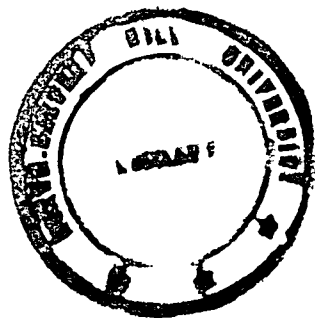


DEMOGRAPHIC STRUCTURE OF NORTH EAST INDIA

By

NIRANJAN PRASAD GOEL

THESIS SUBMITTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY



DEPARTMENT OF GEOGRAPHY
SCHOOL OF ENVIRONMENTAL SCIENCES
NORTH-EASTERN HILL UNIVERSITY
SHILLONG

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This is to certify that the thesis submitted by Sri Niranjan Prasad Goel for the degree of Doctor of Philosophy(Ph.D.) at the Department of Geography, North-Eastern Hill University, Shillong, Meghalaya, entitled "Demographic Structure of North East India" is a bonafide study of the author to the best of our knowledge and believes. This study may now be placed before the examiners for evaluation.

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INTRODUCTION

In order to study the demographic aspects of any area, one should be clear as to the meaning of Demography. Demography is the word which can be understood by breaking it into two parts, "Demos" and "Graphy", which mean human beings and measurement. The word demography commonly symbolises the study of human beings. Most of those interested in population are concerned also with other disciplines, notably economics, geography, history, human biology, sociology and anthropology. In all of these it is always useful to have knowledge of one or more aspects of demography. For example, in economics, population size and distribution are clear factors affecting total production and consumption. Social policy is influenced by the relative number of infants, youngsters, adults and aged persons. Human biology is concerned inter alia with reproduction with control, genetic constitution,¹ Geography, physical structure and population.

The study of demographic aspects of population under any regional setting, occupies a pivotal place in the field of population. To have a comprehensive geographical understanding about a region, geographers generally analyse its physical envi-

1. P.R. Cox: Demography, Cambridge University Press, London, (fifth edition) 1976, p.4.

ronment and its impact on social and economic conditions of the region. Population is perhaps the most difficult component to deal with. Many of the aspects of population have been studied in different parts of the world and there appears to be a growing awareness of the importance of the study in relatively recent years.²

In India, the study of demographic characteristic of population has been started quite late and it is only during the last 30 years that demographers, geographers, economists and sociologists have shown interest in this field.³ While the main

-
2. For example see D.J. Bogue, Principles of Demography, New York John Wiley, 1969; P.R. Cox, Demography, Cambridge University Press, 1970; P.M. Hauser and D.D. Duncan, The Study of Population: an Inventory and Appraisal, University Press, Chicago 1959; Determinants and Consequences of Population Trends, United Nations, New York, 1973; G.J. Demko et.al, Population Geography, A Reader, McGraw Hill Book Co., New York, 1970; J.B. Garnier, Geography of Population, St. Martin's Press, New York 1967; Kingsley Davis: The Population of India and Pakistan, Princeton University Press, Princeton, New Jersey 1951.
3. For example see: S.N. Agarwala, India's Population Problems, Vore Press, Bombay, 1966; S.Chandrasekhar, Asia's Population Problems, New York, Praeger, 1967; P.V. Sukhatme, Feeding India's Growing Millions, Asia Publishing House, London, 1965; A. Bose, (ed.) Studies in Demography, Allen and Unwin, London 1970; Patterns of Population Change in India, 1951-61, Allied Publishing Co., Bombay 1967; G.S. Gosal: 'Population Geography, A Trend Report' in A Survey of Research in Geography; Popular Prakashan, Bombay, 1972 and some other references may be seen under general bibliography.

focus of Indian Demographers and Geographers was on the distribution and growth of population at the earlier stage, other aspects, such as Population Composition, Migration, Literacy, Religion, Occupational Structure and Urbanisation have started receiving attention since the sixties. In this respect IIPS Bombay and Geography Department of Punjab University have been playing key roles and some other universities have also taken up various studies on different parts of the country.*

Interestingly enough the study of population in general and its demographic characteristics in particular have received only slight and fragmentary attention from the Demographers and others of the North Eastern Region of India. The present study is an attempt to understand the demographic characteristics of the region.⁴

* In this connection special reference may be made to the works of J.B. Ambanawar, S.N. Agarwala, J.R. Rele, N.B. Lal, G.S. Gosal, B.C. Mehta, K.N. Singh, Asok Mitra, A. Bose, D. Natarajan, K.C. Zachariah, M.K. Premi, S. Manzoor Alam, and others.

4. For example, the works of B.K. Roy-Burman "Socio-Economic and Demographic Structure of Hill Areas of North East Region of India" Census of India Monograph 1967, M.C. Bhuyan, "Immigrant Population of Assam, Analytical Synthetic Study" Unpublished Ph.D. thesis, Geography Deptt. Gauhati Univ. Gauhati, 1977; P. Chittaranjan, "Urbanisation in the North East Region of India" M.Phil. Dissertation, Geog. Deptt. NEHU, Shillong 1978; T.K. Chaudhury, "Demographic Trends in Assam", B.R. Publishing Corp., Delhi, 1982, and some research articles given under general bibliography requires special mention in this regard.

Location:

The North Eastern Region of India occupies a strategic location from geographical and political points of view. The region is surrounded on three sides by international borders, in all sides except a narrow passage of about 40 Km's wide with the rest of the country. The whole region is a meeting place for the people belonging to different religions, and various ethnic groups having different cultural backgrounds and mode of living. This heterogeneous character of the people poses a big problem to have a better understanding of their various demographic characteristics which are further complicated by the inflow of people from other parts of India and from the neighbouring countries (Bangla Desh and Nepal in special).

The growth of population in the region during the last decade (33.24 percent) is quite high as compared with that in the country as a whole (24.75 percent) 1971-81. In other words the growth of population in this region during the present century (507 percent during the period 1901-81) has been substantially higher than that of the whole country (109 percent) during the corresponding period. It has low Sex Ratio 906 for the region as against 930 for India in 1971, low degree

of urbanisation (16.78 percent in the region as against 23.73 percent in the country). All these factors directly or indirectly lead to the more complicated nature of demographic characteristics of population and their spatial variations. Also there appears to be significant intra-regional variations among different states and union territories of the region with respect to various aspects of population. To bring about a better understanding of the spatial variations, an attempt has been made to analyse the various demographic aspects of population at intra-state level and inter-state. While analysing the data within the region, district has been taken as the smallest unit of the study. These may be considered as the basic premises of the present study.

The present study is based on the information available mainly for the post-independence period, 1961 to 1981. The basic sources of information are various Census Handbooks and publications, Statistical Handbooks of respective states and union territories for different years and North-Eastern Council's publications of various years. The main stumbling block for any demographic study is the comparability of the data for different years as well for different categories and areas. As a result the data on age composition, migration and occupation have been standardised wherever it was possible and necessary. The Census data for Assam for 1981 could not be incorporated in the

present study due to non-availability of data. In Assam due to unavoidable circumstances in 1981 the operations could not take place. Therefore, statements made for Assam for 1981 are based on estimated values only.

The present study "Demographic Structure of North East India" has been introduced, described, analysed, interpreted and concluded in seven different chapters. The first chapter gives the general information about the region in respect of location, physical environment, sources of information and methodology. Different statistical methods have been used to analyse the various aspects of the population. In the second chapter, a comprehensive study on population composition under following sub-headings— Density of population, Age Composition, Sex Composition, Religious Composition, Population of Scheduled Caste and Scheduled Tribes and Literacy, have been analysed and interpreted to bring about spatial variations for whole North East Region at district level. Chapter Three deals with growth of population. In this chapter the growth pattern of population in the region with respect to states and union territories have been analysed with the help of Macechan's Law. An attempt also has been made to estimate the birth and death rates during 1961-71 for the constituent units of the region. The chapter four has been devoted to study the pattern of migration in the region.

An attempt has been made to study the migration — intra-regional, intra-district, inter-district and inter-state in the country and internationally also. In the fifth chapter, occupational structure of population have been dealt in detail. An attempt also has been made to identify the economically advanced areas in the region. The sixth chapter discusses the urbanisation pattern in the region with the help of some new statistical approaches. In the last chapter conclusions have been drawn and some recommendations have been made for future research in this area. Thus the present study not only includes practically all aspects of demography of the region, but it also reflects the changes in the demographic character of the region, which will help in getting better understanding of the demographic characteristics, of the region.

CHAPTER I

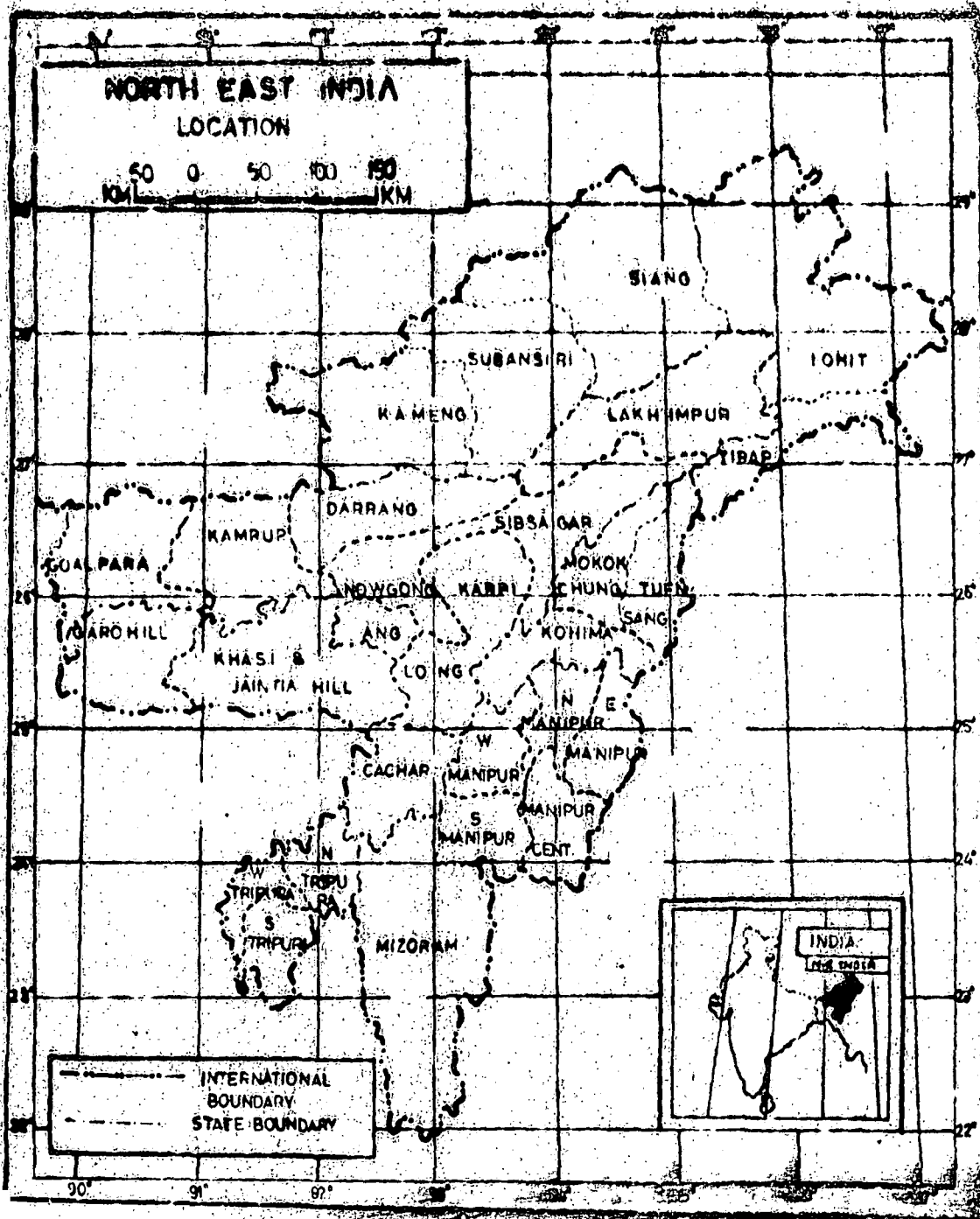
LOCATION, DATA BASE AND METHODOLOGY

Location:

The North Eastern Region is located in between 22° N to 29° 28' N Latitude and 89° 40' E to 97° 22' E Longitude. This region comprises of five states and two union territories i.e. Assam, Manipur, Meghalaya, Nagaland, Tripura, Arunachal Pradesh and Mizoram. The region is bordered by Bhutan and China in the North and North East, Burma on the East and Bangladesh on the South.

The North Eastern Region covers an area of 2,55,037 square Kilometers. This covers about 7.7 percent of the countries geographical area. The population of the region was 19.6 million in 1971 and has reached to 26.7 million in 1981*. The tribal population is quite high in this region. The percentage variation of tribal population lies between 80 percent to 94 percent according to 1971 census. The most of the tribal population lives in the hilly areas of the region.

* Based on Census of India, 1981, Provisional Population Totals, Paper I of 1981.



Map-1

The density of population in the region according to provisional figures of 1981 is 104 persons per square Kilometer. According to the estimated population of Assam in 1981, the highest density is in Assam (253 persons per square Kilometer) and the lowest density is in Arunachal Pradesh (only 7 persons per square Kilometer).

Physically the North Eastern Region presents a diverse picture of land forms. The variation in altitude is between 15 meters in Tripura to maximum of 4570 meters in Arunachal Pradesh. Physically, North Eastern Region of India can be divided into three broad divisions.

- i) Hill Region of Manipur, Meghalaya, Nagaland, Tripura, Arunachal Pradesh and Mizoram. This region has the characteristics of Extra Peninsular India.
- ii) The Brahmaputra Valley or Assam Valley.
- iii) Meghalaya Plateau and Mikir Hills.

Extra Peninsular Mountains:

The far eastern stretch of the Himalaya in Arunachal Pradesh is extremely rugged. In the Western part of Arunachal Pradesh, altitude varies from 1220 meters to 700 meters. The altitude of the Central part of Arunachal Pradesh is about

4570 meters. Patkai range in Tirap district reaching upto 2135 meters forms the boundaty between India and Burma.

Nagaland is separated from Burma by the Naga range. Sabarmati on Naga range has an elevation of about 3825 meters. There are other peaks over 3000 meters high. On the western part of Kohima Hills, Japvo is the highest peak (2995 meters). The country rocks of these ranges are hard.

The Ridge-and-Valley characteristics of western ranges become pronounced in Manipur. Manipur Valley constitutes an area of 1854 square Kilometer out of the total area of Manipur (22,330 square Kilometer). The rest (20,776 square Kilometer) part of the Manipur State is hilly. The altitude ranges from 760 meters to 2750 meters above sea level.

The general height of Mizo Hills is 915 meters running from North to South direction. The Blue Mountain rises to the height of 2165 meters. The Western part of Mizoram is higher than Eastern part.

Tripura is predominately hilly terrain. Hill ranges run from North to South direction. The average distance between two ranges is about 20 Kilometers. The altitude varies from 15 meters to 610 meters above sea level. There are 12 river

basis out of which 7 are important.

Brahmaputra Valley is the continuation of Indo-Ganga trough. This Valley extends from Sadiya to Dhubri, 650 Kilometer long and 80 Kilometer wide. The southern part of the Valley is less wide and more uneven in comparison to northern part of the Valley. The slope of the Valley varies from north-east to south-west direction. There is not much variation in surface features. The Valley is filled by alluvium brought by Brahmaputra and its tributaries.

Meghalaya Plateau has hilly irregular terrain. The southern face of the plateau has regular and steep scarps in respect of western and northern faces of the plateau. Boundary of the plateau in the north is not well defined due to low, irregular and broken hill ranges separating it from Brahmaputra Valley. Meghalaya Plateau physically can be divided into three parts.

- (a) Garo Hills in the West
- (b) Khasi Hills in the Centre
- (c) Jaintia Hills in the East.

Mahesh-Kola-Adaguri range is the dividing range between Garo and Khasi Hills. The average elevation of Garo Hills is 610 meters. Nokrek is the highest peak on Tura range with an elevation of 1515 meters. The Central and Eastern part of Meghalaya Plateau consists of Khasi and Jaintia Hills. Physiographically,

the Central and Eastern part can further be divided into three parts.

- (a) The Northern Undulating Hills.
- (b) The Central upland Zones. The general height of this Zone is 1500 meters. The Shillong peak is the highest (2000 meters).
- (c) The Southern upland with rounded hills and shallow valley.

The Jaintia Hills also have the three physiographic divisions as Central and Eastern part of Meghalaya Plateau. The east of Meghalaya is Mikir Hills with an average elevation of 457 meters. The southern range of Mikir Hills is known as Rengma Hills with average elevation of 900 meters.

NATURE AND SOURCES OF DATA:

The data used for the present study have been collected from the Census of India. The data have been collected for different variables and used mainly in five technical chapters. First, the data on "Population Composition", secondly, on "Population Growth", thirdly on "Movement of Population", fourthly on "Work Force" and finally on "Urbanisation", have been collected, standardised, analysed and interpreted in chapters II, III, IV, V and VI respectively.

The data used for the analysis of Population Composition obtained mainly from (i) Primary Census Abstracts of different States and Union Territories of the region at district level for 1961 and 1971, while for 1981, the data collected from Provisional Population Totals, Supplement, Paper 1 of 1981, for the respective States and Union Territories. (ii) Age Tables for all India for 1961 and 1971. (iii) Religion Tables for all India for 1961 and 1971, which give the distribution of population by religion at district level.

Demographic data for the analysis of periodical and spatial variations in the growth of population are available in the Census reports of the region. The data for the period 1901-71 for rural, urban and total population have been collected from the General Population Tables for States and Union Territories for the region at district level, while for the year 1981, the data have been taken from Provisional Population Totals, Supplement, Paper 1 of 1981, for corresponding States and Union Territories.

The information on 'migration of population' are meagre. The direct information of population movement are not available. The censuses, however, contain some indirect data which were of some help in estimating the character of population movement in the region.

The most important source of such type of data is place-of-birth data, which has helped in estimating the volume and direction of in-migration and out-migration and out-migration gives the net-migration. The other source is place of last residence, which is available only for 1971. Similarly, data on migration for 1981 is not yet published. Therefore, only 1961 and 1971 place-of-birth data on migration have been compared and analysed in the present study.

The data utilised in the study of 'work-force' have been taken from different district census hand books of States and Union Territories. The data from 1911-61 have been collected from Census of India, Subsidiary Tables, paper 1 of 1967, which gives the comparative picture of workers and non-workers. The information for 1971 have been collected from Union Primary Census Abstract, India and for 1981, from Provisional Population Totals, Supplement, Paper 1 of 1981, at district levels. One of the important aspect of the work-force tabulated by the different census operation's lacking is the uncomparability of data. As such, the data of 1951, 1961 and 1971 censuses are not comparable with each other mainly for definitional changes. Only 1971 and 1981 (Provisional data) are to some extent comperable. Therefore, only the comparable data have been collected and analysed.

The data on Urbanisation have been collected from different census tables for the States and Union Territories of the region i.e. from Part II-A(1) of Census of India 1971 and Provisional Population Totals, Supplement Paper 1 of 1981.

From the above discussion on the availability, comparability and source of data, it becomes clear that any statement made or inferences drawn in this study will be on the basis of the comparable data available for 1961, 1971 and 1981(Provisional). This aspect of the present study may be considered as one of the main limitations in making statements or in drawing inferences.

Methodology:

Various indices have been adopted to study the various aspects of population pattern in the present study. The indices have been broadly classified into five main sections based on different technical chapters.

1. Population Composition
2. Growth of Population
3. Occupational Structure of Population or Work Force.
4. Migration or Movement of Population
5. Urbanisation.

Indices of Population Composition:

This aspect of population has been further divided into different sub-sections. The methods used for different sub-sections are as follows,

Density is defined as persons per square Kilometer i.e.

$$\text{Density} = \frac{\text{Population}}{\text{Area in Square Kilometer}}$$

The variation in density has been shown by coefficient of variation.

Age composition has been analysed with the help of following methods.

1. **Dependency Ratio:** It is the dependent children in the age group 0-14 years and dependent aged persons in the age group 60/^{years}and above per 100 active population in the age group 15-59 years i.e.

$$\text{Dependency Ratio} = \frac{\text{D.C.} + \text{D.A.}}{\text{A.P.}} \times 100$$

where D.C. is the dependent children in the age group 0-14 years, D.A. is the dependent aged persons in the age 60 years and above and A.P. is the active population in the age group 15-59 years.

2. **Index of Aging:** It is defined as the dependent aged persons in the age group 60 years and above for 100 dependent

children in the age group 0-14 years i.e.

$$\text{Index of Aging} = \frac{\text{D.A.}}{\text{D.C.}} \times 100$$

where D.A. and D.C. stands for the same as in the case of Dependency Ratio.

3. **Maturity Index:** It is defined as the persons aged 30-59 years per 100 youths aged 15-29 years i.e.

$$\text{Maturity Index} = \frac{\text{Persons aged 30-59 years}}{\text{Youth aged 15-29 years}} \times 100$$

4. **Median Age:** It is defined as the age which divides the total population into two equal parts in terms of age that 50 percent population are below this age and 50 percent are above this age.

Population pyramid also have been drawn for both sexes (Male and Female).

Sex Ratio:

The sex ratio as defined by the Census of India is the "females per 1000 males". The variations in sex-ratio have been studied by using the coefficient of variation method.

Religious Composition:

This aspect of population has been studied by using coefficient of variation and by Location Quotient (L.Q.). The Location Quotient has been computed as

$$L.Q. = \frac{D_{ij}/D_i}{P_j/P}$$

where, D_{ij} = Population of J^{th} Religion in the i^{th} district

D_i = Population of the i^{th} district.

P_j = Population of j^{th} Religion in the State

P = Population of the State.

If the Location Quotient (L.Q.) of an area is unity, the share of that category in that area and the region are the same. The proportional share of the particular activity in the area would be more than or less than its value in the region, according to the value of Location Quotient being more or less than unity.¹

The same technique has been used for analysing the Scheduled Caste and Scheduled Tribes population.

1. Aslam Mahmood : Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi 1977, p.104.

Literacy:

The literacy rates for total population as well as for Scheduled Caste and Scheduled Tribes has been analysed with the help of coefficient of Variation

Indices of Population Growth or Growth of Population:

The growths of population have been analysed with the help of the following methods,

1. By Exponential growth of population

$$P_t = P_0 e^{rt}$$

where P_t = Population of the current year

P_0 = Population of the base year.

r = Rate of growth

t = time in years between P_0 and P_t .

2. By Logistic Law:

$$P_t = \frac{L}{1 + e^{r(\beta - t)}}$$

3. By Makeham's Law:

$$P_t = AB^t$$

where, t is the time in years. Here ' t ' takes values as -7, -5, -3, -1, 0, 1, 3, 5, 7. A and B are parameters to be estimated. The values of P_t thus obtained have been further

tested with the help of χ^2 (Chi-Square) test.

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

where O_i = observed values

E_i = estimated values.

An attempt has been made in the present analysis to estimate the 'Birth Rate' and 'Death Rate' of population by using some important methods which can be used under certain limitations. These are,

- (a) Burgeous Pichat Method
- (b) Reverse Survival Ratio Method
- (c) Coale Demny's Method.

These methods are described as follows:

Burgeous-Pichat Method:

This method estimates the birth rate and death rate of the population by using two characteristics of population viz., 'p' and 'r'. Where 'p' is the percentage of population in the age group 5-14 years to the population aged 5 and more years and 'r' is the annual rate of natural growth expressed in terms of 1000. The estimates are obtained from the relationships of 'b' and 'd' with 'p' and 'r' in the population as²

2. As quoted in Studies in Demography by A. Bose, P. b. Dasai, S. P. Jain (ed.) by J. R. Røle and U. P. Sinha, "Fertility and Mortality in India" 1951-60". George Allen & Unwin Ltd. London, 1970, p.214.



$$b = \frac{3.76 p - 44.68 - r}{1.076}$$

and $d = b - r$.

Reverse Survival Ratio Method:

In the absence of migration the population of age group 0-9 years in 1971 are the survivors of a cohort of births occurred in 1961-71, which has undergone a specific pattern of mortality conditions existing during that period to give the present population. Thus, the essential part is the past mortality conditions through which it has passed. As there also no life tables available, the e_0^0 (expectation of life at birth) for the State and Union Territories are assumed to be 47.5 years for males and 45.0 years for females during 1961-71.

The Reverse Survival Ratio Method is based on tracing the number of births for the last ten years that has yielded the population in the age group 0-9 years, on the assumption that it is fully counted. The respective 'Survival Ratios' are obtained from 'West Regional Model Life Tables'³ and average annual births estimated.

3. A.J. Coale and P. Demeny: Regional Model Life Tables and Stable Populations, Princeton University Press, New Jersey, 1966.

Stable Population Analysis or Coale Demeny's Method or
U.N. Manual IV Method:

This method based on stable population theory is well described in U.N. Manual IV.⁴ A stable population is generated by the continuation of a fixed schedule on fertility and mortality; characterized by an unchanging proportionate age distribution and constant annual increase. If fertility schedule is fairly constant and mortality slowly decreasing then the population will be quasi-stable.⁵ Both these theories are applied here to estimate birth rates for the States and Union Territories of the North Eastern Region.

The procedure is that for different age groups the upper and lower limits of the cumulative age distribution is fixed; and similarly the upper and lower limits of birth rate from Model Stable Populations. The birth rate for the calculated cumulative age distribution is interpolated, and the one corresponding to age 35, in case of female age distribution is considered to give closer estimate of female birth rate. The total birth rate is calculated by assuming sex-ratio at birth

4. United Nations: Methods of Estimating basic Demographic Measures from Incomplete Data, Manual IV, New York, 1967, pp. 12-16.

5. *ibid.*, pp. 12-16.

as 106 males per 100 females.

