte in Suddentschland", 1933, Translated by C.W. Baskin; "Central Places in Southern Germany" Englewood Cliffs, N.J.

A. Losch; "Die raumliche Ordnung der wirtschaf, Sasite neu durchgearbeite Auflage," Juna, 1944, Translated by Wolfgang F. Stolper as "The Economics of Location", New Haven, Yale University Press, 1954.

¹⁶A.e. Smaile; "The Analysis and Delimitation of Urban field" in Geographer, Vol.32, 1947.

¹⁷C.J. Galpin; "The Social Anatomy of an Agricultural Community", University of Wisconsin Research Bulletin No.34, 1915.

¹⁸A.O. Mukerji; "The Umland of Modinagar", National Geographical Journal of India, Sept.-Dec. 1962, p.250.

¹⁹R.L. Singh; "Banaras - A Study of Urban Geography" National Geographical Society, Banaras, 1955, pp.130-132.

of all or some of the variations into one median line, to imply a sphere at a selected level, has no logical basis, for it quite unjustifiably assumes that a certain selection of lines has some form of real association, which in turn rests on the fact that they are related to the operation of a town at that level which has already been partly predetermined by the choice of criteria."²⁰

The second perspective i.e. the symbiotic relationship is studied by Dickinson (1964)²¹ where he emphasised that this relationship varies with the varying socio-economic conditions and the historical development of the city. At the initial stage the the influence is from the hinterland, by means of flow of labour, capital to the industrial complexes and at a later stage, follows the reverse direction of flow i.e. from the city to the hinterlands by means of income, saving and innovations. Ideas and techniques spread through the intermediary of the route and the central place. Except this study the 'symbiotic

²⁰Harold Carter; "The Study of Urban Geography" Arnold-Heinemann, New Delhi, 1982, p.91.

²¹R.E. Dickinson, (1984); Op.cit., p.

relationship' has been a neglected area of urban research.

Whatever the levels of urbanisation, one aspect is common in all the cases i.e. the physical expansion resulting in the encroachment of agricultural land. Thus, periphery of the cities depict transitional character. This transitional zone has been termed as the rural-urban fringe in the study of urban geography. Along with the problems of urbanisation recognised at various levels like-provision of infrastructural facilities, housing, congestion, pollution, the unscrupulous growth of suburbs and slums, the analysis of these fringe areas have been of vital concern to geographers, recently. "Urban fringe" emerges as an important field of study when city is considered as a dynamic entity, continuously expanding and interacting with its immediate hinterland.

This transitional zone between the built up area of the city and the countryside has been substantially neglected or atleast, inadequately studied. The inadequacy is due to the lack of a multidisciplinary approach. Urban planners limit themselves within the city boundary whereas the students of agricultural and land economics stop at the door-steps of the city. Thus, the study of urban fringe is largely left out

for geographers to study. This field of study falls somewhere between the study of landuse in city and the city-hinterland relationship.

Differentiation in nature and characteristics of Urbanisation at different levels

The process of urbanisation depends upon the whole socio-economic, - demographic and technological set-up of a society. Change in one aspect may lead to change in the pace of urbanisation. The degree of change and vulnerability of any one of the four aspects or all aspects together, depends upon mainly four situations.

- (a) The history of urbanisation.
- (b) The levels of economic development.
- (c) Hierarchical position.
- (d) Peculiar location.

On the basis of these four situations the process of urbanisation varies to great extent.

(a) Growth of cities is an important phenomenon in the evolution of the whole human society. The transformation of human society from primitive hunting and gathering economy to settled cultivation led to surplus in basic necessities in the society. The need



of decision making system and use of surplus led to the evolution of administrative system. Thus, cities grew around these seats of power and fortresses. This process continued through the medieval period to the time of Industrial Revolution. The medieval towns were based on these administrative functions and they were consumption oriented. The major break through in technological development and evolution of cities came with the Industrial Revolution. Introduction of industries in the cities led to a tremendous change in the city functions. For the first time the city functioned as a production centre, rather than a consumption centre. Since it became a production centre more and more people immigrated into the cities to avail the new occupational opportunities, Whereas cities of medieval period were consumer oriented and reflected slower pace of growth. The modern cities, largely with a production base experienced higher degree of urbanisation.

(b) The processes of urbanisation and their consequences assume spectacular differences in different socio-economic set-ups. Their differences are explained by the history as well as factors operating at present.

Urbanisation in today's developed and industrialized

countries of the world is the product of the technological and industrial path of development. On the other hand, in most of the developing countries, the process of urbanisation is linked with its colonial history. Colonialism resulted in the decline of old centres of production and in new towns, mainly of port locations. These towns were entry points through which colonial interests were operated. The medieval towns of today's developing countries either lost their traditional functions or were destroyed. The process created a dysfunctionality in the 'city system', where the urban system got dominated by one or two 'primate' cities.

After the aftermath of colonialism from these countries, around middle of the Twentieth Century, urbanisation mushroomed with even the low level of development, harsh life of rural areas and the operation of a 'vicious circle' of abject poverty and underdevelopment. Since, urbanisation is not accompanied by industrial development and increase in employment opportunities, the economy remains as traditional or agricultural. The process, thus, reflects a dualism of 'modernisation' and 'traditionality' in the economy. This dualism has been termed

as 'pseudo-urbanisation' or 'hyper-urbanisation'.²²

In developed countries the urbanisation process has reached such a stage that the core has become over-crowded and high income group people tend to move out from it. The high class residential suburbs have grown out of the city limit. To the contrary, in cities of the developing countries, 'city cores' are still occupied by the higher income group people. Slums are developed in the periphery of the city region. With lower standard of living and higher incidence of abject poverty, the development of high profile suburbs are less, except, perhaps in some of the metropolitan cities. At the same time the city cores are not so over-crowded or the premium on land is not so high to make outmigration to the periphery a necessity. (Alam 1965, Sundaram 1977).²³

In developed countries, different urban settlements

²²The concept denoted by T. McGee in "catalyst or Cancers? The Role of Cities in Asian Society" in Leo Jakobson and Ved Prakash's (ed) 'Urbanisation and National Development', Sage publication, Severley Hills, 1971

"Pseudo-Urbanisation" : A situation where urban population shows an increase over decade but the level of urbanisation remain stagnant.

"Hyper-Urbanisation" : Refers to the concentration of population in dense urban settlements at a rate that, except on the basis of inequality and exploitation, renders their integration into the emerging social order impossible.

²³S.M. Alam,; 'Hyderabad-Secunderabad' - A Study on Urban Geography" Allied Publishers Pvt. Ltd. Hyderabad, 1965
K.V. Sundaram; 'Urban and Regional Planning in India' Vikas Publishing House Pvt.Ltd. New Delhi, 1977.

are found in a functional hierarchical system. The long tradition of urbanisation, complex industrial economic structure has provided a functionally interdependent urban system. Thus, the 'Rank-size Rule'²⁴ is a valid hypothesis in these countries. But this rule of 'harmonic progression' is not applicable to urbanisation processes of Developing Countries'. On the other hand, 'city primacy',²⁵ is an important character of urbanisation in these countries.²⁶ The colonial legacy of these developing countries is inherited by the urbanisation processes also. Most of the primate cities are having a port location, which were established to serve colonial interests. These cities have developed 'enclaves',²⁷ characterised by

²⁴G.W. Zipf; "National Unity and Disunity" Principia Press, Bloomington (Indiana) Chapt. I & II, 1941. He forwarded [letter modified by Berry (1961)] that in a country of fairly large size, there exist an inverse correlation between the number of urban places and the size category, implying that the number of small sized urban places is the largest and it goes on decreasing as the size level increases.

²⁵Mark Jefferson; "The Law of the Primate City" in Geographical Review vol. 29, 1939. Primate City is described as the city that is several times larger than the second ranking city.

²⁶In her study 'Urbanisation and the spatial structure of Indian economy,' Galina V. Sdasyuk (1971) ["Economic and Socio-cultural dimensions of Regionalization" Census of India, Centenary monograph, No.7] concluded the primate character of four major cities of India, Delhi, Calcutta, Bombay and Madras.

²⁷B. Chattopadhyay and Moonis Raza; "Regional Development : Analytical Frameworks and Indicators." Indian Journal of Regional Science, Vol.VII, No.2, 1975.

the sharp contrast in the rural-urban boundaries. Thus, the urban systems in developing countries reflect a dysfunctionality in the urban hierarchy.

Another important distinction is the level of urbanisation. In developed countries the level of urbanisation (i.e. the percentage of urban population to total population) is very high and highlights the overwhelming dominance of urban populace over the rural. In developing countries, the level of urbanisation is low and almost stagnant. The growth in population is not accompanied by increase in the share of urban population. Instead, it is the urban-growth (i.e. increase in absolute urban population) which characterises urbanisation in developing countries.

(c) Urbanisation process finds different expressions at different hierarchical levels. Large size towns, specially, metropolitan cities dominate the urbanisation process all over the world. The metropolises and Class-I cities (under Indian Census classification) are expanding at the expense of small and medium size towns. The problem is more acute in the developing countries. This is the result of dysfunctionality in the urban system. The present metropolises of developing countries are the creation of the colonial legacy and assuming primate

city character they polarise the development processes. The dysfunctional character coupled with lack of sound production base, have resulted in difference in the pace of development at different levels of urban settlement in the developing countries.

(d) Processes of urbanisation and the characteristics of cities also differ according to their peculiarity of location. Ruggedness of terrain, other physical constraints, lower resource potentiality of an area always remain as bottlenecks to the urbanisation process. In a city like Shillong, located in a hilly terrain, amidst tribal milieu and lack of any important minerals or other resources, degree of urbanisation is limited and the pace slower than in case of a city of similar size located in other physiographic and resource situations. The city is characterised by mainly tertiary functions. In most cases the cities with such type of isolated location, function like satellite centres.

The variations in the processes of urbanisation based on the above mentioned four main dimensions, get impressed through the city's demographic — socio-economic and technological attributes. The degree of diversity leads to the variation in their nature of problems.

Urban-Fringe Study

Definition of Urban-Fringe -

Before going to discuss the fringe studies, a definition of 'fringe' area is necessary. The idea of fringe area emerged from the concept of hinterland and the studies on urban-morphology.

The concurrent term of hinterland is the 'Umland'. Whereas 'hinterland' is the term denoted to a larger area surrounding a city, the 'Umland' means a comparatively smaller area. Umland is a part of the hinterland. Rural-Urban fringe is a narrow zone just beyond the city limit.

To study the influences of growing metropolis and class I cities, in India the term 'Umland' is preferred to 'hinterland' by many scholars to demarcate the zone of influence of the city. The identification of 'Umland' is done on the basis of 'threshold of population' or 'distance decay function'.²⁸ Umland represents a composite area of some goods and services such as milk supply, vegetables supply, food products, commuters etc. Umland of one, two or more services and goods may form a part of the whole hinterland of a city. Thus,

²⁸R.L. Singh; "The Rural-Urban Fringe Studies", The Geographer, Aligarh, Vol. 14, 1967, pp.9-21.
Sudesh Nangia; "Delhi-Metropolitan Region", K.B. Publications, New Delhi, 1976.

hinterland depicts more composite picture of a larger area taking all city influences into account. Whereas the concept of 'Umland' deals with city as a service node and market centre, (that, defined by a 'functional approach'). The study of fringe is more formal than functional. The functional characteristics of urban fringe certainly help in evolution and the dynamic nature of the area. But generally, fringe area is identified mainly on the basis of formal attributes.

Elaboration of certain definitions on this field will make the concretization of definition of urban fringe easier.

- (a) "Outer zone of urban centre characterised by open space - neither purely urban nor purely rural in characteristics but partakes the character of both. People do not pay the municipal taxes but take advantage of the various amenities of the town."²⁹
- (b) "Rural-Urban fringe is a zone which lies immediately outside the city area and has strong interaction with the city proper in terms of daily commutation, exchange of goods and services and bears an urban reflection on the physical, occupational and demographic structure. It

²⁹R.P. Sinha; 'Urban-Rural Relationship - A Case Study; in Pradyumna Pandey (ed.) 'Modern Geographical Trends', Today and Tomorrow's printers & Publishers, New Delhi 1983, p.42.

It is rural compared to the typical urban or the city area and urban compared to the typical rural landscape."³⁰

- (c) "The fringe is a distinct stage in the natural process of suburbanisation and its evolution under normal condition is gradual."³¹

Following characteristics emerge from these definitions:

- (1) Fringe area partakes the characteristics of both urban and rural areas.
- (2) It is an area outside the urban limit and do not pay municipality taxes, neither comes under municipal jurisdiction.
- (3) Although a rural settlement, the urban characteristics get reflected in its physical, demographic and occupational structures.
- (4) The fringe area is characterised by higher intensity of interaction with the city in terms of commutations, exchange of goods and services.
- (5) Fringe area is a stage in the natural process of suburbanization.

Thus rural-urban fringe is a transitional zone between the urban and rural settlements,. The formative image get reflected in its landuse pattern and population

³⁰Sudesh Nangia (1976); Op.cit., p.80.

³¹K.N. Gopi; "Process of Urban-Fringe Development"
A Model" - Concept Publishing Co., Delhi, 1978, p.98.

and settlement structure. Functionally it is a dynamic part of the city-region and is linked with the city core in terms of commodity flows and commuters. The transitional character of the fringe area is manifest in all formal and functional attributes. The "rural-urban fringe is the area outside the city limit, where all aspects of demographic, social, economic, morphological and the interrelationship with the city indicates transition from rural to urban characteristics."

The Study Area

Being a part of a developing economy, with minimum characteristics of large size cities and owing to peculiar location, Shillong provides an ideal situation to the study of fringe area. As far as fringe study is concerned, Shillong is insular to great extent. A background to the study area will help in providing a basis for the study.

The fringe areas of Shillong urban agglomeration consist of many villages around it, nearly in all direction. Shillong was the former capital of the erstwhile state of united Assam and currently (1971) is the capital of the State of Meghalaya. The city is located in a valley, surrounded by peaks and hills. The Shillong plateau is part of the large Peninsular Plateau of India,

consisting of mainly Archaean Rocks. The relative relief of the area does not depict much contrast. Road transport has been developed negotiating the gradient of the area. The fringe characteristics are emerging along these radial transportation lines. The villages along these roads show more changes due to the urban influence.

The area surrounding the city is mainly tribal dominated. The occupational diversification has not attained any remarkable degree. Agriculture is still the major occupation. Besides, Shillong is an administrative town with a 'Bonanza Culture and characteristics of a Satellite centre'.³²

The emphasis on the study area will be made in a subsequent chapter.

Objectives of the Study

The inadequate analysis of the characteristics of fringe areas and the uniqueness of the study area are the two motivating forces behind this study. The objectives of the study can be put on the following:

³²A.C. Mohapatra; "Infrastructural Constraints On Urban Development in Hill and Tribal Areas of N.E. India", Paper presented in the 16th Annual Conference of the Regional Science Association of India; Dept. of Economics, Jadavpur University, Calcutta, April 26-28, 1984.

- (a) To identify the demographic, economic social and morphological characteristics of urban fringe of Shillong.
- (b) To understand the temporal changes of these characteristics of the fringe area.
- (c) To analyse the universality and uniqueness of these characteristics.
- (d) To identify the degree and pattern of harmony between Shillong and its fringe area.

Research Questions and Hypotheses

A. Research Questions:

The objectives of the study dictate certain research questions to be investigated. They are,

- (a) what are the directions and dynamics of change in the fringe area of Shillong: These could be categorised as:
 - (1) demographic structure
 - (2) Occupational structure
 - (3) Morphological Structure.
- (b) Whether there exist significant differences between the urban fringe of Shillong being located in a tribal and hill area compared to other cities of similar size in terms of the fringe characteristics?
- (c) What is the pattern and intensity of rural-urban interaction?

B. Hypotheses:

With the help of the studies available and the broad theoretical framework the research questions may generate certain preliminary hypotheses:

- (a) The growth rate of population in the fringe area of a city is more than the surrounding rural areas, as well as the city.
- (b) There is an unfavourable sex-ratio in the fringe areas due to sex-selectivity among immigrants.
- (c) The dependency ratio (in terms of number of non-workers to per 1000 workers) is lower due to immigration of large number of people of working ^{age} group (age selective in-migration).
- (d) That there is a significant change in landuse which is acquiring urban characteristics and undergoing orientation to cater to urban needs.

Scope and Significance of the Study

The fringe study has great significance due to the problems in urban planning posed by it. Fringe is the result of urban expansion. But the area does not come under the municipal limit and hence taxes are not required to be paid by the inhabitants. Because of the absence of Municipal controls in the fringe area, in first place, is devoid of urban amenities and secondly it experiences unrestricted, unplanned growth of urban

landuses. On the other hand, since the fringe is an area of rapid changes, it is incorporated to urban limits after some period. When the fringes are incorporated to the city limit it inherits the problems of unplanned growth and a landuse which can hardly be modified or improved due to the myriad of ownership regulation, particularly in the context of Shillong.

The problem of fringe is common in all cities. But in small and medium size towns the problem is not as acute which can attract serious thinking. Metropolitan planning in many of the Indian metropolises are already a reality (like National Capital Region Planning in Delhi) and the problems of metropolitan fringes have received some consideration. The small and medium size towns do not face the problem of fringe so extensively due to their slow/or stagnant growth, attention is inadequate in most, if not all, of the class I cities, particularly the fast growing one.

With these two facts of urban development, significance of the study can be understood through the words of Dickinson,

"The Rural-urban fringe is really an extension of the city itself, 'present and potential' and since the city or cities of a metropolitan area and its suburban or fringe areas are a unit economically and sociologically, the entire area should³³ be thought of and planned as a unit."

³³R.E. Dickinson; "The West European City" London, 1951, p.69.

The study of fringe itself is an arduous job. Moreover, the study of urban fringe of Shillong owes significance to its peculiar location and peculiar socio-economic base.

The scope of any research depends upon its utility. Utility may be of academic or practical; but the practical utility of any research may not mean a direct solution of the problem. Yet, this pioneering attempt to investigate the urban fringe of Shillong will inevitably contribute to theoretical and applied dimension of urban fringes in hill towns and cities, particularly in tribal areas. Moreover, in planning for the Greater Shillong under a master-plan, which is under consideration of the Town and country planning organisation (of Meghalaya), ^{has a} clear understanding of the problems of the fringe areas can be obtained. A geographical analysis of the urban fringe of Shillong certainly has a bright scope in its divergent academic and practical utilities.

C H A P T E R - I I

REVIEW OF RELEVANT LITERATURE

The study of fringe area emerges from the researches on the internal structure of cities and the city-hinterland relationships. Most of the studies on the problems of urban and rural areas that have done under various disciplines, have not incorporated fringe study into their purview of research. Even geographers attempt in this field is yet to be of any significance. The study denoted particularly to fringe is scanty.

The main thrust of the fringe study came during the second quarter of the present century, specially between the 1940s and 1960s. Galpin (1915)³⁴ recognised the process in his study of agricultural community of eastern America where he used the word 'Urban fringe' for 'rural' land in the process of conversion to 'Urban'. But Hira Lal (1980)³⁵ claims that the term urban fringe was introduced by Smith (1937)³⁶ to describe built up area just outside the corporate limit of the city".

³⁴C.J. Galpin; (1915), Op.cit., p.

³⁵Hira Lal; "Urban Fringe : Concepts and delimitation"; in R.B. Mandal and V.P. Sinha (ed.) - Recent Trends and Concepts in Geography, Vol.III, New Delhi, 1980, pp.121-142.

³⁶T.L. Smith; "The Population of Louisiana": Its Composition and Changes", Luisiana Bulletin, No.293, 1937, p.24.

Wehrwein's (1942)³⁷ study of Rural-Urban fringe has been recognised as the classical study in this field. After analysing the theories of Von Thunen's 'isolated state' and Christaller's 'central place' he evaluated different factors which are responsible for, what he termed as 'urban invasion' and 'peripheral dissemination' of urbanisation. He emphasised that the processes of 'Urban invasion' and 'peripheral dissemination' of urbanisation was started by the introduction of rail roads. Rail roads worked as the first 'decentralizer' and the metalled road, automobiles operated as the 'stimulator' of rapid invasion. He depicted the fringe in USA as institutional desert's because it became the location of all sorts of noxious and undesirable activities.

Andrews (1942)³⁸ threw new light on the study of fringe by attempting to differentiate the urban fringe

³⁷G.S. Wehrewein; "The Rural-Urban Fringe" in Harold M. Myer and Clyde F. Kohn (ed) Readings in Urban Geography, Central Book Depot, Allahabad, 1967, pp.533-551.

³⁸R.B. Andrews; "Elements in the Urban Fringe Pattern", in Journal of Land and Public Utility Economics, Vol. 18, 1942, pp.169-183.

from the rural-urban fringe. R.E. Pahl (1964)³⁹ while studying fringe areas of London summarised the main characteristics under the four heads of (a) segregation (b) selective immigration (c) commuting and (d) collapse of geographical and social hierarchies.

These studies were limited mainly to the problem of definition, delimitation, and identification. The dynamic aspect has not been dealt adequately. The two views emerged from these studies are: (A) Morphological - one who examines rural-urban fringe on the basis of changes in the landuse due to extension of the city and the urban demand of the marginal rural land of the

³⁹ R.E. Pahl; "Urbs in Rure : The Metropolitan Fringe in Hertfordshire: London" Weidenfeld and Nicolson for London School of Economics and Political Science, 1964. Pahl explained four characteristics as follows-

(a) Segregation - He identified four types of settlements based on culmination of functions - modern mixing settlements, large residential suburbs, and small villages which are not modified. All these sets of functions are segregated from one another, small villages being located in the core of the settlements. So, even if there is an admixture of many activities they are segregated from each other.

(b) Selective migration - The rural-urban fringe will attract in particular 'mobile' middle class commuters who tend to live and work in district and separated social and economic worlds from the established population.

(c) Commuting - Commuting will not be confined to the more wealthy but the availability and the cost of transport will create commuting nature necessarily to the less well-off.

(d) By collapse of geographical and social hierarchies he means the dispersed characteristics of functions in the service centres without following central place hierarchy. He maintained that due to the mobility of the population, services or the functions will be collected at the appropriate nodes. He pointed out that the social conflicts of the fringe people considering fringe not only as a physical area but also associated with the particular social process.

city and (B) Sociological - which views it as a distinctive society with two types of people, one advancing group of urban-oriented mobile, middle-class families and the other, the village community entrenched in traditionality and marginal primary activities, trying in futility to preserve the old order.

It is clear that the fringe is a significant development, but, due to its vagueness and transitional character the areal definition of the term has not yet been adequately articulated. Carter (1982) has provided a good review of the literature on rural-urban fringe, the residents of which he thinks, ". . . . live in country but not socially and economically a part of it."⁴⁰

The evolution of fringe is the result of physical expansion (some time termed as 'metropolitan invasion') of the rapidly growing cities. Industrialised and developed countries experienced another process which is the 'residential shift'. At a later stage of urbanisation with improvement of communication lines, people of the core areas started shifting towards the fringe areas to avoid high land rent and to enjoy fresh breath at the country-side. With the introduction of roads and railways, industries got decentralised. Availabl@ran-

⁴⁰Harold carter; (1982), Op.cit., p.70.

transportation, cheaper land, lower taxes and less restrictions over land uses in the immediate rural areas of urban limits have been some of the major inducements for their process of decentralization. The shifting of industries as well as location of new industries lead to establishment of the colonies of industrial workers, daily commuters and other characteristics of urban industrial economy.

In highly urbanized countries fringes are developed due to provision for recreational facilities, like parks, golf-course^s, playgrounds and forests within driving distance from the city centre. Similarly, legal and the institutional factors are also responsible for such growth through which unwanted activities, yet necessary are dumped in the surrounding areas. The establishment of airports, cemeteries, junk-yards, sub-standard dwellings, carnivals, also the city's own public utilities like water supplies, radio towers, sewage disposal plants give an appearance of 'institutional desert'.⁴¹

These developments lead to problems of various dimensions. The unscrupulous penetration of city activity towards rural areas leads to the problem of incorporation of agricultural land and also preservation of space

⁴¹George S. Wehrewin; (1967), Op.cit., p.533.

Incorporation of agricultural land by the urban uses in fringe areas may not have any direct effect on food supply when the percentage of agricultural land to the total geographical area is considered; but "Speculation by the purchase of fringe land in anticipation of development can create a deterioration in agricultural standards." The problems crying for direction,^{42, 43} planning and social controls are thrust upon rural administrative body which is economically and physically incapable to do that. "Unguided settlements, premature subdivisions and unwise expansion of public utilities with increased expenditures for local-shelf government have resulted in tax delinquency and sub-urban slums."⁴⁴ Since the fringe does not pay municipality taxes, the local government cannot provide such infrastructural facilities due to resource constraints. Moreover, the rate of provision of urban infrastructure cannot cope-up with the rate of growth in population density.

In the fringe area two communities come into

⁴²George S. Wehrwein; (1967), Op.cit.,

⁴³Kiran Wadhva; 'Urban Fringe Land Markets'
Concept Publishing Co., New Delhi, 1983.

⁴⁴George S. Wehrwein; (1967), Op.cit., p.533.

contact. The dynamic, urban-oriented, enterprising and unconventional city people interacts with traditional and conservative rural folks, resulting in psychological and social conflicts. Although, these effects are to some degree conducive to economic development of the rural areas; it is at the cost of rural folk 'mores' and 'values'.

The physical expansion along with dysfunctionality in the urban system makes city socially and spatially too big.

- (a) The urban-fringe in general is characterised by -
- (1) Greater influence of the urban centre than the rural hinterland.
 - (2) Areal contiguity with the urban centre.
 - (3) Fast economic transformation from primary to secondary or tertiary activities.
 - (4) An area of social flux where all socio-economic elements are in transition.
 - (5) Rapid changes in the landuse characteristics.
 - (6) Transitional character of its morphological set-up.
 - (7) No restriction of municipal rules, since the area is not under municipal jurisdiction.
 - (8) Provision of urban utilities may extend to some degree, but it is largely incomplete.
 - (9) Unplanned growth in urban landuses, unregulated growth of roads, shops, buildings, etc.

- (10) Farms are small in size, denoted mainly to non food-crops with commercial point of view.
- (11) Mobile population with low to moderate density.
- (12) Rapid residential expansion - where land speculations are common.
- (b) Although, fringe is an universal phenomenon and there are many common characteristics, they are different in different socio-economic conditions. Owing to the variations in the urbanization processes, there are certain unique characteristics of fringe in developing countries. A survey of literature on fringe studies done in Indian situation will reveal the distinctiveness.

In India "the study of rural-urban fringe forms one of the major gaps in geographical studies of urban areas."⁴⁵ Among several studies in India few of them are significant. Singh (1955)⁴⁶ used the circulation of local Hindi newspapers for determining the unland of Banaras. Hira Lal (1971)⁴⁷ suggested incoherent landuse pattern caused by outward growth of the city to be taken as representative of the fringe. Bal (1975)⁴⁸ observed

⁴⁵ Bina Srivastava and R.RamaChandran; "The Rural-Urban Fringe." The Indian Geographical Journal, Vol. XLIX, No.1, June 1974, pp.1-6.

⁴⁶ R.L.Singh; (1975), Op.cit.,

⁴⁷ Hira Lal; (1900), Op.cit.,

⁴⁸ B.P. Mishra; "The Rural-Urban Fringe : A Case Study of Dighari." The Deccan Geographer. Secunderabad Vol. 13, 1975, pp.217-224.

that in fringe settlements of the Nagpur metropolitan region, the agricultural landuse is distinctly oriented to the consumer market of the city. Mishra (1980)⁴⁹ identified characteristics of fringe areas as (1) physical-slums development, small and fragmenting farms, green belt huts and the friction amongst various spatial uses, (2) Functional - rapid and random change, leading to the transformation of ecological complex, (3) physical and functional characteristics result high landvalue, (4) cultural composition becomes urban oriented. All these studies have dealt fringe analyses as a peripheral work. Gopi (1978)⁵⁰ studied 'Uppal' a fringe settlement of metropolitan Hyderabad, in which attempts to explore the characteristics as well as process of fringe development. He noticed that unlike in European and American cities suburban centres of Indian Metropolises are not fashionable and 'exclusive residential' areas of higher and middle income groups. Nor are they industrial suburbs comparable to those around/large cities in industrially advanced countries. These are peripheral villages which have undergone functional and morphological changes either 'through a large scale and sudden transformation

⁴⁹B.P. Mishra; "The Concept of Rural-Urban Fringe", in R.B. Mandal and Sinha (ed). Recent Trends and Concepts in Geography, Concept Pub. Co., New Delhi, 1980.

⁵⁰K.N. Gopi; (1978), Op.cit.,

of the old village millieu or through the process of evolution.' They are of a varied functional character. He tried to develop a stage model of fringe development.

Nangia (1976)⁵¹ in her study of Delhi Metropolitan Region, demarcated the fringe area as a transitional zone between core of the city and the periphery. She used 'boundary-gridle' technique for demarcation and 'extended-urban area' concept to explain potential urban characteristics.

Wadhua (1983)⁵² studied fringe land market of Ahmedabad city. She noticed that a majority of the people who have shifted out to fringe areas belong to low or middle income groups. The land value in the fringe areas depends upon nature of speculation. Srivastava and Ramachandra (1974)⁵³ provided a hypothetical 'stage model' of evolution of fringe area. Different stages are rural stage, rural-urban linkage, transformation of occupation, the change of land use the urban village and the urban-village redevelopment. Kulkarni (1981)⁵⁴

⁵¹ Sudesh Nangia; (1976), Op.cit.,

⁵² Kiran Wadhua; (1983), Op.cit.,

⁵³ Bina Srivastava and Ramachandran; (1974), Op.cit.,

⁵⁴ K.M. Kulkarni; Urban-Structure and Interaction - A Study of Nasik City-region, Concept Pub. Co., N.Delhi, 1981.

discussed the city region of Nasik with the landuse pattern. The impact of urban expansion on rural landuse can have two trends: (i) The orientation of commercialised farm output towards the city market, (ii) the influence of the growing urban area on the values of open land around it.

These studies on the fringe areas in the Indian situation reveals interesting differences of urban physical and functional expansion between the developed and the developing countries.

The forces of urban expansion as well as the characteristic features of urban fringe are different in both the cases of developed and developing countries. In developed countries cities are expanding from a historic core. CBDs are much older by age than the peripheries. The focus of the city changes in time and families with higher income move out to avail the new facilities and avoid the overcrowded city core. The old buildings of city core are occupied by the people from low income groups, the new entrants, job-seekers and turn it into a city slum. On the contrary, as already mentioned, the city cores in developing countries still occupied by the higher-income group people. The immigrants find, shelter in the fringe areas by renting some houses and

also by formation of slums. This provided easy access to various service activities in which they are engaged.

In developed countries heavy and large industries and residential colonies of workers are located in fringe areas. Except few cases of industrial towns most of the cities of developing countries do not possess such large industries and do not have industrial suburbs. It is an admixture of various activities, slums, houses of middle income groups. Small scale industries, recreational facilities, public utilities of the city etc.

From the point of views of psychological adjustment in the fringe areas of developed countries, the problem may not be as acute, where the village structure and economy is not similar to the villages of developing countries. The people are less traditional in outlook and are easily adaptive to modern ideas and new 'life style'. In these villages, the physical, as well as socio-economic changes moves together with the physical expansion of the city.

In a developing economy, the pace of change is slower and fringe villages very often, with their century old traditions and cultural mores like side by side the city and its citizens. The slums that came up in these villages do not enter to the rural life, although there will be physical changes of the village

the psychological and socio-economic changes may not take place to the same extent. The village keeps its' traditional identity as well. Unlike urbanisation of rural areas in developed countries, although it is not exactly the ruralisation of urban areas, in case of developing countries, the rural-urban dichotomy can be observed in these fringes. In case of the developed countries, it is mainly the rural-urban continuum which predominates over the rural-urban dichotomy.

(In the countries of the Third World the urban influence has not been able to create marked changes in the occupational structure of the people of the fringe areas. Although the occupational structure may be changing due to greater commercial motivation, basically it remains agricultural. Owing to availability of limited employment opportunities in other sectors, the share of workers in agricultural sector is larger and tends to remain so for long.

This analysis depicts that more or less the 'pseudo-urbanisation', characteristics of developing countries, exist in their rural-urban fringes also. The villages maintain their entity, the landuse does not change to a great extent but the activities become more urban oriented. The following major characteristics

of fringe areas in developing countries can be identified.

- (1) Incoherent landuse pattern, caused by outward growth of cities. But the degree of changes is not higher.
 - (2) Fringe is not characterised by industrial or residential suburbs. The villages are still agricultural, but the agricultural landuse is consumer market oriented.
 - (3) Small and fragmented forms experience friction amongst various spatial uses.
 - (4) 'Slum development' occurs in the fringe villages.
 - (5) Landvalue is higher due to greater land speculation.
 - (6) Cultural composition of the people is urban oriented.
 - (7) Characterised by varied functional attributes and admixture of various activities.
 - (8) Social conflicts, psychological adjustment is of more contrasting nature in developing countries.
 - (9) Occupational shift does not acquire greater pace.
- (c) The characteristic features of the fringe areas are different again in the level of metropolitan and medium size towns, even within the context of developing countries. In case of metropolitan cities, as observed by few scholars in India, (Nangia 1976, Alam 1965, Gopi 1978)⁵⁵ the greater dynamism of the city leads to a faster growth of the fringe areas.

⁵⁵ S.M. Alam; (1965), Op.cit.,
Sudesh Nangia; (1976), Op.cit.,
K.N. Gopi; (1978), Op.cit.,

With all characteristics of the fringe areas of cities of developing countries discussed above are embedded in it, the medium size urban centre's fringe have certain unique characteristics differing from the metropolitan cities. Rural-Urban contrast is very sharp in metropolitan boundaries, due to polarisation of development process. Moreover, with the city expansion the older fringe is incorporated into the urban limit and new fringe occur outside it.

In contrast, in medium size towns have less marked fringe development. Fringe areas are occupied by residences and small industries along the radiated highways giving a finger like penetration to the rural hinterlands and star shape to the city. Being dominated by more of administrative and commercial functions and due to lack of a sound production base, the medium size towns do not have a fringe with marked occupational diversification. Thus, although the urban-fringes have many common characters as we have already noted down, the characteristics assume uniqueness in each level of analysis.

The lowest unit of analysis in this study - Shillong, provides certain unique characteristics due to its typical socio-cultural and environmental settings. The type of migration from the rural areas to the city is quite different from other towns of similar size.

Two main types of immigrants are responsible for city growth. One, those, who come from distant places mostly skilled and professionals and the others from the surrounding rural hinterland. The first type of immigrants are confined to the core areas of the city whereas the latter stream is located at the periphery of the city. People move from the rural areas not because they do not have land or due to lack of employment opportunities in the villages. The low density of population, extensive "Jhuming" or practice of shifting cultivation have not led to this necessity. People migrate to the city to have some what relatively easier life and comfort, to enjoy modern means of entertainment and to get rid of the harsh environmental conditions of their villages. These villages are located mostly in the hilly terrain, problems of level land, water supply, agriculture, difficult transportation etc. in elking out a living man often force them to move towards a somewhat easier life of the town. When they move they still own their land and houses in the villages. The people move to the city to open up new economic activities in the 'unorganised sector' which gives some additional income to their agricultural incomes. Likewise, many of the tea-stalls and kiosks are owned by daily commuters who go back to their villages after the day's work. Another stream occurs mainly to have education, who after completion

of education do not go back and may settle in the fringe areas. Although the physical expansion of the fringe areas are largely controlled by the topography of the area, the barriers may be overcome by the process, provided, other forces of expansion are stronger. Singh's (1980)⁵⁶ observation regarding Shillong is that, no growth takes place to the west, south and north-east due to the presence of cantonment, the steep slopes of Shillong range, and golf-links, race course and agricultural land, needs verification.

The fringes are mainly characterised by few residences of middle income group, retail service stations, repair shops, automobile service stations, recreational facilities etc. The city possessed less of slums and negligible industrial colonies. Industries are very rudimentary type with small capital and need less skilled labourers. Light manufacturing, small scale industries concentrate in the fringes due to easy transportation and cheap labour location from slums and the fringe villages.

The main problem in the fringe areas is the complexity in the nature of change in the tribal socio-economic set-up. The unstratified tribal society under-goes

⁵⁶J.P. Singh; "Urban Land-use Planning In Hill Areas", Inter India Publications, Delhi, 1980, p.192.

two types of stratification, (i) one on the basis of economic inequality among the original residents and the migrants and (ii) another due to the different cultural levels of the two types of population. This quasi-monetised tribal economy based on barter mode of exchange, gets transformed into money economy. People take up the occupations which are different from the traditional ones and need less skills and technical know-how. The most remarkable changes come in the field of psychological changes. Specially in a Khasi society "one of their chief characteristics is a dislike of all restraints, including the restraints of tradition, which of such binding force among most of the inhabitants of the east... they are ever ready to take a novelty."⁵⁷ The acceptance of modern notions and sudden exposures may create confusion and social tension, if it goes unplanned and unregulated. By adequate understanding of urbanization process the physical expansion could be regulated and thus, the anticipated ill-effects could be minimised. The study of fringe areas help to understand these aspects because this is the zone which receives larger degree of impulses of urbanisation within a short time span and a social and economic flux is created.

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B.C. Allen, A.e. Gait, H.F. Howard; Gazetter of Bengal and North-East India, Mittal Publications, Delhi 1979, p.481.

CHAPTER - I I I

. AND METHODOLOGY

Data:

The number of studies denoted to urban studies are substantial but those denoted to problems of fringe areas are relatively few. The attempt made towards formulation of theoretical models in fringe studies have been treated peripheral to urban studies. In the current study attempt has been made to study urban fringes in broadly three areas. Firstly, the task is to identify the characteristics of fringe areas and therefore, definitional. Secondly, identification of the defined fringe areas of an urban centre and finally, the attempt has been to develop a theoretical model suitable in explaining the urban fringe in developing countries like India.

The outer boundary of an urban centre is largely indeterminate⁵⁸ due to its transitional nature. Because of its transitional character, the problem of quantification of its characteristics and demarcation of boundary

⁵⁸R.E. Dickinson; 'City and Region: A Geographical Interpretation', Rutetrdge and Kegal Paul Ltd., London, 1944.

poses a serious problem. Thus, a definite line of demarcation will be a result of subconscious subjectivity of the researcher. The methods to be used to fulfil these objectives of the study will therefore, be less sophisticated in quantification and more of explorative and qualitative in nature.

Because of the paucity of data and non-availability cadastral survey and village maps and near verginity of area from the point of view of academic investigation, the scope of using sophisticated statistical techniques in analysis of collected data is largely restricted.

Two types of data are used in this study, those from the secondary sources and from the primary sources. Secondary data has been obtained from the urban schedule and the District Census Hand-book of the Census of India for the years of 1971 and 1981. Information on the demographic, economic attributes of Shillong and some villages surrounding it have been obtained from these sources. Besides, locations and distance of the villages from the city have also been collected from various other sources.

The data from secondary sources are not free from limitations and the reliability is limited to

few aspects only. The problem of comparability arises regarding the data on occupational categories. Census of 1971 categorised workers into nine industrial categories,⁵⁹ and in Census of 1981 there are only four categories⁶⁰ of workers. The Census of 1981, however regroups some of these categories into four broad groups, apart from a substantial changes in the definition of agricultural workers and cultivators and bring@s in a new category of marginal workers. The following categories of Census of 1971 are covered under one category, i.e. 'other workers'. They are:

-
- ⁵⁹
- I. Cultivators
 - II. Agricultural labourers.
 - III. Livestock Forestry, Fishing, Hunting, Plantations, Orchards and allied activities.
 - IV. Mining and Quarrying.
 - V. Manufacturing, processing, Servicing and repairs - (a) Household (b) Non Household.
 - VI. Construction.
 - VII. Trade and Commerce.
 - VIII. Transport, Storage and communication.
 - IX. Other Services.

- ⁶⁰
- I. Cultivators.
 - II. Agricultural labourers.
 - V.(a) Manufacturing Household industry, Processing, servicing and Repairs.

- | | |
|----------|-----------------|
| III, IV, |) |
| V (b) |) Other workers |
| VI, VII, |) |
| VIII, IX |) |

Marginal workers.

- (a) Livestock, Forestry, Fishing, Hunting, Plantations, Orchards and allied activities.
- (b) Mining and Quarrying.
- (c) Manufacturing, Processing, Servicing and Repairs carried out otherwise than as household industries.
- (d) Construction.
- (e) Trade and Commerce.
- (f) Transport, Storage and Communications.
- (g) Other services.

This creates the problem of comparability as well as disaggregation of these categories into the primary, secondary and tertiary activities. Because of such changes the comparison of sectorwise data has become a serious problem. Since, manufacturing i.e. under V(I), which is defined as a secondary sector activity in 1971, is added with the industry III category of 1971 census (primary activity) in 1981 census, therefore, the computation of the share of non-primary, particularly, the secondary sector workers has become impracticable. Considering the 'definition of workers'⁶¹ in 1981

⁶¹The concept of workers in 1981 census slightly differs from that of 1971, in terms of the reference period. In 1971 census a person was categorised as a worker even if his contribution to the work was extremely marginal. A person was enumerated as worker if he is employed for one week, preceeding the day on which he was enumerated. In case of agriculture, if a person is employed for one hour a day during the major season he was enumerated as a worker under the category of 'Agricultural labourer'. In 1981, the reference period is one year preceeding the date of enumeration. The Marginally engaged population has been enumerated as the 'Marginal Workers'. Keeping in view, the socio-economic condition of the State of Meghalaya, the addition of 'Marginal Workers' to 'Agricultural labourer' will not be of much deviation from the reality.

census the affinity of 'Agricultural labourers' and 'Marginal workers' can be understood. These two limitations in the secondary data could be adjusted by calculating the non-agricultural and agricultural workers for both the periods. Thus, cultivators, Agricultural labourers and Marginal workers of 1981 will be comparable to cultivators and Agricultural labourers of 1971 census, broadly speaking.

Although, data on landuse and the provision of socio-economic amenities would have been of great help in understanding the fringe characteristics, these are not adequately provided by the secondary sources consulted. The inadequacy of data leads to the omission of these two important parameters. Secondary data on the demographic, social and economic attributes have been used primarily to analyse the process of urbanisation of Shillong and the fringe villages, particularly, to identify the sample village for a detailed survey.

Primary data have been collected on a detailed questionnaire basis from the village selected for survey, i.e. Mawsbuit. A fifty per cent sample survey has been conducted to obtain data on demographic, social, economic and morphological structure, urban amenities and interaction of the village with the city. The information

which are collected under these broad categories are as the following:

- (a) Demographic -
 - (1) Size of the Household.
 - (2) Age and Sex.
 - (3) Level of education.
 - (4) Marital Status.
- (b) Social -
 - (1) Caste
 - (2) Community.
- (c) Economic -
 - (1) Occupation
 - (2) Agriculture
 - (3) Size of holdings
 - (4) Income and earnings.
- (d) Morphological -
 - (1)
 - (1) Crops grown and coverage.
 - (2) Intra-village settlement Structure.
 - (3) Non - Agricultural landuses.
- (e) Social amenities -
 - (1) Electrification
 - (2) Postal Services
 - (3) City bus services.
 - (4) Drinking-water supply.
 - (5) Medical care facilities.
- (f) Interaction with the city -
 - (1) Commuters.
 - (2) Commodity flows.
 - (3) Circulation of dailies.