Indices of Movement of Population:

Mainly percentage distribution has been used to analyse the pattern of population movement in the region. An attempt has been made to study the intra-district, inter-district, inter-state and international movement of population with the help of percent values.

In the present chapter, an attempt has been made to estimate the natural increase by indirect method i.e. by subtracting or by adding the net balance of migration to the intercensal increase, according as the balance is positive or negative. The rough estimate of net migration can also be obtained with the help of survival ratio method which can be written as $M = p^2 - sp^1$, where M is the net-migration, p^2 is the population at the current census, p^1 is the population of previous census and 's' is the ratio of $\frac{p_2}{p_1}$, where p_2 and p_1 are the population of country at two consecutive censuses.

The sex-composition, which is often sex selective may also give information with respect to population migration in different areas of the region.

Indices of Work-force:

Mainly percent distribution has been used in analysing the occupational structure of population. A comparison between different census working population has been tried on the basis of percent values. Further, an attempt has been made to study the changes in urban male work-force with the help of Principle Component Analysis. First, the percentage changes have been calculated with the help of the given explanation,

$$\text{Percentage change} = \frac{P_{1971} - P_{1961}}{\frac{P_{1971} + P_{1961}}{2}} \times 100$$

where, P_{1961} and P_{1971} , are workers population in respective years in each occupational categories. The number of workers as Cultivators and Agricultural Labourers could not be included in the present study due to definitional changes which have occurred between 1961 and 1971.

The percentage change data have been subjected to a multivariate statistical analysis namely Principle Component Analysis.

$$| R - \lambda I | = 0 \quad \text{--- (1)}$$

where R is correlation Coefficient matrix, λ is eigen values and I is identity matrix. The cut-off point to determine the eigen values is pre-set at $\lambda \geq 1$. The rotated factors have been

identified by

$$/ R - \lambda I / P = 0 \quad \text{--- (2)}$$

where 'P' is factor loading or eign vector. The equation (2) have been solved for all values of $\lambda \geq 1$. The P vectors have further normalised by the method,

$$W_i = \frac{P_i (i = 1, 2, 3, \dots, n)}{\sqrt{p_1^2 + p_2^2 + \dots + p_n^2}}$$

where P_i is the factor loading in i^{th} factor. This gives the normalised vector or the weights. The factor loadings were than computed by removing the biasness of scale by the following relation

$$X_i^* = \frac{X_i}{\bar{X}_i} \quad , \quad i = 1, 2, 3, 4.$$

where X_i is the percentage change in the i^{th} occupational category and

$$X_j^* = X_1^* W_1^* + X_2^* W_2^* + \dots,$$

X_j^* is the factor scores for j^{th} district with W_i^* as weights.

Indices for Measuring Urbanisation:

Various methods have been used to analyse the urban population pattern. The methods used here are :

(1) Levels of Urbanisation

- (2) Location Quotient of Urban Population.
- (3) Growth Coefficient of Urban Population
- (4) (a) Quantitative Indicators of Change in Levels of Urbanisation
(b) Quantitative Indicators of Change in the Share of Urban Population of the District to the Urban Population of the Region.
- (5) Rank Size Rule.
- (6) Probabilistic Approach of Urban Settlements in Hill Region.

The definitions and working procedures of various methods are discussed in detail.

Levels of Urbanisation:

A crude measure of Level of Urbanisation of an area is the percentage share of urban population to its total population.

Location Quotient:

The Location Quotient (L.Q.) is applied to analyse the degree of urbanisation of a district in relation to the degree of urbanisation of the Region. The L.Q. of urban population is the ratio of the level of urbanisation of a district to the Level of Urbanisation of the region. Symbolically, it can be

written as

$$L.Q. = \frac{U_i/T_i}{U_r/T_r}$$

where, U_i = Urban Population of the i^{th} District.

T_i = Total Population of i^{th} District.

U_r = Urban Population of the Region

T_r = Total Population of the Region.

Growth Coefficient of Urban Population:

It is a simple ratio between the population sizes (Total, Rural or Urban) at two points of time. Here the two points of study are 1901 and 1971.

$$\text{Growth Coefficient} = \frac{\text{Population of 1971}}{\text{Population of 1901}}$$

This coefficient indicates the number of times the population has increased from 1901 to 1971.

Quantitative Indicators of Change in Levels of Urbanisation:

The basic indicators of the extent, rate and character of urbanisation for analysing changes in levels of urbanisation between 1901 and 1981 are as follows:

U_b = Urbanisation Level at the beginning of the study period
i.e. 1901.

in other words, U_b = Urban Population as percentage to total population in 1901.

U_e = Urbanisation level at the end of the period under study i.e. 1981.

I = Increase in the level of urbanisation
= $U_e - U_b$.

K_u = Coefficient of change of urban population (which shows the number of times the urban population has increased during the period under consideration)

K_r = Coefficient of change of rural population (which shows the number of times the rural population has increased during the period under consideration).

The following formula is used to find U_e .

$$U_e = \frac{100}{1 + \frac{K_r}{K_u} \left[\frac{100}{U_b} - 1 \right]}$$

Quantitative Indicators of Change in the Share of Urban Population of the District in the Total Urban Population of the Region:

The basic quantitative indicators for determining the change in the share of urban population of the district in its

regional context are as follows,

C_b = Percentage of urban population of the district to total urban population of the region at the beginning of the period (1901).

K_u = Growth coefficient of urban population of the district (1901-1971).

K_o = Growth coefficient of urban population of all other districts of the region 1901 and 1971.

C_e = Percentage of urban population of the district to total urban population of the region at the end of the period (1971).

$$C_e = \frac{100}{1 + \frac{K_o}{K_u} \left[\frac{100}{C_b} - 1 \right]}$$

Rank Size Rule:

According to Rank Size Rule, if we arrange the urban settlements of a region according to population in descending order it should be noticed that the second ranked city or town will be half the size of the first, the third ranked city one-third the size of the first, and so on and the n^{th} ranked city will be $\left(\frac{1}{n}\right)^{\text{th}}$ of the size of the first. Thus the Rank Size

Rule is an empirical regularity which one would expect to find in the urban system of many countries in the world. But this regularity is more evident in advanced countries and those with an old history of urbanization. According to this rule, the population of a town is related with its rank follows the Pareto's Law of income distribution.

$$P_r = KR^{-b}$$

where P_r = Population of the town whose rank is R .

R = Rank of the town

K and b are constants.

The above relationship can be written as,

$$\log P_r = \log K - b \log R$$

$$\text{or } Y = a - bX$$

where, $Y = \log P_r$

$X = \log R$

$a = \log K$.

The Rank-Size distribution when represented on a double logarithm graph paper, where the population (P_r) of town of a region plotted on Y-axis and their ranks (R) are plotted on X-axis, will produce a scatter diagram which will closely form a straight line, having a negative slope.

Probabilistic Approach of Urban Settlement in the Hills of North East India:

In many urban studies, the urban settlement pattern were analysed to ascertain the degree to which a given distribution deviates from the expected if they are distributed in a random manner in the area. In mathematical probability a random process which generates a random distribution can be defined as "each event has an equal probability of occurrence". In geographical distribution, it may be defined as "any sub area of specified size has had the same chance of receiving a point as any other sub-area of that size". In the present analysis this probability law has been used.

It is assumed that within the study area, there is an equal probability that an urban settlement will be located within any one sub-area of specified size as in any other sub-area of the same size. In the present study, this assumption has been considered as a theoretical norm and any departure from it has been treated as human biases.

The theoretical model based on this probabilistic law may be described as follows. If a given area is sub-divided into a number of 'm' sub-divisions of equal sizes, when 'n' points are selected at random from the given area A. The

probability $P(r)$ that ' r ' points will be selected from a sub-division mentioned above follows the Poisson Probability Law*.

$$P(r) = \frac{e^{-\mu} \mu^r}{r!}, \quad (r = 0, 1, 2, \dots, n)$$

where μ is a parameter to be estimated. The Poisson Probability Law has two parameters:

- (i) A non-negative real number μ which may be represented by mean for a closed distribution or by median for an open distribution.

$$\text{mean} = \frac{n}{m}$$

$$\text{or median} = 1 + \frac{n/2 - Cf}{f} \times h$$

where ' Cf ' is the cumulative frequency preceeding to the median class and ' f ' is the frequency of the median class. ' h ' is the width of the median class.

- (ii) a probability p lies between 0 and 1,

$$\text{i.e. } 0 \leq p \leq 1.$$

* The basic assumption here are that the distribution pattern is generated by random process, the probability of occurrence is very very small and non-occurrence is relatively high (i.e. $p \rightarrow 0$ and $q \rightarrow 1$). Further, it is assumed that the number of observation is also fairly large.

In the present study, for the hilly areas of North Eastern Region of India for the census year 1981 has been analysed. The state of Assam has been excluded mainly because it is mostly a plain area and census data for 1981 is not available. Another exclusion has been made in respect of Manipur Central District. Manipur Central District has a peculiar population concentration and out of 32 urban settlements according to 1981 census, mostly (as many as 23) are located in and around Imphal city giving rise to a agglomerated character. The rest of the areas have been divided into equal size quadrants by drawing grid lines.

As the emphasis is given on the locational pattern of urban settlements, the population sizes are not considered. The optimum size of the sub-division was ensured by the following relationship,

$$\text{Optimum size of the quadrant} = \frac{2A}{n},$$

where, A = Total area of the region in square Kilometers.

n = Number of urban settlements in the region.

Since the frequency table of the distribution of urban settlements in the region is an open table, the mean cannot be calculated. Therefore, median value have been estimated.

CHAPTER II

POPULATION COMPOSITION IN NORTH EAST INDIA (1961 to 1981)

In all demographic studies, composition and characteristic of population constitute one of the most important features. In this Chapter, attempt has been made to make a comprehensive study of the population composition of North Eastern Region of India between 1961 to 1981*.

The Chapter has been broadly divided into six main sections dealing with the following features.

- (i) Density of Population,
- (ii) Age-distribution of Population,
- (iii) Sex-Ratio of Population,
- (iv) Religion Composition of Population,
- (v) Composition of Population Schedule under Castes and Tribes, and
- (vi) Literacy of the Population.

It may also be noted that along with demographic characteristics, aspects of regional variation of these attributes have been analysed to the extent possible by


* Figures for 1981 based on provisional tables and for Assam, the projected one.

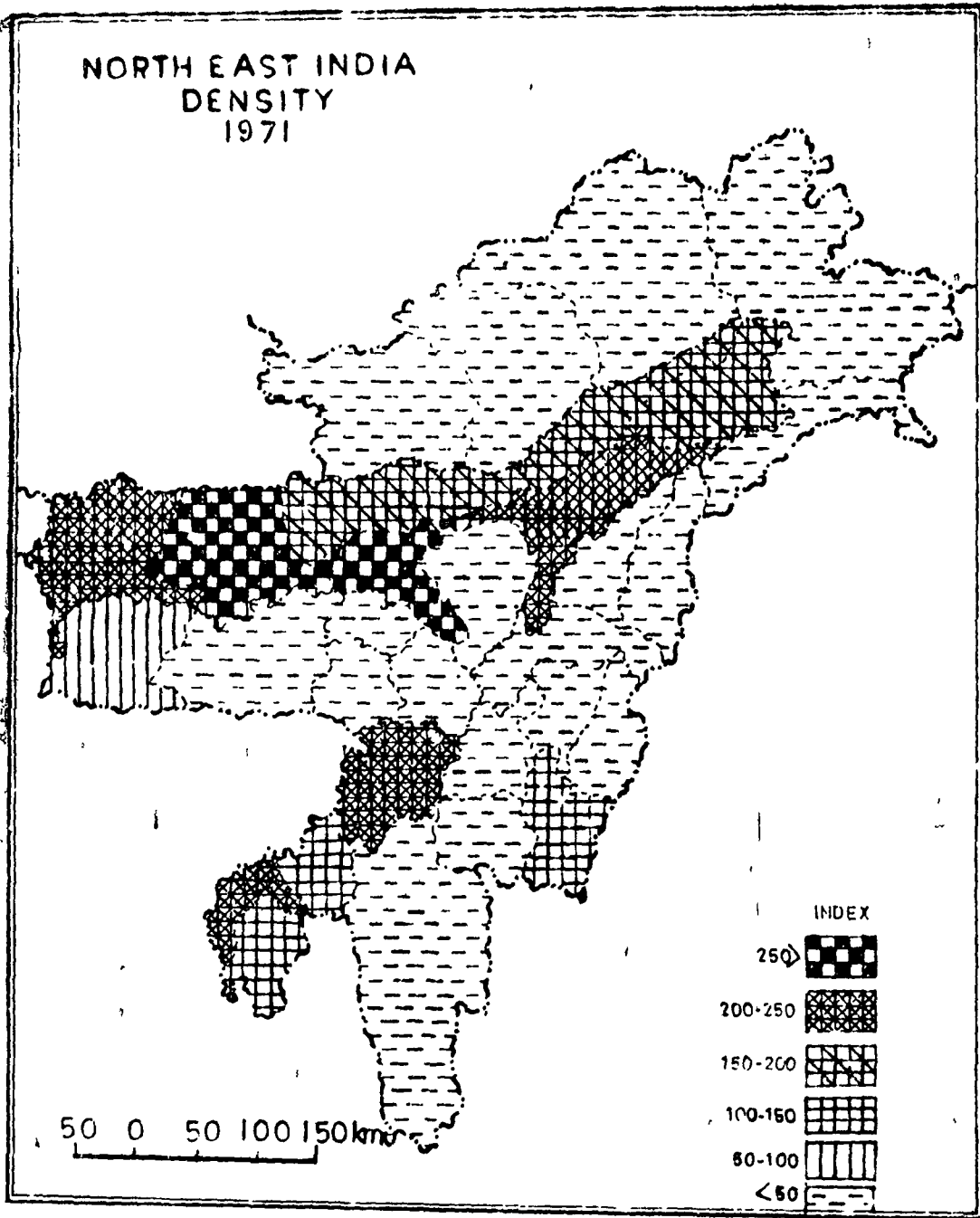
limitation of comparable data.

(i) Density of Population:

Density of population characterises very important socio-economic conditions. For instance, a high density region may reflect the limitations of the carrying capacity of land under a given system of economic exploitation of resources or a low density region being able to attract more people from high density regions etc.

North Eastern Region of India is sparsely populated, but it occupies roughly one-twelfth of the area of the country and contains only one-twentieth of the total population of the country in the year 1971. The density of population of this region was as low as 56, 77 and 104 per Square Kilometres in 1961, 1971 and 1981, respectively whereas the figures for the country as a whole were 134, 167 and 208 per Square Kilometres for the corresponding years. The average coefficient of variation is 94 percent, indicating a great degree of regional variations in the concentration of population in the North East India.

Table 2.1(a)  reveals that the population density in the North East India is almost half of the density of the country but within the states there is a wide degree of difference. For instance, it varies from 253 in Assam to 195 in



Map-2

TABLE 2.1(a) : DENSITY OF POPULATION IN NORTH EAST INDIA
(1961, 1971, 1981*)

State/Union Territory and Districts	1961	1971	1981
(1)	(2)	(3)	(4)
Goalpara	149	215	-
Kamrup	220	305	-
Darrang	136	198	-
Nougong	218	302	-
Sibsagar	168	204	-
Lakhimpur	122	166	-
Cachar	198	246	-
Mikir Hills	22	37	-
North Cachar Hills	11	16	-
<u>A. Assam***</u>	138	186	253
Manipur Central	100	136	174
Manipur East	11	14	18
Manipur North	21	30	47
Manipur South	14	21	25
Manipur West	8	10	14
<u>B. Manipur</u>	35	48	63

TABLE 2.1(a) (Contd.)

State/Union Territory and Districts	1961	1971	1981
(1)	(2)	(3)	(4)
Garo Hills	38	50	62
Jaintia Hills	32	30	40
Khasi Hills	44	44	64
<u>C. Meghalaya</u>	34	45	59
Kohima	15	24	42
Mokokchung	33	44	57
Tuensang	25	32	42
D. Nagaland	22	31	47
North Tripura	83	114	153
South Tripura	77	112	149
West Tripura	171	224	289
<u>E. Tripura</u>	109	149	195
Union Territories:			
Kameng	5	6	-
Subansiri	1	3	-
Siang	5	5	-
Lohit	4	7	-
Tirap	9	14	-
F. Arunachal Pradesh**	4	6	7

TABLE 2.1(a) (Contd.)

State/Union Territory and Districts	1961	1971	1981
<u>G.</u> Mizoram	13	16	23
North Eastern India	56	77	104
All India	134	167	208

Source: Census of India, 1961 & 1971, Part II-A(11), Union Primary Census Abstracts. Provisional Population Totals, Paper I of 1981 for Corresponding States & Union Territories

* For 1981, the figures are based on provisional data.

** Since exact boundaries are not available for the reorganised districts corresponding to those of 1971, the figures could not be estimated for 1981.

*** Since no Census could be carried out, only estimates for the state as a whole are available, for the year 1981.

Tripura, 23 in Mizoram and only 7 in Arunachal Pradesh in 1981. In Assam the density of population is increasing rapidly in comparison to the average rate of increase for the country as a whole. In 1961, the density was 138 compared to the density for the country as only 134 person per Square Kilometre. In 1971, the density became 186 against 167 for the country. Between 1971 to 1981, the density changed very fast and reached 253 against the average density of the country 204. The Union Territory of Arunachal Pradesh shows that the density of population was as low as 6 persons per Square Kilometre in 1971 which is roughly one-thirtieth of the density of the country for the same year. States which show low density as compared to the North Eastern Region and the country are Manipur, Meghalaya and Nagaland, the Union Territories of Arunachal Pradesh and Mizoram. Tripura, shows high density of population in comparison to the Region but compared to the country the figure is low. The possible reasons for a low density in this region, especially the hilly areas in relation to the density of population of India may be attributed to the ruggedness of the terrain, constraints of accessibility, poor carrying capacity of land, and a hostile cultural history of the area. The total isolation from the mainstreams of national life and the overall negativity of the area attributing to the low density of population.

The districtwise study of the density of population shows wide regional variations. It is the least in the district of Subansiri of Arunachal Pradesh to as high as 305 in district of Kamrup of Assam. In the State of Assam, the density varies from 16 (North Cachar Hills district) to 305 (Kamrup) in 1971. There are only two districts in the whole State of Assam which have low density of population in comparison to the All India figures i.e. Mikir (Karbi Anglong) and North Cachar Hills whereas the rest of the districts show high density compared to the value for the country in 1961 and 1971. High density of population can also be seen in some parts of Tripura and Manipur i.e. 289 in West Tripura and 174 in Manipur Central districts. Rest of the districts of the region, particularly in Arunachal Pradesh, show extremely low concentration of population. There are four districts out of 28/29 total district units which show density higher than the regional average but lower than the countries average value which can be specified as of moderate density areas [Table 2.1(b)]. Seventeen districts have density of population lower than the average of the region.

The coefficient of variations (in per-centage) of density of population at the State level and for the North

TABLE 2.1(b) : FREQUENCY DISTRIBUTION OF DISTRICTS IN NORTH EAST INDIA, 1961-81.

States		1961	1971	1981
Assam	(a)	6	6	
	(b)	4	1	
	(c)	2	2	
	(d)	9	9	
Manipur	(a)	-	-	-
	(b)	1	1	1
	(c)	4	4	4
	(d)	5	5	5
Meghalaya	(a)	-	-	-
	(b)	-	-	-
	(c)	2	3	3
	(d)	2	3	3
Nagaland	(a)	-	-	-
	(b)	-	-	-
	(c)	3	3	3
	(d)	3	3	3
Tripura	(a)	1	1	1
	(b)	2	2	2
	(c)	-	-	-
	(d)	3	3	3
Arunachal Pradesh	(a)	-	-	-
	(b)	-	-	-
	(c)	5	5	5
	(d)	5	5	5
Mizoram	(c)	1	1	1
NER	(a)	7	7	7
	(b)	4	4	4
	(c)	17	18	18
	(d)	28	29	29

a - above Nation average; b - below Nation average; but above Regional average; c - below Regional average; and d - total.

Source: Based on Table 2.1(a).

Eastern Region have been calculated in Table 2.1(C). The

TABLE 2.1(C) : REGIONAL VARIATION IN DENSITY OF POPULATION IN NORTH EAST INDIA. (1961, 1971 and 1981*)

State/Union Territories	1961	1971	1981
Assam	52.61	51.48	-
Manipur	113.21	112.30	108.43
Meghalaya	8.57	8.70	3.33
Nagaland	30.25	24.66	15.05
Tripura	38.95	34.89	33.03
Arunachal Pradesh	53.33	53.43	-
Mizoram	-	-	-
North East India	94.19	94.20	93.67
All India	156.39	167.02	188.00

* Provisional figures

Source: Same as 21.(a)

regional variation in density of population of North Eastern Region is relatively less (94.19 percent in 1961, and 93.67 percent in 1981), compared to the coefficient of variation for

the country as a whole (156 percent and 188 percent respectively for the corresponding years). But, within constituent states of North Eastern Region, the variations in density are very low except in the State of Manipur (113.21 and 108.43 percent respectively for the corresponding years). Within the hill areas the variation in density is almost negligible and the trend over the two decades has been declining compared to an increase in the national scene. This may lead to hypothesise that at a smaller regional level i.e. the district, the growth rate pattern, either by natural growth or by migration is more uniform, while at a higher level of aggregation there are significant differences in composition of growth structure of the population.

(ii) Age Distribution of Population:

In a demographic study of population the analysis of age composition has a great social and economic significance. Every society assign to its members different functions, confers different economic and social status and expects different behaviour pattern at different stages of age span. For example, the age at which to enter into school, to marry, to perform gainful work and to retire from labour force, follow a definite chronological order.

In India, the median age of total population in 1961 was only 19.55 years which came down further to 19.01 years in 1971 compared to life expectancy which went up from 41.89 to 46.40 years in case of males and 40.55 to 44.70 years in case of females in 1971¹. Compared to this picture the median age for population in North East India was only 17.51 years in 1961 which slide down further to only 17.39 years (almost lower by 11 percent). The median value for the constituent states and union territories of the region are normally less than that of the country, except in Nagaland for the same years (Table 2.2).

In North East India, in 1971 45.10 percent (1961 = 45.27 percent) of the total population was below 15 years of age which is higher than the corresponding figures for the country (41.10 percent in 1961 and 42.20 percent in 1971). This may indicate that either the fertility in the region is relatively higher or infant mortality is lower than the national level. Even in the case of ^asex-wise breakup, the proportion of population is 43.4 (1961 = 43.51) years and 47.10 (1961 = 47.23) years for the region. On the other hand, within the constituent states, the proportion is the highest in Assam (45.4, 46.1 percent in 1961 and 1971 respectively) and the lowest in Nagaland

1. Census of India 1971, Life Tables, Series I- India Paper 1 of 1977 p.6.

TABLE 2.2 : MEDIAN AGE OF POPULATION IN NORTH EAST INDIA (1961 & 1971)^{1/2}

State	1961			1971		
	T	M	F	T	M	F
Assam*	17.30	18.78	15.72	17.12	18.18	15.99
Manipur	18.25	17.85	18.63	17.57	17.65	17.50
Meghalaya	-	-	-	18.40	19.26	17.54
Nagaland	19.61	20.15	19.09	20.95	21.84	19.89
Tripura	18.56	19.34	17.80	18.88	19.29	18.42
Arunachal Pradesh	-	-	-	21.42	22.61	19.92
North East India	17.51	18.81	16.14	17.39	18.34	16.38
All India	19.55	19.81	19.26	19.01	19.16	18.83
Coefficient of Variation for NER**	4.47	4.40	7.26	8.46	9.19	7.66

* Includes Meghalaya and Mizoram in 1961 and Mizoram in 1971.

** Excludes Arunachal Pradesh in 1961.

Source: Computations based on Age distribution, Census of India 1961 and 1971.
Age Tables.

40.8 percent and 38.0 percent respectively in 1961 and 1971. Similar situation is there in the population in age groups of 5-15 years. In general, there is not much variation between states and union territories of North East India (Appendix - A.2.1). Since the proportion of infant population and children age group is very high in almost all the constituent states and union territories, it indicates a very high population growth prospects in the ensuing decades because most of this population shall enter the reproductive age groups.

The Aging index reflects the combination of two effects the mortality and the fertility differentials. In countries where fertility differentials are not great and decline in fertility is also not much significant, the mortality differentials are only the main determinants of the differences in the proportion of old persons in the total population². It has already been discussed earlier, that there is not much regional variation in the proportion of persons in the age group 0-15 years, the denominator of aging index is also not significantly different and hence the numerator is the dominant factor affecting the ratio. The numerator in this case reflects the factor of longevity.

2. Mehta, B.C. : Regional Population Growth, A Case Study of Rajasthan, 1978, p.35.

TABLE 2.3 : AGE DISTRIBUTION INDICES IN NORTH EAST INDIA (1961 & 1971)*

States/Union Territories	Aging Index		Maturity Index		Dependency Ratio		Population Growth Potent- tial Factor	
	1961	1971	1961	1971	1961	1971	1961	1971
Assam**	8.49	8.72	96.33	95.08	96.13	99.22	26.58	17.47
Manipur	11.43	12.51	100.64	97.54	95.20	102.13	26.30	26.04
Nagaland	15.45	17.17	102.35	101.62	89.11	80.42	24.60	24.11
Tripura	10.73	15.19	101.40	104.60	92.79	95.66	25.56	26.73
Arunachal Pradesh	-	-	-	-	-	75.71	-	22.85
North East India***	8.98	9.62	97.13	96.16	96.45	98.52	26.43	28.02
All India	11.81	12.23	105.68	105.53	84.98	89.69	24.55	25.96

* Source : Based on Appendix - A.2.1.1 and A.2.1.2

** - Includes Meghalaya and Mizoram

*** - Excludes Arunachal Pradesh.

From the Table 3.3, it is clear that the aging index is lower in the North East India than the country as a whole, being 8.98 percent and 9.62 percent for 1961 and 1971 respectively as against 11.81 percent and 12.23 percent for the same periods for region and the country respectively. It is highest in the State of Nagaland for 1961 and for 1971 followed by Tripura for 1971, whereas for 1961, Manipur had the advantage over Nagaland. In 1971, Nagaland has surpassed Manipur. Assam has the lowest value of the index even lower than that of the regional average. This shows that the differential mortality rate in the region is significant.