Whereas, data on demographic social, economic and morphological attributes have been collected at the household level, the provision of social amenities have been collected at the village level. Of course, certain attributes like electricity are reported at the household level as well as the village level.

Methodology:**Analysis of fringe villages and choice of the sample village:**

To identify the characteristics and the transformations taking place in a fringe village for primary survey, the selection can not be arbitrary. Use of secondary data helps in analysing the characteristics of the fringe villages as well as the advantage of choosing the sample village. Information has been collected from the census reports as mentioned for 25 fringe villages, located beyond the "Standard Urban Limit"⁶² and within the distance of 5 kms. from this limit (please see the Fig. 1). The data has been grouped into variables, which have been found suitable for the purpose:

- (a) Population growth rate,
- (b) Sex ratio,
- (c) Literacy rate,
- (d) Occupational Structure,
 - (1) Share of non-agricultural workers to total workers.
 - (2) Dependency ratio.

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The standard urban Area is defined as projected growth area of a city or town having a population of 50,000 or more in 1971 as it would be in 1991. Taking into account not only the towns and villages which will get merged into it but also the intervening areas which are potentially urban.

In this study considering the size of the urban area depicted by different units the standard urban area seems to be optimally suited. Moreover, the rural component within this limit is already under planning and avail to urban amenities. The understanding of the influence of the city will be more meaningful in case of a village located outside the limit.

These variables on demographic, social, economic and amenities for all the 25 villages have been analysed to provide comparison with the Urban Agglomeration of Shillong. To have a more realistic picture, certain variables are used in two-way tables of percentage share and the growth rate over the decade. For example, the relation between the workers share in non-agricultural sectors and the annual rate of growth of workers would indicate settlements (village) with low share of non-agricultural workers but with high growth rate in it, or high share but with low growth rate or moderate share with moderate growth rates. These help in identifying the villages under various stages of transformation, due to various degrees of urban influence upon them and therefore, would help in choosing the most dynamic village on the fringe of the city.

Therefore, a village with typical fringe characteristics, theoretically must possess the following attributes.

- (a) a higher rate of growth of population than the city.
- (b) a lower sex-ratio than the city due to sex selective immigration.
- (c) high percentage of literacy and high growth rate in the level of literacy.
- (d) high share of workers in non-agricultural sectors and high growth rate in the share of non-agricultural sectors.

- (e) Lower dependency ratio and a declining trend in the dependency ratio (DR).

From these indicators an attempt has been made to formulate a composite index. In the compositing exercise the scoring scheme used is very simple. Except the sex-ratio and the dependency ratio, higher the value of the observation, higher is the level of urban influence. In case of sex-ratio and dependency ratio scoring scale has been of reverse order. The Table III.1 shows the scoring scheme. The ideal conditions should be represented by score at 28 and the most rural characters by 7.

The composite index will help in the identification of the fringe village. A fifty per cent sample survey has been conducted in the village 'Mawsbuit' to collect primary data on demographic, social, economic and amenities. The information collected both at the village level as well as the household level using two schedules i.e. the village schedule and the household schedules. (The format of the schedules are attached in Appendix-1). The village schedule is denoted to broader parameters, like landuse, social amenities and the level of interaction with the city. The household schedule, largely denotes itself to problems of demographic

TABLE III.1
Scoring Scheme for Composite Index

Decennial population growth	Change in Sex Ratio		Literacy		Change in dependency Ratio		Non Agricultural Workers				
	Class	Score	Class	Score	Class	Score	Class	Score			
Negative	1	Negative	4	0 - 20	1	Negative	4	0 - 20	1	Negative	1
0 - 20	2	0 - 100	3	20 - 40	2	0 - 10	2	0 - 100	2	0 - 10	2
20 - 40	3	100 - 200	2	40 - 60	3	10 - 20	3	100 - 200	2	40 - 60	3
40 +	4	200 +	1	60 +	4	20 +	4	200 +	1	60 +	4

(age, sex, education, employment and occupational status.), economic (character of household economy) and social attributes of the household.

The information so collected have been grouped into sets of variables which have been converted into the following variables.

(a) Demographic

(1) Age-Sex Wise Distribution of Population

An age and sex pyramid has been prepared for the village to understand the age and sex wise distribution of population. More people in the middle age groups will indicate the urban characteristics due to age and sex selective immigration.

(2) Sex-ratio

Sex-ratio is the number of females per thousand male population. A lower sex-ratio of the village than the city will mean age and sex selective immigration into the village and it will indicate larger urban influence.

(3) Literacy rate

Percentage of literates to total population means the literacy rate. Literacy rate has been computed both for total as well as male and female population. An increasing literacy trend in the village will mean its fringe characteristics.

(b) Occupational Structure:

(1) Dependency Ratio (DR)

DR is calculated in terms of number of non-workers to total workers. A lower dependency ratio in the village, specially lower than the city, is the expected characteristic of a fringe village.

(b) Percentage Share of Non-primary Workers:

A higher percentage of non-primary workers will indicate a shift in the rural economy from traditional agricultural economy towards more urban-oriented economy.

(3) Percentage of workers engaged in different kind of occupations:

The percentage of workers engaged in different modern urban-oriented occupations like education, services, white collar jobs etc. will indicate a shift in the occupational structure and the degree of occupational diversification.

(5) Age-group wise distribution of Workers:

The percentage of workers in different age-group and in different sectors will indicate the change in the occupational structure through the successive generations.

(5) Percentage of skilled, semi-skilled and unskilled workers:

The occupational categories of a modern economy demands a certain degree of qualifications and skills. Workers of the study village are grouped according to their level of skills. For example drivers, services are the occupations which need skills. Agricultural labourers

are grouped into unskilled labourers, since, no special training is required in this occupation. A higher share of skilled labourers will indicate marked shift in the occupational structure of the village.

(c) Morphological:

(1) Size of land holdings:

The size of land holdings in each family will indicate the level of income as well as intensity of cultivations. A smaller size of land holding for a large number of families means subsistence mode of agriculture of the village.

(2) Area under different Crops

Predominance of primary sector always does not mean a rural characteristic. The types of crops grown and size of land denoted to each crop will indicate the nature of cultivation. A higher share of non-food crops like vegetable gardening will indicate the urban-oriented economy of the village.

(3) Mode of Cultivation

In case of the fringe area of Shillong, which being located in a tribal society is largely under the practice of 'Jhuming' i.e. shifting cultivation, the shift in the mode of cultivation from 'shifting' to 'permanent' cultivation will indicate urban influence due to modernisation. The area devoted to permanent cultivation by each family will provide the broad agrarian characteristics of the village.

(4) Number of families having social amenities

The access of the household to modern social amenities like electricity, water supply will indicate the provision of these attributes in the village. The information on social amenities are provided by the village schedule.

(d) Interactional Elements

(1) Number and purpose of daily commuters:

An analysis of the number and the purposes of the people who visit the city regularly will indicate the patterns and intensity of interaction between the fringe village and the city.

(2) Commodity flows:

Commodity flows between the study village and the city include: those produces which the village sells in the urban market, like milk, vegetables, etc. and the manufactured products which the village buys from the city, like clothes, fertilizers, medicines, etc. A supply of various agricultural and forest products by the villagers to the city and a variety of goods the city provides to the village will indicate the level of interaction between the village and the city.

These indicators have been further classified on the basis of 'static' as well as 'dynamic' characteristics of the fringe. Whereas demographic and morphological attributes provide static characteristics, the socio-

economic and interaction elements provide the dynamic characteristics. All the indicators have been analysed to understand the pattern and intensity of transformations taking place in the fringe.

Since, the survey is at one point of time, the study of dynamics (temporal) of the fringe can not be analysed directly and therefore, indirect procedures have been followed. Age structure may provide a very significant and objective criterion to analyse changes which are taking place at one time. For the present analysis the socio-economic characteristics of the older age groups can be compared with that of the newer generations. To make it simpler various categories of age groups have been prepared as the following:

- 0 - 5 yrs.
- 6 - 15 yrs
- 16 - 45 yrs
- 46 - 60 yrs
- 60 and above.

Analysis of age-structure for each indicator will help to understand the transformations, that are taking place in the village, over successive generations. Thus, this indirect method will help to understand the increasing urban influence.

Morphology of the village, located in urban

fringe experiences a fast change with increasing urban influences. In case of Mawsbuit the transformation in morphological attributes have been studied through patterns of landuses and provision of urban amenities. Although, the non-availability of cadastral survey for the hill regions of Meghalaya, has been a main hurdle in studying landuse pattern with the help of a landuse map, preparation of a sketch showing landuse pattern within the village can focus certain prominent features. Since, the investigator surveyed the village for quite a number of days, an attempt towards understanding of broad landuse pattern will not be much deviation from the reality.

Provision of urban amenities will indicate the rate of change that a fringe village may experience due to urban influences. The information on the number of households having electric connection, number of households having access to the newspapers etc. have been analysed from the household level questionnaire. On the other hand, provision of drinking water supply, medical facility, infrastructure for education etc. have been analysed at the village level. In the case of Mawsbuit the non-availability of urban amenities itself speaks about the fringe characteristics and

makes use of sophisticated statistical techniques insignificant.

Analysis of the pattern and intensity of interaction between the city of Shillong and the fringe village, Mawsbuit has been done with the help of retail structure of the village, commuters and commodity flows between the city and the village. Although, the volume of commuters could not be exactly represented through a flow map, the understanding of purposes of the commuters and the frequency of their visits will help to analyse the level of interaction. Commodity flows in terms of the commodities that the village supplies to the city and the goods and services the city provides to the village will speak about the degree of economic integration between the fringe village and the city.

Thus, the methods applied to this study is without any sophistication and approach has been to understand both formal as well as functional attributes.



C H A P T E R - I V

**ANALYSIS OF THE URBANISATION PATTERN OF
SHILLONG URBAN AGGLOMERATION
AND THE IDENTIFICATION OF THE FRINGE VILLAGE**

**Urbanisation Pattern of Shillong
Urban Agglomeration**

Fringe of the city reflects the accretion of urbanisation process to the rural areas. Thus, it depicts a transitional zone between a city and the village, in social and economic dynamics, particularly, in a developing situation. Fringe is a distinct stage in the natural process of 'sub-urbanisation'⁶³. Because of the expansion and extension of the urban area, the fringe may get incorporated into the city overtime and in the process, a new fringe is created.

In this chapter an attempt will be made to understand the nature of the urban fringe of Shillong. The characteristics of an urban fringe show the operation of three main factors, the pace and degree of urbanisation, nature and the function of the city and the overall socio-economic condition of the area within which the city and its hinterland are located. The characteristics of the urban fringe of Shillong revolve around these three factors. An analysis of the nature and function

⁶³K.N. Gopi, (1978) Op.cit., p.98.

of urbanisation process of Shillong Urban Agglomeration will be of great help in this regard.

Shillong city is an integral part of the 'Urban system of the North Eastern Region which is the nexus with metropolis of Calcutta and the urban system developed around the port. The urbanisation process of Shillong can be attributed to the peculiar location of the city in a predominantly tribal and hill area, with limited sedentary agricultural practices and inadequate transport linkages within and without the region.

The evolutionary history of the city, being principally an administrative satellite centre of the British Raj, still continues being essentially service oriented. Being located at about 5000 ft. above the sea level (MSL), its location provided an ideal setting for the exasperated administrators, the planters, and other fortune seeker from the oppressive climate and often hostile social life of the plains. That is why, Sten⁶⁴ preferred to call it as the 'Scotland of the East'. Being occupied and developed under the tutelage of the British, its influence on the surrounding villages and their people was no less.

⁶⁴H.W. Sten, "The Meghalaya Year Book", 1971, North-East India News and Feature Service, 1971, pp.57-58.

Inhabited by 176,064 persons (according to Census of India, 1981) the town is one of the largest among the cities of North-Eastern India. Through the ages the town has experienced several changes both in its physical as well as functional attributes. The degree and nature of influences generated by the urban centre will depend upon the degree of these changes. Shillong Urban Agglomeration occupies 21.27 sq.km. of area at 25°34'N. latitude and 91°53' E. longitude. The city is well connected with other towns of the North-Eastern India through a network of national highways, with Guwahati in the North and Jowai, Cherrapunji, silchar in the East and South. Shillong is also connected by air with Calcutta, Guwahati and Silchar.

Shillong is surrounded by a number of large villages inhabited by principally Khasi and Jaintia tribes. The people are Tibeto-Burman but speak the Austric group (Mon-Khmer). The varied topography, copious rains and the greenery and a beautiful, hospitable people provide enough of variety in its socio-economic spectrum. The variety becomes its uniqueness and therefore has developed as the premier centre for educational and cultural activities in the Region.

Shillong derived its name from a person named 'Shyllong' who discovered God at the highest peak.⁶⁵ The urban centre evolved around the weekly market centre called "Eewduh" i.e. present 'Bara-Bazar'.

Bullshi

With certain events like the acquisition of the Dewani of Bengal by the East India Company in AD 1765 and 'Yandaboo Treaty' in AD 1826 the Shillong plateau and Khasi and Jaintia Hills area came under the British rule.

For the selection of sanitorium and cantonment for the British military, Cherrapunji was selected by the British in 1829. But due to inclement weather condition of the place and due to need of better water supply facilities, central location with the advantage of military post and civil station and easy access, Shillong was opted in 1834, abolishing Cherrapunji, as the capital. Under the guidance of Captain Rowlatt, Civil Assistant Commissioner of the Khasi Hills a place near 'Eewduh' was selected and renamed as Shillong. The district headquarters of the Khasi and Jaintia Hills were transferred to Shillong from Cherrapunji in 1864. However, shifting was completed in 1876. Shillong was made the capital of Assam, after creating Assam

⁶⁵ J.P. Singh, (1980), Op.cit., p.46.

X
B

as a new province in 1874. Thus the administrative orientation of Shillong is due to the predominance of our history.

With establishment of Shillong Municipality in 1909, new areas such as Laitumkhrah, Hopkinson Estate, Malki, Mawprem, Laitkor forest were included under the Municipal boundary.

A new thrust of horizontal and vertical expansion ^awas experienced by Shillong after Independence. Due to large in-migrations, expansion of residential buildings, administrative building, vacant lands in Laitumkhrah, Laban, Malki were occupied. Proper planning, especially in case of residential expansion was not done at this stage. In 1951 Shillong had only two parts, the Municipality and the Cantonment. By 1961, Nongthymmai and Mawlai Townships had developed and formed two Census towns. Due to unrestricted residential expansion and changing in Municipal boundary, a clear fringe area developed around Shillong. Happy Valley, Umlyngka, Upper Shillong, Nongkesh, Lawsotun, Madanrting, Pynthorukhrah, Nongmysong and Umpling developed urban characteristics in their morphological and economic set-ups. In 1981, Madanrting and Pynthorumkhrah were included under Shillong Agglomeration. In 1970, when the new

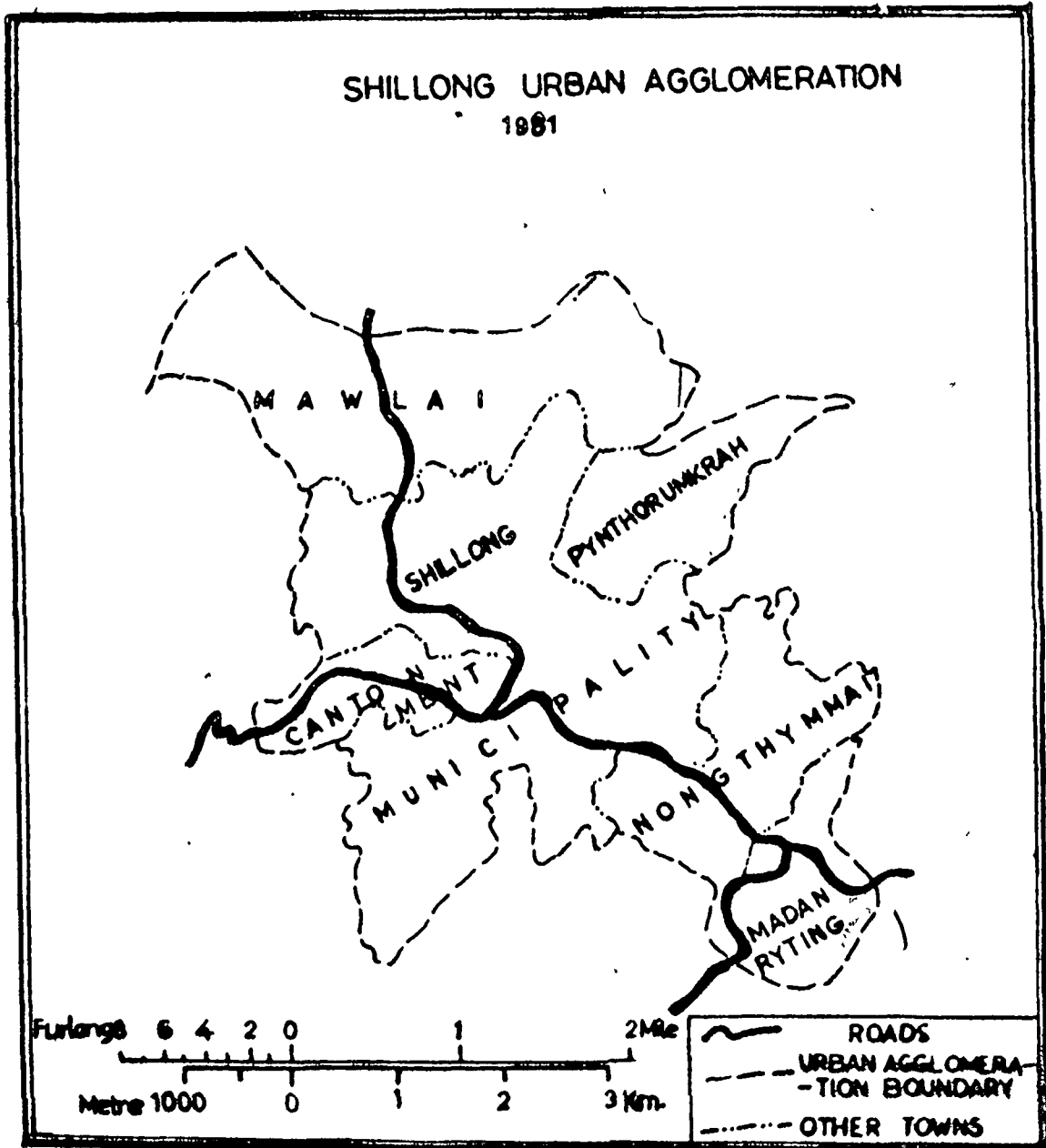


Fig 1

State of Meghalaya was created and Assam's capital was shifted to Dispur, Shillong remained as the Capital of Meghalaya only.

Shillong was established mainly for administrative purposes. Through the history of evolution, it has ascribed certain degree of specialization to its functions. The population has increased at a rapid pace leading to acquisition of new settlement under urban areas. Similarly, the share of workers in traditional non-primary occupations have declined to a great extent, adding more to their existing urban characteristics. An analysis of its demographic, socio-economic characteristics would be meaningful in this context.

Shillong urban Agglomeration consist of Shillong Municipality, Cantonment, Mawlai, Nongthymmai, Pynthor-umkhrah and Madanrting. The Fig.1 shows the different units of the Agglomeration according to Census of India 1981.

Certain important characteristics emerge from the Table IV.1.

(i) The growth of population is higher in 1961-71 decade than the 1971-81 in all four constituents except Shillong Municipality. The reason may be the large

TABLE IV.1
Population of Shillong Urban Agglomeration

Urban Units	Total Population			Decennial growth	
	1961	1971	1981	1961-71	1971-81
Shillong Municipality	72439	87659	107673	+21.01	+ 22.85
Cantonment	2988	4730	6653	+58.32	+40.66
Mawlai	8528	14260	20280	+67.21	+42.22
Nongthymmal	10084	16103	21563	+59.69	+33.91
Pythor Umkhrach	-	-	10735	-	-
Madanrting	-	3013	6160	-	-
Shillong U.A.	94039	122752	176064	+30.53	+43.43

Source: Census of India 1981 and final tables for 1961 and 1971.
Provisional population total Meghalaya Series-14.

scale outmigration resulting from the shifting of capital from Shillong to Dispur. But the overall growth rate is higher in 1971-81 decade indicated in the figure for Shillong Urban Agglomeration.

(2i) The growth of population is the product of (i) natural increase (ii) change in the Municipality boundary and (iii) inmigration from the surrounding rural areas as well as from distant places including inter-State migrations.

When the population of Madanrting and Pynthor Umkhrah are eliminated the growth rate of Shillong Urban Agglomeration remains 28.9 per cent instead of 43.70 per cent in 1981. Thus, the population growth of Shillong depicts a picture of 'relative stagnation'.⁶⁶ The causes of the stagnation are observed by Mohapatra as (i) Shifting of Capital from Shillong to Dispur (ii) Physical extension of the city into the hinterlands which do not clearly figure in the Census enumerations.

The stagnation is mainly due to the ineffectiveness of the main two forces of growth viz. Inmigration and Natural growth. The marginal growth rate is the result of largely physical expansion of the city.

Inmigration into shillong could be of two types

⁶⁶A.C. Mohapatra, (1984), Op.cit.,

(i) one is augmented by the migration stream from the immediate hinterland of Shillong; (ii) the other is the augmentation by the migrations stream from distant places or interstate migrations. In case of Shillong, the probable fact is that the first stream is not as significant due to the traditional — agricultural — tribal-milieu surrounding it. The second process is also not as prominent due to relative deceleration of its urban function, particularly after the shift of capital of Assam. It may attract people as a health resort or an important educational town. Immigration from distant places are also restricted by the constitutional safeguards provided to the scheduled tribes of the area in the Sixth Schedule of the Constitution and in employment opportunities in 'white-collar' jobs. However, there exist a large stream of immigration of labour into the state for unskilled or semiskilled jobs, principally in the construction sector.

Owing to its topographic limitations, slope characteristics and the complexity of land ownership⁶⁷ and land laws, the city expansion is not possible in all directions. Particularly in the establishment of housing colonies etc., the free choice is not available.

⁶⁷K. Haloi, 'Land Ownership in Khasi Hills', Hill Geographer, Vol. II, No.1, pp.11-17.

Therefore, the innercity areas are already highly congested and traffic density are fairly high on the road network of the city.

(3) In case of the size of population, the relative dominance of Shillong Municipality is closely manifest. The share of urban population of Meghalaya is very less, which is 18.12 per cent, as against 23.73 per cent of the national average. However, Shillong Municipality (48.71 per cent) has the largest share of the urban population of the State. This has led to high density of population with around 10,500 persons per square km., causing strains and stresses to urban infrastructure and the quality of life in general.

Consideration of other indicators suggests some important features:

Sex-Ratio

Sex-ratio, expressed as females per thousand males is considered to be an index of urbanisation in the Third World cities. A decline in the number of females in urban areas indicates the large influx of male-selective immigrants. Thus, growing immigration in response to increasing employment opportunities in the urban areas are considered to be the indicator

TABLE IV.2
Sex-ratio of Shillong Urban Agglomeration 1971-81

Urban Units	1971	1981
Shillong Municipality	841	910
Cantonment	765	762
Mawlai	938	905
Nongthymmai	881	912
Pynthor Umkhrach	-	867
Madanrting	-	950
Shillong U.A.	855	902

Source: Census of India 1981.
 Provisional Population Tables Total 1981 Meghalaya.

of urbanisation. In reality, in India the immigration of rural youth is not due to the 'pull factor' of the urban amenities, grandeur or lucrative opportunities, rather, it is the 'push-factor' of rural areas, largely agriculture not being able to accommodate a fast growing rural population. In the process, the youngmen, unskilled or semi-skilled, leave singly or without family for the city in search of the illusive employment, finally settling for the odd job and for daily wages. Hence, sex-ratio as an indicator of urbanisation needs verification.

Secondly, there is a general, gradual but steady decline in sex-ratio in India. It declined from 972 in 1901 to 932 in 1971 and slightly improved to 934 in 1981 Census. The figures were less for the urban areas, but the decline in the ratio is visible. Compare to the above situation, Shillong experienced an increase in the sex-ratio during the decade of 1971-81.

The fact does not indicate urban male outmigration or deurbanisation; instead, this may be a true indicator of a matrilineal society where women enjoy a fair degree of importance and status in the society, determining a better situation of 'life expectancy'. The argument can be best supported by the fact that while the share

TABLE IV. 3

Level of Literacy in Shillong Urban Agglomeration

	1971			1981		
	Total	Male	Female	Total	Male	Female
Shillong Municipality	68.16	73.01	62.24	67.16	71.36	62.54
Cantonment	57.48	63.05	50.22	60.26	63.88	55.51
Mawlai	52.62	56.30	48.10	56.20	59.92	52.09
Nongthymmai	69.38	72.60	65.73	65.53	69.22	61.48
Pynthorumkhrach	-	-	-	53.39	59.69	46.12
Modern Rytting	-	-	-	51.96	55.98	47.73
Shillong Urban Agglomeration	66.11	70.80	60.62	62.92	68.18	59.39

Source: Census of India, 1981.
Provisional population total, Meghalaya.

of male workers to total population declined from 49.26 per cent to 47.64 per cent during 1971-81 decade, the female workers participation increased from 13.65 per cent in 1971 to 15.72 per cent in 1981. The increase in the number of female is due to better female participation in the workforce. Secondly, the sex-ratio in general is higher in Meghalaya 956 (1981). A slight decline or lower sex-ratio may indicate age-selective immigration.

The Table IV.3 shows that in all the units of Shillong Urban Agglomeration, the literacy rate is quite high compared to national average. This is mainly because of the concentration of number of educational institutions at Shillong and also the efforts put forward by various missionary organisations. Although the overall literacy shows a slight decline from 1971 to 1981 it is because of the two new additions of townships'. Pynthorumkhrah and Madanrting being traditional and with low literacy figures, which disturbs the overall picture. Otherwise the percentage literates goes up to 69.77 per cent (1981).

Occupational Structure

Definition of an urban centre veers around

TABLE IV.4

Percentage of Workers to Total Population

	1971			1981		
	Total	Male	Female	Total	Male	Female
	Shillong Municipality	33.16	49.63	13.63	33.53	48.68
Cantonment	31.08	53.23	2.15	30.78	42.63	17.47
Nongthymmai	30.70	47.13	12.07	32.44	47.58	15.83
Pynthorumkhras	-	-	-	29.70	48.63	7.88
Madan Rytting	-	-	-	27.39	41.86	12.16
Shillong Urban Agglomeration	32.84	49.26	13.65	32.50	47.64	15.72

Source: Census of India, 1981.
Provisional Population Total, Meghalaya.

TABLE IV.5 (a)

Shift in the Share of Workers to Total Workers 1971-'81

	% of Agricultural Workers		% of workers in Household industries		% of other workers						
	1971	1981	1971	1981	1971	1981					
Shillong Municipality	1.35	0.37	-0.98	1.52	1.66	+ 0.14	97.13	97.34	0	2	1
Cantonment	0.21	0.10	-0.11	2.18	0.93	- 1.25	97.61	98.97	1.36		
Mawlai	37.86	19.78	-18.08	3.62	0.88	- 2.74	68.52	79.44	10.92		
Nongthymmai	2.24	1.41	-0.83	1.44	0.86	- 0.58	96.32	97.73	1.41		
Pynthor Umkhras	-	9.88	-	-	1.73	-	-	88.39	-		
Madanrting	-	2.96	-	-	2.61	-	-	94.43	-		
Shillong Urban Agglomeration	4.59	3.65	- 0.94	1.78	1.48	- 0.3	93.63	94.81	1.18		

Source: Census of India, 1981. Provisional Population Total, Meghalaya.

TABLE IV.5 (b)
Growth Rate in the workers of Shillong Urban Agglomeration

Urban Units	Agricultural Total		% Growth Rate (71-81)	Household Industries total		% Growth Rate (71-81)	Other workers Total		% Growth Rate (71-81)
	1971	1981		1971	1981		1971	1981	
Shillong Municipality	392	364	-7.1	442	598	+3.52	28234	35146	+ 2.44
Cantonment	3	2	- 3.3	-	19	-	1467	2027	+ 3.81
Mawlai	1829	1224	- 3.3	175	55	-6.85	3310	4914	+ 4.84
Nongthymmai	61	99	+ 6.23	71	60	- 1.54	4763	6835	+ 4.35
Pynthor Umkhras	-	315	-	-	55	-	-	2818	-
Madanrting	-	50	-	-	44	-	-	1593	-
Shillong U.A.	1850	2054	+ 1.10	718	831	+1.57	37744	53360	+ 4.13

Source: Census of India 1981.

the occupational structure. An urban centre with a sound production base provides more employment opportunities especially in non-primary sectors. This would help in absorption and assimilation of immigrants, particularly from neighbouring areas, creating possibility of income transfers and a 'trickle down effects'.

Analysis of Table IV.4 shows the unchanged share of workers to total population of Shillong, while the percentage of male workers shows a declining trend, that of the female workers recorded marked increase in their share of the workforce. The percentage change of share of workers according to different industrial categories (census classes) also indicate relative stagnation. Except in case of Mawlai and Nongthymmai, the decline in the primary sector and increase in non-primary sector has been minimal.

Growth in tertiary sector has been predominant in all the urban units. The development of tertiary sector is based on its dominance by administrative function and the development of the educational function which is the pattern, generally observed in the urban centres of the Region, in the absence of any substantial manufacturing base.⁶⁸ Because of a slow rate of urban

⁶⁸P. Chittaranjan; "Urbanisation in the North-East Region of India." M.Phil. Disseretation, NEHU, 1978.

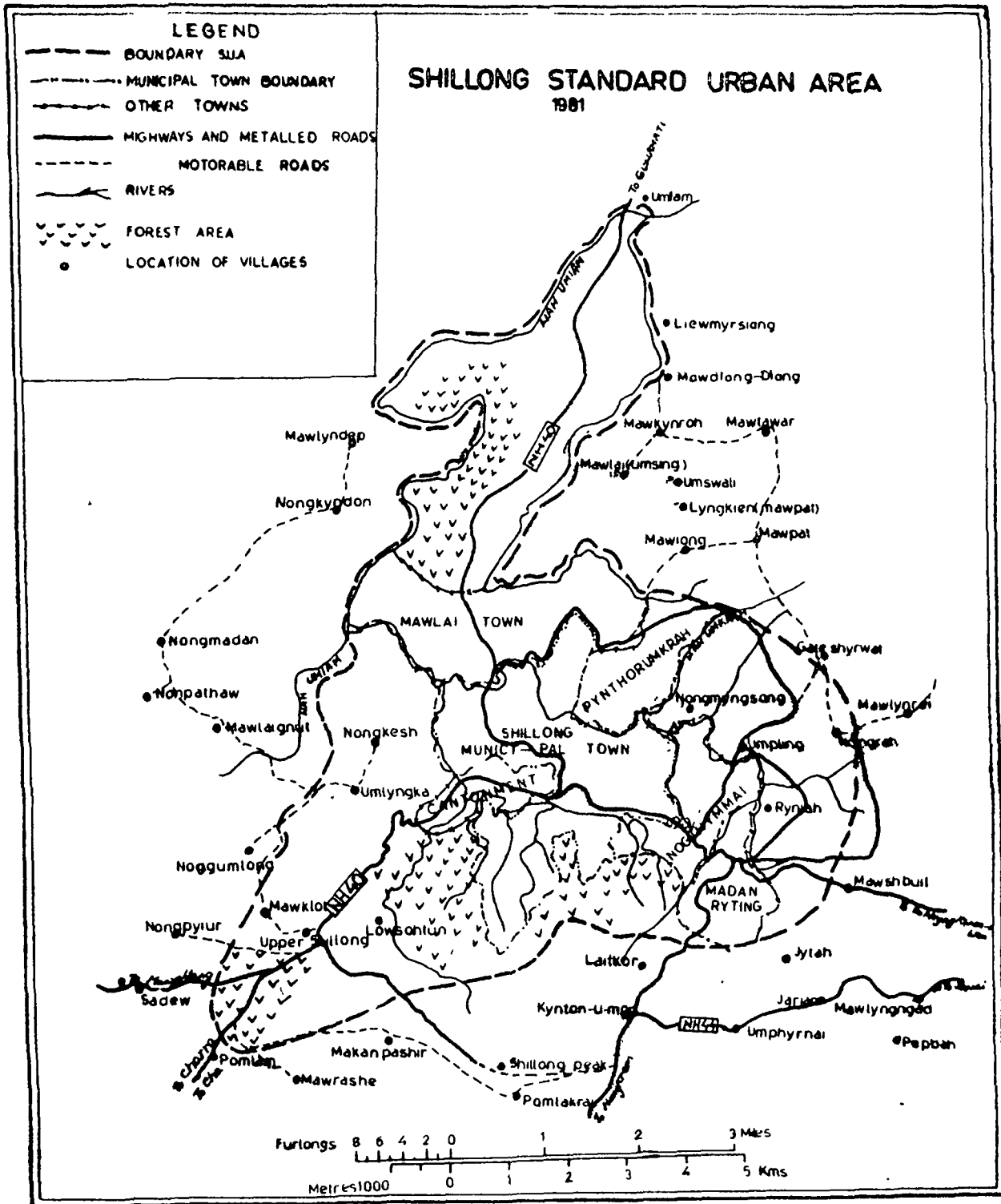


Fig 2

growth, the fringe development and urban accretion is not a dominant factor in the urban process.

With the help of this brief analysis, the possible influences of the city and the characteristics of the fringe villages can be understood in this context.

Fringe Villages of Shillong Urban Agglomeration

Twenty five villages, adjacent to the standard urban area have been taken into consideration for the analysis of fringe. The rural component within the urban area as shown in the Fig. (2) are already under the city plan. These villages have more urban characteristics which are revealed in the concept of Standard Urban Area⁶⁹ itself.

Considering the Standard-Urban Area (SUA) as

⁶⁹Urban Agglomeration - The concept is developed on the 1961 concept of 'Town Group'. The 1961 concept has been revised including the intersecting areas of two or more towns into the urban limit. UA is a contiguous area. In 1971 census, town group with potential urban areas are termed as Urban Agglomeration. The same concept also adopted in 1981 census. UA thus represents a spatial urban spread at a given time.

Standard-Urban Area: (for definition, see footnote of page)

Criteria: (1) It should have a core town of minimum population of 50,000 (2) Contiguous areas made up of other urban as well as rural administrative units should have mutual socio-economic links with the core town. (3) In all probability this entire area should get fully urbanised in a period of 2 to 3 decades.

the city limit, 25 villages surrounding it within 5 km distance from the SUA boundary have been designated as fringe villages. 1971 and 1981 census data for these villages have been computed to four indicators, which are -

- (1) Population growth rate,
- (2) Sex-ratio,
- (3) Literacy,
- (4) Occupational structure -
 - (a) Dependency ratio
 - (b) Share of non-agricultural workers.

The comparison are made on time-scale i.e. over the decade 1971 to 1981. Temporal comparison helps in studying the process and dynamics and therefore, is more significant compared to the analysis at one time-point. On the other hand, the variations in the degree of urban influence over time, itself is an ingredient of the analysis of fringe characteristics.

But the problem arises from the comparability of census information. While the census of India 1971 divided workers into nine industrial categories, in 1981 the dimensions were reduced to only four categories. Besides dividing workforce into main workers and marginal workers, in the 1981 census further accentuates the problem of comparability. Hence, the workers engaged in manufacturing industry cannot be worked out. Although,

FRINGE VILLAGES OF SHILLONG

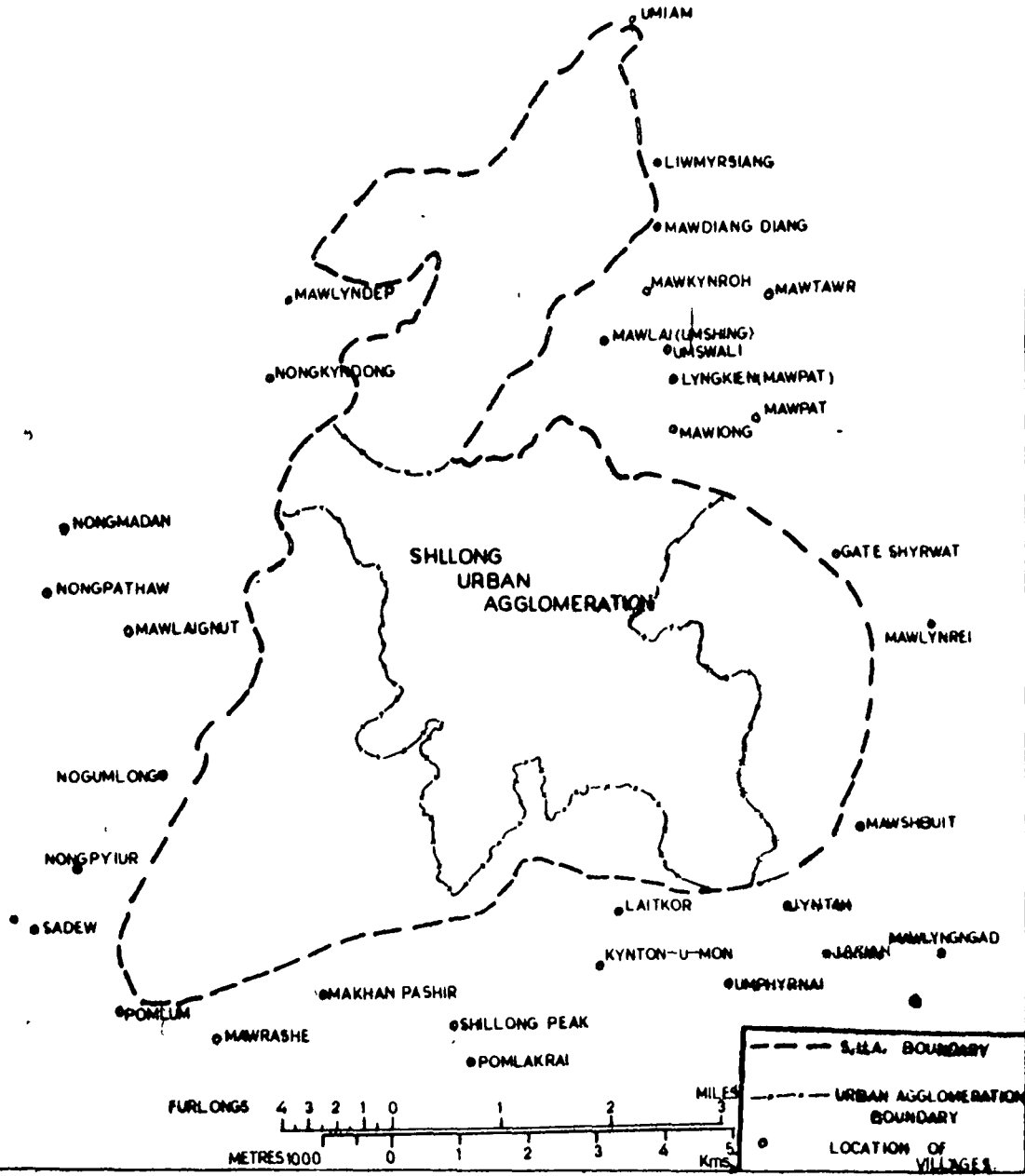


Fig 3

the share of workers in secondary sector is significant to understand the urban characteristics, due to non-availability^{of} information the analysis is confined to agricultural and non-agricultural workers only. In a traditional agricultural setting, without any large scale industries, the analysis of non-agricultural workers would suffice for the purpose of analysis. Secondly, non-availability of data on landuse has been a major handicap in explaining the morphological changes in the fringe villages. The problem is further accentuated by the fact that the villages have no cadastral maps or land records to provide any accurate picture of existing landuses.

Fringe characteristics can be understood with the help of indicators mentioned in the preceding discussion. At the later part of this chapter an attempt will be made to identify the villages with most fringe characteristics, with the help of a composite index. Such an index can help in the choice of sample village for a detailed survey.

Population Growth Rate

Growth rate of population over the decade 1971-81 can be used as an indicator of fringe development. An extremely high growth rate of a village may be the

result of three processes (1) Immigration from other far-off places into the village, who are looking for employment in the city but can not afford to stay in the city and therefore, settle in the village with relatively low house rents. (2) Residential shift from the city. (3) Change in the village boundary i.e. inclusion of other villages or areas into its boundary.

In case of fringe villages of Shillong, all these three processes are operative. The higher rate of growth, which is higher than the other rural areas and even the city, indicates the transitional character of the fringe area.

An analysis of Table IV.6 indicates that out of 25 villages under study, 13 villages experienced growth rate more than the Shillong U.A. (43.43 per cent) over the decade of 1971-81. Moderate increases are found in case of another 5 villages like Mawsbuit, Mawlyndep where population growth rate is almost same as that of Shillong. These villages show growth rate more than the State average (32.04 per cent) during the same decade. Extreme cases have been registered in case of 'Mawpat' 'Umswali' which are mainly due to the inclusion of other villages in their limits.

Sex-Ratio

The problem of sex-ratio as an indicator has been discussed already. The decline in sex ratio (expressed as the number of females per 1000 males) can be adopted as an indicator of urban influence. Meghalaya depicts a higher sex-ratio in general. Any decline in the sex-ratio will indicate a concentration of more male population. The concentration may be the result of (1) Sex-ratio at birth, (2) Differential mortality of the two sexes at different stages of life or (3) Sex selectivity among the migrants i.e. (a) male inmigrants and (b) female outmigrants. If all these factors operate in favour of the male, the sex ratio goes in favour of the male population and therefore, a decline in the ratio.

With certain degree of understanding of the socio-economic condition of a tribal society, like of the Khasi, all the possibilities can be discarded except the increase due to number of male inmigrants i.e. (3)(a). The increase in the number of male inmigrants to the village is significant in the context of the present study. Large influx of male inmigrants has brought about a marked change in the economy of these villages. In the light of the facts stated, the picture

appears more peculiar in case of fringe villages of Shillong. Out of total 25 villages, 11 villages show a decline in sex-ratio over the decade. While sex-ratio as a whole in Meghalaya and Shillong in particular is increasing, the declining trend of these villages certainly sex-selective immigration.

Literacy

Qualitative attributes of population can be understood through the index of literacy. Trends in literacy are indicative at the pace at which a particular society is getting transformed.

In this case literacy may not be a true indicator, since the study is handicapped by the lack of information on age and sex-wise distribution of population. Effective literacy rate has to be computed, eliminating population below 5 years which does not go to school. But the analysis of the rate of literacy may help in understanding the overall picture.

To obtain a more realistic picture the rate of literacy and the occupational structure are computed in terms of both percentage change and growth rates over the decade.

Percentage
of literates
in 1971

TABLE IV.6
Degree of Change in the level of literacy in the fringe villages of
Shillong Urban Agglomeration (1971-'81)

	Negative	0 - 10	10 - 20	20 +
0 - 20		2	22	1, 3, 12, 17, 18, 20
20 - 40		15, 21, 23	4, 9, 13	8, 10, 11, 14 16, 19
40 - 60		5	24	
60+	7	6	25	

Growth rate of literates (1971-'81)

Number represents location of village. See, Table IV.7.