The lower value of the aging index of the region indicates that the proportion of elderly persons to children has increased during the period (1961, 1971) for the country as well as for the region. The same trend is followed by all the constituent regional units of this region. In the State of Tripura, the increase is maximum during the period. It was 10.71 percent in 1961 compared to All India figure of 11.81 percent and has increased to 15.19 percent in 1971. This indicates a sharp increase in the proportion of old people in the State under discussion.

The 'maturity index' indicates the proportion of demographically mature persons (the active population) reflecting th

economic growth potential of the population. The productive capacities and potentialities depends upon the youthfulness of the population. Population in the age groups of 15-30 years are most active economically, socially, even by demographic criteria (reproduction). This also provides socio-political leadership which ultimately adds up to the overall growth and development potential of the country. In 1961, the proportion of population in the mature age group (15-60 years) for the North Eastern Region was 97.13 percent, whereas the corresponding figure for the country was 105.68 percent, indicating the relative inadequacy of survival facility of the region. Since the longevity depends on better medical facilities and nutrition etc. particularly after the age of 30 years, the inadequacy on both accounts results in higher mortality in 30 years and above age group reflecting the overall infrastructural inadequacy of the region and its backwardness.

It is commonly regarded that in India to blame the high birth rate as the root cause of population problem. As the maturity index shows a decline from 1961 to 1971, for the country, a higher mortality rate cannot be ruled out. This is particularly significant, since in both, the numerator and denominator of the index, the age groups involved are persons born decades ago when the natural rate of growth of population was quite low. It may be because of the impact of post-independence decline of

mortality, that the maturity index in turn has shown a decline.

Maturity index is highest in 1961 in Nagaland (102.35 percent) and is lower in Assam (96.33 percent). Except Assam, which has shown a decline in the index, all other states of the region have shown increasing trends during 1961 and 1971. The State of Tripura has attained the maturity status at the level of the country.

It has already been discussed earlier that the dependency of persons is quite large in underdeveloped countries and is on the path of further increase. In 1961, the proportion of dependent children and dependent aged persons to the population of active age group (15-60 years) was around 85 percent which has increased to around 90 percent in 1971 for the country. The corresponding figures for the Region are high i.e. 96.45 percent and 98.52 percent respectively. The large percentage of dependants population tends to reduce savings and investments and hinders the rate of economic and social development. On the other hand, the direct cost of providing consumption goods as well as indirect costs of a large proportion on infrastructural facilities i.e. housing, education and health care leads to considerable diversion of available resources of the country.

Dependency Ratio is the highest in the State of Manipur, where it has jumped from 95.2 percent in 1961 to 102.13 percent

in 1971. Nagaland has shown a marginal decline in dependency over time from 89.11 percent to 80.42 percent, whereas Assam and Tripura show only marginal increase in the ratio.

The age group 5-15 years reflects the reproductive potentialities in the coming decades. If we compare the proportions of population in different age groups in 1961 and 1971, population aged 0-15 years has increased from 50.6 percent in 1961 to 41.8 percent in 1971 for males and 41.7 percent to 42.4 percent in case of females for the same period for the country. Decrease in infant and child mortality may be the main cause for this increase in population during the decade. It can be observed from the Appendix - A, ^{2.1.} that age pattern in this region is different to that of India. It was 45.27 percent in 1961 and has changed to 42.2 percent in 1971, showing a decline.

The life cycle of population of the Region may be analysed by constructing the age pyramids of population. The broad base of the pyramid for the Region as well as for the states and union territories of the Region suggests high fertility of population, while rapid decrease of population upto age of 20 years for both the years 1961 and 1971 in the Region and for the states/union territories, suggests higher mortality rate in these ages. The decrease of population with the advancing age of population in this Region as well as in the constituent parts of this Region are relatively small between the age 20 to 30 years

indicating the prevalence of lower mortality in these ages and also immigration of a small section of people from other parts of the country, on a age selectivity basis.

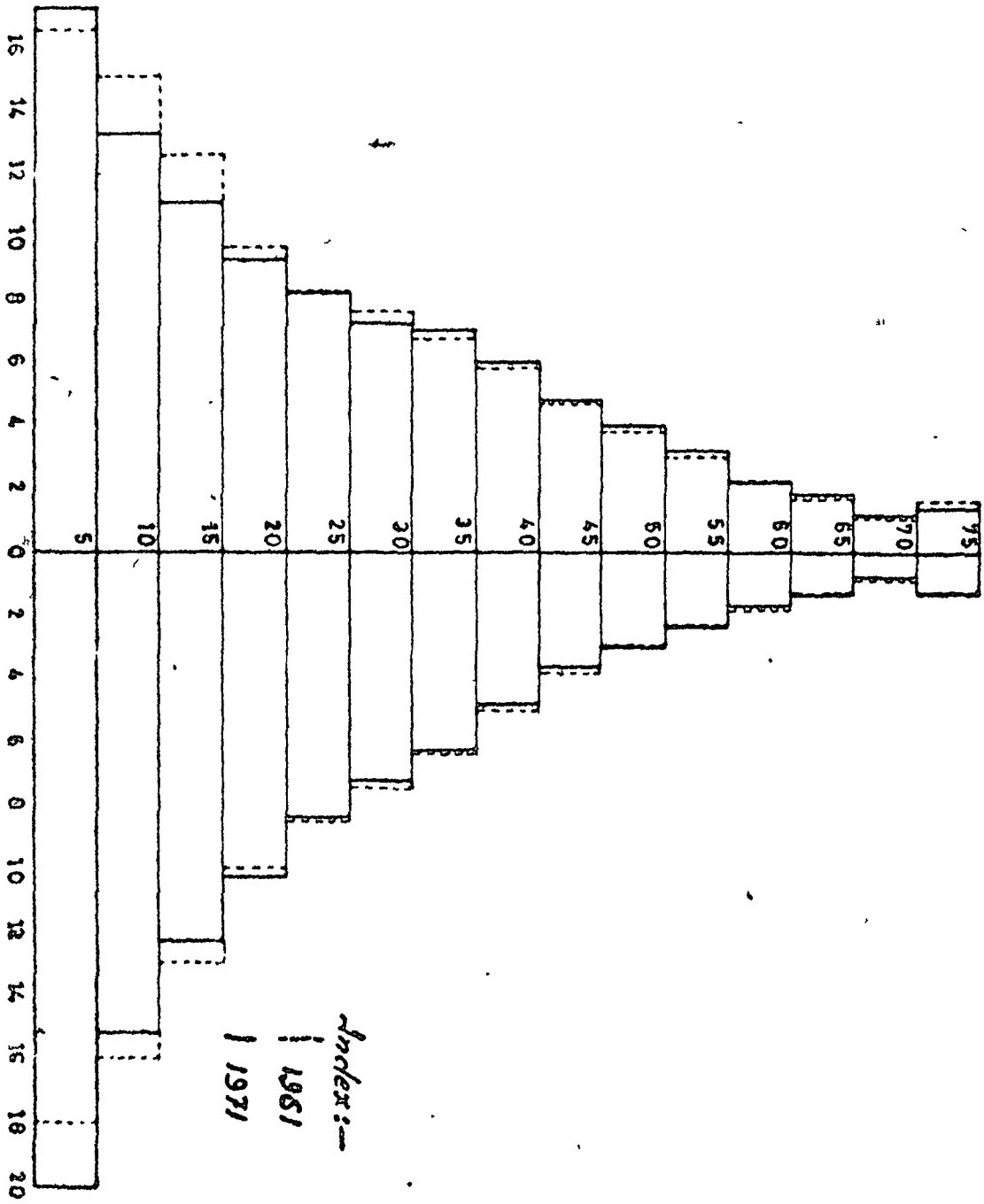
The population of both the sexes decreased upwards uninterruptedly giving a conical shape to the pyramids. The absence of unusual steepness in the curve of age pyramids which characterises the age pyramid of India at earlier periods indicates that the mortality increases uniformly with the increase in age towards the older age groups. There is a considerable similarity of age structure of states and union territories of the region, even on the basis of divisions into two sexes. Fig 2.1 (I-IV)

Sex Composition of Population:

Sex ratio is another important determinant of population growth. It determines the sexual (between males and females) parity. Unlike age reporting, it is believed that there is no ambiguity in reporting of sex. It is expected that the sex ratio at birth should be 1000 females per 1000 males, but generally, observed that it is around 1050 males per 1000 females or 952 females per 1000 males. Parks³ (1963) thought, for human beings

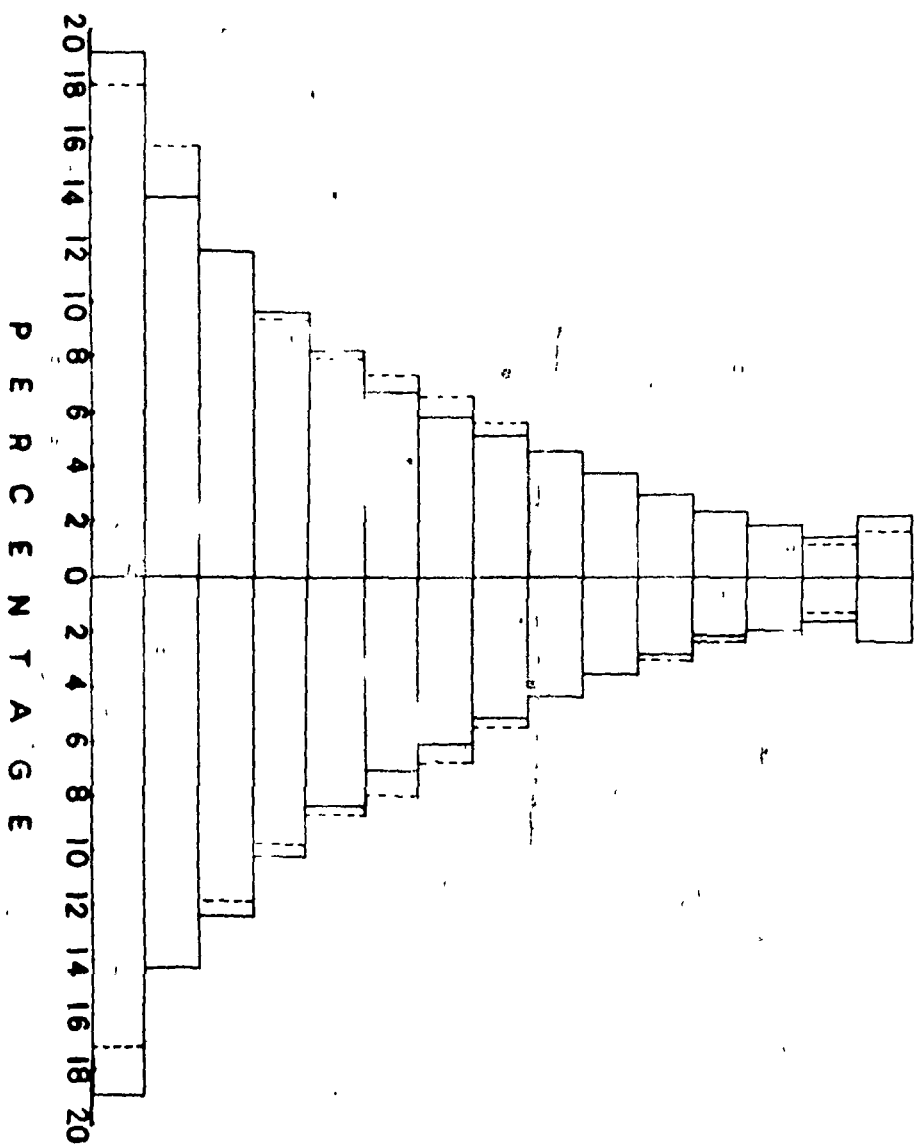
3. As quoted in B.C. Mehta's Regional Population Growth, A Case Study of Rajasthan, p.39.

ASSAM, MEGHALAYA, NIXORANG
AGE-SEX PYRAMID
1961-71



Index:-
| 1961
| 1971

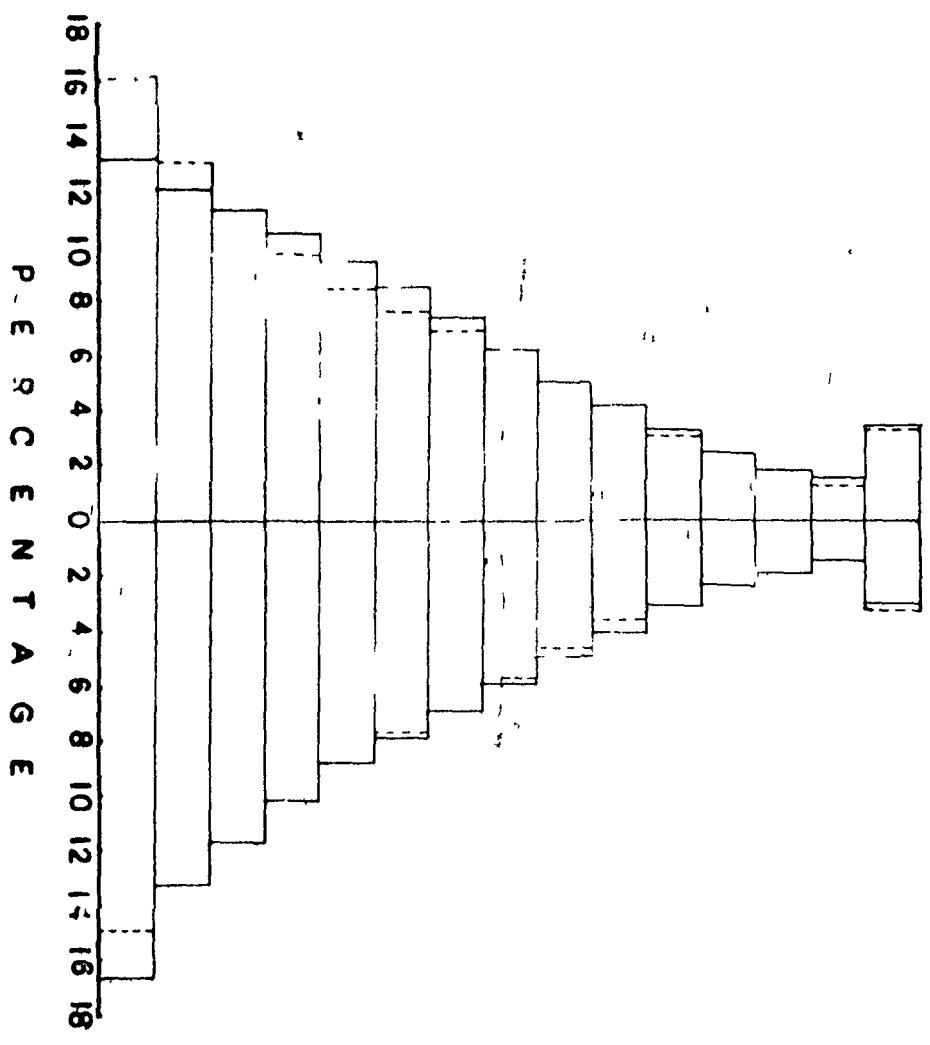
MANIPUR
AGE-SEX PYRAMID
1961-1971



INDEX:-
- - - = 1961
| = 1971

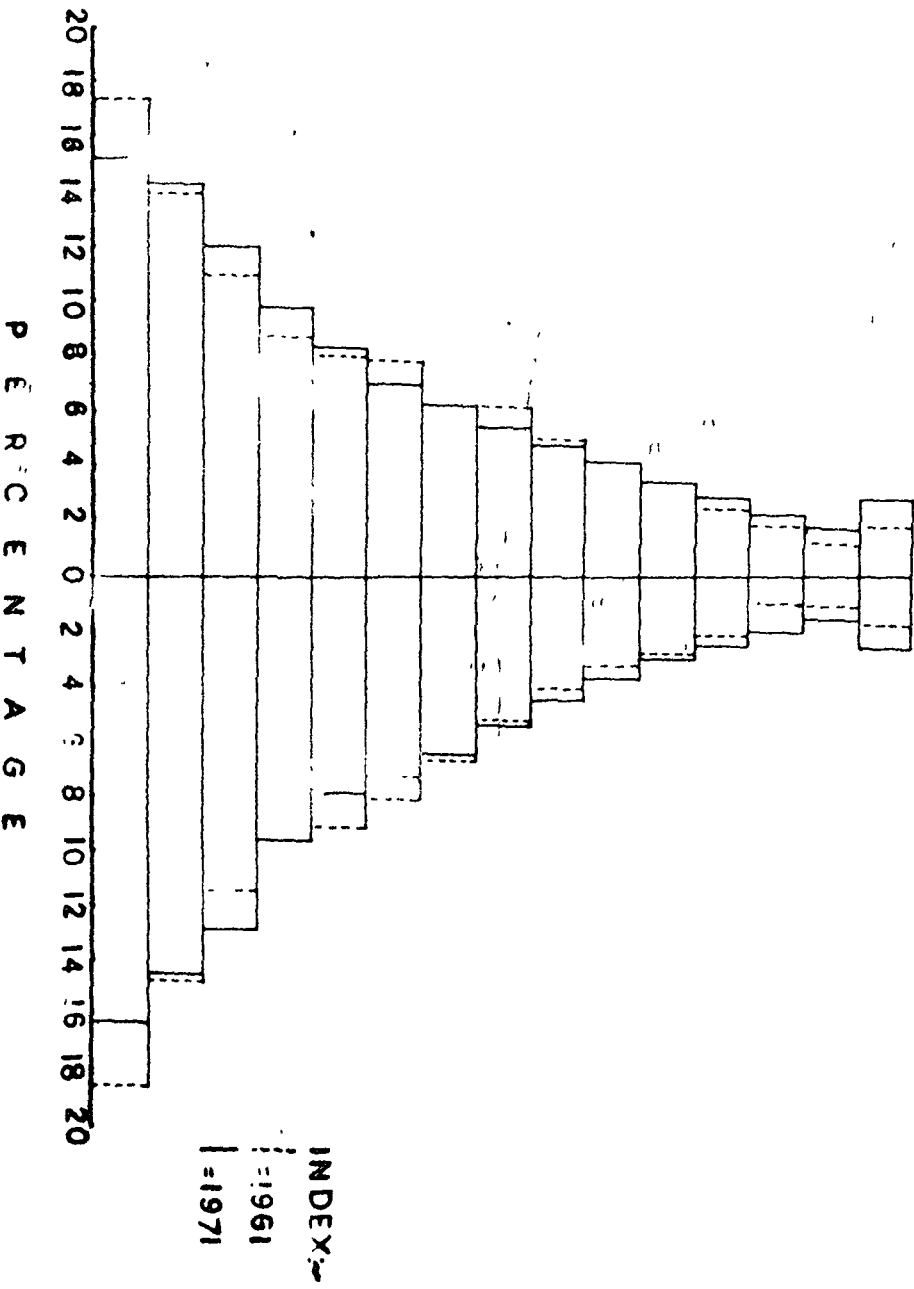
Fig-2-1 (ii)

NAGALAND
AGE-SEX PYRAMID
1961, 1971



INDEX
- 1961
- 1971

TRIPURA
AGE-SEX PYRAMID
1961 1971



the ratio of male to female children at conception might be somewhat between 1.25 to 1.50. Actually, it is 1.06, showing that total mortality is much higher for male than for female children.

As the society shows a high ratio of male children over female children at birth, one can see that with the advancement of age, the predominance of males diminishes, depending upon the mortality schedule operating upon them. The sex ratio in India has been declining since 1921 to 1971.⁴ It has increased in 1981 from 930 to 935. But the situation in North East India is different. It is showing an increasing trend from 1961 to 1981.

Comparing the sex ratios of the 1981 census with that of 1961 census for different units of this region, it is clear from Table 2.4, that the sex ratio is increasing except for the states of Manipur and Nagaland and the Union Territory of Mizoram and to some extent in Arunachal Pradesh; Only Manipur and Mizoram show sex ratio above the national average for all the three decades. Tripura is the lone State showing a trend closer to the national norm having only 9 points less in 1961, whereas it has gone up on 1971 and 1981 by 13 points in both decades over India's

4. P.J. Bhattacharjee, G.N. Shastri : Population in India, A Case Study of Inter State Variations, ISEC, Monograph.3, Vikas Publishing House Pvt. Ltd. New Delhi, 1976, p.58.

TABLE 2.4 : SEX-RATIO IN NORTH EAST INDIA (1961, 1971 & 1981*)

States/Union Territories & Districts	1961			1971			1981		
	T	R	U	T	R	U	T	R	U
Goalpara	900	913	725	927	939	801	-	-	-
Kamrup	859	894	607	890	915	723	-	-	-
Darrang	856	867	618	888	901	709	-	-	-
Nowgong	875	889	706	899	911	759	-	-	-
Sibsagar	865	879	626	886	902	724	-	-	-
Lakhimpur	831	856	631	869	894	702	-	-	-
Cachar	908	917	802	923	927	874	-	-	-
United Mikir & North Cachar Hills	863	866	639	889	880	602	-	-	-
<u>A. Assam</u>	873	892	674	896	912	744	900	-	-
Manipur Central	-	-	-	984	984	983	987	988	985
Manipur East	-	-	-	969	969	-	921	924	880

TABLE 2.4 : (Contd.)

States/Union Territories & Districts	1961			1971			1981		
	T	R	U	T	R	U	T	R	U
Manipur North	-	-	-	950	950	-	940	946	861
Manipur South	-	-	-	976	979	947	933	955	845
Manipur West	-	-	-	1016	1016	-	970	979	863
<u>B. Manipur</u>	1015	1018	985	980	980	980	972	973	968
Garo Hills	960	972	639	950	958	779	954	968	986
United Khasi & Jaintia Hills	921	971	775	936	958	862	957	965	877
<u>C. Meghalaya</u>	937	971	764	942	958	853	955	967	903
Kohima	-	-	-	804	895	502	812	861	651
Mokokchung	-	-	-	906	986	417	938	975	752
Tuensang	-	-	-	908	908	-	880	904	641
<u>D. Nagaland</u>	933	953	628	871	928	472	867	907	676

TABLE 2.4 : (Contd.)

States/Union Territories & Districts	1961			1971			1981		
	T	R	U	T	R	U	T	R	U
North Tripura	-	-	-	946	947	937	935	934	945
South Tripura	-	-	-	945	945	948	945	946	932
West Tripura	-	-	-	935	936	915	956	953	973
<u>E.</u> Tripura	932	936	884	943	944	935	948	946	961
Kameng	-	-	-	805	825	396	-	-	-
Subansiri	-	-	-	931	931	-	-	-	-
Siang	-	-	-	883	883	-	-	-	-
Lohit	-	-	-	878	927	457	-	-	-
Tirap	-	-	-	773	795	508	-	-	-
<u>F.</u> Arunachal Pradesh	894	894	-	861	881	457	870	887	646
<u>G.</u> Mizoram	1009	1017	869	946	947	936	936		

TABLE 2.4 : (Contd.)

States/Union Territories & Districts	1961			1971			1981		
	T	R	U	T	R	U	T	R	U
North East India	889	906	710	906	920	775	910		
All India	941	963	845	930	949	858	935		

* - Provisional

Source: Calculations are based on Census of India 1961, 1971, Part II-A(i) of respective States and Union Territories and for 1981, Provisional Population Totals.