Change in the level of literacy can be analysed by a two-way table considering the percentage of literacy in 1971 and growth-rate over the decade. In the Table-IV.6 villages with a higher growth rate with a higher percentage of literates will find place in the squares representing more than 10 per cent growth and more than 20 per cent literate people as in 1971.

One village Pomlum (7) experienced a negative growth rate. The villages like Mawsbuit (15), Mawkynrot (21) Kynton-U-Mon (11), indicates medium rate of growth and considerably larger share of literates in 1971.

The classification does not by itself show high level of urbanisation. Kerala, with the highest literacy (74.42 per cent) rate in the country (1981) does not depict a picture of the most urbanised state. Thus, while high literacy could be a product of high level of urbanisation, the opposite may not be necessarily true. The literacy being high in Sumer and Barapani can be substantiated by the fact that these settlements represent project areas with a large component of skilled labourers. But at the same time, the decline in literacy may indicate the unproportionate influx of unskilled /illiterate people to cater the service needs of the educated employees of these settlement.

Except these three villages, most of the villages of the fringe area show positive trend, both in terms of the percentage change and growth rate. None of the villages have a higher share of literates than the city of Shillong. However, the high rate of change in literacy characterises an important fringe attribute.

Occupational Structure

At least 75 per cent of non-agricultural work force is one of the criteria used by the Indian Census in defining urban areas. In this context the distribution of working population on the basis of its economic activities in an urban fringe is of significance. The 'occupational shift' and 'occupational diversification' can be true indicators of the transitional character of the fringe villages. In fringe areas, the concentration of workers in non-primary sector indicates the urban influence. The fringe areas of Shillong also experience higher degree of occupational diversification; of course, keeping in view, the relative stagnation in development of non-primary sector and expansion of tertiary sector in case of Shillong U.A. the degree and direction of changes have been at a fairly lower level. The rural economy based on a subsistence system and shifting

agriculture is characterised by a fair degree of non-monetised or quasi-monetised situation. The fringe villages experience an incipient occupational diversification. The fringe areas are characterised by a fast decline in the share of primary workers, also.

The occupational structure of the fringe villages under the present study can be examined through (i) dependency ratio (ii) share of non-agricultural workers to the total workforce and (iii) growth rate of non-agricultural workers.

Although, the share of secondary workers could not be calculated for reasons stated earlier, in case of the traditional village economy of the area based on subsistence type of agriculture, a shift from agricultural to non-agricultural occupation will indicate the response to new occupational opportunities. These indicators have been studied in a two-way classification both in terms of the percentage share and that of the growth rate over the decade. The positive change in growth rate of population may simply indicate either natural increase or of net migration effect. This might be associated with increase in net sown area (NSA) and increase in agricultural occupation, and therefore, can not be treated as a characteristics of fringe area.

But when associated with a fast rate of change in occupational structure, indicated by a high growth rate of the non-primary sector, it would mean a significant occupational shift as well as migration effect of non-primary workforce.

Thus, the combination of both i.e. the percentage share and the growth rate of non-primary workforce provides a more realistic picture. A higher share of non-agricultural workers with a higher growth rate of non-primary workforce are significant indicators of the fast changing fringe village.

Dependency Ratio

Dependency ratio is computed by

$$\frac{\text{Number of Non-Workers}}{\text{Number of workers}} \times 1000.$$

The bulk of the non-working population consist of population in the dependent age groups, i.e. children below the age of 15 years and old men over 60 years plus handicapped and a large section of women, the latter being of limited application in Meghalaya. This section of the population due to several reasons, cannot participate in the productive sphere of the economy and has to be cared for by the society in general and the work force in particular. Therefore, the lower is the ratio.

TABLE IV.7
Variables showing degree of changes in the fringe villages of Shillong Urban Agglomeration 1971-'81

Name of the village	Loca- tion Code	Decennial population growth 1971-'81	Sex Ratio		Change in Sex Ratio (1971-'81)	Literacy			% Growth Rate '1971-'81
			% in 1971	1981		% in 1971	% in 1981	% change 1971-'81	
1	2	3	4	5	6	7	8	9	10
Mawlyndep	1	38.46	873	789	-84	9.05	37.58	28.53	47.5
Nongkyndong	2	61.49	891	951	60	1.72	21.35	19.63	1.9
Mawlai Ngut	3	121.83	769	939	170	8.03	23.02	14.99	39.2
Nongumlong	4	36.94	1022	1162	140	27.5	47.61	20.11	11.1
Nongpyiur	5	20.82	890	908	18	41.64	63.98	22.34	7.6
Sadew	6	-1.76	1079	1053	-26	64.99	66.15	1.16	0
Pomlum	7	-7.91	631	1069	438	64.38	14.76	--	-1.1
Makhan Pasir	8	103.51	869	1217	348	24.27	47.27	23.00	32.7
Mawrashe	9	11.89	762	935	172	24.32	42.51	18.19	14.7
Pamlakrai	10	92.41	973	1049	76	9.48	20.16	10.68	30.9
Kynton-U-Mon	11	144.59	1176	1011	-165	32.43	46.96	14.53	25.4
Laitkor	12	74.74	994	967	-27	19.49	34.12	14.63	21.00
Jyntah	13	61.93	1031	994	-37	34.52	46.08	11.56	11.6
Rynjah	14	142.73	834	993	159	23.98	43.30	19.32	33.8
Mawsbuit	18	38.69	1016	931	-86	21.28	30.51	9.23	9.9
Gate-Shyrwat	16	158.14	1263	1018	-245	63.23	38.73	8.51	29.0
Mawpat	17	316.40	667	764	97	2.67	56.21	53.54	68.7
Mawjong	18	-1.03	979	882	-97	8.65	11.54	2.89	3.2
Lyngkien (Mawpet)	19	40.98	921	847	-74	23.97	46.83	22.86	23.1
Umswali	20	86.9	651	933	282	11.27	15.99	4.72	127.5
Mawkynroh	21	25.0	1077	975	-102	35.94	38.75	2.81	3.4
Mawdiang-Diang	22	8.0	613	957	344	12.00	18.89	6.89	18.3
Liewmyriaslang	23	29.24	1060	956	-104	38.01	42.99	4.98	4.6
Umiam (Sumer)	24	208.65	588	863	275	58.86	47.51	-10.35	15.3
Umiam (Barapani)	25	176.5	678	832	154	65.62	49.52	-15.1	11.6

Source: 1) For 1981 data unpublished file from the Census of India, Meghalaya.
2) For 1971 data district Census Handbook for East Khasi Hills District, 1971.

Table contd..

Table IV.7 contd.

Name of the village	% growth rate in Agri. workers '71-81		Nonagricultural workers				Dependency Ratio		
	11	% growth rate in	% in		% growth rate in in (71-81)	% change 1971-81	1981		% change in (71-81)
			12	13			14	15	
Mawlyndep	0.63		26.85	44.00	12.7	17.15	1040	1046	-6
Nongkyndong	9.36		26.85	1.25	-9.3	-25.6	813	596	217
Mawtai Ngut	3.9		6.25	2.44	-4.5	-3.81	1065	699	366
Nongumlong	0.06		13.07	15.85	2.6	2.78	1694	1045	649
Nongpyiur	-1.4		4.14	14.09	22.3	9.95	1378	1185	193
Sadew	0		17.46	17.46	0	0	1063	1101	-38
Pomlum	15.17		62.58	0.69	-9.8	-61.89	844	884	-40
Makhan Pasir	-1.31		9.43	26.9	20.6	17.47	3070	1151	1913
Mawrashe	3.29		18.00	8.40	-4.4	-9.6	739	850	-57
Pamlakrai	14.2		3.29	4.05	20.0	0.76	882	1387	-505
Kynton-U-Mon	-2.96		25.00	77.38	62.2	52.38	1154	1055	99
Laitkor	0.33		13.42	27.35	15.9	13.93	1942	1083	859
Jyntah	0.55		51.35	75.95	21.5	24.6	1018	1662	-644
Rynjah	193.3		95.85	56.64	-0.4	-39.27	3080	1779	1204
Mawsbuit	-0.66		79.63	51.19	13.2	21.56	1086	992	924
Gate-Shyrvat	13.00		60.00	23.33	-5.3	-37.00	2700	720	1980
Mawpat	12.6		-	53.50	-	-	1197	974	223
Mawlong	2.73		25.14	10.93	5.3	-14.21	563	690	-127
Lyngkien (Mawpet)	17.8		63.46	32.05	-2.4	-31.41	1626	1326	302
Umswali	9.45		29.00	-	-	-	600	677	-77
Mawkynroh	8.14		30.65	6.02	-7.5	-24.63	927	1065	-138
Mawdiang-Diang	13.33		28.57	31.37	16.6	2.8	764	1381	617
Liewmyriasiang	7.00		25.37	20.57	2.9	-4.81	1065	1552	-487
Umiam (Sumer)	87.33		99.53	68.68	-0.6	-30.85	1995	309	1686
Umlam (Barapani)	18.42		96.73	90.71	8.9	-6.02	2391	1407	-984

the healthier is the picture, since the workforce would not be unduly overburdened. The ratio may not directly imply that urbanisation by itself depicts a low level of dependency rate, but in the developing countries like India, where age selective migration is a common feature, a large young immigrating population would change the overall dependency structure of the city towards the lower figure.

Referring to Table IV.7, it is clear that almost half of the villages under the present study show marked decline in their dependency ratios. The rate of decline is more prominent in case of villages nearer to the city, like Jyntah, Pomlakrai. These villages have experienced both male immigrants and an increase in the employed youth of the village.

Share of Non-Agricultural Workers to Total Population

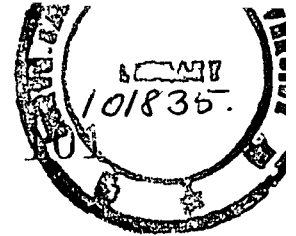
The occupational shift in terms of change in the share of non-agricultural workers to total workers can be best understood with the help of a two-way table. In the table IV.8 indicators of two dimensions, the share of non-agricultural workers as percentage of total workers (1971) and the growth rate of non-agricultural workers over the decade 1971-81 is cross-tabulated.

TABLE IV. 8
Distribution of villages according to non-agricultural population
Growth rate of non-agricultural workers (1971-81)

	Negative	0 - 10	10 - 20	20 +
0 - 20	3, 9	4, 6	12	5, 8, 10
20 - 40	2, 18, 21	20, 23	1, 15, 22	11
40 - 60				13
60 +	7, 14, 16, 19, 24	25		

Share of Non-agricultural workers as percentage of total workers (1971)

Number represents the locational code no. of the villages.



The attempt has been to understand the rate of change in relation to the share of non-agricultural workers at the base year 1971. A village might have a large share of non-agricultural workers in 1971 but the growth rate experienced over the decade may remain very low. In another case a village may attain a higher growth rate owing to tremendous growth of total population but the share of non-agricultural workers. In either was low. In either cases the influences of urbanisation are minimal. The most important case in the context of present study will be the villages with higher share in 1971 and a higher growth rate. In Table IV.8, the squares representing more than 10 per cent growth rate and more than 20 per cent share of non-agricultural workers to total workers in 1971 will depict the fast changing characteristics of a fringe village due to large amount of urban influence. Thus, Mawlyndep (1), Mawsbuit (15), Kynton-U-Mon(11), Jyntah (13) and Mawdiang-Diang represent such fringe characteristics.

Analysis of Table IV.7 depicts that almost 50 per cent of the villages under study show a decline in the share of non-agricultural workers, indicating less urban influence or due to the impact of definitional changes which is very difficult to assess by disaggregation.

Corresponding figures for agricultural workers of some villages show a declining trend in the share of agricultural workers to the total workforce. Even, in case of villages with higher agricultural workers, a situation may be a shift towards truck gardening from foodstuff which is clearly an indication of the urban influence but is not necessarily revealed in the workforce data.

The overall picture of the non-agricultural sector is disappointing. The growth of overall non-agricultural employment is rather, slow owing to the pattern of urbanisation of Shillong. Lack of employment opportunities in skilled and secondary sector and a poor production base of the city are some of the factors responsible for a slow rate of occupational shift.

Thus, the characteristics shown by these indicators can be summarised as follows:

- (1) The rate of population growth is higher in the fringe villages than the city.
- (2) There is a decline in sex ratio in the fringe villages as against increasing trend of the city of Shillong.
- (3) The literacy rate of the fringe villages is lower than the city.
- (4) There is a decline in the dependency ratio.
- (5) There is a marked occupational shift reflected by the increasing trend in non-agricultural sector.

Although it can not be expected that in the urban fringe of Shillong, the urban accretion will be in all directions, equally, a birds eye view of the indicators at a time may help us in selecting the villages with a greter degree of urban influence.

In the compositing exercise the scoring scheme used is very simple. Except the sex-ratio and the dependency ratio, higher the value of the observation, higher is the level of urban influence. In case of sex-ratio and dependency ratio, scoring scale has been of the reverse order.

The table IV.19 shows the scoring scheme and the composite score. The ideal conditions should be represented by score of 28 and the most rural character by 7. The villages under study ranges between these two extreme values. Mawlyndep, Pomlakrai, Kynton-U-Mon Jyntah, Mawsbut, Mawpat, are the villages showing higher degree of urbanisation. Considering the contiguity aspects, the size of the village, distance from the city etc. the village Mawsbuit can provide the best unit for the case study.

In chapter V, the attempt will be to carry out an intensive field study of Mawsbuit where the the hypothesis as well as characteristics of fringe villages are manifest in these chapters, will be investigated.

TABLE IV.9
Composite Index for Identification of Villages with More Urban Characteristics, 1971-'81

Name of the village	Population growth Rate	Change in sex-ratio	Percentage of literacy in 1971	% Growth rate in literacy 1971-81	Change in dependency ratio	% share of non-agri. workers in 1971	% Growth rate in non-agri workers	Total scores
Mawlyndep	3	4	3	4	4	2	3	25
Nongkyndong	4	3	2	2	1	1	1	14
Mawlai Ngut	4	2	2	4	1	1	1	15
Nongumlong	3	2	3	3	1	2	2	16
Nongpylur	3	3	3	2	2	2	4	19
Sadew	1	4	2	2	4	2	2	17
Pomlum	1	1	1	1	4	1	1	10
Makhan Pasir	4	1	3	4	1	2	4	19
Mawrashe	2	2	2	3	4	1	1	15
Pamlakrai	4	3	2	4	4	2	4	23
Kynton-U-Mon	4	4	2	4	3	3	4	24
Laitkor	4	4	2	4	1	2	3	18
Jyntah	4	4	2	3	4	3	4	24
Rynjah	4	2	2	4	1	1	1	15
Mawsbuit	3	4	2	2	3	3	3	20
Gate-Shyrrwat	4	4	2	4	1	1	1	17
Mawpat	4	3	4	4	1	2	2	20
Mawiong	1	4	2	4	4	1	1	17
Lyngkien(Mawpet)	4	4	3	4	1	1	1	18
Umswali	4	1	2	4	4	2	2	19
Mawkyroh	3	4	2	2	4	1	1	17
Mawdiang-Diang	2	1	2	3	4	2	3	17
Liewmyriasiang	3	4	2	2	4	1	2	18
Umiam (Sumer)	4	1	1	3	1	1	1	12
Umiam (Barapani)	4	2	1	3	4	1	2	17

C H A P T E R - V

MAWSBUIT - A CASE STUDY OF A FRINGE VILLAGE

Mawsbuit, a village on the outskirts of Shillong urban area has been considered for the case study of fringe characteristics of Shillong. The village is located at 6 km distance from Shillong city and manifests itself as a mixture of rural and urban settlements. The people of the village live in rural milieu but do not functionally and economically belong to it.

Umkhen river, a small rivulet could not pose physical barrier between the village and Shillong. Located at a small flat-topped projection of Meghalaya plateau the village is bounded by 'Mawlynrei' and 'sweat fall' to the north, Happy valley in the west and south-west, Umkhen river in the south and 'Shoryngkham' to the east. The minimal relative relief is not a serious hindrance to transportation. A jeepable but unmetalled road connects all households of the village. The village is connected with the city by a metalled road, through Happy-valley military residential area.

It's peculiar location, adjacent to an urban area but separated by a protected zone which restricts expansion of the city, provides an ideal unit of

investigation. The villae is not an area of insularity to urban influence nor an area of sudden exposure with overlapping urban features.

The Census of India 1971, recorded the population of the village as 827 which increased to 1147 persons in the Census of 1981. The field survey, conducted on the basis of 50 per cent sample of total 210 households recorded 633 persons. Thus, by 1985 the population of the village has almost reached 1300 mark. Most of the villagers are Christians, with a few cases of the Hindus, the Muslims and the Khasi indigenous faith. The Hindus and the Muslims are mainly immigrants to the village and reside ⁱⁿ the rented houses of the local Khasi farmers. The interesting aspect is that those people who settled down in the village married into Khasi families and reported their religion as christianity, irrespective of their original religion.

The village consists of four hamlets (see the sketch, Fig. 4); Nonglum, Nongkhlaw, Nongshilliang and Nongrim. Sample included households from all these four units. Hamlets are not far apart from each other and all of them are oriented towards the two shopping centres of the village.

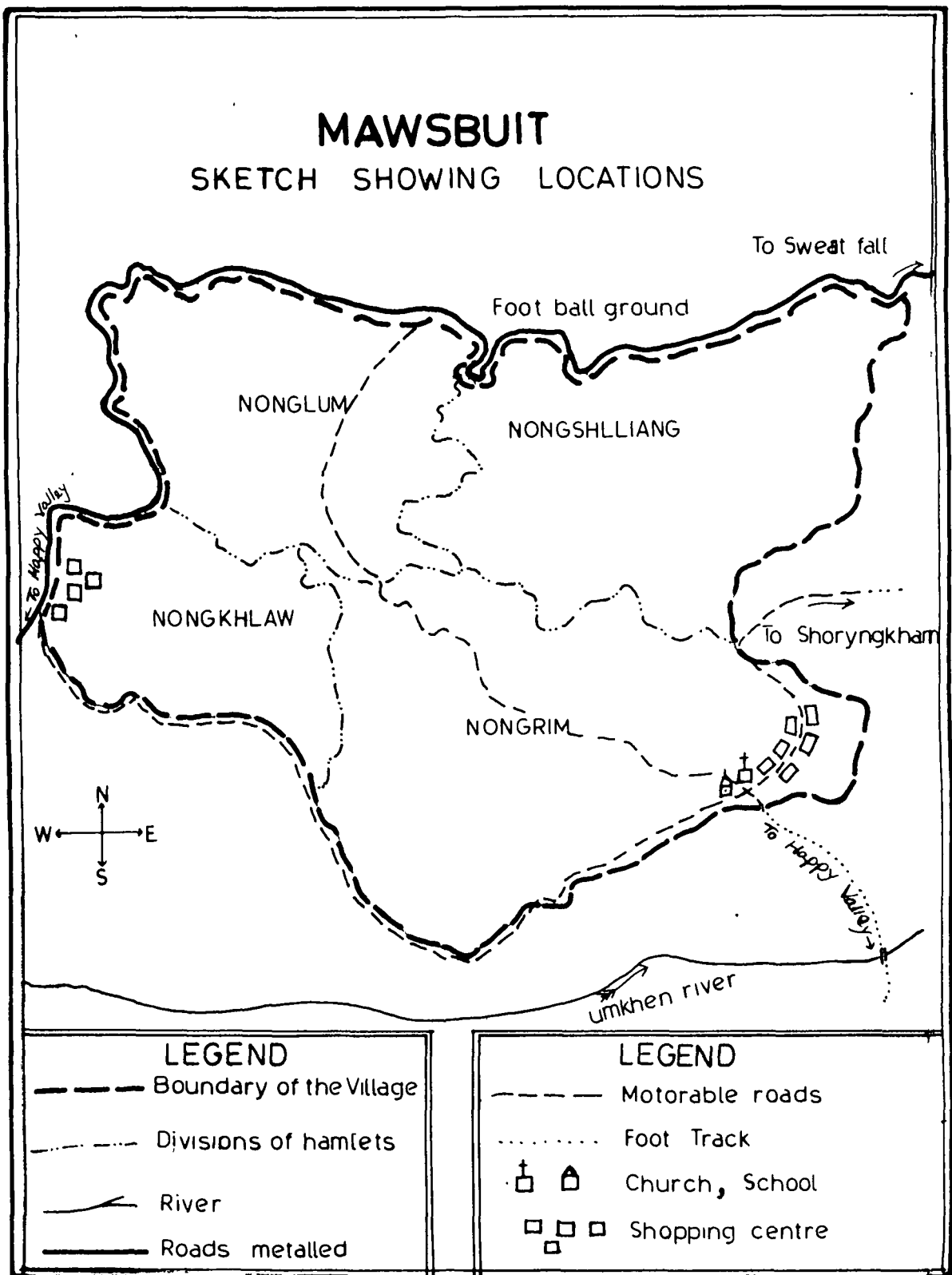


Fig. 4

The characteristics of the fringe village which has been identified from the analysis of Census data in Chapter IV, can be verified with the help of data collected during the field survey. Analysis of demographic and economic characteristics have been done through the following indicators:

- (1) Population growth-rate,
- (2) Age and sex-wise distribution of population,
- (3) Literacy rate,
- (4) Occupational structure.
 - (a) Dependency ratio.
 - (b) Share of non-primary workers to total workforce.
 - (c) Occupational diversification.
 - (d) Level of skills among workers.

The transitional character of the area can be examined with the help of age-structure analysis (See chapters III, p 62).

As a result of increasing urban influence, along with demographic and economic transformations, fringe villages experience certain degree of transformation in their morphological patterns. Morphological transformations can be studied with the help of landuse characteristics and provision of urban amenities. These two indicators are not exclusive to other socio-economic indicators and therefore, reflect the transformation in the rural economy and the quality of life of the people.