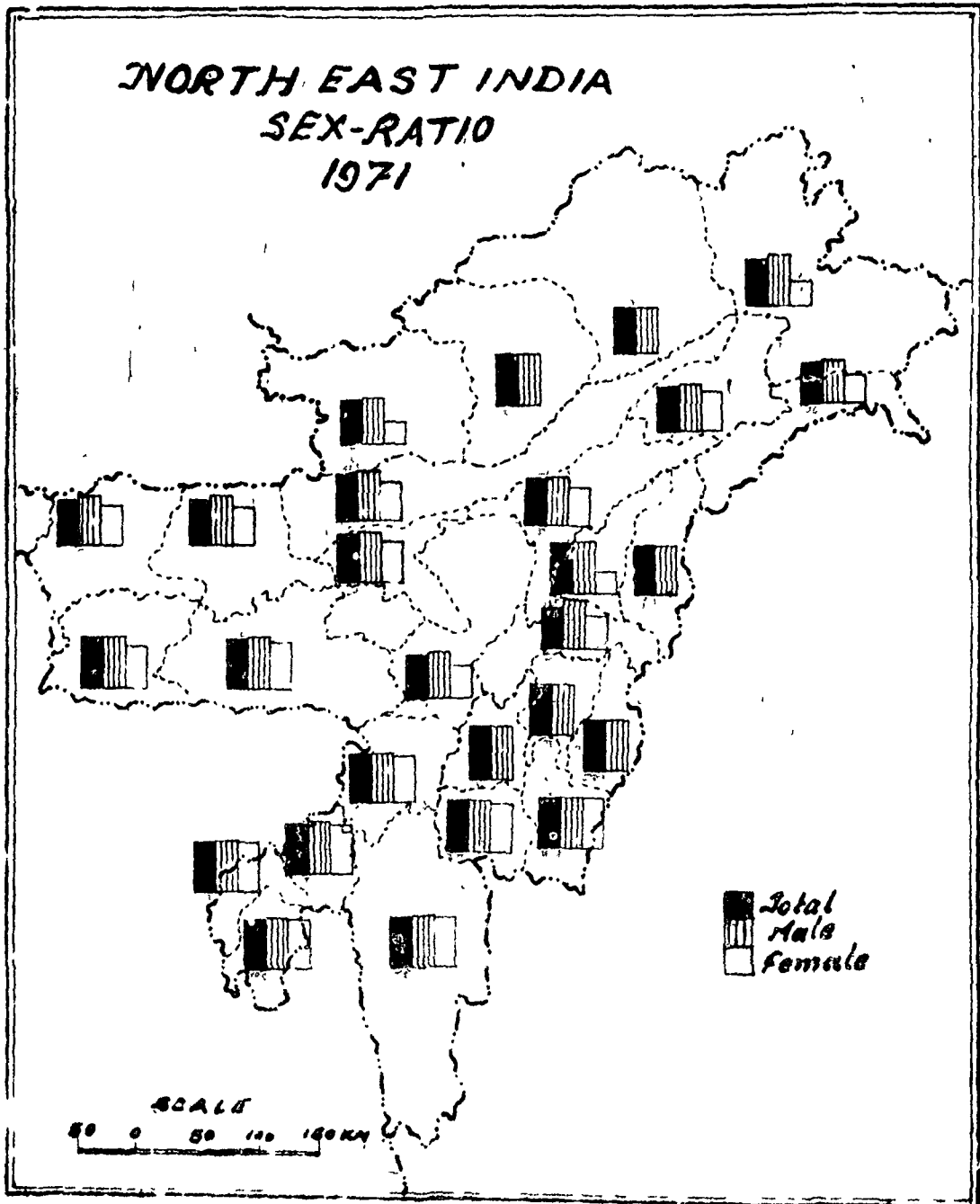
value. The region as a whole shows values well below the national norm in all the three decades. The predominance of male incidence was low in Manipur (1015) and Mizoram (1009) in 1961 but has increased in 1971 and 1981. In 1971 and 1981, no state shows a low masculinity ratio in this region as happens in the case of the state of Kerala. In case of Mizoram, the sex ratio has gone down sharply i.e. from 1009 in 1961 to 936 in 1981 balancing almost with the ratio of the country. The low sex ratio in this Region may be contributed towards the in-migration of males to tea plantation and as labourers in agriculture etc. in Assam and many in different informal sectors from neighbouring states. The urban places on account of their nodal positions and as centres of administration, education, transport and many other services exert strong pull force attracting a sizable section of male population from surrounding rural areas as well as other parts of the country. According to Gosal,⁵ the male selective rural-urban migration is the main root for economic conditions prevailing in the urban centres. The opportunities for female employment in urban areas are mostly absent and the cost of living in these areas is so high that male migrants prefer to leave their families in rural areas while they go in search of job to urban areas.

5. G.S. Gosal : The Regionalization of Sex Composition of India's Population, Rural Sociology 26 : 126, 1961.

The sex ratio for the Region in urban areas is less than the national for both the decades indicating a strong social restriction against the movement of females out of their rural habitat leading most of the male workers to move alone to the urban areas for work.⁶

The sex ratio in different states/union territories and in different districts in this Region shows high variations. In 1961, it was highest in Manipur (1015) and the lowest in Assam (873), but the district of Garo Hills (960) in Meghalaya shows highest sex-ratio out of the districts for which the information is available and the lowest is in the district of Lakhimpur (831) of Assam. In the case of states and union territories, Manipur is the leading State in all the three decades followed by Mizoram in 1971 and Meghalaya in 1981. There are 10 districts out of the 26 districts in 1971, in North Eastern Region, which show that the sex ratio is less than 900, and in another 9 districts, the sex-ratio ranges from 900 to 949, and in another 5 districts, the ratio is more than 950 but less than 1000. Only one district shows the ratio to be more than 1000 and one less than 800 in 1971 (Map 3). As against this out of 18 districts for which

6. R.S. Dube : Population of the Rewa Plateau, A Geographical Analysis, Ph.D. Thesis submitted to Department of Geography, Saugor University, Saugor 1974, pp.205-206.



Map-3

information is available for 1981, only 2 districts show the ratio to be less than 900 and rest have more than 900. The districts which show sex-ratio more than 950, suggests that either the net out-migration effect is significant or there is less mortality in females compared to the males. Districts with less ratios can be attributed to the net in-migration effect.

The regional variation in the sex ratio is less in this region (4.45 percent) compared to the All India figures (8.61 percent) in 1961 and 1971 (Table 2.5). The variations within the constituent states are still less except in Nagaland (5.57 percent) and Arunachal Pradesh (6.69 percent) comparing to the whole North East Region in 1971, it is still less in relation to the All India figures in 1971. The highest variations are observed in the Union Territory of Arunachal Pradesh followed by Nagaland and the minimum variation is in the State of Tripura. The same is the situation in case of Rural-Urban differentials. The maximum variation is in Assam (10.02 percent) and the minimum is in Manipur (1.39 percent) in urban areas in 1971, whereas in rural areas the situation is different. The maximum variation is shown in Arunachal Pradesh and the minimum in Tripura during the same period.

The proportion of females differs greatly in various religious groups of the North Eastern Region during 1961 and

TABLE 2.5 : REGIONAL VARIATIONS IN SEX-RATIO IN NORTH EAST INDIA (1961, 1971 & 1981).

State	1961			1971			1981		
	T	R	U	T	R	U	T	R	U
Assam	2.66	2.35	9.57	2.28	1.92	10.06	-	-	-
Manipur	-	-	-	2.21	2.21	1.39	2.58	2.40	5.68
Meghalaya	2.07	0.05	9.62	0.74	-	5.06	0.16	0.16	5.85
Nagaland	-	-	-	5.57	4.32	7.59	5.87	5.15	7.36
Tripura	-	-	-	0.53	0.51	1.47	0.91	0.83	1.80
Arunachal Pradesh	-	-	-	6.69	6.23	7.80	-	1.51	5.29
Mizoram	-	-	-	-	-	-	0.71	1.91	5.29
North East India	5.25	5.03	13.44	4.45	3.20	26.64	-	-	-
All India	8.86	5.18	13.82	8.61	8.94	16.42	-	-	-

Source: Based on Census of India 1961, 1971, General Population Tables Part II-A of respective States and Union Territories and for 1981, Census of India 1981, Provisional Population Totals.

1971. The Hindus comprise of the highest proportion among various religious groups in both the periods. They also show a high sex-ratio. The Sikhs (502) and Jains (603) who are mostly sex-selective in-migrants from other parts of the country, have the lowest sex ratios. The Christians show the highest (992) sex-ratio in 1961, slightly more than the national average during the same period, whereas the situation observed in 1971 has been just the opposite i.e. the ratio of Christians has gone down from 992 to 977 from 1961 to 1971, for the region as a whole, India's figure remaining almost constant. The highest sex-ratio of the region was observed in Mizoram for the Christians (1041), followed by Nagaland (1016) and Meghalaya (1009) in 1961. These states are of christian predominance - On the other hand the lowest sex-ratio was in the Sikhs (84) for Arunachal Pradesh in 1961. Mizoram has reported no Sikh female population in 1961, which has come upto 13 in 1971.

Appendix - A.2.2, also suggests that North East India has normally a lower sex ratio for all the religious communities compared to the national average in 1971.

The coefficient of variations of the States and Districts in terms of their sex-ratios show that among the Hindus the highest variation can be seen in Nagaland in 1961 (52.54 percent) and in 1971 it came down to 24.67 percent only less than the

average for the Region. The minimum variation is observed in the State of Tripura, among the Hindus (0.75 percent). On an average Christians in this Region show the lowest regional variation in sex-ratio except in Arunachal Pradesh, largely because of a low Christian composition as such (0.97 percent in 1971). Higher regional variations in sex-ratios are recorded within religious communities which are in extreme minority and are normally of immigration origin e.g. the Sikhs, Jains and Buddhists. (Table No. 2.6).

RELIGIOUS COMPOSITION:

History of Indian people has demonstrated a remarkable tolerance for religions of foreign origin and avowed secularism which has no parallel elsewhere in the world. But political and social motivations in the early twentieth century have shown that change in religious composition as well as regional concentration can lead to the extent of bifurcation of the country. That is why it is of extreme importance to understand the religious composition of people and their concentration in different sub-regions of North East India. Religion is one of the foremost ideologies which operates, as one of the most forceful cultural determinants of a group of population e.g. the age of marriage, the practice of remarriage, the occupation etc.⁷

7. P;J. Bhattacharjee & G.N. Shastri & Op.cit p.

TABLE 2.6 : REGIONAL VARIATION IN POPULATION SEX-RATIO IN DIFFERENT RELIGION AND COMMUNITY GROUPS
IN NORTH EAST INDIA (1961 & 1971)*

States/Union Territories		Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others	Sche- duled Castes	Sche- duled Tribes
Assam	1961	2.72	23.48	3.39	51.15	34.06	46.03	33.37	4.69	3.68
	1971	2.13	16.60	1.80	17.24	5.52	17.27	-	3.07	14.43
Manipur	1961	-	-	-	-	-	-	-	-	-
	1971	39.83	47.68	3.35	62.06	67.43	17.45	132.27	54.03	14.54
Meghalaya	1961	15.43	50.42	5.86	37.94	3.39	8.39	0.89	0.69	2.20
	1971	9.13	22.76	2.65	11.34	17.46	10.35	0.96	18.72	2.07
Nagaland	1961	52.54	54.09	5.04	81.09	32.89	1.70	3.32	-	-
	1971	24.67	72.29	3.55	52.51	57.07	29.83	8.38	-	3.29
Tripura	1961	-	-	-	-	-	-	-	-	-
	1971	0.60	0.75	3.51	114.45	1.72	68.23	-	0.77	1.00
Arunachal Pradesh	1961	-	-	-	-	-	-	-	-	-
	1971	27.04	25.97	38.00	43.75	3.69	47.51	0.55	34.38	1.37

TABLE 2.6 : (Contd.)

States/Union Territories		Hindu	Muslim	Christian	Sikh	Bud-dhist	Jain	Others	Sche- duled Castes	Sche- duled Tribes
Mizoram	1961	-	-	-	-	-	-	-	-	-
	1971	-	-	-	-	-	-	-	-	-
North East India	1961	36.08	53.37	26.34	45.29	55.68	23.77	40.71	13.98	20.13
	1971	37.85	41.43	14.01	66.92	27.05	26.52	9.40	38.89	2.45
All India	1961	15.65	7.24	18.38	15.21	35.98	16.12	13.39		5.86
	1971	13.50	7.67	13.50	26.26	34.04	8.28	16.15	14.60	6.94

* Based on Appendix A-2.2.1 and A-2.2.2

Appendix A.2.3, tabulates the percentage distribution of population by religious groups for the major religious communities, namely the Hindus, Muslims, Christians, Sikhs, Buddhists and Jains etc. at various regional levels. In the country as a whole, Hindus accounted for 83 percent of total population in 1961 and 1971. As revealed by the 1971 Census, Hindus and Muslims together constitute about 94 percent of the total population of the country (82.7 percent and 11.2 percent respectively). The population of Hindus have declined from 83.5 percent to 82.72 percent between 1961 and 1971. On the other hand, the situation of the North Eastern Region shows an increase in the composition of the Hindu population from 64.10 percent to 66.39 percent during the same period. The Muslims are the second largest community in the country as well as in the region of study. Christianity in India as well as in the North Eastern Region has shown an increase from 2.44 percent to 2.60 percent in case of the former, 7.75 percent to 9.12 percent in case of the latter. Rest of the religions have shown no significant change during the period. Sikhs in the country forms the fourth major religious community, whereas in the North East Region, it is Buddhists who forms the fourth largest religious group in the region.

It may also be noted that Buddhists, who form a very low numerical position, were returned as the fifth largest community in the country after the conversion movement in Maharashtra in the early fifties under the aegis of the veteran parliamentarian Dr. Ambedkar.

All the states and union territories in the region show an increase in Hindus proportion from 1961 to 1971, except in the State of Manipur and Arunachal Pradesh. This proportion of Hindus in 1971 varies between 6.39 percent in Mizoram to 89.55 percent in Tripura. (This is compared to an earlier position in 1961 where Mizoram had 5.18 percent and Tripura has 76.01 percent as the Hindu population). In 1961, Assam, Manipur, Tripura and Arunachal Pradesh were dominated by Hindus and the position remains broadly unchanged in 1971. Hindus constitute overall 66.4 percent of the total population in this region. Following Tripura, Assam has 72.51 percent and Manipur 58.97 percent of the people returned as Hindus.

Inter-State and intra-State variations in religious compositions are very high except for Meghalaya, where the coefficient of variation is only 3.14 percent compared to Manipur which is 128.65 percent in 1971. Table 2.7(a) and (b), tabulate the Location Quotient (LQ) of religious groups at the district level for 1961 and 1971, which gives the impression that in Assam, Tripura, Arunachal Pradesh, the concentration of Hindus is indisputable with LQ more than one in 1961, but in 1971, only Assam and Tripura show significant Hindu concentration. The districts which show significant concentration of Hindus are Sibsagar, Lakhimpur, united Mikir and North Cachar

TABLE 2.7(a) : LOCATION QUOTIENT (LQ) OF POPULATION IN DIFFERENT RELIGIOUS GROUPS
IN NORTH EAST INDIA, 1961*.

State/Union Territory & Districts	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Goalpara	0.72	1.71	1.37	0.25	0.50	0.44	0.07
Kamrup	0.97	1.16	0.37	0.63	1.13	0.13	0.13
Darrang	1.06	0.77	1.91	0.88	0.75	0.75	0.57
Noungong	0.81	1.63	0.24	1.38	1.38	0.19	0.03
Sibsagar	1.29	0.23	0.79	1.38	1.50	1.69	0.80
Lakhimpur	1.26	0.22	1.43	2.13	1.75	3.31	1.30
Cachar	0.84	1.55	0.45	-	0.13	0.13	0.07
United Mikir & North Cachar Hills	1.14	0.05	4.05	1.13	0.88	2.00	1.10
Garo Hills	0.93	1.87	0.81	0.18	0.69	-	1.14
United Khasi & Jaintia Hills	1.05	0.42	1.13	1.59	1.23	1.00	0.91
Kohima	2.38	2.58	0.72	1.71	1.00	3.43	1.03
Mokokchung	0.56	0.17	1.62	1.43	-	-	0.23
Tuensang	0.30	11.50	0.64	-	2.00	-	1.70

TABLE 2.7(e) : (Contd.)

State/Union Territory/ Districts	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Assam	1.11	1.20	0.31	1.00	0.50	1.29	0.14
Manipur	0.96	0.30	2.52	0.88	0.13	1.43	2.81
Meghalaya	0.29	0.14	4.54	2.13	0.41	0.29	9.74
Nagaland	0.15	0.01	6.84	0.88	0.03	1.00	8.44
Tripura	1.19	0.96	0.11	N	9.22	0.29	N
Arunachal Pradesh	1.03	0.12	0.57	24.00	46.91	0.57	2.24
Mizoram	0.08	N	11.18	N	22.00	0.14	0.24

* Based on Appendix - A.2.3.1

N Negligible

Note: 1961 Data for district level for Manipur, Tripura and Arunachal Pradesh was not available.

TABLE 2.7(b) : LOCATION QUOTIENT (LQ) OF POPULATION IN DIFFERENT RELIGIOUS GROUP
IN NORTH EAST INDIA, 1971*.

State/Union Territory & Districts	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Goalpara	0.74	1.76	1.41	0.50	0.07	2.00	-
Kamrup	0.97	1.20	0.35	1.13	0.13	1.11	-
Darrang	1.08	0.67	1.98	0.75	0.57	0.78	-
Nowgong	0.82	1.64	0.28	1.38	0.03	0.89	-
Sibsagar	1.27	0.22	0.82	1.50	0.80	0.67	-
Lakhimpur	1.26	0.19	1.26	1.75	1.80	0.78	-
Cachar	0.81	1.66	0.52	0.13	0.07	0.56	-
United Mikir & North Cachar Hills	1.21	0.05	4.04	0.08	1.10	0.11	-
Manipur Central	1.34	1.40	0.21	1.20	0.40	1.38	0.76
Manipur East	0.06	0.01	3.53	0.50	0.80	0.31	0.58
Manipur North	0.33	0.05	2.16	0.50	4.20	0.08	2.96
Manipur South	0.10	0.03	3.42	0.30	1.80	0.08	0.50
Manipur West	0.08	0.01	2.98	0.40	0.20	0.08	2.23

TABLE 2.7(b) (Contd.)

State/Union Territory & Districts	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Garo Hills	1.04	2.07	0.87	0.08	1.16	0.67	1.09
United Khasi & Jaintia Hills	0.97	0.28	1.09	1.67	0.89	1.00	0.94
Kohima	1.84	1.85	0.84	1.69	0.50	3.00	1.03
Mokokchung	0.73	0.66	1.33	1.08	1.00	-	0.12
Tuensang	0.41	0.45	0.85	0.23	1.00	-	1.83
North Tripura	0.92	1.40	2.81	1.50	1.91	3.00	-
South Tripura	1.00	0.65	0.70	1.50	1.92	-	-
West Tripura	1.04	0.97	0.18	0.50	0.02	1.00	-
Kameng	0.90	0.61	0.82	1.19	2.89	-	0.66
Subansiri	0.61	0.72	1.00	2.03	0.06	N	1.33
Siang	0.60	1.44	0.54	0.70	0.23	N	1.29
Lohit	2.27	2.22	3.02	0.89	0.98	6.00	0.54
Tirap	1.17	0.28	0.76	0.19	1.26	-	0.90

TABLE 2.7(b):(Contd.)

State/Union Territory & Districts	Hindu	Muslim	Christian	Sikh	Bud-dhist	Jain	Others
Assam	1.09	1.24	0.28	0.89	0.39	1.13	N
Manipur	0.89	0.34	2.85	1.11	0.06	1.63	1.88
Meghalaya	0.28	0.13	5.15	1.33	0.25	0.38	7.63
Nagaland	0.17	0.03	7.32	1.44	0.05	1.50	5.08
Tripura	1.35	0.34	0.11	0.22	3.53	0.25	-
Arunachal Pradesh	0.33	0.01	0.09	3.00	17.05	0.13	15.40
Mizoram	0.10	0.03	9.44	1.44	6.84	N	N

* Based on Appendix - A.2.3.2

N - Negligible

Hills and Darrang in Assam and United Khasi and Jaintia Hills in Meghalaya in 1961. In 1971, the pattern is the same in Assam but in Meghalaya, it was Garo Hills district only which shows significant Hindu concentration. Apparently, both high rate of conversion and out-migration a large urban Hindu population has diluted the case of United Khasi and Jaintia Hills district due to the shifting of capital of Assam from Shillong to Dispur near Gauhati. The other districts in 1971, which show high concentration of Hindus are South and West Tripura, Central Manipur and Tirap of Arunachal Pradesh. The districts which show higher concentration of Hindu population in comparison to the respective state. They are Kohima (1.84) as against Nagaland (1.00), Lohit (2.27) as against Arunachal Pradesh (1.00) in 1971. All the districts having low concentration of Hindus against the state's normal except Kamrup and Garo Hills in Meghalaya for 1961 whereas in 1971, the districts are Kamrup in Assam, United Khasi and Jaintia Hills in Meghalaya, all the three districts of Tripura and Kameng in Arunachal Pradesh, which shows the balanced position of Hindus.

The Census of 1971, which shows an increase of Islamic component of population at the national level has an opposite situation of decline in case of the North Eastern Region (Appendix A-2.3). But it remains the second largest religious

community particularly due to the high concentration in the State of Assam (About 25 percent). The districts which show higher proportion of Muslim population than the regional average of 19.40 percent are Goalpara (42.25 percent), Cachar (39.89 percent), Nowgong (39.39 percent) and Kamrup (28.93 percent) in 1971. All the districts show a decline in the Muslim proportion of population between 1961 to 1971, though decline in absolute numbers are not reported anywhere. The coefficient of variation shown in Table 2.8, indicates that there were high variations in the population proportion of Muslims. The minimum was in Tripura (30.70 percent) and maximum in Manipur (182.91 percent). The districts position in the respective state or union territory based on Location Quotient theory is presented in Table 2.7(a,b). From the above table, it is clear that the higher concentration of Muslims is observed in the districts of Goalpara, Nowgong and Cachar in Assam, Garo Hills in Meghalaya and Kohima in Nagaland in 1961 as well as in 1971. Goalpara, Kamrup and Cachar have shown an upward change in the Location Quotient whereas other districts of the state observed downward change during 1961-71. Only United Mikir and North Cachar Hills have not observed any change during the period. In Meghalaya where Garo Hills has changed from 1.87 to 2.07, the United Khasi and Jaintia Hills has changed from 0.42 to 0.28. In Nagaland,

TABLE 2.8 : REGIONAL VARIATION OF POPULATION IN DIFFERENT RELIGIOUS GROUPS IN
NORTH EAST INDIA (1961 & 1971)*

State/Union Territory	Year	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Assam	1961	19.71	70.46	88.05	48.06	100.23	50.77	186.11
	1971	19.75	73.41	87.22	50.78	104.23	59.04	-
Manipur	1961	-	-	-	-	-	-	-
	1971	128.65	182.91	49.85	53.12	104.82	132.06	71.28
Meghalaya	1961	6.30	62.97	16.59	80.00	26.92	100.00	11.23
	1971	3.14	76.14	11.33	90.48	12.50	16.67	7.26
Nagaland	1961	86.10	100.00	44.65	74.99	100.00	-	60.58
	1971	61.65	62.62	22.81	54.91	31.43	-	70.47
Tripura	1961	-	-	-	-	-	-	-
	1971	5.06	30.70	91.71	50.00	69.63	100.00	-
Arunachal Pradesh	1961	-	-	-	-	-	-	-
	1971	55.70	63.16	83.52	62.96	92.92	-	34.34

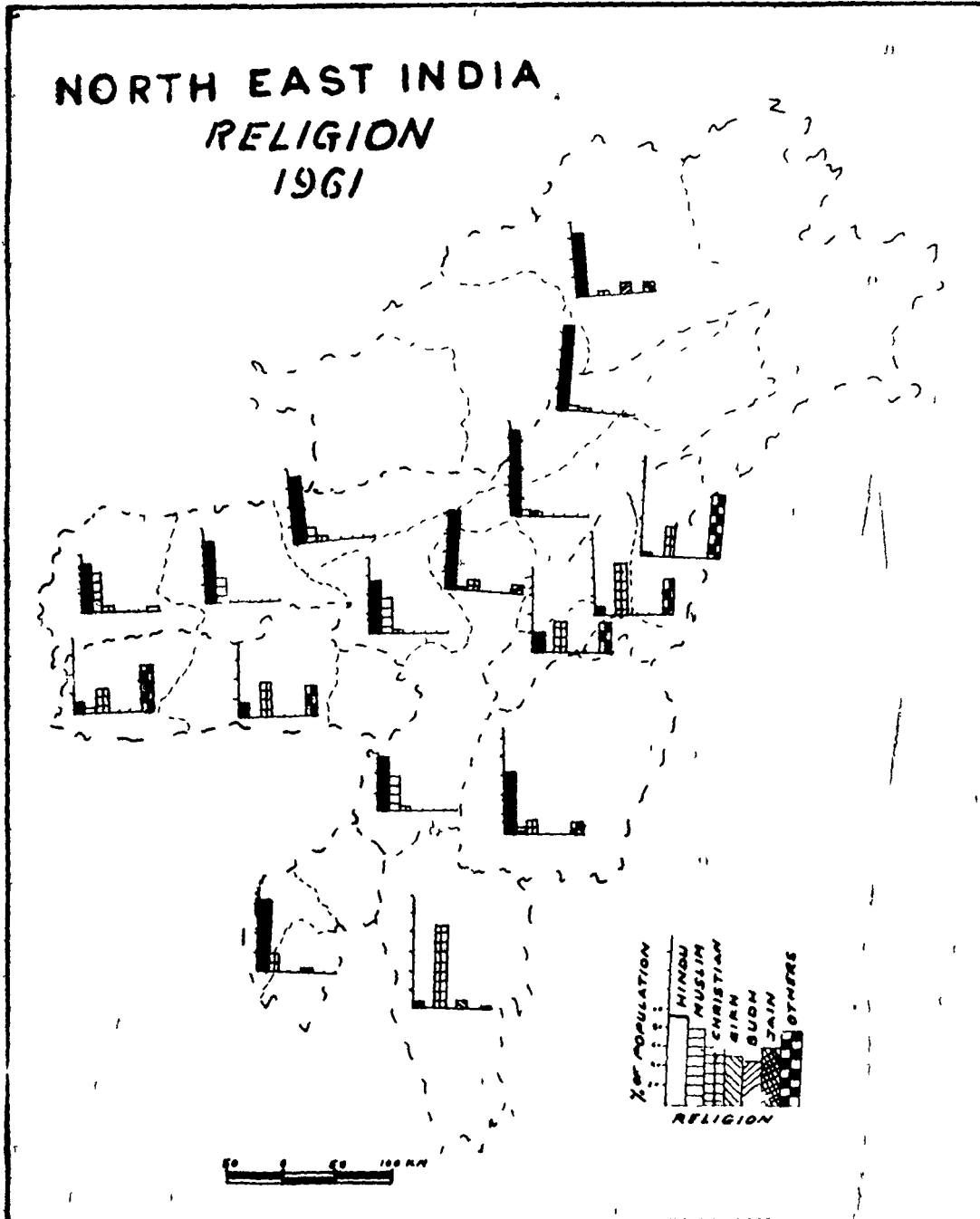
TABLE 2.8 (Contd.)