The geographical analysis of urban-fringe will be incomplete unless the rural-urban interaction pattern is adequately dealt with. The existing pattern and intensity of interaction between 'Mawsbuit' and Shillong can be investigated through retail activities, passenger traffics and commodity flows. An attempt has been made to study these towards the end of this chapter.

Before going for detailed investigation, a point of caution should be kept in mind that, the characteristics which emerge from the analysis are highly particularised. Any level of generalisation has to be done cautiously and should be studied in a normative sense.

The analysis of the fringe evolution of Mawsbuit village can be done under two broad sections, (i) the first on the basis of the relatively 'static' characteristics like (a) village morphology and changes taking place therein and (b) demography of the village, particularly, the aspects of growth, migration, age and sex characteristics, and occupational changes. (ii) The second section will, deal with the relatively 'dynamic elements' like (a) social attributes, viz. ethnic composition, education and social amenities, (b) economic attributes like skill formation, labour and employment,

earnings and income etc. and (c) the rural urban interaction pattern based on transport linkages, commuters and commodity flows.

(i)(a): Morphological Change

Landuse: Directions and dynamics of changes in landuse pattern reflect the transformation in morphological picturesque of the village and secondly, stresses and strains suffered by the rural economy due to the urban influence.

TABLE V.1

Frequency of families in different sizes of Landholdings
Mawsbuit 1985

<u>Classification in size of landholdings (in acres)</u>	<u>Number of families</u>
No lands	53
0 - 2	20
2 - 4	16
4 - 6	6
6 - 8	3
8 - 10	2
Above 10	5

Source: Field survey

Most of the farmers of the village have small sized plots/of cultivable land. Larger part of the village land are left under forests. The table V.1 shows that out of total 105 households surveyed 53 of them reported

without any agricultural land. Family members of these families work as agricultural labourers on dailywage labourers in stone-cutting quarries of the village. Some of them also working in the city as house-servants.

TABLE V.2
Area under different types of landuses Mawsbuit: 1985

Landuse Types	Area in acres
Net operated area	80
Forest	94
Rice	45
Maize	11
Potatoes	60
Vegetables	40

Source: Field Survey

The analysis of table V.2 indicates that the gross cropped area of the village is influenced by the area under vegetables crops. Vegetables and potatoes are cultivated twice or thrice a year. Otherwise, the ruggedness of the terrain, strongly seasonal rainfed character of the cropping and the practical absence of irrigation within the area, prohibits multiple cropping. One of the most important characteristics of Mawsbuit is that permanent cultivation is entering the village economy in lieu of shifting cultivation. Almost 80 per cent of households surveyed are now well versed in permanent

cultivation. But there is no cadastral survey in the hill areas of Meghalaya and nonexistent landrecords which makes it an absolute impossibility to get any measure of yields of different crops as well as the levels of earnings from various agricultural practices. The village land is mostly community owned. The farmers cultivate in a plot of land allowed by the village headman and customarily, become owners, if they have made permanent improvements on the land, but if they abandon it then it comes back to the general village plot of land. Since there is no permanent and recognised boundary of their plots of land, the mapping of landuse pattern^m has become an extremely difficult proposition. Yet, since the investigator had a detailed survey of the village for quite a few days, a presentation through bird's eye view of the broad and general pattern of the existing landuse of the village, will not be much deviation from the reality. A sketch (Fig. 5) representing the existing landuse pattern of Mawsbuit explains the dominance of urban oriented economy of the village. Besides maintaining a 'kitchen garden' by each family, the villagers devoted their land to vegetable gardening towards the area located near the roads which connect the village with the city. The residential areas are towards the western and the southern margins of the

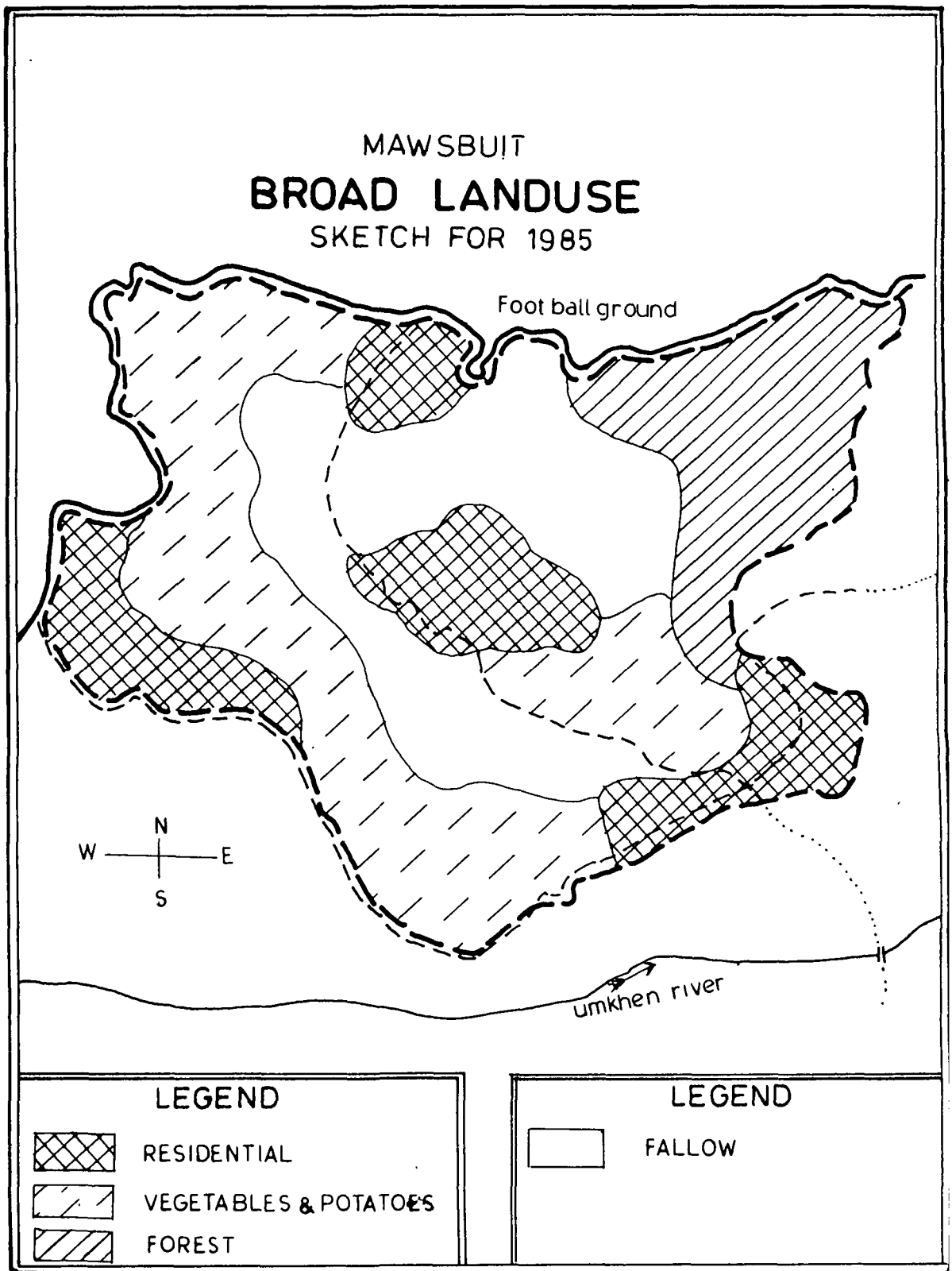


Fig. 6

village due to the nearness to the 'Umkhen-river'. The eastern side of the village is under forest cover. Except few pockets of residences here and there the central part at the village is thinly populated and also largely unutilised due to rocky structure of the area.

The amount of land cultivated depends upon the availability of labour, capital and the farmer's desire. In a relatively quasi-subsistence Khasi-society, requirement of the farmers is minimal and thus, the size of landholdings are not expanding with a view to accumulating more wealth. Vast tracts of land area are left uncultivated due to (i) topographical constraints (ii) Low level of technology and non-availability of farm labour (iii) Lack of capitalist spirit among the rural Khasi people.

The cultivation of rice and other food-crops is not practiced to a great extent. The village supply potatoes and vegetables to the city as well as to the other parts of the country and in return villagers obtain necessary food, clothes, medicines and other sundries from the city.

Land devoted to other urban-uses as parks, playgrounds, residential areas, sewerage, roads etc. have

been restricted largely by the presence of the military residential area of Happy-valley.

Thus, landuse of the village is dictated by the necessity of the villagers and in response to the urban influences and is limited by the topographical unsuitability. There is a definite trend towards decline in the area devoted to food crops. The declining trend is compensated by the increase in the area under vegetable gardening. Change in the mode of cultivation from traditional shifting type of agriculture to more sedentary agriculture and cultivation of more urban-oriented crops, indicate the growing urban influences in the village. The transitional character can be understood, again from not a fully commercialised agriculture, but from a shift from the traditional base.

Urban Amenities

Improvement in provision of urban amenities leads to urbanism in rural life and results in modernisation and changes in attitude of the people. But, the provision of urban-amenities has been very low in the village Mawsbuit. Although electricity has been introduced in the village 6 years back, only 50 households have reported having electric connection. There is no telephones

or telegraph facilities. Villagers use Happy-valley post office for postal or telegraphic communication. The metalled road connecting the village and the city is through the Happy valley and ends at the village limit. One jeepable 'kutchra' road touches all the houses. Circulation of Newspapers, which have been considered as an indicator of urban influence, is not common. Only 40 households of the village reported to have access to the local newspapers which they collect while commuting to city for jobs, education or any other purpose. Thus, although the village has now ascribed itself to urban characteristics in its urban-oriented socio-economic attributes, the lack of urban amenities and infrastructural facilities have hindered the process of fast changes which was expected.

One of the most important aspect of urbanisation is the level of modernisation in the daily life of the people and improvement in the quality of their lives. The modern gadgets like radio, tape-recorders, televisions, swing machines have already made in-roads to the rural life. Almost 75 per cent of the reported household possess radio and tape-recorders etc.

The village does not have any drinking water supply nor any medical facility. The villagers use

stream water for their day-to-day uses like for drinking, cooking, washing, etc. The traditional tribal society is well adjusted to the eco-system. However drinking water poses a real problem to the general health of the village people. Therefore, they are not aware of hygienic conditions and problems created due to consumption of contaminated water. The village is now experiencing chronic health problem. A nutritional survey will definitely lead to the exploration of large scale mal-nutrition and undernourishment. Thus, lack of infrastructure, needed for urbanisation, non-availability of provisions for modernisations like, medical and educational facilities, and due to unfavourable environment hindering intensive food grain cultivation, the general condition of the average household is poor. Owing to this comparative disadvantages, the village being located in the urban-vicinity, largely fails to assimilate urban impulses. A faster economic transformation of the village has been restricted by this failure.

The vivid picture of the socio-economic condition of the village itself speaks out the transitional character. The tribal society neither remains as traditional which is unaware of any restrictions and complex competitive money economy, nor they are able to dissimilate

all aspects of modernisation resulted from the influence of the city. Thus, the urban impacts seems to be a superimposition leading to the problems of non-assimilation, reflected in the large scale poverty and a poor standard of living.

Three main morphological characteristics of the fringe village can be noted down.

- (1) There is a change in the mode of cultivation from shifting to permanent agriculture and a decline in the area devoted to subsistence crops. More area is devoted to urban market oriented crops, which is mainly the vegetable gardening.
- (2) The degree of improvement in infrastructural facilities is disproportionate to the growing needs of the village.
- (3) Existence of mass poverty and health problems along with superimposed modernisation is the cost that the fringe village has to pay for its transitional nature.

(i)(b): Population Growth

The twin processes of immigration and residential shift from the city, resulted in a higher growth rate of population in the fringe villages. Population growth rate, calculated from the census data over the decade of 1971-81 shows a growth rate of 38.24 per cent in the village Mawsbuit, which is higher than the growth

rate of Shillong Municipality (22.01 per cent) and roughly equal the rate of growth of Shillong Urban Agglomeration (43.29 per cent). The higher growth rate of population signifies that the village is neither stagnant nor the growth results from pure natural increase in population. The facts indicate the differences between a remote village and a fringe village. In the prevailing socio-economic conditions of India, it is generally observed that the rural areas located far from urban centres experience 'depopulation'⁶⁹ due to large scale outmigration. To the contrary, a fringe village experiences a higher population growth rate indicating a larger immigration component. Analysis of the Table V.2 will explain the effect of immigration into the village. In the village, Mawsbuit 11.06 per cent of total population surveyed is immigrants.

Age and Sexwise distribution of Population:

To understand the demographic structure of the village, age and sex-wise distribution of population can be analysed with the help of age and sex pyramid and sex-ratio.

⁶⁹'Depopulation' is not to be taken as absolute decline in population, but is taken as the negative 'Net migration' effect, i.e. the outmigration surpassing immigration.

A large number of children at the base of age-pyramid indicates underdeveloped economies. It also depicts a higher dependency ratio. On the other hand, a larger size of population in the middle age group indicates a developed economy along with large streams of immigration and intense urbanisation process. Thus, age-pyramid with small size of non-working population is considered as a characteristics of developed economies.

The age and sex pyramid for the village Mawsbuit depicts the transitional character between the two established facts mentioned above.

TABLE V.3
Age and Sex distribution of population in 'Mawsbuit' 1985

Age groups	Total		Male		Female	
	Total	%	Total	%	Total	%
0 - 4	91	14.38	55	16.27	36	12.20
5 - 9	95	15.01	47	13.91	45	15.25
10 - 14	89	14.06	50	14.79	42	14.24
16 - 19	52	8.21	25	7.40	27	9.15
22 - 24	51	8.06	28	8.28	23	7.80
25 - 29	47	7.42	28	8.28	19	6.44
32 - 34	44	6.95	23	6.81	21	7.11
35 - 39	43	6.79	22	6.51	21	7.11
40 - 44	40	6.32	21	6.21	19	6.44
45 - 49	23	3.63	9	2.66	14	4.75
50 - 54	16	2.53	8	2.36	8	2.71
55 - 59	15	2.37	6	2.52	9	3.05
60 +	27	4.27	16	6.72	11	3.73
Totals:	633	100	338	100	295	100

Sources: Field survey.

Although, the base of the pyramid is not very small the middle aged group consists the larger share of population. The age and sex pyramid (see fig. 6) is in favour of male and that too ⁱⁿ ~~the~~ favour of working age group.

Sex-ratio of the village declined from 1017 (1971) to 931 (1981) according to Census of India 1971 and 1981 and it is 895 in 1985 (on the basis of field survey). There is a general trend of declining sex ratio in India as well as in Meghalaya. But, in a matrilineal society where number and status of women is predominate, the declining trend is not at par with the trend showing by the other parts of India.

Thus, the village experiences (1), a higher growth rate of population than the city. (2) The age-pyramid is in favour of male and middle aged group of people. (3) There is a gradual declining trend in the sex-ratio.

All these facts indicate the possibility of higher influx of male inmigrants to the village and a higher rate of employment among the 15-45 age group of people. Employment is universal among this group of people.

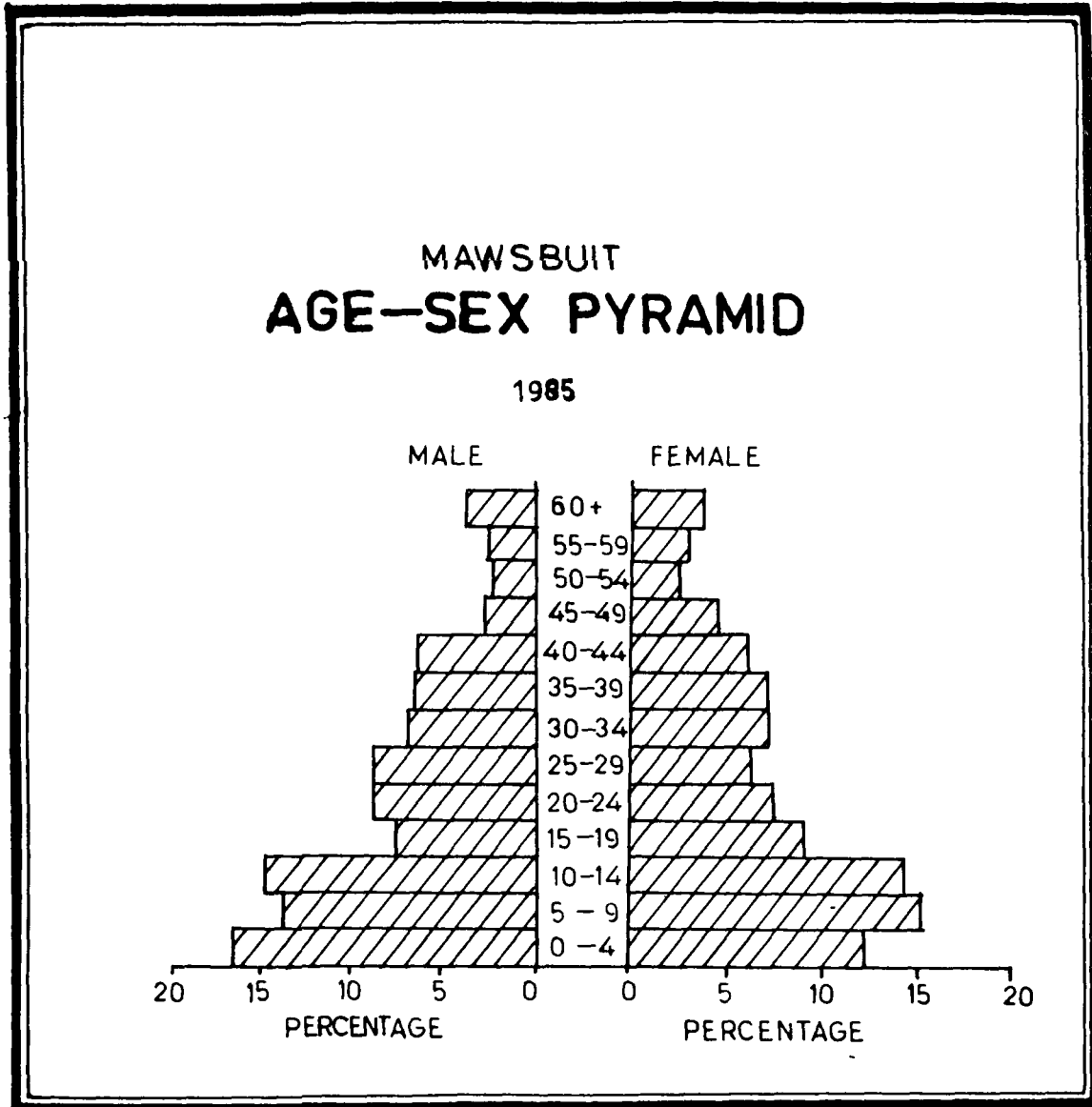


Fig. 6

TABLE V.4
Inmigration into Mawsbuit, 1985

Age group	Total		Male		Female	
	Total	%	Total	%	Total	%
15 - 30	6	8.57	5	7.14	1	1.43
30 - 45	51	72.86	41	58.57	10	14.29
45 - 60	13	18.57	12	17.14	1	1.43

Source: Field Survey

The analysis of table V.4 indicates that immigrants constitute 11.06 per cent of total population surveyed. Most of the immigrants belong to the age-group of 30-45 years. Moreover, 58.87 per cent of total immigrants are males and of 30 - 45 years of age group. These facts clearly indicate the age and sex specific immigration which have larger impact on all the attributes analysed for the village.

Age and sex selective immigration may take place from two sources (1) from distant places i.e. far-off rural areas of Meghalaya and inter-State migration, (2) from other nearby villages of the hinterland of Shillong. Both forces are under operation in case of population growth of Mawsbuit. The other process of immigration into the fringe village i.e. the residential shift is not observed in the present study. Because

of non-availability of infrastructural provisions, presence of Happy-valley military restricted area and due to moderate level of urbanisation in Shillong, the residential shift from the core of the city to the fringe village 'Mawsbuit' is not common.

TABLE V.5
Sources of Inmigration. Mawsbuit, 1985

Age group	Inter-State			Inter-State Rural-Rural			Urban-Rural		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
15 - 30	-	-	-	8.57	8.62	8.33	-	-	-
30 - 45	17.14	15.51	25.00	45.71	46.55	41.67	10.00	8.62	16.67
45 - 60	4.29	5.17	-	12.86	13.79	8.33	1.43	1.72	-
Total:	21.43	20.69	25.00	67.14	68.97	58.33	11.43	10.34	16.67

Source: Field Survey

An analysis of Table V.5 indicate that the stream of migration from other rural areas of the State i.e. the rural to rural migration (67.14 per cent) dominates the inmigration into the village. The dominance of 30 - 45 years of age group and male inmigrants is clearly visible from the table.

Since, migration analysis has certain other weaknesses like definitional problems etc. a detailed investigation of migration pattern has not been taken

at this stage. In Table V.4 and V.5, the brief analysis done are enough to understand the impact of age and sex specific immigration into the village. This brief analysis will adequately explain the patterns that will emerge in cases of other attributes.

Because of mixing of the immigrants and the local rural people, certain degree of heterogeneity, in terms of ethnic origin, religion, language of the population of the village is observed. In case of Mawsbuit the heterogeneity index cannot be computed meaningfully, because, the non-tribal people who got married into the Khasi families and settled in the village do not report as non-tribal.

(ii) (a) **Social Attributes**

The heterogeneity resulted due to influx of immigrants may get reflected in different social attributes. Although, the heterogeneity index in terms of ethnic origin of the people can not be worked out, the linguistic structure depicts heterogeneity among the people of the village.