State/Union Territory	Year	Hindu	Muslim	Christian	Sikh	Buddhist	Jain	Others
Mizoram	1961	-	-	-	-	-	-	-
	1971	-	-	-	-	-	-	-
North East India	1961	58.74	89.69	86.11	62.50	165.22	50.00	121.55
	1971	65.17	120.06	103.53	66.67	172.99	71.43	107.96

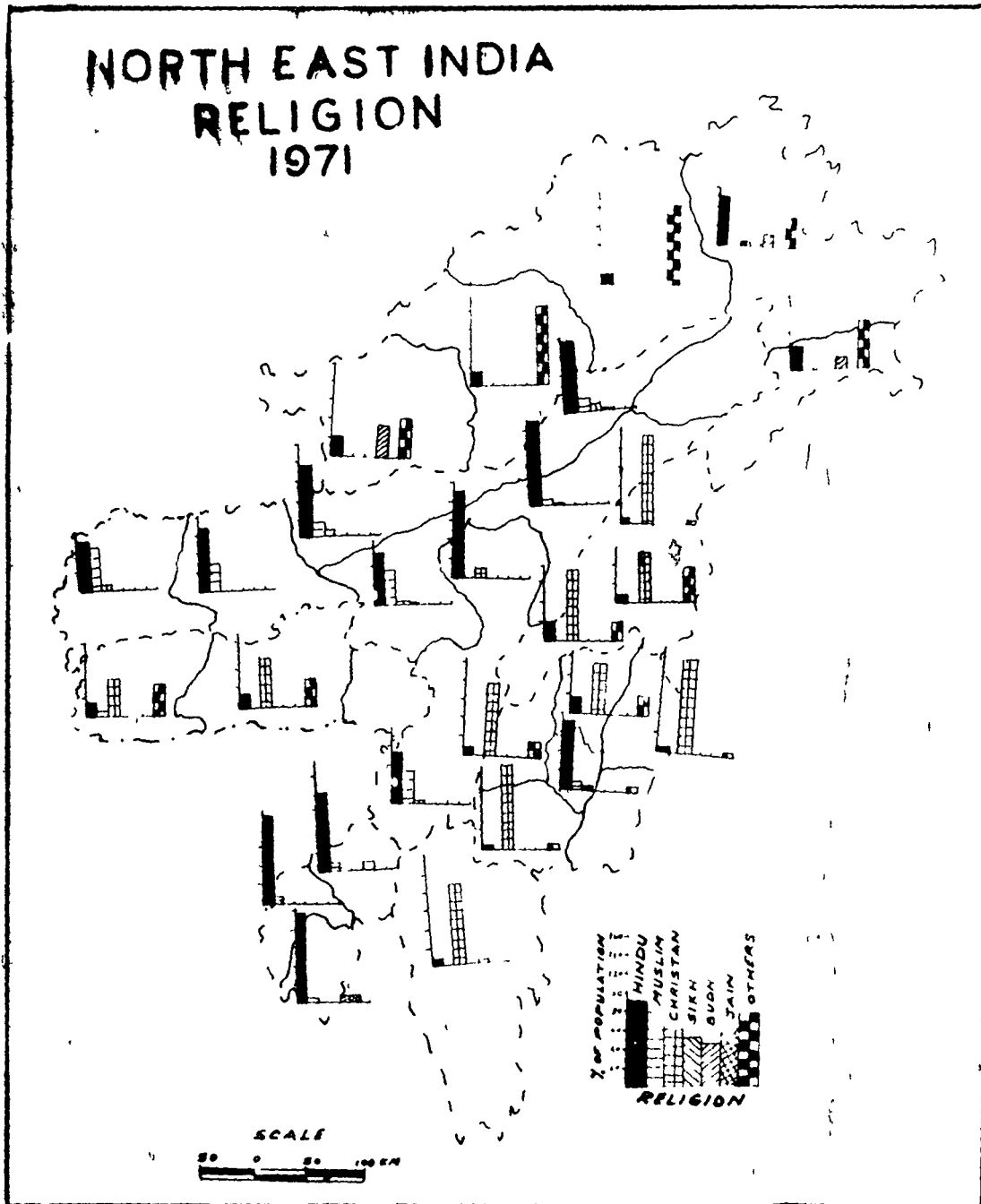
* Based on Appendix - A.2.3.1 and A.2.3.2.

Mokokchung is the only district which has observed an upward change while rest two districts have shown a downward change during 1961-71.

About one-eight (1785856) of the total Christian population (14223382) were living in this region in 1971. The states and union territories in which the proportion of christian population is exceeding the national average (2.60 percent) are Manipur (26.03 percent), Meghalaya (46.98 percent), Nagaland (66.76 percent) and Mizoram (86.09 percent). Percentage change in christian population shows higher in this region than the national average during 1961-71. The districts where the concentration of christian population is quite high (more than 50 percent of the total population) can be noticed in Mokokchung and Mizoram in 1961 whereas in 1971, it is noticed that except Central Manipur all other districts have high proportion of christian population. United Khasi and Jaintia Hills which had only 39.73 percent of its population as christian in 1961 has increased to 51.16 percent in 1971. Nagaland as a whole, has shown a tremendous increase in christian population during 1961-71. While in 1961, only Mokokchung was having proportion of christians more than 50 percent now all the three districts have shown more than 50 percent as christian population (Map. 4,5).



Map-4



Map-5

Coefficient of variation has shown a declining trend throughout the region as in the case of country. The maximum variation can be noticed in Arunachal Pradesh (38.00 percent) in 1971 against the Assam (1.80 percent). Concentration of population has been estimated with the help of Locational Quotient for the region and states for 1961 and 1971. From the Table 2.7(a) and (b), it is clear that Mizoram is the one unit which shows maximum proportion of christians in the region followed by Nagaland, Meghalaya and Manipur in 1961. Whereas Tripura has shown a negligible proportion of christians in 1961. But in Arunachal Pradesh, concentration of christians population has decreased from 1961 to 1971, while Nagaland and Meghalaya have recorded higher concentration. In 1961, Tripura was showing least dispersed distribution of christian population whereas in 1971 it is the Arunachal Pradesh while Tripura remains at par with 1961 position. The position of districts in respective state or union territory has been analysed through Locational Quotient. In Assam United Mikir and North Cachar Hills show the highest concentration of christians followed by Darrang Goalpara and Lakhimpur in 1961 as well as in 1971. Manipur is another State which also shows quite high concentration of christian in all the districts except for Manipur Central in 1971. While in Nagaland, Mokokchung has higher concentration of christians

and other districts show a dispersed distribution in 1961 and 1971.

Buddhists which comes in the fourth order, the region does not show any significance presence in the whole region. Buddhists are in quite significant number in Tripura (2.95 percent), Arunachal Pradesh (15.01 percent) and Mizoram (7.04 percent) in 1961 where the corresponding figures for 1971 for the same units have shown a decline. Districts which observed a significant number of Buddhists are Kameng (37.98 percent) Tirap (16.54 percent), Lohit (12.94 percent), Siang (3.07 percent), South Tripura (5.23 percent) and North Tripura (5.19 percent) on 1971. There population is highly dispersed in Nagaland, Manipur, Meghalaya and Assam while Tripura, shows highest concentration in the region during 1971. Lakhimpur and United Mikir and North Cachar Hills in Assam show a higher concentration of Buddhists while other districts show quite dispersed distribution in Assam. West Tripura shows a highly dispersed distribution of Buddhists in 1971.

Sikhs and Jains are found very rarely in the region. But they have improved their position from 1961 to 1971. Mizoram is the only unit in this region which has a negligible proportion of both in 1961 while in 1971 the proportion of

Sikhs have improved significantly (0.13 percent) while Jains have shown a decline. The highest proportion of Sikhs (0.55 percent) is in Subansiri whereas Jains have recorded highest proportion in Kohima (0.36 percent) in 1971.

Scheduled Castes and Scheduled Tribes Composition:

The proportion of Scheduled Castes and Tribes in the population of any part of India provides an important yardstick of the stage of social, economic and technological development.⁷¹ A higher proportion of these would indicate the backwardness of the society, awaiting more attention of the Government and the planners for their development and a lower proportion may suggest lesser constraints on development.

The Census of 1971, indicates that 28 percent of total population of the North Eastern Region consisted of people enumerated either as Scheduled Castes or Scheduled Tribes. The Scheduled Castes comprised of about 5.97 percent of the total population in 1961 and this decreased to 5.75 percent in 1971. This might have occurred due to conversions to other religions, particularly christianity, which shows some increase

7. R.S. Dube : Population of Rewa Plateau, A Geographical Analysis, Ph.D. thesis submitted at Saugor University, 1974.

in 1971 in its share. The Scheduled Tribes constituted of about 21.04 percent of the total population in 1961. The in-migration of certain tribes (i.e. Chakmas) during 1961-71 and inclusion of some castes under the tribal categories increased the share to 22.19 percent in 1971 census (Appendix - A.2.4).

It therefore, follows that only Scheduled Tribes comprises of a little less than one-fourth of the total population of the region and together with Scheduled Castes comprises of a share closer to one-third of the population of region in 1961 as well as in 1971. The proportion of Scheduled Caste was highest in Tripura (10.48 percent) in 1961, which increased to 12.39 percent in 1971. On the other hand, the union territories of Arunachal Pradesh and Mizoram did not register even a single Scheduled Castes member in 1961. Even Nagaland, which registered a mere 0.03 percent of Scheduled Castes in 1961 did not register any in the subsequent census. In 1971, the average share of the Scheduled Caste population for the region as a whole was 5.75 percent. Districts which registered a higher share of population as Scheduled Castes than the region are Cachar (12.19 percent), Nowgong (9.95 percent), almost all the districts of Tripura (10 percent and above). While the districts of Goalpara (5.39 percent)

and Kamrup (5.77 percent) were almost at par with that of the regional average. The lowest percentage is recorded in the Subansiri district (0.01 percent) of Arunachal Pradesh.

Table 2.10, indicates high inter-state variation in Scheduled Caste composition of population for both 1961 and 1971. The level of regional variation has increased from 81.88 percent in 1961 to 114.11 percent in 1971. An interesting feature of the composition is comes out when the proportion of Scheduled Castes are taken to the Hindus of the respective state which shows that the share of Hindus and Scheduled Castes move closely together as in the case of the states of Tripura (13.84 percent) and Assam (8.60 percent) while the opposite is true of the rest as in the case of Arunachal Pradesh (0.33 percent) and Mizoram (0.39 percent).

Analysis of Location Quotients (LQ) indicates a highly dispersed population of Scheduled Castes in the region, except for the state of Assam and Tripura, where the concentration of Scheduled Castes population is quite high. Districts with high concentration of Scheduled Castes are Nowgong, Cachar, Manipur Central, Garo Hills, Lohit and medium concentration is in the districts of Kamrup, South and West Tripura and the rest with low concentration (Table 2.9).

TABLE 2.9 : LOCATION QUOTIENT (LQ) OF SCHEDULED CASTES AND
SCHEDULED TRIBES IN NORTH EAST INDIA
(1961 & 1971)*

Districts	Scheduled Caste		Scheduled Tribe	
	1961	1971	1961	1971
Goalpara	0.80	0.86	0.94	1.26
Kamrup	0.91	0.93	0.69	0.95
Darrang	0.77	0.71	0.70	0.97
Nowgong	1.29	1.60	0.47	0.68
Sibsagar	0.99	0.75	0.41	0.62
Lekhimpur	0.78	0.59	0.69	1.23
Cachar	2.22	1.95	0.07	0.08
United Mikir & North Cachar Hills	0.39	0.38	4.86	5.25
Manipur Central	-	1.36	-	0.23
Manipur East	-	0.03	-	3.09
Manipur North	-	0.07	-	2.55
Manipur South	-	0.21	-	3.01
Manipur West	-	0.07	-	3.14
Garo Hills	1.75	1.29	1.03	1.00
United Khasi & Jaintia Hills	0.56	0.82	0.98	1.00
Kohima	-	-	-	0.90
Mokokchung	-	-	-	1.03
Tuensang	-	-	-	1.07

TABLE 2.9 (Contd.)

Districts	Scheduled Caste		Scheduled Tribe	
	1961	1971	1961	1971
North Tripura	-	0.88	-	0.93
South Tripura	-	1.00	-	1.24
West Tripura	-	1.06	-	0.91
Kameng	-	0.29	-	1.00
Subansiri	-	0.14	-	1.15
Siang	-	-	-	1.10
Lohit	-	7.29	-	0.74
Tirap	-	-	-	0.89
Assam	1.06	1.09	0.68	0.50
Manipur	0.29	0.27	1.40	1.41
Meghalaya	0.03	0.07	3.63	3.63
Nagaland	0.01	-	4.07	3.99
Tripura	1.76	2.16	1.38	1.31
Arunachal Pradesh	-	0.01	3.87	1.19
Mizoram	-	N	4.29	4.25

* Based on Appendix A.2.4

TABLE 2.10 : REGIONAL VARIATION OF POPULATION SHARES IN SCHEDULED CASTE AND SCHEDULED TRIBES IN NORTH EAST INDIA (1961 & 1971)*.

State		Scheduled Caste		Scheduled Tribe	
		1961	1971	1961	1971
Assam	T	50.17	51.36	130.67	109.05
	M	49.93	51.52	130.92	109.06
	F	50.55	51.20	130.40	109.68
Manipur	T	-	147.20	-	45.96
	M	-	132.20	-	45.94
	F	-	165.96	-	45.98
Meghalaya	T	52.63	22.50	2.53	0.36
	M	50.00	14.63	4.63	1.02
	F	52.94	32.50	0.36	1.74
Nagaland	T	-	-	-	7.08
	M	-	-	-	6.95
	F	-	-	-	4.80
Tripura	T	-	7.56	-	14.71
	M	-	7.46	-	14.79
	F	-	7.74	-	14.34
Arunachal Pradesh	T	-	181.82	-	15.19
	M	-	190.00	-	17.33
	F	-	183.33	-	12.86
North East Region	T	81.88	114.11	61.52	53.40
	M	81.49	113.36	51.18	52.64
	F	82.14	88.04	51.95	54.26

* Based on Appendix - A.2.4

The concentration of Scheduled Tribes diametrically opposite to that of the Scheduled Castes. According to the 1961 Census, 30,173,998 persons were reported as Scheduled Tribes in the country accounting for 6.87 percent of the total population. This has increased to 38,015,162 persons in 1971 i.e. 6.94 percent. In the North Eastern Region, the share of Scheduled Tribes population was 21.04 percent in 1961 which has increased to 22.19 percent in 1971. This indicates that the concentration of Scheduled Tribe population in the North Eastern part of India is three times more than that of the National average.

The distribution pattern of the tribal population in this region has its own peculiarities. The tribal population concentration brings out significant variations in the region in 1971, e.g. it varies from 10.99 percent in Assam to 94.26 percent in Mizoram.

As shown in the Appendix A-2.4, the tribal population is more than 10 percent of the total population in all the states and union territories of the region. In Manipur and Tripura, the share of tribals to total population was 31.18 percent and 28.95 percent respectively in 1971 and elsewhere they are very high i.e. Arunachal Pradesh (79.02 percent), Mizoram (94.26 percent), Nagaland (88.61 percent) and Meghalaya (80.48 percent) etc.

The distribution pattern that emerges from the study of state and union territory, data largely conceals the tendencies of clustering and concentration and tends to give an impression that the tribal population generally constitutes an insignificant proportion of the population in the entire country.⁸ This position is not tenable in case of the North Eastern Region. In fact, the tribals live in certain pockets where they constitute a clear majority and where normally the density is low (Table 2.1).

From the Appendix A-2.4, it is clear that six districts namely Manipur East (96.30 percent), Manipur South (93.75 percent), Manipur West (97.82 percent), Mokokchung (91.30 percent), Tuensang (94.70 percent) and Subansiri (90.93 percent) have more than 90 percent of their population as tribals while another six districts register tribal population between 75 percent to 90 percent. There are only three districts namely North Tripura (26.46 percent), South Tripura (35.80 percent) and West Tripura (26.80 percent), with tribal population share between 25 percent to 50 percent. In the Cachar District of Assam the concentration of tribal population is lowest in the whole region being even less than one percent.

8. M. Raza et al., : Tribal Population of India, Spatial Patterns of Clustering and Concentration, Occasional Paper, 1977, Jawaharlal Nehru University, New Delhi.

Table 2.10, shows that inter-state variations in concentration of Scheduled Tribes is not as high as in the case of Scheduled Caste population. In Assam, intra-state variation is the highest i.e. 109.05 percent while Meghalaya shows the least variation (0.36 percent)

The values of Location Quotient (LQ) given in Table 2.9, shows a higher concentration of Scheduled Tribes in Mizoram, Nagaland, Meghalaya, Arunachal Pradesh, Manipur and Tripura. Assam shows a very dispersed distribution of tribals in 1961 as well as in 1971. In Assam 1961 Census shows that there was only one district namely United Mikir and North Cachar Hills (4.86 percent), where the concentration of tribals was relatively high, whereas in 1971, there were three districts namely Goalpara, Lakhimpur and United Mikir and North Cachar Hills registered high tribal concentration. On the other hand in Manipur, except the Imphal Valley (Manipur Central) rest of the districts show high tribal concentration. In the State of Tripura, only the South Tripura district shows a high concentration of tribals. Rest of the districts in Mizoram, Meghalaya, Nagaland and Arunachal Pradesh indicate high concentration of tribal population in all the districts at one hand and very little regional difference between districts of each state or union territory.

EDUCATIONAL COMPOSITION:

Level of literacy in the society is one of the most important yardsticks of demographic dynamism and economic potentials. The percentage distribution of literates to total population is given in Appendix A-2.5. It reveals that there is an increase in the rate of literacy from 1961 to 1981. It went up from 24 percent in 1961 to 34.8 percent in 1981 for the country, whereas for the North East Region it increased from 18.88 percent in 1961 to 28.72 percent in 1971.

In case of males the literacy rate for the region went up from 25.40 percent in 1961 to 37.20 percent in 1971 and in the females, the literacy has almost doubled (11.47 percent to 19.34 percent) during the same period. However, the overall literacy rate in the region was only 28.72 percent in 1971. The results are more disappointing when the female literacy is considered separately. The female literacy rate for 1971 was 19.34 percent while it was 37.20 percent for males.

Mizoram has the highest literacy for total population as well as for both the sexes taken separately during the last two decades of 1961 and 1971. (Appendix A-2.5). The other states and union territories show higher literacy rates compared to the average of region i.e. the states of Tripura, Meghalaya and Manipur. Assam recorded a higher rate in 1961 than the

regional average but in 1971, its value came down below the regional average. The states and union territories which have shown rates below the regional average of 28.72 percent, are Assam (28.15 percent), Nagaland (27.40 percent) and Arunachal Pradesh (11.29 percent). Recorded values of literacy rates for the states and union territories in 1971, ranges from 11.29 percent in Arunachal Pradesh to 53.8 percent in Mizoram. Male literacy among different states and union territories ranged from 17.82 percent in Arunachal Pradesh to 60.50 percent in Mizoram and female literacy from 3.71 percent in Arunachal Pradesh to 46.70 percent in Mizoram. Except Nagaland other states and union territories, showed higher literacy rates for males and females than the regional average, for 1961.

Considering a districtwise breakup of literacy in 1971, it indicates that in Assam, Sibsagar (36.62 percent), Cachar (30.57 percent), Lakhimpur (29.94 percent), Nowgong (28.92 percent) and Kamrup (28.77 percent) are the districts which have values higher than the state average of 28.15 percent, the rest of the districts having lower values. The male literacy of Assam, in 5 out of 8 districts show higher figures than the state norm. Only in 3 district i.e. Goalpara (30.27 percent), Darrang (30.26 percent) and United Mikir and North Cachar Hills (28.37 percent), showed lower than the state average (36.68

percent) in 1971 (same case is there for 1961). In case of females, Kamrup (18.18 percent), Darrang (14.30 percent), Goalpara (13.03 percent) and United Mikir and North Cachar Hills (11.47 percent) showed lower rates than the state (18.63 percent) norm.

In Manipur, the average literacy is higher against the average literacy of region as well as the nation for 1971. The districtwise rates show that against the average of 32.91 percent, literacy for the state in 1971, the districts of Manipur South (34.68 percent), Central (34.64 percent) and East (34.10 percent) recorded higher rates. Districts to the North and West show relatively low literacy. The male and female literacy, only Central and Eastern Manipur have a higher rate than the average of the State in case of former and the Northern and Western districts in case of the latter.

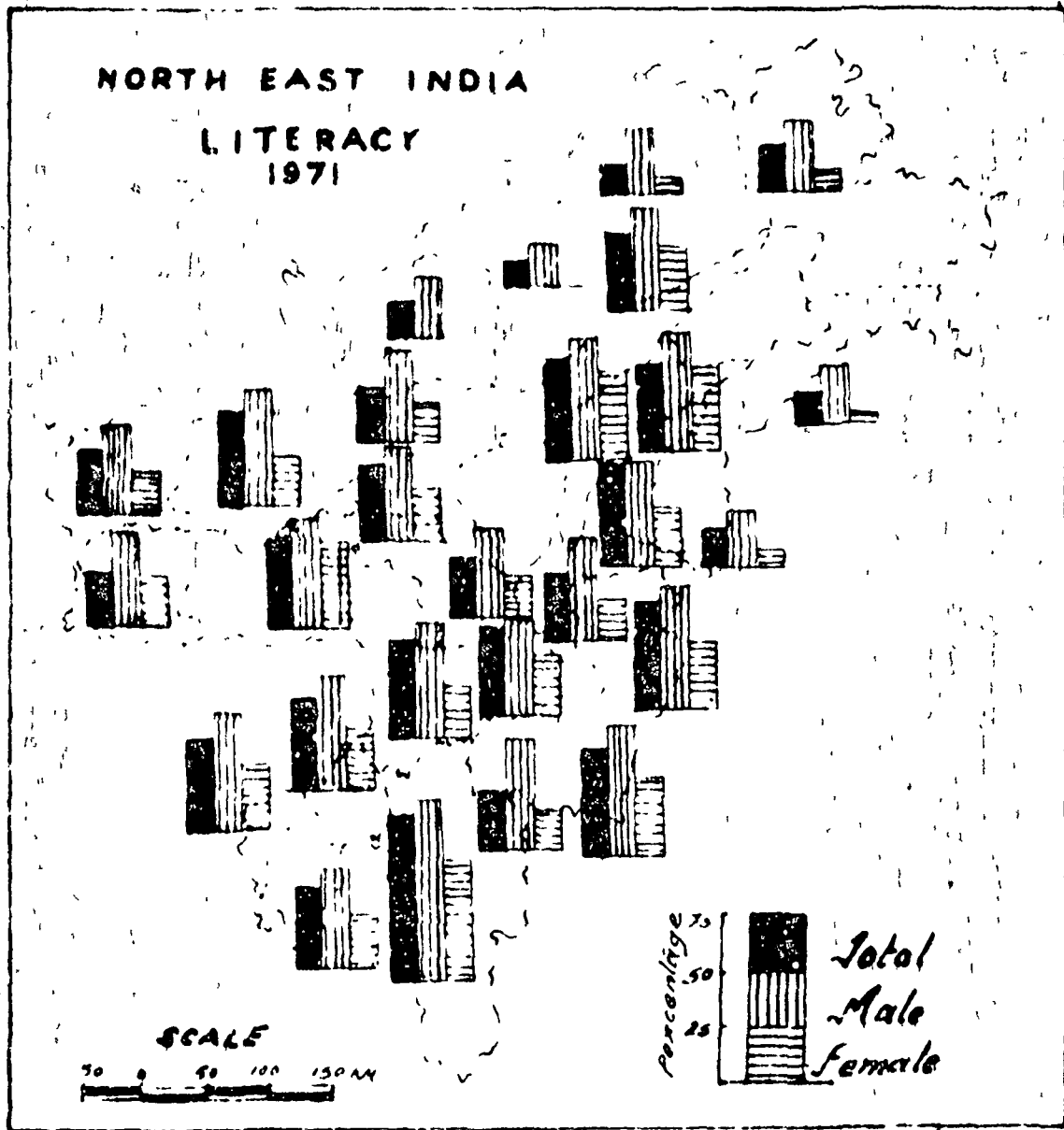
The State of Meghalaya has follows the national norm of literacy. The districts of United Khasi and Jaintia Hills show significantly higher rates compared to the Garo Hills district from 1961 to 1981 and also for both the sexes.

In Nagaland, the average literacy was 27.40 percent which is lower when compared to regional average as well as the national average. The State of Tripura has demonstrated a

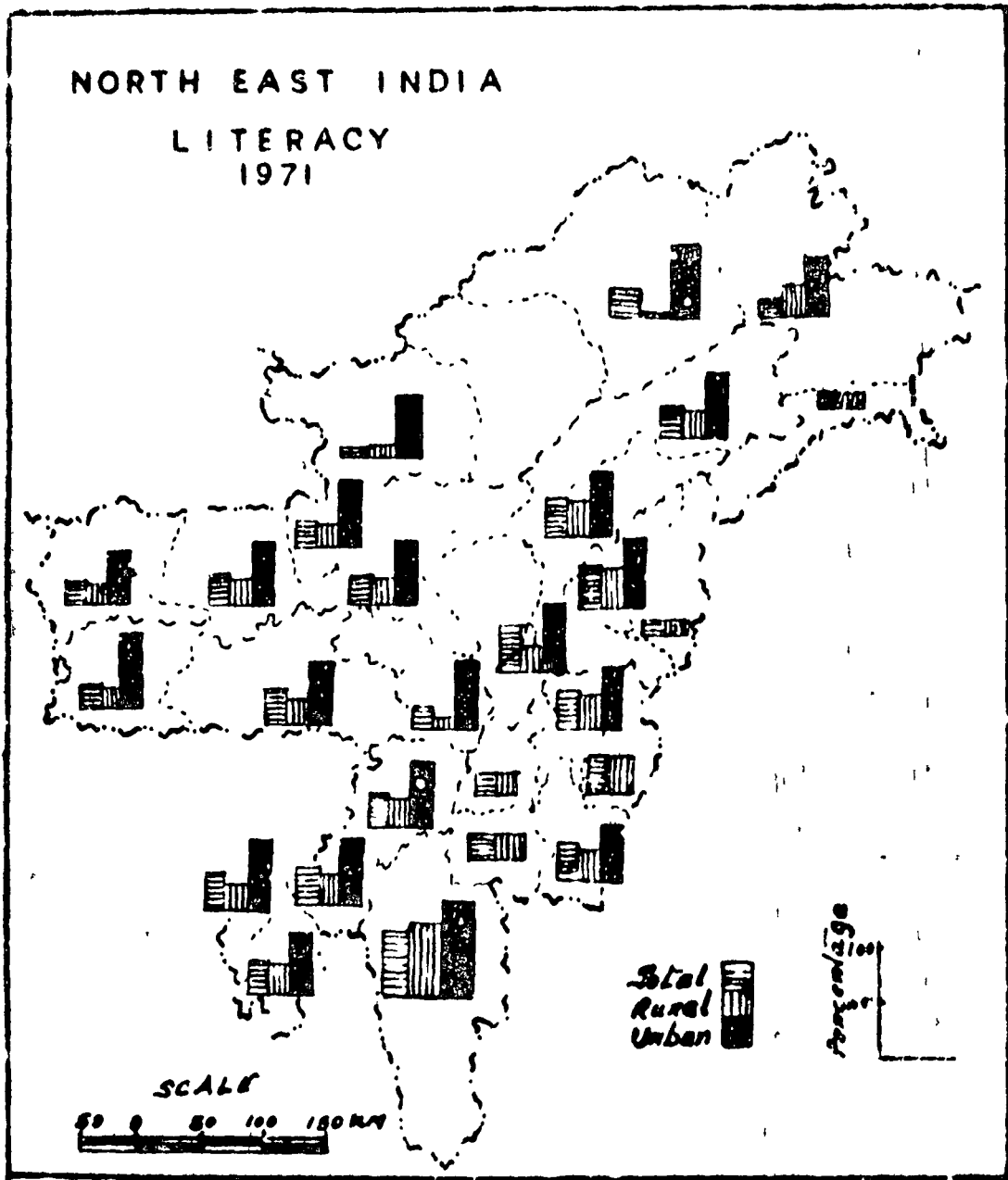
very significant change in literacy between 1961 (when the State average was 20.24 percent) to 1971 (it become 30.98 percent), by adding as much as 10 percent of additional literates of the population and thereby crossing over the national average figures.