TABLE V.6
Linguistic Composition of People. Mawsbuit, 1985

Languages spoken	No. of Persons	% to Total Population
Khasi	628	99.21
Hindi	15	2.37
Both Khasi & Hindi	21	3.32
Khasi, Hindi, English	20	3.16
Bengali, Khasi	5	0.79
Assamese, Khasi	15	2.37
Nepali, Khasi	77	12.16

Almost all persons out of total population surveyed reported that they can speak Khasi language.⁷⁰ The analysis of the table V.6 shows that there are people in the village who speak other languages. The percentage of people speaking Nepali and Khasi language is higher than the other groups. Hindi and English are the languages spoken by the office-goers, traders, students and those which are engaged in several kinds of modern occupations. The degree of diversity in the language of the people of the village reveals the impact of urbanisation in the village.

Literacy:

Literacy can be used as a yardstick to measure changes in qualitative attributes of a population. Normally the trend of literacy in a fringe village may get disturbed by the process of migrations with differential literacy levels between the residents and the immigrants. In the prevailing socio-economic ^{Condition} of the region, immigration of unskilled illiterate youths of working age groups is the more a general

⁷⁰The data includes the population below 5 years also. Their languages have been entered on the basis of the language of the family. The data do not depict the 'Mother Tongue', which have little relevance in this study. Instead, the data depict what are the languages the people of the village speak.

pattern. Coupled with low level of development in the infrastructure of education, inmigration of illiterate and unskilled labour into the village keep the level of literacy low.

TABLE V.7
Literacy rate, Mawsbuit 1971-1985

Year	Total	Male	Female
1971	21.28	25.85	18.22
1981	30.51	31.82	29.11
1985*	30.33	31.37	29.43
Shillong U.A. in 1981	62.92	68.18	59.39

Source: *Field Survey
Census of India 1971, 1981.

The percentage of literate persons to total population in Mawsbuit has been low compared to Shillong Urban Agglomeration throughout the period of study (1971 to 1985). But, there is certainly, a slow but steady increase in the trend of literacy. The increase in literacy is due to the establishment of two lower-primary schools in the village by missionaries.

The 'effective literacy'⁷¹ rate is 35.42 per

⁷¹Effective literacy rate:

$$E_L = \frac{T_L}{T_P - P_F} \times K.$$

T_L = Total Literacy

P_F = Persons below 5 yrs of age.

T_P = Total population

K = 1000

cent. Rate of increase in female literacy is more than the male. Out of the sample in the village, 60.42 per cent of literate people had education upto primary level only. From remaining part 31.25 per cent of them upto class VII and 7.81 per cent upto class X while only 4 persons including one woman had college education.

With a slightly higher growth rate, female literacy always remained low through all levels of education in the village. The transitional character of the village in its demographic structure is indicated by literacy among different age-groups of the population.

Out of total 192 persons of literates, 43.75 per cent consists of 5 - 15 years of age group, more than half of the literate people are of 15 - 45 age group and only 9 out of total 81 persons (11.11 per cent) of beyond the age of 45 years are literate. The slightly more percentage of middle aged group (15-45) than the younger generation is explained by the broader age group of middle aged persons. Whereas 5 - 15 years of age group consists 29.07 per cent of total population 15 - 45 years of age group consists 44.39 per cent of total population.

Changes in the economic structure and some degree of modernisation demand higher skills and educational

qualifications, particularly employment in the tertiary sector. The nearness to the city influences the public awareness in the village regarding opportunities for better educated and is principally responsible for a growing trend towards higher literacy. Thus, although level of literacy in the village is lower than the city, the increase in the trend of literacy in younger generation of Mawsbuit indicate the penetration of urbanisation processes into the rural milieu.

(ii) (b) **Economic Attributes**

Occupational Structure:

Among all other attributes a 'rural economy' is more vulnerable to change in its occupational character through the growing urban influence. Transformation in the occupational structure of the village, owing to increasing opportunities in a gradually diversifying economy, reflects urban characteristics. With growing employment, the dependency ratio also declines.

Dependency ratio is calculated in terms of number of non-workers to total workers (per 1000). The dependency ratio of Mawsbuit is 1252 persons. This ratio is comparatively low when seen in the context of rural India where the dependency ratio is invariably over 2000 or more. The explanation of this situation

can be that (1) in tribal areas the female participation rates are generally high and that dampens the DR and (2) secondly, a fringe village would avail urban employment market which further boosts the figure for workers. As can be seen, that the figure of DR for Shillong was 2076 (1981), largely due to a large non-tribal skilled immigrants, where the female population does not participate in the workforce.

TABLE V.8

Share of workers in different sectors of economy Mawsbuit, 1985

Sectors	% to total population	% to total Workers
Primary	21.95	58.40
Secondary	0.79	2.10
Tertiary	14.85	39.50
Total	37.59	100.00

Source: Field Survey

A sectorwise analysis of workers will indicate the degree of orientation of workers to the urbanising forces. Table V.8 indicates that the primary sector still dominates the total workforce of the village. The share of agricultural labourers is the highest. Besides, there are workers in dairy, forestry and mining. Secondary sector consists of workers engaged in construction works. The share of non-primary workers is lower than the primary sector. Although, the primary sector

still dominates the scene the character of this sector is more urban oriented, i.e. vegetable gardening is more common than the typical subsistence agriculture expected from an Indian village.

Each family on an average owns about one hectare of land devoted to vegetable cultivation. The number of agricultural labourers is higher not because of pressure on land but due to its intensive use as in vegetable gardening. The constitutional safeguards provided to tribal against land transfers and the ruggedness of the terrain making it difficult for cultivation, are the two main factors which keep outsiders away from occupying the vacant land of the village.

The wages of agricultural labourers are higher because of the relative short supply of wage workers due to closeness to the urban labour market and settled grain cultivation is minimal. On the other hand, the small families, with less number of family workers can not sustain themselves on agriculture alone and in turn have entered into the labour market. Thus, the people find it easier to earn livelihood by working in other larger farms. Out of total household surveyed 10 families reported to have large size farms with 6 to 8 hectares of land under vegetable cultivation.

These families organise farms on the basis of hired workers and pay wages to the workers. While most of the families of the village sale their products from vegetable gardening like cabbage and potatoes to the intermediaries, the larger farmer take their products to the city market. Thus, the larger farmers earn more profit and can employ the agricultural labourers of the village as wage labourers. This type of cultivation is not a traditional phenomenon. Introduction of money economy and availability of city market for the vegetables have enhanced the processes of change in the mode of cultivation. Thus, it depicts a transitional stage in the rural economy. The rural economy is not confined to the traditional mode of subsistence cultivation, nor it is fully commercialised or dominated by non-primary occupations. The economy is based on primary sector; but oriented to the city market.

The apparent character of primary sector dominance will be more clear with further discussion of the occupational structure of the village. Table V.9 indicates the occupational diversification in the village. Occupational shift from traditional agricultural to modern occupations is one of the important characteristics of the fringe village.

TABLE V.9
Occupational diversifications Mawsbuit 1985
(Non-Primary Sectors)

Occupational categories	Persons	% to total workers
Education	3	1.26
Health	2	0.84
White collar jobs	14	5.88
Services*	24	10.08
Carpentry	14	5.88
Dairy, animal husbandry	15	6.31
Trade	29	12.81
Transport	6	2.52

*Army, Para-military or Police forces.
Source: Field Survey.

Mawsbuit experience various kinds of occupational adoptions. Most of people engaged in services. The occupations, which were not known to tribal people earlier, have found their way in due to increasing urban influences. People engaged in dairy, animal husbandry, poultry, vegetable gardening, mainly cater to the city. Vegetable marketing appears as the main income source of the people.

TABLE V.10
Occupational diversification among different age-groups, Mawsbuit 1985

Age group	Total Workers	Primary		Secondary		Tertiary	
		Total	%	Total	%	Total	%
15 - 45	175	98	56.00	3	1.71	70	42.29
45 - 60	39	24	61.53	1	2.57	17	35.9
60+	10	7	70.00	-	0	3	30.00

Source: Field Survey

Age-wise distribution of workers indicates that the share of primary workers is declining in the younger generations. The highest share has been observed in the age group of 60 years and above. The declining trend in the number of workers in the primary sector is compensated by the increase in employment in secondary and tertiary sectors. The younger generations with a higher literacy are better suited to pick up more urban oriented (non-traditional) jobs. This indicates the transitional character in the occupational structure of the village.

Vegetables, petty business like tea-shops, liquor shops have grown-up in the village and mainly women are engaged in this 'informal' sector. Since, Happy valley is the Headquarters of the Assam Rifles, the Assam Regiment and the Gorkha Regiment, most of the village youth opt for employment in the Army or other para-military forces. Thus occupational diversification is one of the important economic attributes of the village, which indicates the initial stage in the urbanisation of the rural economy.

Changing occupational structure through occupational diversification is required to be accompanied by augmentation in the level of skills among the workers

With increasing urbanisation and greater degree of occupational diversification, more skilled workers are required in the city and thus, the workforce of a fringe village acquire new skills of new occupations, either technical or otherwise.

TABLE V.11

Level of skill among workers of different age-groups, Mawsbuit 1985

Age-group	Total Nos	Skilled		Semi-skilled		Unskilled	
		Total	%	Total	%	Total	%
5 - 15	40	-	-	-	-	14	-
15 - 45	175	54	30.86	10	5.71	110	62.86
45 - 60	39	8	20.51	2	5.13	29	74.36
60+	10	2	20.00	1	10.00	7	70.00

Source: Field Survey

The table V.11 indicates that most of the workers of 45 - 60 age group are unskilled. Workers from this group (74.36 per cent) are engaged in such occupations where technical skills or spacial qualities are not required. The percentage of unskilled workers more in elder generations and declined with the younger age groups. People of 15-45 age group, who entered into the city employment market, possess certain technical skills and qualifications demanded by the modern occupations of the city. Repairing of automobiles, carpentry and white collar jobs of the city attract rural youths. The qualified ones can get employment in the city market. Thus, the demand for qualifications

and provision of occupational diversification itself work as a catalyst in the process of transformation in the rural economy.

Although transformation of rural economy indicated by urban oriented sectors, occupational diversification and change in the level of skills of workers, is in the incipient stage; The process of urbanisation has already set in in Mawsbuit. Along with urbanisation, the process of fringe development has started which reflects the characteristics of "Urbs in Rure".⁷²

Analysis of demographic and economic indicators can help in identification of demographic and economic characteristics found in Mawsbuit.

Demographic:⁷³

- (1) Population growth rate of the village is higher than the other villages located far from the

⁷²R.E. Pahl; (1964), Op.cit.,

⁷³Despande, Arunachalam and Bhat (1980); while discussing the "Impact of a metropolitan city — Hyderabad" on South-Kolaba region, identified demographic indicators of a rural hinterland suggestive of out-migration. These are - (1) Lower decennial growth rate of population over the decade in comparison to other areas. (2) Female population is in excess of male population. (3) The age-pyramid structure is narrower at the middle age groups. (4) Higher dependency ratio.

In contrast to these, the demographic indicators of Mawsbuit suggest a fringe area with increasing urban influence rather than a far-off rural hinterland. Thus the fringe area is different from both village and the city and depicts a transitional zone of 'Ru-Urbs'. It is a zone of in-migration and not out-migration. The degree of traditionality depends upon the pattern and intensity of inmigration.

city and the state average and conversely, nearby equals to the growth rate of Shillong Urban Agglomeration.

- (2) The size of population in the working age groups is comparatively larger and there is a balance between both the sexes in working age groups.
- (3) There is a decline in the sex-ratio of the village.
- (4) A minimal degree of heterogeneity in terms of tribal and non-tribal has been emerging in the fringe village.
- (5) Level of literacy is lower than the city but there is an increasing trend in the level of literacy specially in the younger generation of the fringe village.
- (6) dependency ratio of the village is lower than the city.

Economic:

- (7) Although the economy is not predominated by non-primary sector the primary sector is oriented towards urban economy.
- (8) There is a certain degree of occupational diversification in the total workforce of the village. Diversification of occupation indicates transformation from traditional primary sector to more non-primary sectors.
- (9) In response to the growing demand for qualification and technical skills in the city market,

the level of skills of the village workforce ¹³³ is improving.

All these characteristics indicate the transitional character of the fringe area where traditional rural economy is getting transformed towards modern urban economy.

Rural-Urban Interaction

With the demographic, economic and morphological characteristics embeded in the fringe village developes a symbiotic relationship with the city through a marked interaction pattern. The interaction between the fringe village and the city can be understood through the retail activities, commodity flows and commuters. Higher frequency and dynamism of these three indicators will indicate a healthy symbiosis between the fringe village and the city.

Retail structure may change with increase in the urban influence leading to change in tastes and consumption pattern. It is generally observed that the people of the fringe villages depend on the village shops and retail outlets for lower order goods and services viz. vegetables, food items, newspapers etc. The city serves higher order goods and services like expensive consumer durables and services like hospital, college education etc.

Because of the peculiar characteristics of Mawsbuit from the point of view of standard of living, purchasing power, social set-up, availability of infrastructure, the established trend of dependence is apparent in its nature. Two fair-price shops of the village supply most of the household needs like food-items, poultry feed, fuel etc. For medicines, newspapers, clothes villagers depend on the city. The 40 households which reported to have accessibility to newspapers, collect them from the city.

TABLE V.12
Retail structure of the village Mawsbuit, 1985

Types of shops	Numbers
Tea shops	15
Grocers	4
Fair-price shops	2
Cloth stores & tailoring	1

Source: Field Survey

Villagers purchase agricultural inputs from the city. There is no cooperative society to have these goods. Proximity to the city and availability of needy goods in the city may be the causes responsible for not having any cooperative society in the village. Fair-Price shops serves as the centre of retail activities and other shops like tea-shops etc. have grown around these

fair-price shops. 'Tir' (Gambling) bookie centres provide another link between the villagers and the city. Almost all members of the village come to the centre which provides a meeting place. Thus, there appears two shopping centres in the village. One of this is located near the foot-track leading to Happy Valley bus-stop and another near the metalled road linking the village with the city. One of the shopping centre has the advantage of being located near the village church and the primary school. Both the centres are identical in the nature of services provided by them like, fair price goods, tea and snacks and the bookie centre for 'Tir'.

The kind of goods and services a shopping centre can provide depends upon people's purchasing power, their attitude and the scale of economies. Except for some of the lower order goods like food items, provided by the fair price shops, grocers, cigarettes, refreshments, gambling etc., the villagers depend upon the city market for their other retail needs. The location of shoppers in the two centres clearly indicates the elementary nature of the retail activity.

In case of consumption pattern of the villagers, larger share of the income goes to food and medical

expenditure. Diversity in the expenditure pattern within a family has been less frequently reported. This indicates the lower level of income and the reason for elementary nature of retail activity. Except for vegetables and fuels, for all the other retail activities, villagers are dependent entirely, on the wholesale market of the city. Thus, the retail activity of the village is characterised by shops dealing in goods and services of the lower order for a fairly large number of households have a very low level of income. The economic interdependence between the fringe and the central city manifests in the pattern and intensity of the commodity flows and passenger traffics. In the fringe areas of the developed countries and large metropolises, where residential suburbs is a significant characteristic, commuting has taken a very important dimension in the pattern of interaction. In the developing countries and in lower ranking towns in general and the urban fringe of Shillong in particular, passenger commuters consists of mainly employed persons, students and shopkeepers etc. Similarly, commodity flow is another important aspect. The fringe villages supply village products to the city and the city provides consumer goods, agricultural inputs etc. to the village.

Students constitute nearly 50 per cent of total

daily commuters to the city from Mawsbuit. The college students go to the city, whereas students of middle and secondary levels commute daily to Happy Valley and Madanrting townships. Others, largely the office goers and villagers who go for shopping, medical and other purposes, constitute the other half of the commuters. Out of a total 105 household surveyed, the numbers of only 40 household members reported that they visit city daily for educational purposes. (See table V.13 and Fig. 7).

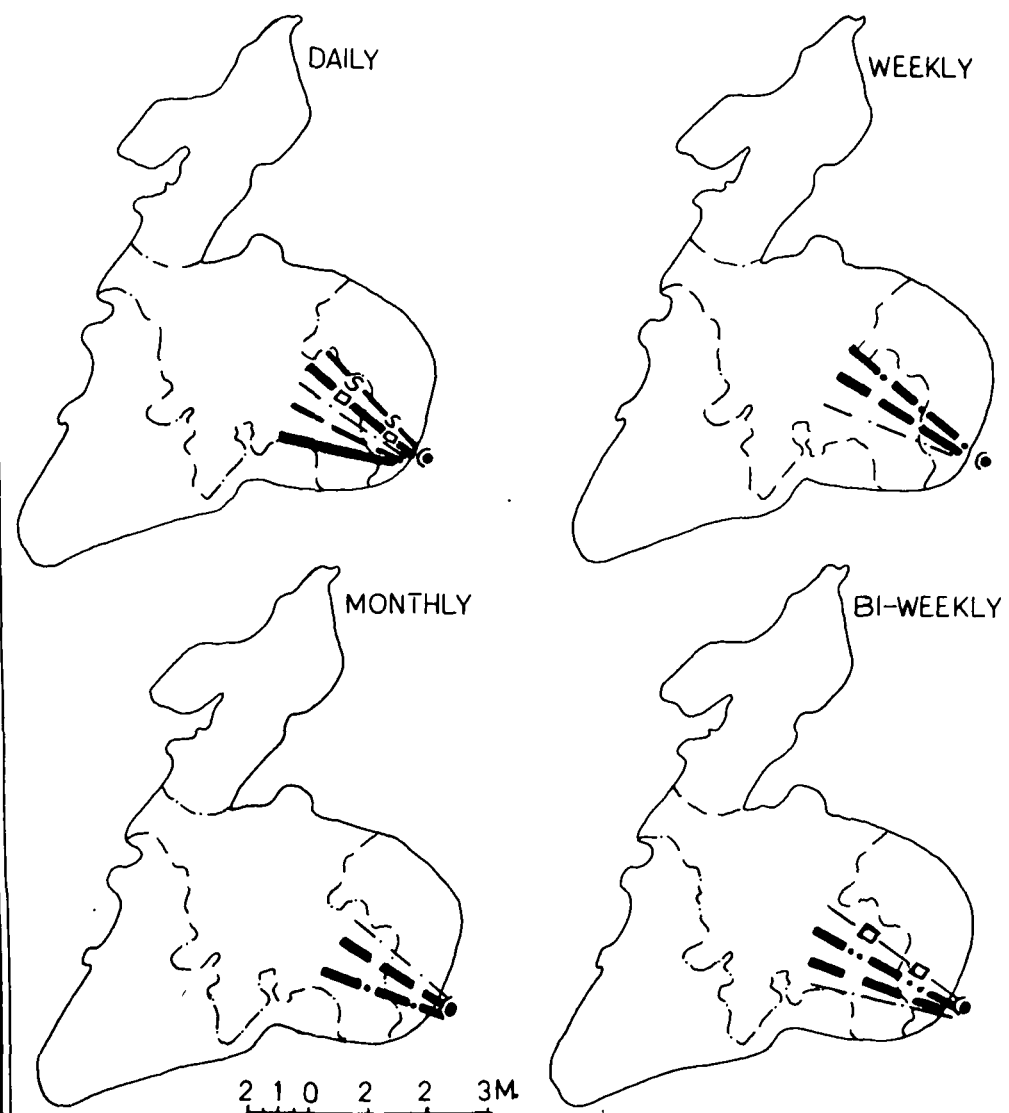
TABLE V.13
Commuters of Mawsbuit to Shillong

Purpose	Daily		Weekly		Bi-weekly		Monthly	
	Total	%	Total	%	Total	%	Total	%
Academic	40	43.01	-	-	-	-	-	-
Shopping	15	16.13	35	63.64	20	27.40	30	27.27
Medical	3	3.23	17	30.91	5	6.84	70	63.64
Agricultural	-	-	3	5.45	45	61.64	10	9.09
Petty-Business	20	21.50	-	-	3	4.11	-	-
Services	15	16.13	-	-	-	-	-	-
Total:	93	100.00	55	100.00	73	100.00	110	100.00

Source: Field Survey.

Smaller number of farmers commute for agricultural purposes particularly, to sell the agricultural products in the city. Villagers buy their necessary agricultural inputs from the city.

MOVEMENT OF COMMUTERS SHILLONG AND MAWSBIT



2 1 0 2 2 3M
1 0 1 2 3Km

PURPOSES

- Academic
- - - - Shopping
- . - . Medical
- . . . Agricultural
- □ - □ Petty Business
- s - s Service

FREQUENCIES

- Percentage
- 0—10
 - 10—20
 - Above 20

Fig 8

Although there is a mass scale health problem in the village, the villagers show casual attitude towards treatment in the city hospitals, mainly due to problems of communication and traditional prejudices against modern medications. People, mainly the women are engaged in tea-shops in the office canteens of the city and the Nepali immigrants of the village are engaged in milk production and dairy and sell the milk in the city and therefore reported commute under the petty-business category.

The villagers have to walk $\frac{1}{2}$ km. to the city-bus stop in Happy Valley. City-bus frequency is 45 trips daily from 8 A.M. to 7 P.M. The frequency is relatively higher between 8.30 A.M. to 10 A.M. City-bus trips are mainly meant for transportation of Happy Valley area but at the same time it serves the village people too. Even then, compared to the population of the village, the levels of economic development and aggregate demand for transport this frequency seems fairly adequate.

Development of transportation and other infra-structural provisions are both cause and effect of the process of economic development. Although, a metalled road connects the village at one end, due to absence

of city-bus service at that site, people have to opt to Happy Valley but-stop.³ Compared to the physio-graphical constraints the link of the village by city-bus service with only a gap of 1/2 k.m. is not negative but a positive sign of integration through interlinks with the city.