The average literacy for all ages in rural areas is found, the position of Mizoram (51.39 percent) is the leading one followed by Manipur (29.83 percent), Tripura (27.13 percent), Assam (25.24 percent) and Nagaland (23.71 percent), having higher rate than the regional average (23.41 percent) in 1971. The literacy rate in rural areas of Arunachal Pradesh is lowest (9.79 percent) in the region. In the region among the districts the literacy rate is quite high in the districts of Mokokchung (35.39 percent), Sibsagar (34.38 percent), Manipur South (32.54 percent), Central (30.77 percent) than the regional average in 1971. Districts which are at par with the regional average are Kamrup of Assam, Garo Hills of Meghalaya, Kohima of Nagaland and the South Tripura. Districts of Goalpara, Darrang, United Mikir and North Cachar Hills (Assam), North and West Manipur, Garo Hills (Meghalaya), Tuensang (Nagaland) and all districts of Arunachal Pradesh show less than average rate of literacy in rural areas in both 1961 and 1971 (Map ~~(a)~~ (b))

Appendix - 2.5, reveals that in all the urban areas



Map 6 (A)



Map-5(a)

except in Lohit district of Arunachal Pradesh, the level of literacy is more than 50 percent. It varies from 48.97 percent in Lohit to 66.06 percent in Garo Hills of Meghalaya. The male and female, when taken separately, it varies from 57.69 percent in Goalpara to 77.55 percent in Mizoram for males whereas in case of females, it lies in between 29.89 percent in Kameng (Arunachal Pradesh) to 67.13 percent in Mizoram.

In comparison, literacy in rural and urban areas show interesting features of juxtaposition. For example, rural literacy is quite high in Mizoram while it is very low in Arunachal Pradesh. This situation might have arisen because of the dichotomous character of the urban base e.g. Mizoram has a better rural-urban continuum while Arunachal Pradesh has little rural to urban relationship. The other most important factor appears to be the elite base of which has much parity in Mizoram. On the other hand in Manipur, the urban elite has no clear dominance. The picture is quite different for the states of Assam, Meghalaya and Nagaland. (Table No. 2.11).

Looking at Table 2.12, it appears that the variation, inter-regionally (between the states) as well as intra-regionally (within the states) have declined between 1961 and 1971. Inter-regional variation which was 30.25 percent in 1961 came down to 26.68 percent in 1971. On the contrary, in terms

TABLE 2.11 : REGIONAL VARIATION IN LITERACY IN NORTH EAST INDIA (1961, 1971 and 1981*)

State	1961			1971			1981		
	T	R	U	T	R	U	T	R	U
Assam	18.98	18.98	9.14	18.35	28.27	6.31	-	-	-
Manipur	-	-	-	20.25	18.03	3.32	12.65	10.59	18.81
Meghalaya	22.33	18.98	0.66	17.34	5.97	0.72	15.24	8.07	5.67
Nagaland	-	-	-	40.32	37.21	1.62	26.01	28.94	1.88
Tripura	-	-	-	8.83	7.96	5.56	11.52	10.60	3.17
Arunachal Pradesh	-	-	-	30.24	28.32	1.56	20.70	22.29	4.10
Mizoram	-	-	-	-	-	-	21.61	22.23	7.84
North East Region	30.25	37.19	6.50	26.68	27.46	9.14	-	-	-

Source: Based on Appendix - A.2.5

* - Provisional figures.

TABLE 2.12 : PERCENTAGE OF LITERACY AMONG SCHEDULED CASTES AND SCHEDULED TRIBES TO TOTAL POPULATION IN NORTH EAST INDIA. (1971)

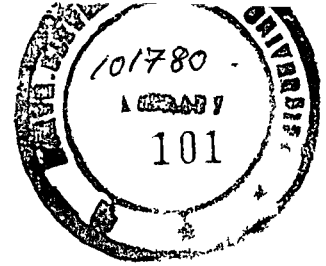
State		Scheduled Castes			Scheduled Tribes		
		T	M	F	T	M	F
Assam	T	1.61	2.16	0.99	2.27	3.16	1.27
	R	1.52	2.08	0.90	2.43	3.42	1.34
	U	2.55	2.93	2.03	0.68	0.78	0.53
Manipur	T	0.40	0.57	0.24	8.95	11.88	5.97
	R	0.44	0.62	0.26	9.38	12.55	6.13
	U	0.16	0.24	0.07	6.16	7.41	4.88
Meghalaya	T	0.08	0.11	0.05	21.29	23.57	18.87
	R	0.04	0.06	0.03	21.23	23.07	17.26
	U	0.28	0.38	0.17	27.54	26.35	28.95
Nagaland	T	-	-	-	21.27	25.34	16.60
	R	-	-	-	20.99	26.00	15.59
	U	-	-	-	23.84	20.79	30.28
Tripura	T	2.54	3.76	1.25	4.35	6.79	1.76
	R	2.58	3.86	1.22	4.58	7.25	1.74
	U	2.22	2.91	1.48	2.40	2.85	1.93

TABLE 2.12 (Contd.)

State		Scheduled Castes			Scheduled Tribes		
		T	M	F	T	M	F
Arunachal Pradesh	T	0.03	0.04	0.01	4.11	6.39	1.46
	R	0.04	0.04	0.01	4.00	6.32	1.36
	U	0.02	0.03	0.02	6.99	7.76	5.33
Mizoram	T	N	N	N	50.42	54.66	45.93
	R	N	N	N	48.32	52.93	43.86
	U	N	N	N	66.76	68.13	65.30
North East Region	T	1.43	1.95	0.86	5.15	6.47	3.69
	R	1.37	1.91	0.79	5.12	6.60	3.51
	U	2.01	2.36	1.55	5.44	5.37	5.54

Source: Census of India 1971, Social and Cultural Tables for respective States and Union Territories.

N - Negligible.



of intra-regional variations was the lowest in Tripura in 1971 but has shown an increase in 1981. In 1971, the maximum intra-state variation was in Nagaland (40.32 percent) in 1971 which came down to 26.01 percent in 1981. Rest of the states show intra-state variations less than 20 percent in 1981. Intra-state variations of literacy in urban areas are relatively low compared to the rural areas, e.g., Meghalaya has only 0.72 percent in 1971 (and the highest of 6.31 percent in Assam) and that of rural areas, was about 6 percent for the same period. Maximum variation in rural literacy is observed in Nagaland i.e. 37.21 percent in 1971, which came down to about 29 percent in 1981.

A consideration of literacy among the socially backward communities is necessary and Table 2.13 provides rates for Scheduled Castes and Tribes of the region in 1971. It is evident from the table 2.13, that among the Scheduled Castes with a numerical insignificance in the region, literacy is extremely low. On the other hand, the Scheduled Tribe population, which dominate the Hill areas of the region have a fairly high literate component. The highest literacy among Scheduled Castes is found in Tripura i.e. 2.54 percent. Highest literacy rate of 50.42 percent is observed in Mizoram among Scheduled Tribes. While in most of the like areas the literacy rates are

TABLE 2.13 : PERCENTAGE LITERATES AMONG SCHEDULED CASTES IN NORTH EAST REGION
(1961, 1971)

State		1961			1971		
		T	M	F	T	M	F
Ass	T	24.32	31.77	16.10	25.79	35.00	15.74
Assam	R	23.54	30.92	15.29	24.49	33.70	14.50
	U	34.17	40.63	25.81	38.31	47.21	28.07
Manipur	T	22.37	31.96	12.19	26.44	36.02	15.96
	R	22.20	31.60	12.28	26.00	35.57	15.71
	U	36.71	56.44	1.75	38.68	45.84	25.37
Meghalaya	T	14.83	20.09	8.23	20.38	27.98	11.91
	R	10.60	15.25	5.28	22.53	33.17	12.24
	U	42.77	52.17	29.85	18.74	24.49	11.63
Nagaland	T	25.40	28.75	19.57	-	-	-
	R	35.48	34.62	40.00	-	-	-
	U	22.11	25.93	17.07	-	-	-
Tripura	T	13.42	22.07	4.10	20.51	30.32	10.06
	R	12.81	21.30	3.69	19.68	29.44	9.31
	U	23.66	34.77	11.18	35.36	45.90	23.85

TABLE 2.13 (Contd.)

State		1961			1971		
		T	M	F	T	M	F
Arunachal Pradesh	T	-	-	-	36.28	52.81	18.01
	R	-	-	-	35.52	52.00	17.50
	U	-	-	-	100.00	100.00	100.00
North East Region	T	22.86	30.44	14.33	24.88	34.20	14.75
	R	21.99	29.57	13.56	23.66	32.98	13.59
	U	33.14	40.13	24.20	37.57	46.54	27.25
C.V. for N.E.R.	T	21.01	16.02	37.46	19.09	28.45	17.05
	R	35.12	22.81	74.80	18.22	22.31	17.46
	U	20.72	22.87	47.55	53.99	43.46	78.05
Mizoram	T	-	-	-	25.61	26.58	-
	R	-	-	-	24.68	25.68	-
	U	-	-	-	40.00	40.00	-

Source: (i) Census of India 1961 Vol.1, Part V-A(i) Special Tables for Scheduled Castes and Scheduled Tribes
(ii) Census of India 1971, Part II-C(i) Series I, - India Social and Cultural Tables.

TABLE 2.14 : PERCENTAGE OF LITERATES AMONG SCHEDULED TRIBES IN NORTH EAST INDIA
(1961, 1971)*

State		1961			1971		
		T	M	F	T	M	F
Assam Assam	T	24.35	33.76	14.31	20.67	29.78	11.19
	R	23.86	33.28	13.81	20.31	29.38	10.90
	U	60.22	66.40	52.87	61.09	68.75	50.09
Manipur	T	27.25	37.03	17.67	28.71	38.64	18.87
	R	28.86	36.43	17.49	27.32	37.18	17.59
	U	51.98	67.37	30.63	58.30	68.38	47.47
Meghalaya	T	21.85	24.94	18.76	26.45	30.11	22.79
	R	19.44	22.61	16.27	23.40	27.12	19.65
	U	51.04	53.62	48.53	60.40	64.93	56.21
Nagaland	T	14.76	18.99	10.57	24.01	30.17	17.68
	R	13.54	17.45	9.68	22.28	28.29	16.12
	U	56.13	67.70	43.00	63.20	70.83	54.63
Tripura	T	10.01	17.37	2.31	15.03	23.60	6.04
	R	9.40	16.78	1.84	14.64	22.86	5.42
	U	61.76	70.84	51.00	71.12	80.91	59.70

TABLE 2.14 (Contd.)

State	1961				1971		
	T	T	M	F	T	M	F
	T*	29.09	38.81	8.47	5.20	8.72	1.70
Arunachal Pradesh	R	29.09	38.81	8.47	4.92	8.31	1.56
	U	-	-	-	34.85	46.82	19.22
	T	43.34	52.52	34.39	53.49	60.24	46.88
Mizoram	R	42.19	51.55	33.09	51.16	58.25	44.24
	U	65.79	71.08	60.45	72.00	75.85	68.16
	T	21.27	28.59	13.69	23.19	30.29	15.94
North East India	R	20.31	27.67	12.70	21.67	28.81	14.39
	U	54.21	59.88	48.19	62.96	68.91	56.83

*Excludes Population 292972 (144586 males and 148386 females) of Arunachal Pradesh as their distribution into literate is not available for 1961.

- Source: (i) Census of India 1961, Vol.I. Part V-A(i) Special Tables for Scheduled Castes and Scheduled Tribes
(ii) Census of India 1971, Part II-C(I) Series I - India, Social & Cultural Tables.

fairly high, as in the case of the Khasis, Nagas and Mizos. The situation in the plain areas, particularly in Assam Valley, Tripura, Manipur and Arunachal Pradesh show low literacy for the Scheduled Tribes (Assam 2.27 percent, Tripura 4.35 percent, and Arunachal Pradesh 4.11 percent). The high literacy in the hill areas have been attributed to the Christian Missionaries and education brought by them to these people. But in the plains, particularly in Assam, with a relatively high component of Scheduled Caste population also, shows a very low literacy for them as well. It may be noted that the Scheduled Caste and Tribe people of the plains and that of Arunachal Pradesh have not come much in contact with the educational progress of the Christian Missionary.

Female literacy among the Scheduled Tribes is fairly high compared to that of the Scheduled Castes, although, on an average literacy among males are more. Mizoram has the distinction in female literacy in the sense that it is even higher than the national average for males.

Conclusion:

The temporal and spatial analysis of the composition of population in North East India reveals the following facts:

(1) The growth rate pattern is relatively uniform when smaller

regional units of observation have been considered and there appears to be significant differences in composition and growth at higher level of aggregation. These findings may lead to the fact that there exists internal homogeneity with respect to population growth and structure and the differences are more and more prominent among the states and union territories;

(2) From the analysis of the age distribution through 'aging index' and 'maturity index' the overall economic and social conditions of the region is being reflected. It is interesting to note that while the 'aging index' is lower in the region than that of the country, the maturity index which reflects the economic growth potential of the population is also lower than that of the national figure. Both the indices reflect the general inadequacy of survival facilities in the region and its backwardness.

(3) In the North Eastern Region, there exists a sharp spatial variation with respect to the sex composition and distribution. As a whole, the urban areas have relatively more males than its rural counterpart. It clearly indicates the social immobility of the females. There also exist a high variation among different districts/states/union territories and as well as among various religious groups. Smaller religious groups show higher variations in sex ratio may be due to the age-selectivity of the in-migrants to the region.

(4) The analysis of the religious composition and the composition of Scheduled Castes/Scheduled Tribes of the region throws some interesting light. For example, while the major religious groups of the region viz. Hindus and Muslims are wide spread, the other minor groups are relatively clustered. Similar nature may be observed in case of the distribution of Scheduled Castes/Scheduled Tribes. But, examining the temporal trend it has been found that the variations have been declining.

(5) As a whole the literacy rate of the region is much lower than that of the national average. Although the literacy rate is increasing steadily, the picture becomes more disappointing when the rate of literacy has been studied separately for males and for females. Female literacy in the region is very very low (only 19.34 percent in 1971). Among the states and union territories of the region, Mizoram tops the list followed by Meghalaya, Manipur, Assam and Tripura. At the district level - some of the plain districts have higher literacy rates than that of the state average. It is also interesting to note that the urban areas are much more advanced whether in the plains or in the hills (more than 50 percent literacy) as compared to their rural counterpart, only with a few exceptions (viz. in Mizoram rural literacy is very high). Looking at the temporal perspective, it can be seen that the variations have been declining for all categories, including males and females,

Scheduled Caste/Scheduled Tribe's urban-rural and the people
of plains and of hills,

CHAPTER III

POPULATION GROWTH IN NORTH-EAST INDIA, 1901-81*

Change in the size of population in the positive direction is commonly known as population growth. The growth of population of a region is basically dependent on three main sources births, deaths and migration. The pattern of population distribution in a region is mainly due to the past changes in the population characteristics in terms of location, distribution, density and growth. Moreover, the components of population change act as vital forces in determining the demographic character of 'places' and the areal pattern of population growth magnificently reflects the economic potentialities and changing nature of different sub-areas of a region.¹

The population of India has reached 688 million in 1981. This is nearly three times its size of 1901 (Table 3.1). Every year nearly 22 million babies born and nearly 8 million persons die, bringing about a net annual increase in population of about 14 million, which is numerically equivalent to the population of

*1981 figures are provisional.

1. R.S. Dube: "Population of the Rewa Plateau - A Geographical Analysis", unpublished Ph.D. Thesis submitted in the Department of Geography, Saugor University, Saugor, 1974.

the whole of Australia.²

In terms of population size, India is the second largest country in the world after the mainland China. The population of China is not exactly known, but according to the estimates made by United Nations, it is more than one billion⁴ in 1982.

TABLE 3.1 Population, Size and Rate of Population Growth
in India 1901-81

Year	Population (in millions)	Decade variation (in percentage)
1901	238.4	-
1911	252.1	5.75
1921	251.3	- 0.31
1931	279.0	11.00
1941	318.7	14.22
1951	361.1	13.31
1961	439.2	21.51
1971	548.2	24.80
1981	683.8	24.75

Source: Census of India, 1971, General Population Tables, Series 1, India, Part II-A(i) p.131, Figures for 1981, taken from Provisional Population Tables, Paper 1 of 1981.

2. S.N. Agarwale: "India's Population Problems" Tata McGraw Hill Publishing Co. Ltd., New Delhi, 1974, p.40.

The overall increase of population during the three decades from 1951 to 1981 is around 78 percent. Therefore, rapid population growth is one of the major problems which India is facing at present. High growth of population is associated with poverty, malnutrition, illiteracy and social, economic backwardness. But, if, the economic development is to accelerate, population growth is a big hazard. The rapid growth of population is not because of a sudden burst in the birth rate but is largely due to a progressive decline in the death rate. The death rate started declining at a comparatively faster rate, while the birth rate remained almost constant (marginal decline is recorded from 1921 onwards). From the available information, it was observed that during 1921-51, the decline in the birth rate was 12 percent as compared to the decline in the death rate of 42 percent. Again, during the next 20 years (1951-71) the decline in the death rate was another 42 percent while the decline in the birth rate was only 5.5 percent. This explains the high growth rate of population since 1951.³

The population of the North-East Region has increased during the period 1901-81 by 510.75 percent. The total population

3. P.J. Bhattacharjee & G.N. Shastri: Population in India - A case study of Inter-State variations, ISEC, Monograph No.3 Vikas Publishing House, Pvt. Ltd. New Delhi 1976.

of the North-East Region at the beginning of the century was 4.27 million, which has now become 26.09 million in 1981. The net increase was 21.82 million during the last 80 years.

Though the North-East Region is one of the least densely population regions in India, its population is increasing at a considerably higher rate compared to the nation as a whole. In India, the first half of the twentieth century has shown ups and downs in population growth, whereas this region has shown a steady nearly 20 percent plus rate of growth for decade till 1951. During the decade of forties, the region has experienced a slight fall in the population growth rate (Table 3.2). This decrease might have resulted from the widespread chaotic condition in the country around 1947. It is also observed that the growth rate of population rose very sharply between 1951-1961 by as much as 41.33 percent compared to 21.51 percent for the nation. This is attributed to the influx of migrants from the erstwhile East Pakistan (now Bangladesh). On contrary to India's population which has shown an increase during 1961-71, the region's population growth rate has fallen from 41.33 percent in 1951-61 to 35.04 percent in 1961-71. During 1971-81, the region has witnessed a further decline in the population growth rate (33.24 percent) but the rate of growth of population in the North-Eastern Region has been considerably higher than the

TABLE 3.2: NORTH-EASTERN REGION: GROWTH OF POPULATION 1901-81.

Year	Population (in million) in NE Region	Percent change in the Region	Percent change in India
1901	4.3	-	-
1911	5.1	18.42	5.75
1921	6.0	18.71	-0.31
1931	7.2	19.44	11.00
1941	8.6	20.15	14.22
1951	10.3	19.06	13.31
1961	14.5	41.33	21.51
1971	19.6	35.04	24.80
1981	26.1	33.24	24.75

Source: 1) Census of India, 1971, Part II-A(i), India, General Population Tables.

2) Census of India, 1981, Provisional Population Tables for different States and Union Territories.

national growth rate in the last three decades in particular.

The intra-regional examination of the growth of population during 1901-81 reveals a sharp variation from as much as 290.09 percent in Meghalaya to 1081.22 percent in Tripura.

The national rate of increase was only 186.84 percent during the same period of 80 years, the regional growth rate was 510.75 percent. By analysing the regional growth rates, it is possible

to place the states and union territories into two broad groups. One, the states and union territories having higher growth rate than the regional average*. It includes Tripura (1081.22 percent) and Nagaland (661.48 percent). The other group with those of lower growth rate than that of regional average. This group includes Assam (505.01 percent), Mizoram (491.71 percent), Manipur (396.15 percent) and Meghalaya (290.09 percent).

The average growth rate per decade for the states and union territories is given in Table 3.3. It is clear from Table 3.4, that the average growth rate per decade for the States and Union Territories in the growth I is much higher than that of the regional average as in the case of Tripura. In the second group, the average growth rate is lower than the regional growth rate except for the period of 1941-51 and 1961-71, which is slightly higher than the regional norm. Meghalaya recorded the lowest growth rate while Assam recorded the highest growth rate. The average growth rate in this group was almost equal to that of regional average in 1961-71, but has declined in 1971-81.

At this stage, it would be worthwhile to examine the intra-regional i.e. inter-decadal variations in the population growth rates by using coefficient of variation and rank correla-

*North-Eastern Region has been taken as the norm because all the States and Union Territories in this region show higher growth rate than the national rate (186.84 percent).

TABLE 3.3: Population Growth in Different States and Union Territories of North East India during 1901-81. 116

Group	States or Union Territories	Growth rate 1901-81	Average decadal growth rate 1901-81
I	Tripura	1081.22	36.99
	Nagaland	661.46	23.03
	Assam	505.01	25.42
II	Mizoram	491.71	25.44
	Manipur	396.15	22.57
	Meghalaya	290.09	18.89
	North East India	510.75	25.67
	All India	186.84	14.38

Source: Calculated by the Author.

TABLE 3.4: Average Decadal Growth Rate in Different States and Union Territories of North East India during 1901-91.

Group	1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1971-81
I	39.62	19.57	19.13	20.09	16.58	46.39	38.08	40.64
II	16.26	11.88	19.05	18.43	17.53	33.17	32.23	36.43
North East India	24.05	14.28	19.08	18.98	17.21	37.57	34.18	37.83

Source: Calculated by the Author.

tion of population growth rates. The value of range of population growth rates in different regional units were 36.12 percent in 1901-11, 26.04 percent in 1911-21, 13.80 percent in 1921-31, 28.10 percent in 1931-41, 19.82 percent in 1941-51, 64.64 percent in 1951-61, 14.95 percent in 1961-71 and 18.43 percent in 1971-81 respectively. This shows that the degree of variation is highest in 1951-61 and was lowest in 1921-31. It may be noted that during the first quarter of this century the mortality rate was comparatively high. During the decade of 1951-61, the unusual high rate of growth can reasonably be attributed to the partition of the country and the consequent influx of refugees and immigrants into the North East India*.

Coefficient of variation of population growth rates for different decades may indicate the nature of comparability of the constituent decades. A high coefficient of variation may indicate independent processes of population growth in different decades while a low value may indicate similar, if not identical process of growth. On the contrary, a decreasing level of decadal variations may indicate a growing compatibility. Table 3.5, summarises the decadal variations in percentage (CV's), and it throws some interesting lights on the issue of intra-regional (NER) compatibility of population growth process (Fig. 3.1)

*This shall be dealt in details in Migration chapter of the present study.