Mawsbuit supplies vegetables, milk and forest products (see Fig. 8) to the city. The business of vegetables and the forest products assumes lion's share in the village economy. This business is handled by largely, intermediaries. Villagers collect their salable goods to the two shopping centres and sell to the intermediaries. The intermediaries take vegetables and forest products to the city wholesale market, from where a larger portion goes to other parts of North-east India. Thus, there is a gap between the producer and consumer and the farmers do not get adequate share of the remuneration. In a personal conversation a farmer expressed that they get only Rs.1.80 per kg of cabbage which is sold at Rs.6.00 in the city market at a distance of 6 km. This discrepancy is one of the major causes of low level of income attained by the farmers despite their hardwork. Infrastructural bottlenecks, specially non-availability of direct city-bus services with the city are the main economic bottlenecks of the village.

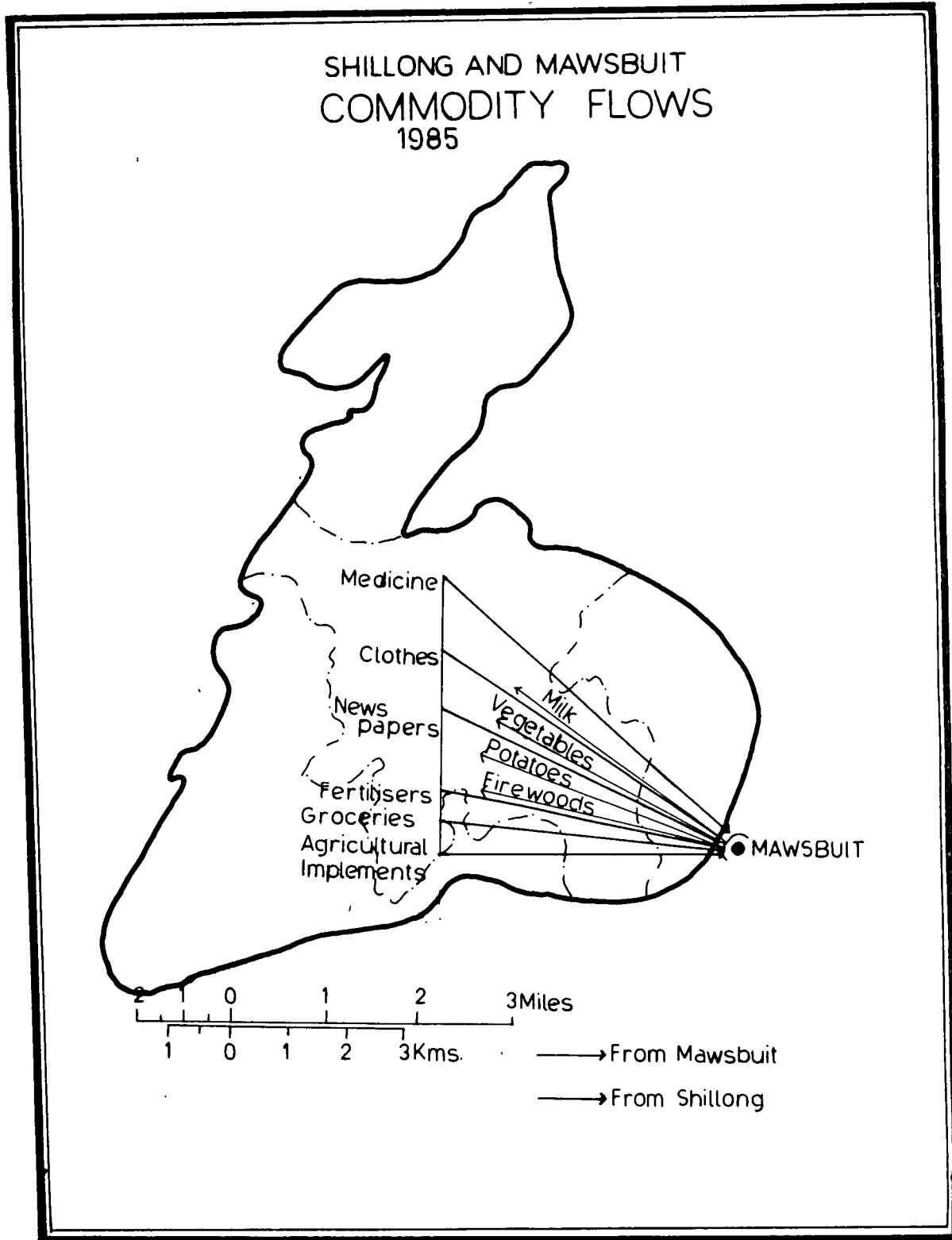


Fig 8

If the city-bus route can be diverted to the other limit of the village and to the other centre, the village will certainly experience tremendous socio-economic transformation.

The forest provide fuel to the villagers and the city people. It also provides building materials and raw-material to the forest based industries of the other parts of North-East India.

Milk production is not so intensive as one could expect in a fringe village. Villagers use milk cattle for self. Thus, the whole dairy farming is confined to the immigrants, mainly the Nepalis. There is an interesting symbiosis between the Nepalis engaged in dairy and the local Khasi farmers who consume beef. The Nepalis reside in the rented houses of the farmers and in return for rent they provide cow-dung (manure) to be used for the vegetable cultivation. The production of milk is highly unorganised and is mostly sold by the producers in the hotels and restaurants of the city. Thus, milk production clearly indicates urban demand and rural-urban interdependence. Milk production has not reached higher scale due to the dominance of dairy farm located at Upper Shillong.

Because of the importance of these three commodities, the occupational shift has not assumed greater dynamism. Although, there is a decline in the share of primary workers to total workforce the primary sector still dominates in significance in the village economy. Yet, the urban influence and consequent rural response can be seen from the dominance of vegetable cultivation in the rural economy. The village produce vegetables on the basis of its comparative advantage. The village produces vegetables because there is a market in the city for its production. Besides the market, the city assures supply of food grains, production of which would have been largely uneconomic for the village.

Thus, the pattern and intensity of interaction between Mawsbuit and Shillong city can be summarised.

- (1) The village depends on the city for most of its retail needs and the village supplies milk, vegetables and forest products to the city.
- (2) The volume and pattern of passenger traffic is dominated by students, office goers and people engaged in petty-business.
- (3) There is a degree of discrepancy in the prices of villagers get for their produce and what it fetches in the urban market due to the presence of intermediaries. This has led to a situation of lower income level of the people. Consequently,

a healthy growth of interaction between the city and the fringe village is stunted.

This brief analysis clearly indicates the economic integration between the fringe village Mawsbuit and the city of Shillong. The degree of interaction may not be of a very high order owing to the total socio-economic set-up of the region and the level of urbanisation of Shillong. Two points should not be ignored at this juncture (i) Location of Happy Valley military residential area between Mawsbuit and the city and (ii) Mawsbuit is a village outside the standard Urban area. The first is responsible for restricted urban expansion while the second may indicate the characteristics of an outer urban fringe. Thus, there should be another fringe belt near the boundary of Shillong Urban Agglomeration.

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CHAPTER - VI

SUMMARY AND CONCLUSIONS

Rural-Urban fringe is a transitional zone between the city and the villages. It is transitional in the sense, that, it differs from the rural as well as the urban areas in its demographic, socio-economic and morphological characteristics. Rural areas, located in the hinterland of a city experience age and sex specific out-migration. The process of 'depopulation' get reflected in lower level of labour participation, higher dependency ratio and a higher sex-ratio of the population. To the contrary, a fringe village depicts the characteristics indicating age and sex specific immigration. Fringe area differ from the city, in terms of not being fully commercialised and with the existence of the traditional rural-social milieu. Thus, rural urban fringe depicts the characteristics of both rural and urban settlements.

Because of its dynamic attributes of acquiring urban characteristics, the fringe area gets incorporated into the urban limit very fast. The demographic, economic, social, morphological and interactional elements of the village, located in a fringe area suggest that

the transition from rural to urban settlements is taking place inevitably. Population growth rate, sex-ratio and literacy rate indicate a marked change in the demographic set-up of the village. The rural economy becomes more urban-oriented. Unlike urban areas, change in demographic attributes of the village may not always be accompanied by an increase in the number of workers in the non-primary occupations. If the agricultural economy finds more easy access to and return from the city market, the agriculture sector will provide more employment opportunities. But, irrespective of the nature of the economy of the village, Primary or non-primary, it experiences a transition from traditional-stagnant-subsistence type to more profit oriented-commercial economy. With the increasing urban influence, the traditional economic system of the village gets integrated with the urban economic system. The elements of commercialised and modernised money oriented economy make inroads into the traditional rural economic system of the village. Incursion of new elements manifest in the landuse pattern of the village. Intensity of impulses of urban-origin depends largely upon the generating capacity of the city which itself is dependent upon the total socio-economic situation of the whole region.

Mawsbuit inherits its fringe characteristics from a city which reflects the urbanisation pattern of a developing country. Some of the characteristics found in this study are universal in terms of fringe characteristics of any city.

The degree of transformation in a fringe village should be more prominent in the morphological attributes. But Mawsbuit depicts infrastructural bottlenecks and lack of urban amenities.

The population growth rate is higher than Shillong Municipality and roughly equal to that of Shillong Urban Agglomeration. Sex-ratio declines from 1017 in 1971 to 895 in 1985. The size of population in the working age-group is fairly larger. These demographic attributes of Mawsbuit point out to the age and sex-specific immigration, into the village. The immigrants constitute 11.06 per cent of total population, out of which 58.57 per cent is male and of 30-45 years.

The level of literacy in the village is lower than the city, but an increasing trend is observed during the analysis.

Although, economy of the village is not predominated by the non-primary sector the primary Sector (58.40 per cent of total workforce) is urban-oriented.

There is a fair degree of occupational diversification and an improvement in the level of skills among the workers of Mawsbuit. Thus, economic attributes largely depicts the transformation in the village economy.

The interaction pattern between Mawsbuit and the city of Shillong represents by commodity flows and passenger traffics. The flow of agricultural and forest produces of the village to the city and a flow of manufactured goods from the city to Mawsbuit indicate the level of interaction between them. From the pattern and intensity of the interaction between the city and the village that has been studied, it is understood that the interaction pattern represents 'rural-urban continuum' rather than 'rural-urban dichotomy'. The fact that instead of 'polarisation' of the urbanisation process by the city there is a tendency towards 'assimilation' of urban characteristics into the rural milieu, and therefore, reveals the economic integration (although at a lower level) between Mawsbuit and shillong urban Agglomeration.

Thus, higher growth rate of population, higher sex-ratio, increasing literacy, increasing share of non-primary workers and a fair degree of occupational diversification are the characteristics through which

'Mawsbuit' represents the fringe family. At the same time, change in tribal economy, marginal change in its morphological attributes and a lower level of standard of living depict the uniqueness of the area. Unlike the fringe villages of developed countries and large metropolises, Mawsbuit is not characterised by the expansion due to residential shift from the city. The explanatory factors emerge from the intricacies of the tribal land laws and lack of Governmental construction and the relative stagnancy of Shillong urban Agglomeration.

Dynamics and directions of transformations in the socio-economic and morphological attributes of the village, may not be of higher degree, as observed in cases of large metropolises. This slower pace is due to the weak socio-economic impulses generated by Shillong city which is yet to come out from the legacy of administrative, educational and tertiary functions based parasitic character to a highly diversified, fast-growing and a generative city. Moreover, the percolation of desired 'trickle down' effect of Shillong is restricted by the infrastructural bottlenecks prevailing in Mawsbuit. The characteristics of these attributes observed in Mawsbuit clearly explains the transitional

character of the fringe village.

A fringe village with a higher level of development and a generative and dynamic city may expand their level of interaction with vigour and vitality. So, the planning for a city must consider the fringe area of the city. Dispersal of urban activities, residential areas, parks and other urban landuses will reduce to congestion in the core of the city. At the same time, there should not be a superimposition of urbanisation and modernisation in the fringe villages. The fringe villages must be acquainted with urban infrastructural provisions by means of thoughtful planning. Before the city can generate impulses of urbanisation, the fringe village must be ready to assimilate them to its own system. Otherwise, such kind of superimposition will accentuate the urban problems after incorporation of the fringe areas into the urban limit.

From the findings of this study the identification of the fringe area of Shillong can be done with one or two more case studies. The attempt will be made towards identification of urban-fringe of Shillong and analysis of pattern of linkages that exist between the urban fringe and the core of the city, in future research work.

An analysis of the fringe villages, identification of fringe areas and understanding of symptoms of their handicaps will lead to powerful normative usage and planning measures for a healthy integration of the fringe with city both physically and economically. It is an area of investigation which cannot be ignored by urban-planners on the process of regional development as a whole. An adequate understanding of the pattern and processes which are operative in a fringe village may contribute to the solution of the much debated dichotomy between the 'polarised development' versus 'decentralised planning'. The attempt made in this study may contribute to the understanding of the dynamics of city expansion as well as towards solution of specific problems of urban fringe of Shillong in a specific context, in the process of its economic, social and morphological integration with the city.

APPENDIX LA

HOUSEHOLD SCHEDULE

Principal Investigator:

Year & Month of Survey:

A. Identificatory

1. Name of the Head of the Household and code:

a) Age..... b) Sex..... c) Religion..... d)Caste/Community.....

2. a) Are you a member of SC/ST

b) If S.C., which community

c) If S.T. which tribe

B. Demographic Attributes of the Household

1. Total family members: (a) Male..... (b) Female.....

C. Occupational Structure of the Household

Sl.Nos.	Age	Sex	Educational Qualifications				Marital Status				Occupational Status
			1	2	3	4	1	2	3	4	
1	2	3	4				5				6

Sl.Nos	Place of work	Place of residence	If works outside distance	If in service approximate monthly salary	In any other occupation
	7	8	9	10	11

C. Land use and Agriculture

1. Total Land holding
 - (a) Net area operate currently
 - (b) Current Fallow
2. Area leased in/out
3. Area under forest
4. Type of cultivation
 - (a) Permanent cultivation
 - (b) 'Shyrtil', Shifting cultivation
5. Irrigations:
 - (a) total area irrigated
 - (b) Source of Irrigations:

Type	Area
------	------

Streams & canals

Pond/Tank

Any other

6. Cropping patterns:

Type of crops	Net Area	Gross	Area Irrigated	Production In Quint.
---------------	----------	-------	----------------	----------------------

(i) Rice

(ii) Maize

(iii) Potato

(iv) Pine-apples

(v) Vegetables

(vi) Any other

D. Income and Expenditure**1. From Agricultures**

Item	Quantity sold	Value	Purchases
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

2/ (i) How many houses you have?

- (a) In village
(b) In city.

(ii) How do you use them?

Type	Monthly income	Expenditure in maintenance	Expenditure in repairs
A) Rented			
(i) Private tenant			
(ii) Govt.			
(iii) Semi Govt.			
(iv) Other			
B) Self Occupation			

3. Credit Facility:

Sources	Amount	Year	Purpose
Bank			
Co-operative			
Money lenders			
Other Societies			

4. Agricultural inputs

Types	New/Old	Total Qty. applied	Cost	From where you acquire	Distance
i. Seeds or HYV					
ii. Fertilizers					
iii. Implements					
iv. Pesticides					
v. Repairs/ Main tenence					
vi. Others					

5. Agricultural labour use (hiring in)

	No. of workers	How many days	Av. wage paid
i. Family members			
ii. Hired			

6. Livestock

Item	Income from sale	Purchaser	Sopurce of fodder	Other expenses
1. Cattle				
2. Goat				
3. Pig				
4. Poultry				
5. Others				

8. What is your annual income from all sources?

8. Consumption:

Types	Amount	Mode
Education		
Ceremony		
Medical		
Food		
Clothing		
Travel		
Savings		

E. Quality of Life

1. Do you have drinking water facilities?

- a) If yes, type
- i) well ()
 - ii) Tube well ()
 - iii) Tap () Treated ()
-do- Untreated ()
 - iv) Any other sources ()
- b) Frequency of the supply
- 1. Regular ()
 - 2. Irregular ()
- c) If irregular what is the alternative sources?
- i. Pond ()
 - ii) Stream ()
 - iii. Water carrier ()

2. do you have lavatory facilities? Yes/No

- a) If yes, for how long
- b) What is the charge you have to pay
- a. Water reading ()
 - b. Fixed rented ()

4. Housing :

- a. Structure of house -
- 1. Wood ()
 - 2. Concrete ()
 - 3. Thatched ()
 - 4. Tin ()

b. Space occupied by the house in sq. feet.

c. Amount of kitchen garden

d. No of rooms

e. Use of rooms

	Nos
Living room	
Store	
Livestock shade	
Garage	
Drawing room	
Any other use	

5. What are the other assets do you have?

Item	No.	Year of use
T.V.		
Radio		
Bi-cycle		
Motor Cycle		
Jeep		
Telephone		
Any other		

6. Do you read newspapers? Yes/No

a) If yes, how often

b) Sources 1. Hawker () 2. Personal source ()

F. Migration

1. Are you a Native of this village? Yes/No

If No then

a. Where have you come from

b. When you have come? and why?

c. Are you planning to settle down here? Yes/No.

2. Any of your family members, who working in the city? Yes/No.

a. Where does he/she stay? City/Village

b. If in village, what is the mode of journey & frequency

- | | |
|-----------------|---------------|
| 1. City bus () | 1. Daily () |
| 2. On foot () | 2. Weekly () |
| 3. Any other | |

G. Interactions

1. How many time the family members visit town

Purpose	Frequency		
	Daily	Weekly	Monthly
Academic			
Social gathering			
Shoping			
Medical			
Agricultural			
Any other			

H. Do you think the expansion of city life helping you in:

1. Increase in wage
2. Any other facilities

APPENDIX I

VILLAGE SCHEDULE

Principal Investigators

 Year of Study: 1985
 Month _____
A. General Information:

1. Name :
2. Block :
3. Police Station :
4. No. of House-holds :
5. Population: _____ Males: _____, Female _____
6. Distance from the nearest city :
7. Nearest Market place/Service Centres:
 (a) _____ (b) _____

B. Physical Set-up

1. Location : River Valley (). Hill Slopes ().
 Plateau () Highway Side ().
2. Is the Village Contiguous to the Urban are? Yes/No
3. If not what physical form separates it :
 (a) Hill () (b) Reserve Forest () (c) Agricultural Land ()
 (d) River ().

4. Land-Use Pattern

Land-Use	Area
Forest	
Net cultivated Area	
Cultivable Waste	
Open spaces	
Fallow Land	
Area not available for Cultivation	

5. Use of Open spaces

Use	Area
Parks	
Play-Grounds	
Govt. Reserved Land	
Pastur Land	

6. Area not available for Cultivations

Area / Length

- a. Settlements
- b. Slums
- c. River
- d. Road
- e. Any other.

C. Socio-Economic Characteristics

1. Whether the village is connected by road Yes/No
2. If 'Yes' give the following informations regarding the quality of the roads:

- a. Metalled
 - b. Unmetalled
 - c. Kuchha
3. If 'No', indicate the distance to the main road connecting the town.
4. Is the main road a highway? Yes/No
5. a) Whether the village is electrified? Yes/No
- b) If 'Yes', since when the Village had the facility?
- c) How many house-holds consume electricity?

D. Nature of the Services

Is it in the village	Nos.	If not at which place. Distance
----------------------	------	------------------------------------

1. Educational:
 - a) Lower primary School
 - b) Middle School
 - c) Secondary school
 - d) Any other
2. Postals:
 - a) Post Office
 - b) Telegraph
 - c) Post and Telegraph & Telephone
3. Medical:
 - a) Primary health Centre
 - b) Dispensary
 - c) Maternity Care
 - d) Family Welfare Centre
 - e) Midwife/village health worker
4. Shops
 - a) Fair price Shops
 - b) General merchandise

- c) Grocer
- d) Cloth Store. Tailoring
- e) Pharmacy
- f) Others

5. Agricultural Establishments:

Is it in the village	Nos	If not at which place. Distance
----------------------	-----	---------------------------------

- a) Co-operatives
- b) Seed Stores
- c) Fertilizers & Pesticides
- d) Repairs

6. Drinking Water Facilities

- a) Tube-well
- b) Tap Water Treated
 -do- Untreated
- c) Well
- d) Other sources

7. Veterinary Hospital/Dispensary

8. Financial Institutions:

- a) Marketing Cooperative Society
- b) Banks
- c) Others

9. Any other Extension Services?

10. No. of Industries in the Village?

- i) Cottage Industry
- ii) Small-scale Industry
- iii) Processing Industry

Yes

7. Ethnic Composition

Types	TotalPopulation
1. Tribals	
Khasis	
Other Tribals	
2. Non Tribals -	
Castes:	
a)	
b)	
c)	
d)	
e)	
f)	

8. Linguistic Composition

Types	Population
Khasi	
Hindi	
Nepali	
Bengali	
Assamese	
Others:	
a)	
b)	
c)	
d)	

9. Religious Composition

Type	Population
Christian	
Hindu	
Muslim	
Sikh	
Jain	
Buddhists	
Other Tribal Religion	

10. Literacy Levels

Types	Population	
	Male	Female
Illiterate		
Primary-Secondary		
Secondary		
Matric & above		
Technical		

E. City - Village Interaction

1. Do you have the facility of City-bus? Yes/No
2. a) If 'Yes', What is the frequency.
 b) No. of persons commuting daily:

- i) To
 ii) Fro

Male	Female

3. If 'No' what are the modes used to travel to City?
4. Why the villagers go to the City?
 - a) To sell agricultural goods
 - b) To sell milk and meat etc.
 - c) To sell manufactured goods.
 - d) For Educational purpose.
 - e) For work.
 - f) For Medical service
 - g) For Marketing.
 - h) Any other.
5. Has the Village got public water supply?
 - (i) Tap water
 - (ii) Tanker service
6. (i) Has the Village got street lights?
(ii) If 'Yes', when was it first started?
7. Has the village got a Community Centre?
8. Has the village got common play ground?
9. Any additional information the Interviewee is interested to give.

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