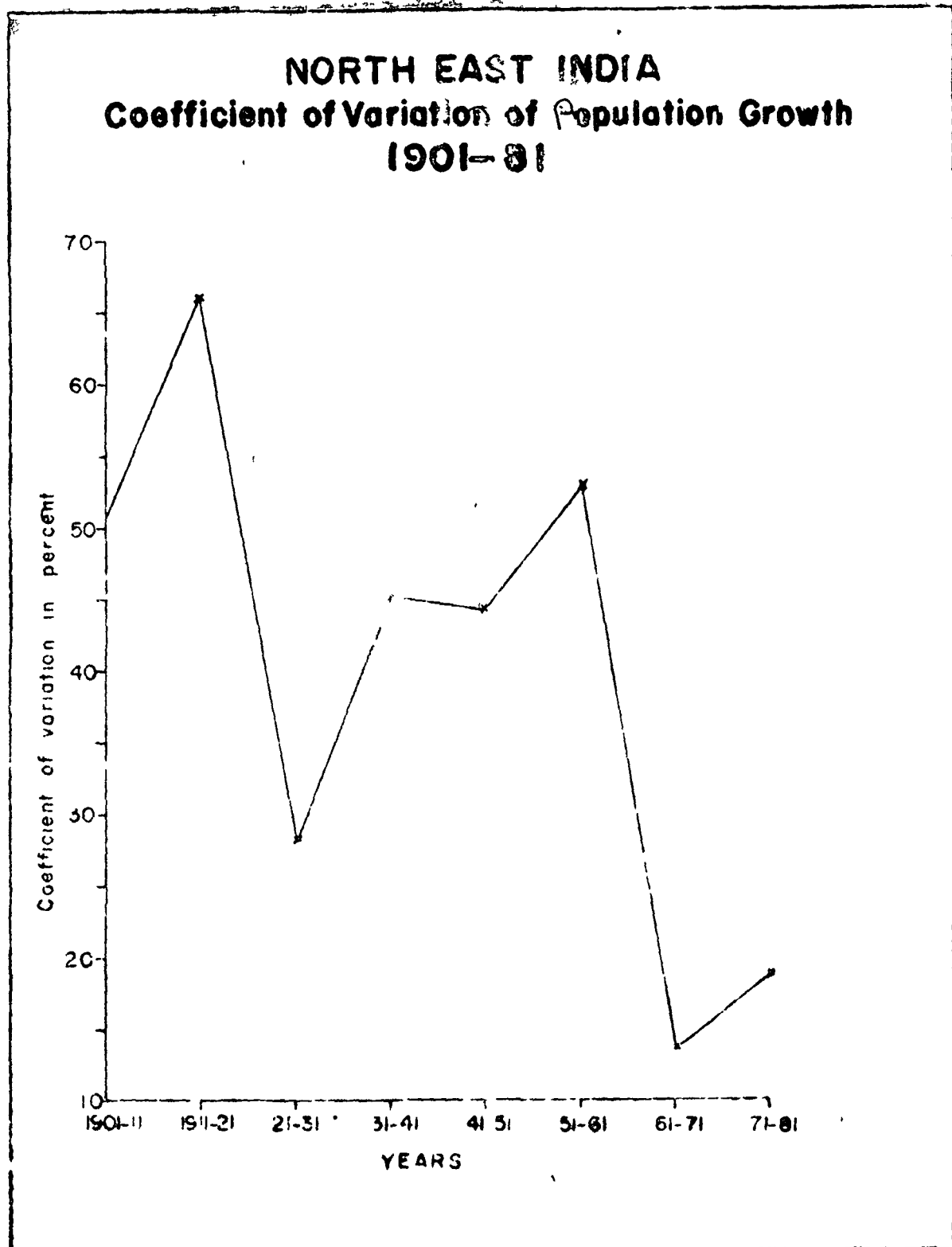


TABLE 3.5: Mean and coefficient of variation of population growth for different decades during 1901-81 in North Eastern Region

Year	Mean	Standard Duration	Coefficient of variation (in percent)
1901-11	24.05	12.19	50.69
1911-21	14.28	9.45	66.18
1921-31	19.08	5.42	28.39
1931-41	18.98	8.58	45.21
1941-51	17.21	7.62	44.28
1951-61	37.57	19.89	52.93
1961-71	34.57	4.79	13.74
1971-81	37.33	7.13	19.10

Source: Calculated by author.

TABLE 3.6: Rank correlation coefficient of population growth among the States and Union Territories for different decades.

1901-11 to 1911-21	1911-21 to 1921-31	1921-31 to 1931-41	1931-41 to 1941-51	1941-51 to 1951-61	1951-61 to 1961-71	1961-71 to 1971-81
0.029	0.657	0.886	0.886	0.886	-0.314	0.257

Source: Calculated by author.

Rank correlations of decadal growth rates show that the coefficient significantly increased from the first decade of the century to a very high degree upto 1961. But, after 1961, there is a considerable change in the pattern of population growth due to the factors of immigrations indicated earlier. The negative rank ~~coefficient~~ ^{correlation} between 1951-61 and 1961-71 and a considerable low value for 1961-71 and 1971-81, indicate the reversal and the growing competitiveness of the process of population growth in the North Eastern Region*. *Table 3.6.*

Table 3.7, represents the sub-regional patterns of growth (i.e. at the States level) and variations in growth rates, indicate that the decadal average growth rate is the highest in Tripura (36.99 percent) followed by Assam and Mizoram. The lowest average decadal growth of 18.89 percent is observed in Meghalaya. Maximum of intra-state variation in the population growth rates is recorded in Nagaland (77.02 percent) followed by the State of Meghalaya and Mizoram. When the coefficient of variation are compared with the regional average, it is observed that higher variations are mainly due to the sporadic nature of the high growth rates in a few decades, rather than a consistent high rate of growth over the decades except for the state of Assam where it has been fairly consistent (Fig. 3.2) i-vii) (Appendix 3.2).

*As indicated earlier on the points of Table 3.5

EXPONENTIAL GROWTH OF POPULATION

1931-81

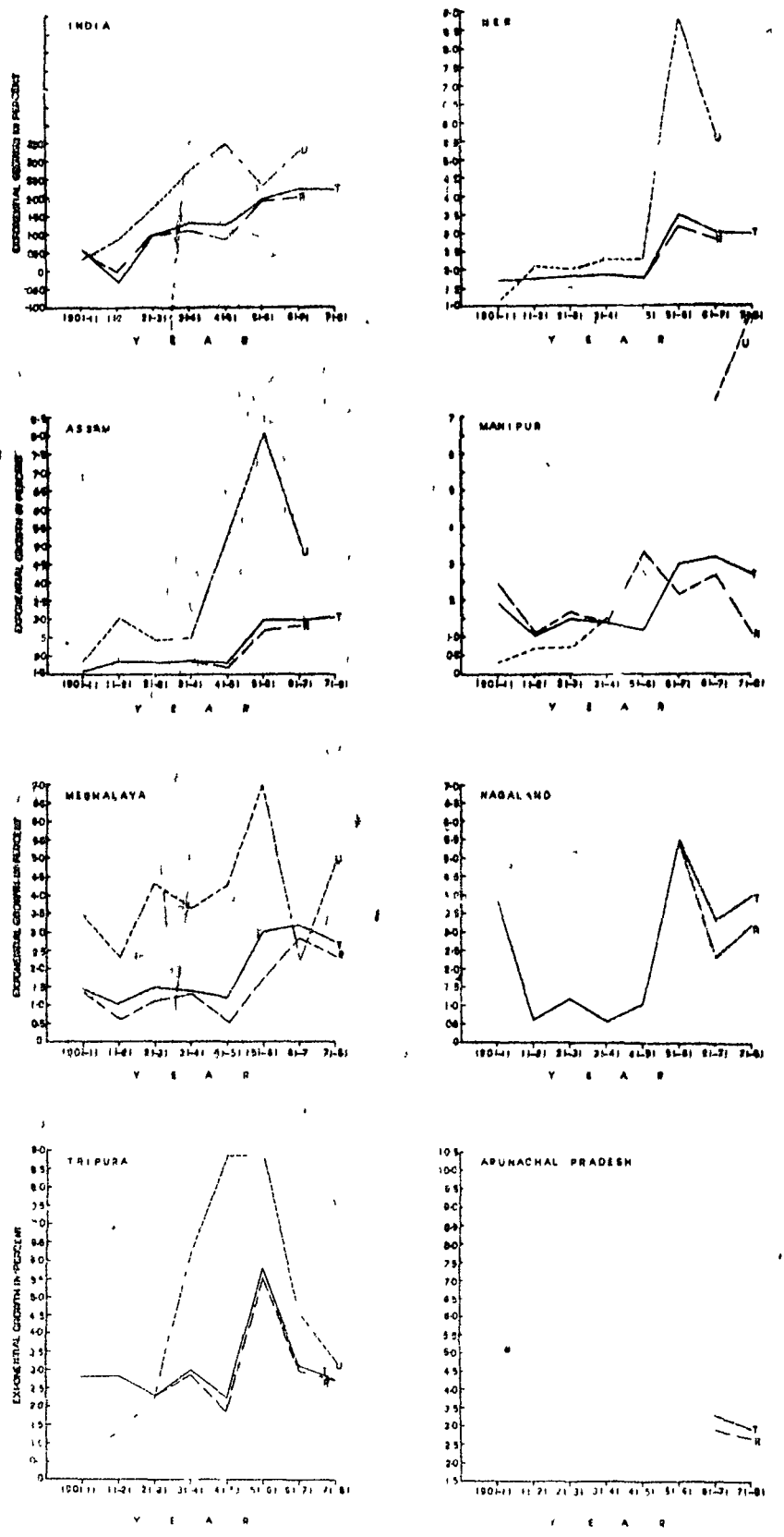


Fig 3 a

TABLE 3.7: Mean, Standard Deviation (S.D.) and Coefficient of variation (C.V. in percent) of Population Growth.

State/Union territory	Mean	S.D.	C.V. (percent)
Assam	25.47	7.72	30.33
Manipur	22.57	9.96	44.13
Meghalaya	18.89	9.09	48.10
Nagaland	23.03	17.74	77.02
Tripura	36.99	16.21	43.82
Mizoram	25.44	11.73	46.13
North East India	25.67	8.69	33.85

Source: Calculated by author.

EXPONENTIAL TREND OF POPULATION GROWTH IN NORTH EAST INDIA 1901-81:

Table 3.8, which gives the exponential growth pattern in the region for the period 1901-81, reveals that, for all the decades from 1901 to 1981, the growth rate in North East India is quite high as compared to the national average. The estimation of the parameters and necessary calculations have been given under Methodology. During the decade of 1901-11 and 1911-21*, when the

*The 1911-21 period was the natural calamity prone period for the Central & Northern province, that is why the growth rate has declined to negative.

population growth rate of the country were very low i.e. 5.6 percent and -0.3 percent respectively, it was fairly high in the North East India (16.9 percent and 17.1 percent respectively). The maximum growth of 34.6 percent was observed for the region in 1951-61. The reason for a very high growth rate of population

TABLE 3.8: Exponential Growth Rate in North East India during 1901-81.

State/Union territory	1901	1911	1921	1931	1941	1951	1961	1971
	-11	-21	-31	-41	-51	-61	-71	-81
Assam	15.7	18.6	18.2	18.6	18.2	30.0	30.0	30.8
Manipur	19.6	10.4	14.9	13.9	12.0	30.0	31.9	27.4
Meghalaya	14.6	7.0	13.0	14.5	8.6	23.9	27.4	27.2
Nagaland	38.4	6.3	11.9	5.9	11.6	55.0	33.6	40.4
Tripura	28.1	28.2	22.8	29.4	22.0	58.1	31.0	27.4
Arunachal Pradesh	-	-	-	-	-	-	-	-
Mizoram	10.1	7.6	23.4	20.6	25.0	30.5	22.3	38.4
North East India	16.9	17.1	17.8	18.4	17.4	34.6	30.0	28.7
All India	5.6	-0.3	10.4	13.3	12.5	19.6	22.2	22.1

Source: Census of India, 1971, Part II-A(1), India, and Provisional Population Tables for all States and Union Territories 1981.

in the region (34.6 percent) during 1951-61 over the All India figure of 19.6 percent during the same period has already been attributed to immigration from neighbouring states as well as from the erstwhile East Pakistan (now Bangladesh).

From Table 3.8, it is observed that, the state of Nagaland had a very low rate of exponential growth as low as 5.9 percent during 1931-41. The corresponding figure for the country was 13.3 percent. During 1941-51 in comparison to India's decadal growth rate of 12.5 percent the state of Manipur (12.0 percent), Nagaland (11.6 percent) and Meghalaya (8.6 percent) have invariably shown lower figures (Fig. 3.3).

The variation of the exponential growth rates ranges from 5.9 percent during 1931-41 in Nagaland to 58.1 percent during 1951-61 for Tripura. Tripura maintained a high rate of growth of population for the entire period except for 1971-81. The state of Assam has maintained a population growth rate on the heels of the region. Nagaland has shown high decade fluctuations upto 1951, but thereafter, the rates have shown a steady upward trend.

DIFFERENTIAL GROWTH OF POPULATION, SEX-WISE:

The proportion of females in the population recorded a continuous decline upto 1951 in the region, which on an average

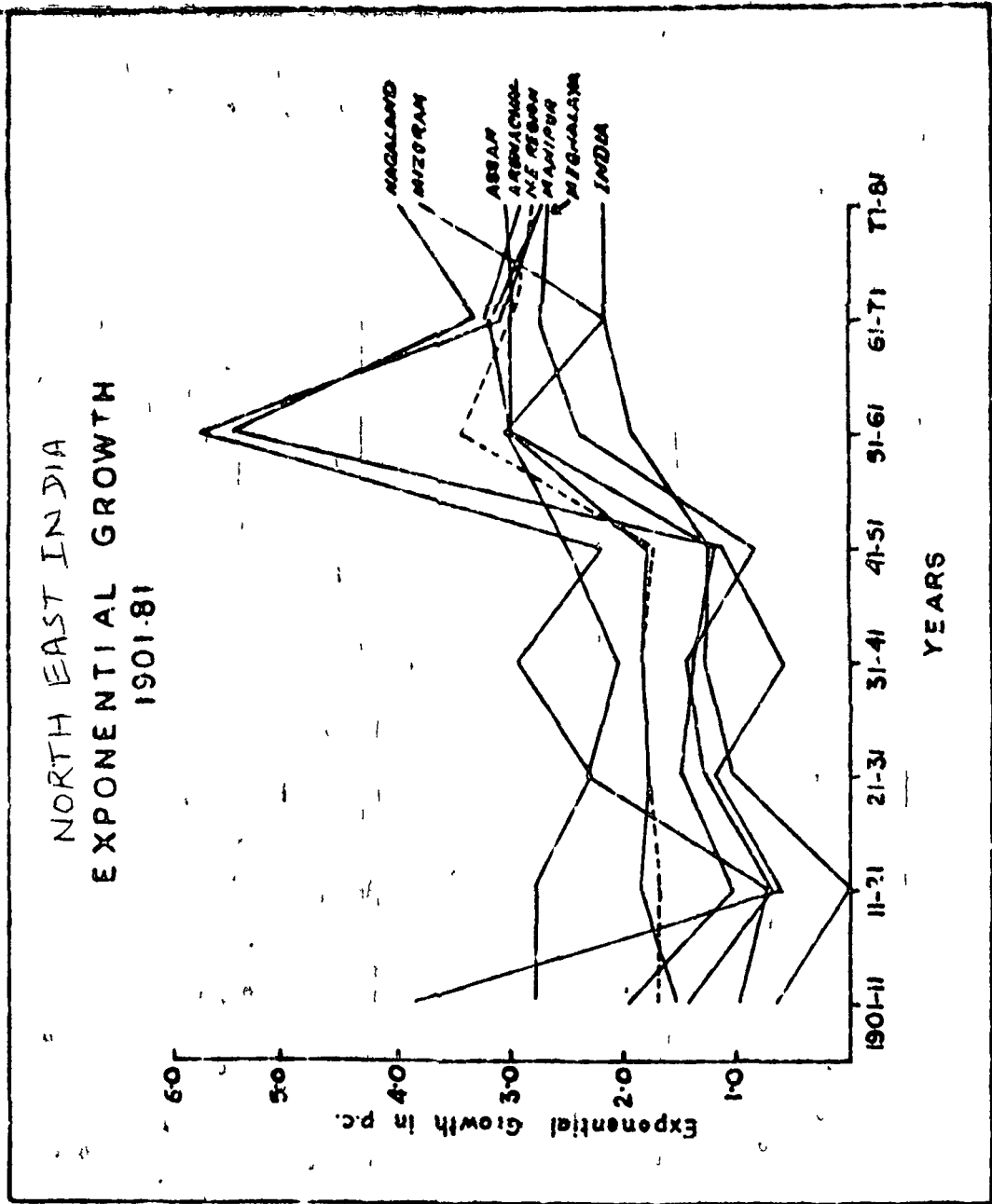


Fig-3-3

follows the pattern of a decreasing sex ratio for the country as a whole*. In the region, for 1961, sex-ratio stood at par with the 1951 ratios. In 1971 and 1981, it has recorded an increase to the extent of 909 in 1981 compared to 889 in 1951. During the 80 years period from 1901-1981, the region has recorded a low sex ratio compared to the country as a whole. (Table 3.9). There were 938 females per 1000 males in the region at the beginning of the century. The proportion decreased to 889 in 1961 and has then increased to 909 in 1981. It shows that the net decrease during the 80 years was to the extent of 29 females per 1,000 males as compared to the country (37 females per 1,000 males) for the same period.

Figure 3.4 shows that there is a general paucity of females in the region from 1901-81 except in Tripura where the sex ratio is somewhat higher. The possible reason for this increase in Tripura, it seems the immigrants are more dominated by female and childrens that might have changed the sex-ratio. Assam is the only state which maintains the sex ratio well below the national and regional averages. Tripura on the other hand shows that the ratio was far below to both national and

*Only in 1981, Census, the sex ratio of the country shows an increase from 930 in 1971 to 935 in 1981.

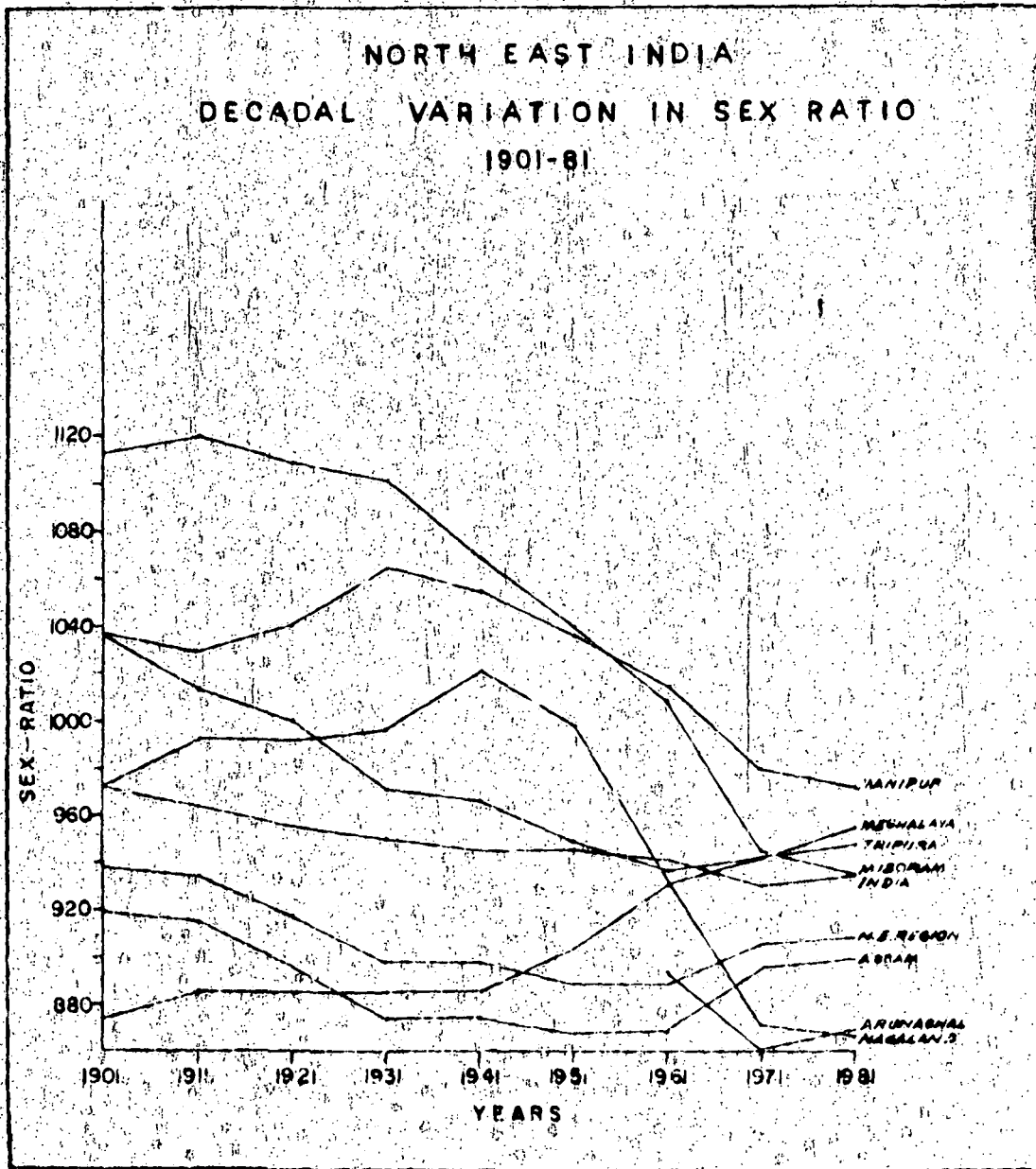


Fig 34

TABLE 3.9 : DECADAL VARIATION IN SEX RATIO OF POPULATION

	1901	1911	1921	1931	1941	1951	1961	1971	1981
Assam	919	915	896	874	875	868	869	896	900
Manipur	1037	1029	1041	1065	1055	1036	1015	980	972
Meghalaya	1036	1013	1000	971	961	949	937	942	955
Nagaland	973	993	992	997	1021	999	933	871	867
Tripura	874	885	885	885	886	904	932	943	948
Arunachal Pradesh	1048	1041	1041	-	-	-	894	861	870
Mizoram	1113	1120	1109	1102	1069	1040	1009	946	936
North Eastern Region	938	934	917	898	898	889	889	906	909
All India	972	964	955	950	945	946	941	930	935

Source: Census of India 1971, Part II-A(1), General Population Tables, India.

regional values upto 1941. But from 1951 onwards it has surpassed the regional average by 15 numbers in 1951; in 1971 and in 1981, it has surpassed the national values by 13 numbers. The interesting feature emerges from the Mizoram's figures where the sex ratio was highest in the country in 1901, has reached at par with the country by 1981. The sex ratio in Tripura was in the lowest side and has crossed the national norm in 1971, a complete reversal of the picture in two adjoining regions.

DIFFERENTIAL POPULATION GROWTH, RELIGIONWISE:

The religious groups in this region show different trends of growth during 1951-71. Hindus recorded an increase in the growth from 37.89 percent to 39.16 percent during 1951-61 and 1961-71. Other religious groups have recorded decreasing trend for the region for the same period whereas the All India figures are completely different.

Table 3.10 reveals the differing patterns among the states. The growth of Hindus was highest in Nagaland (299.97 percent) during 1951-61 which came down to only 70.23 percent in 1961-71. The states and union territories which show higher growth than the regional average for 1951-61 and 1961-71 are Assam and Manipur in 1951-61 and during 1961-71, Meghalaya also joined them.

Muslim population recorded lowest growth after independence in the region and showed great variations among the component regional units. Tripura for example, shows that the growth has declined to the extent of (-54.80 percent) during 1961-71. Nagaland has recorded a higher increase during the decade. Christians and Jains are the two religious groups that have recorded a decline in their growth during 1961-71 over 1951-61 for all states in the region. Buddhists in Nagaland have gained tremendous increase during 1961-71 over 1951-61. It may be due to immigration.

It is therefore, clear that the population of different religious groups have increased in a different manner than the pattern of the country. The Hindus recorded higher rates than the Muslims. Others have recorded quite higher growth than the Hindus and Muslims during 1951-71.

DIFFERENTIAL POPULATION GROWTH, CASTEWISE:

The rates of population growth also differs by castes. The growth among Scheduled Caste was 30.00 percent whereas it was only 23.94 percent for the country as a whole during 1961-71. In case of Scheduled Tribes, the region had higher growth (31.56 percent) compared to the national average (25.48 percent). The growth rate in states or union territories vary from 22.43 percent

TABLE 3.10 : RELIGIONWISE GROWTH IN NORTH EAST REGION DURING 1951-71.

	Assam	Manipur	Meghala- ya	Nagaland	Tripura	Aruna- chal Pradesh	Mizoram	North Eastern Region	All India	North Eastern Region 1951-71	All India 1951-71
Hindu											
1951-61	33.67	38.52	46.21	299.97	88.58	-	112.95	37.87	20.29	91.86	49.32
1961-71	37.18	31.49	33.25	70.23	60.56	-	58.08	39.16	23.69		
Muslim											
1951-61	38.29	30.62	86.05	71.35	67.96	-	56.96	40.28	25.61	74.99	73.43
1961-71	30.99	46.06	14.46	232.88	-54.80	-	827.09	24.70	30.85		
Christian											
1951-61	654.75	122.30	81.30	99.44	90.78	-	29.82	70.28	27.38	170.41	69.49
1961-71	44.80	83.66	75.43	76.29	56.52	-	24.13	58.81	32.60		
Sikh											
1951-61	111.27	946.00	41.36	61.39	40.00	-	300.00	150.79	25.13	273.14	66.88
1961-71	42.84	96.56	-5.33	169.41	548.98	-	5237.50	48.79	32.28		
Buddhist											
1951-61	70.24	804.85	168.00	-10.64	118.89	-	55.70	85.24	1670.71	136.28	131
1961-71	34.46	52.31	85.76	326.19	25.42	-	20.98	27.56	17.20		
Jains											
1951-61	123.21	418.67	168.75	1246.05	441.67	-	-	141.57	25.17	251.95	60.9
1961-71	38.71	80.98	107.75	138.40	92.31	-	89.66	45.69	28.48		

Source: Based on Religion Tables 1961 and 1971.

TABLE 3.11 : SCHEDULED CASTE/SCHEDULED TRIBE GROWTH, 1961-71.

	Population Scheduled Caste		Scheduled Caste (%)	Scheduled Tribe (%)	Population Scheduled Tribe	
	1961	1971			1961	1971
Assam	732751	912557	24.54	-10.93	1803802	1606648
Manipur	813376	16376	22.43	34.30	249049	334466
Meghalaya	1261	3887	208.25	27.39	639161	814230
Nagaland	126	-	-	33.14	343697	457602
Tripura	119725	192860	61.09	25.13	360070	450544
Mizoram	5	82	1540.00	20.03	261014	313299
North Eastern Region	865983	1125762	30.00	31.56	3022827	3976789
All India	64543670	79995896	23.94	25.48	30296008	38015162

Source: Based on Census of India 1961 and 1971, Social and Cultural Tables, India.

for Manipur to 1540.00 percent for Mizoram in case of Scheduled Castes. In case of Scheduled Tribes, Assam had recorded a growth rate of -10.93 percent while Manipur recorded the highest rate of growth by 34.30 percent. In Mizoram, the population of Scheduled Castes have increased from 5 to 82 persons only, the base effect will be quite clear through the analysis of growth rates.

TRENDS OF POPULATION GROWTH:

From the Appendix-A3.12, it is clear that the population of the region has increased by 154.3 percent as against 89.4 percent for the entire country during 1951-81. From the Table 3.12, it can be seen that from 1901 onward the index of growth for the region is showing an upward trend whereas during 1921,

TABLE 3.12: Indices of Growth of Population 1901-81

	(1901 = 100)								
	YEAR								
	1901	1911	1921	1931	1941	1951	1961	1971	1981
India-	100	106	105	117	134	151	184	230	287
NER -	100	116	124	141	163	178	226	297	607

Source: based on Tables 3.1 & 3.2

the index has declined from 106 to 105 for the entire country. In the region the index has increased more than six fold over the 80 years, while for the country, it was nearly three fold. Thus, it may be said that this sudden increase in the growth of population in this region may be due to⁴ (i) the strong immigration from other parts of the country, (ii) the ratio of immigrants to local people is quite high, and (iii) a very sharp decline in death rate of the region, which is not very true.

The universally accepted principle in Demographic study "Logistic Law"⁵ gives the best fit to the natural growth of population. For India, it is found that this law fits well whereas for the North Eastern Region Logistic Curve of population growth does not fit well. It also shows that the natural growth of population in North East India is obscured by migration. The population figures for the region give the upper limit of population as negative value (i.e. $L = -109.22$) which is absurd value for the Logistic Law, as this value (L) can never be negative if the population shows only natural increase. Therefore, for the

4. R.K. Rai & N.P. Goel: Trends of Population Growth in Meghalaya, Journal of Social Sciences, NERC, ICSSR, NEHU, Shillong, Vol.1, March 1981, pp.48-53

5. P.R. Cox: Demography, Cambridge University Press, 1957.

region the universally accepted principle is not applicable. Another principle for the study of Demography was suggested by Makeham,⁶ a well known statistician. He suggested a law for graduation of the population, which is known as Makeham's Law of graduation. It is found that Makeham's law fits well for the region as well as for the constituent units of the region. The population figures for the region from 1901 to 1981 gives the values of the constants (A & B) as 94.65 and 1.25 respectively, whereas for the country are 35.04 and 1.14 respectively for the same period.

From the law of graduation by Makeham, the population of North East India and country has been estimated and are presented in Table 3.12. The actual and estimated values have been plotted on the graph [Fig. 3.5 (i & viii)]⁷. The graph gives an idea about the actual and estimated trend of population growth. It reveals that the computed value by using Makeham's Law is almost same as the actual values.

In order to test whether the Makeham's law of Graduation is the best fit for the population growth of the region and the country, Chi-Square⁷ (χ^2) test has been used. It has been recorded

6. R.R. Kuczynski: "The Measurement of Population Growth", Sidgwick and Jackson, 1935.

7. M.G. Kendall: The Advanced Theory of Statistics, Charles Griffin and Co., London, (1945), pp.309-319.

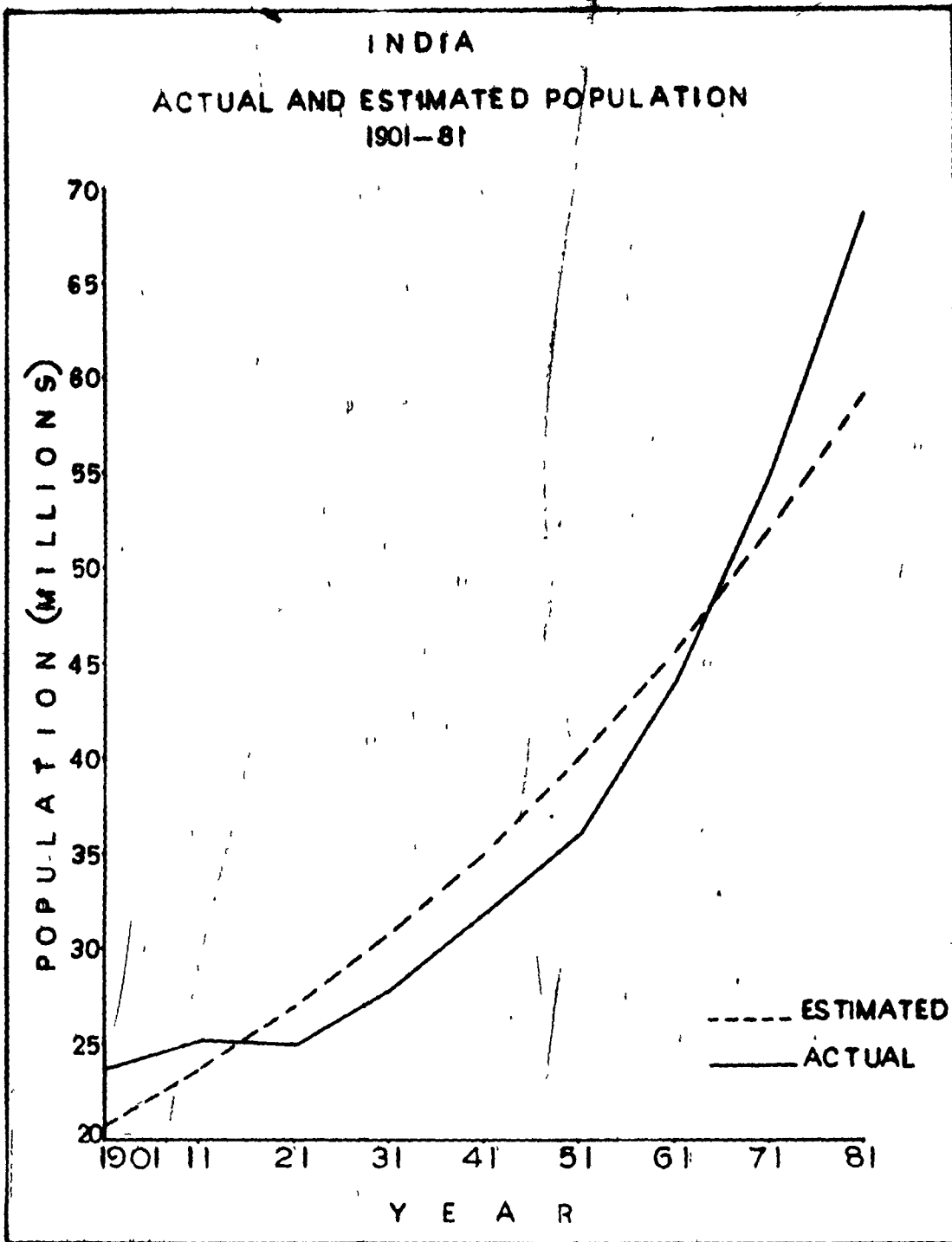


Fig 35(i)

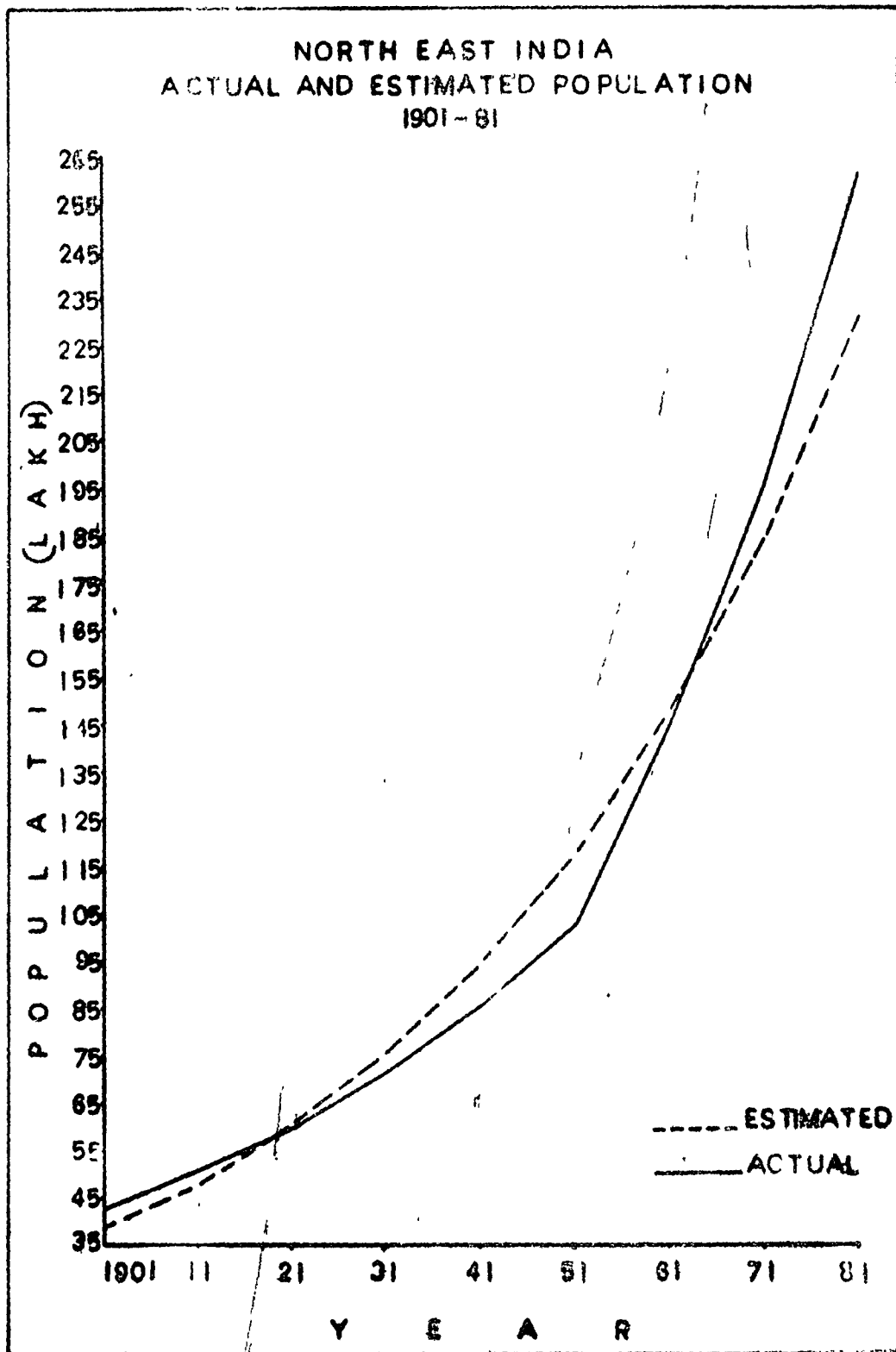


Fig 3-5(i)

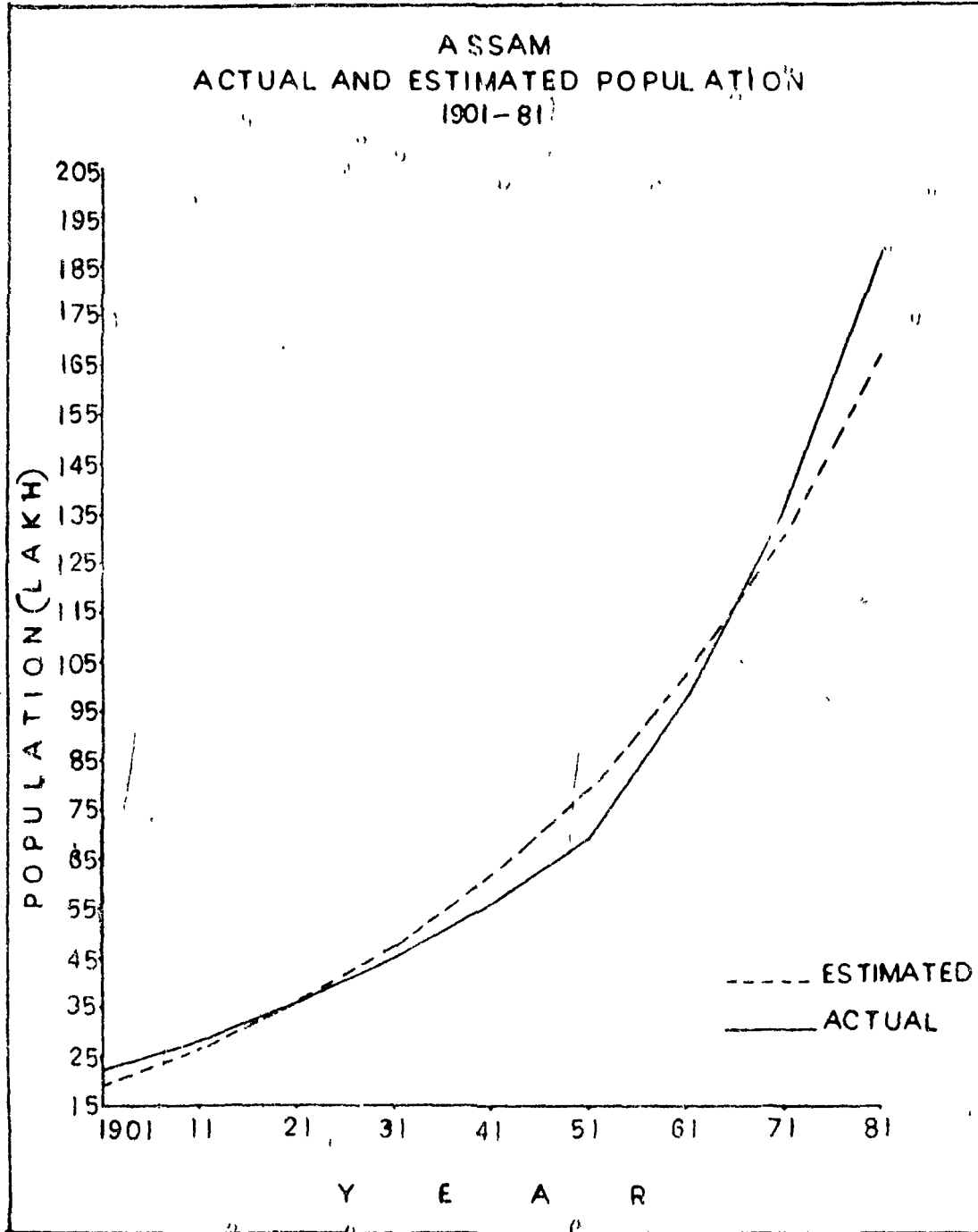


Fig 3.5(ii)

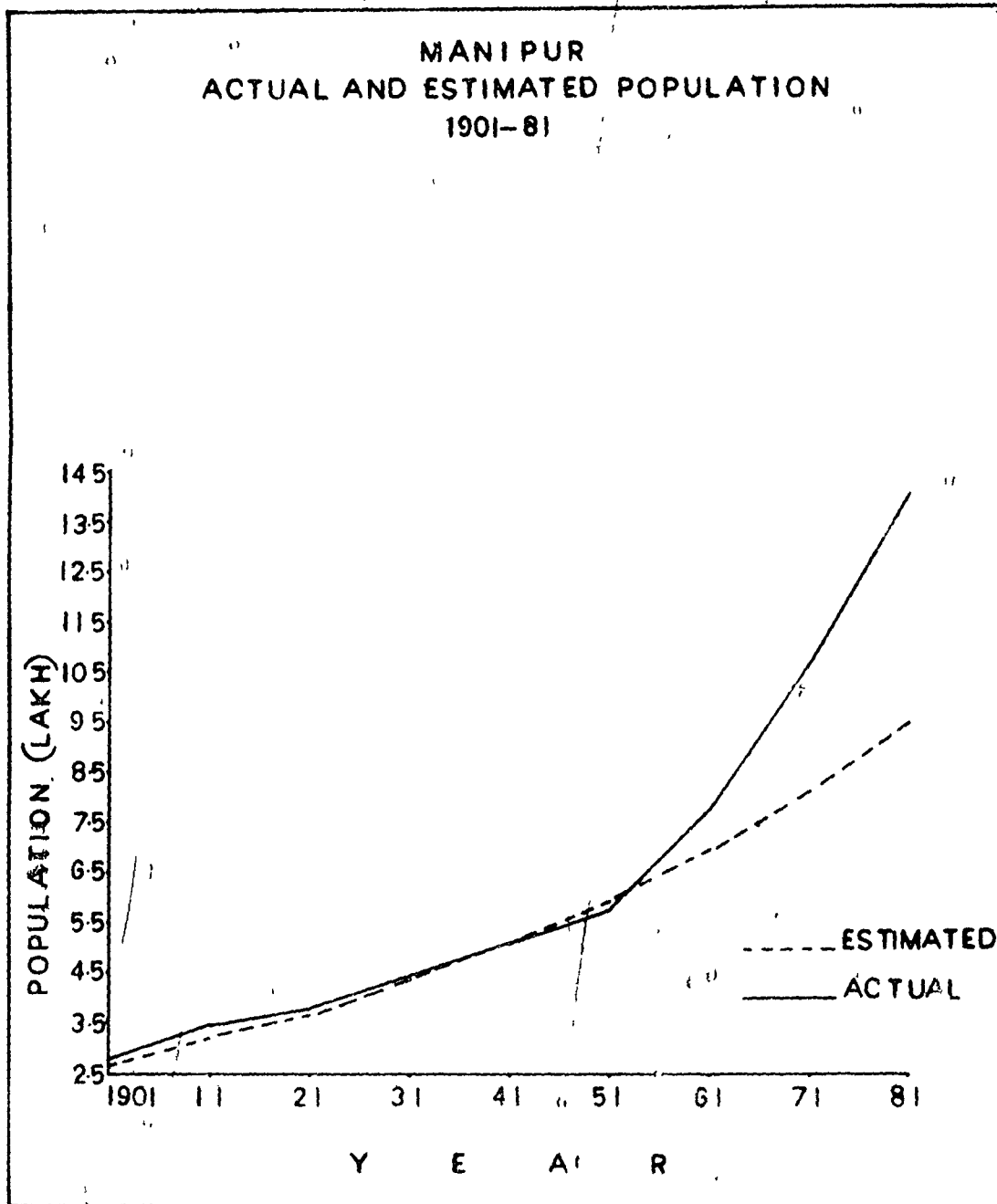


Fig 3.5 (iv)

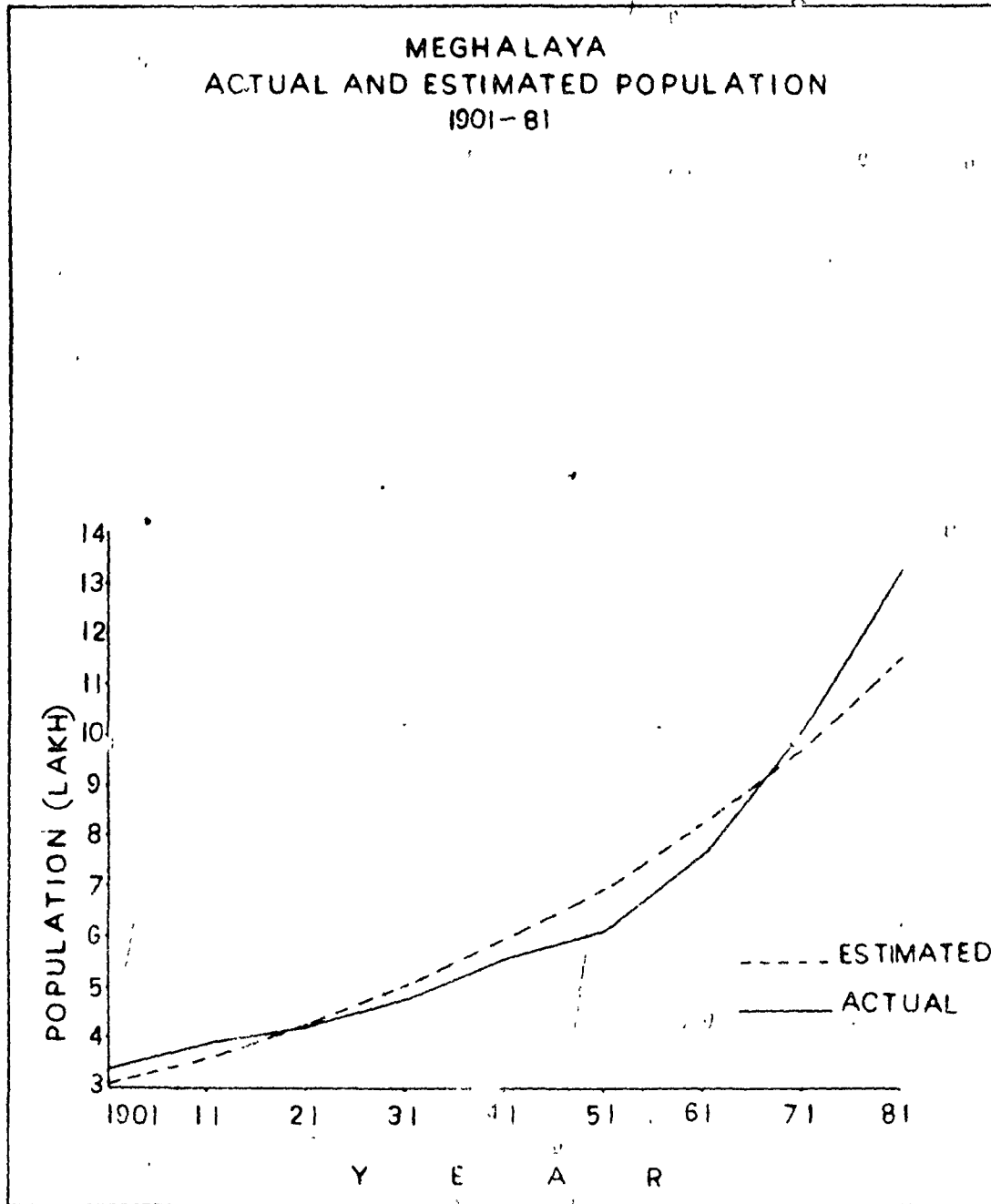


Fig 3.5(v)

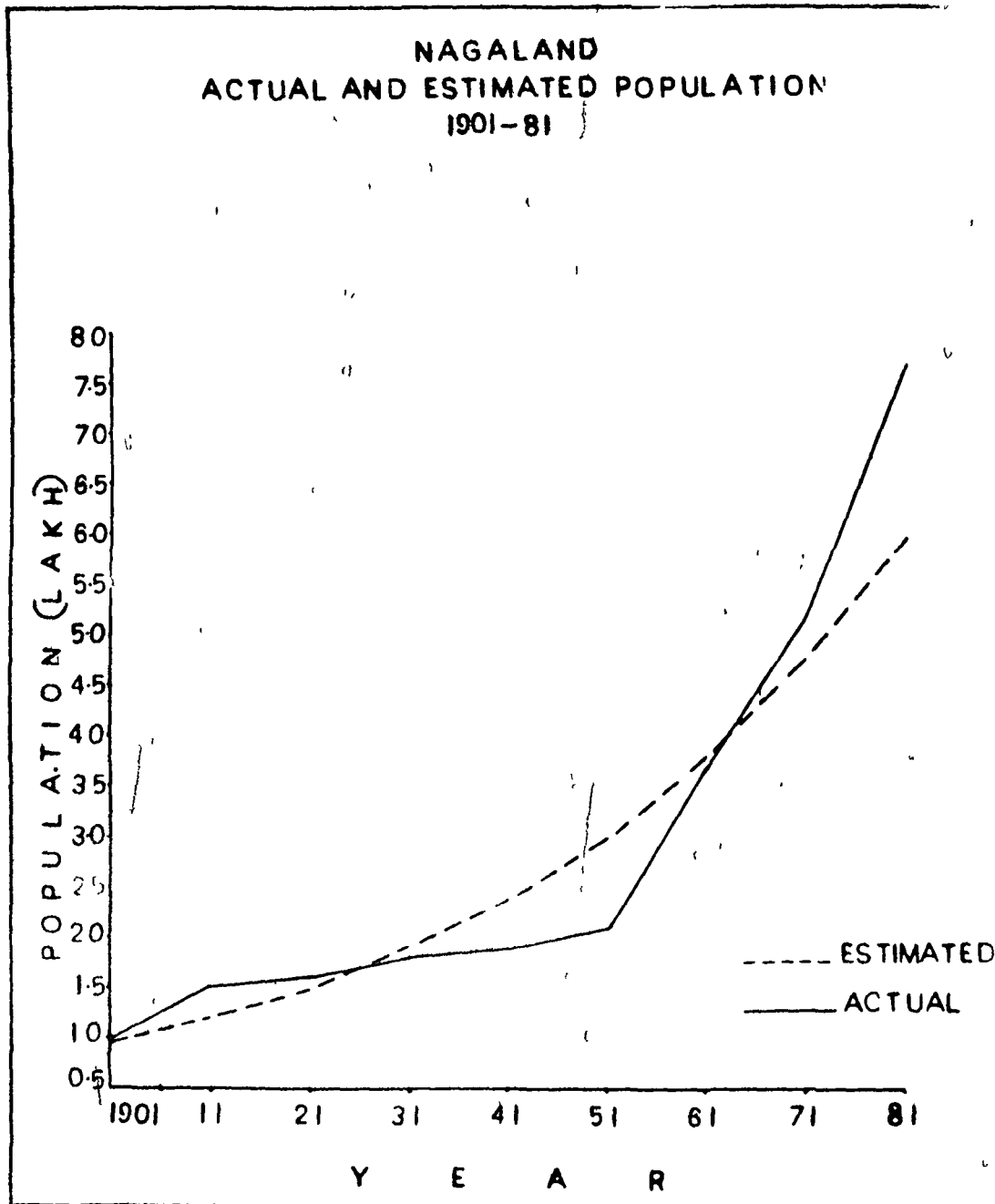


Fig 3-5(G)

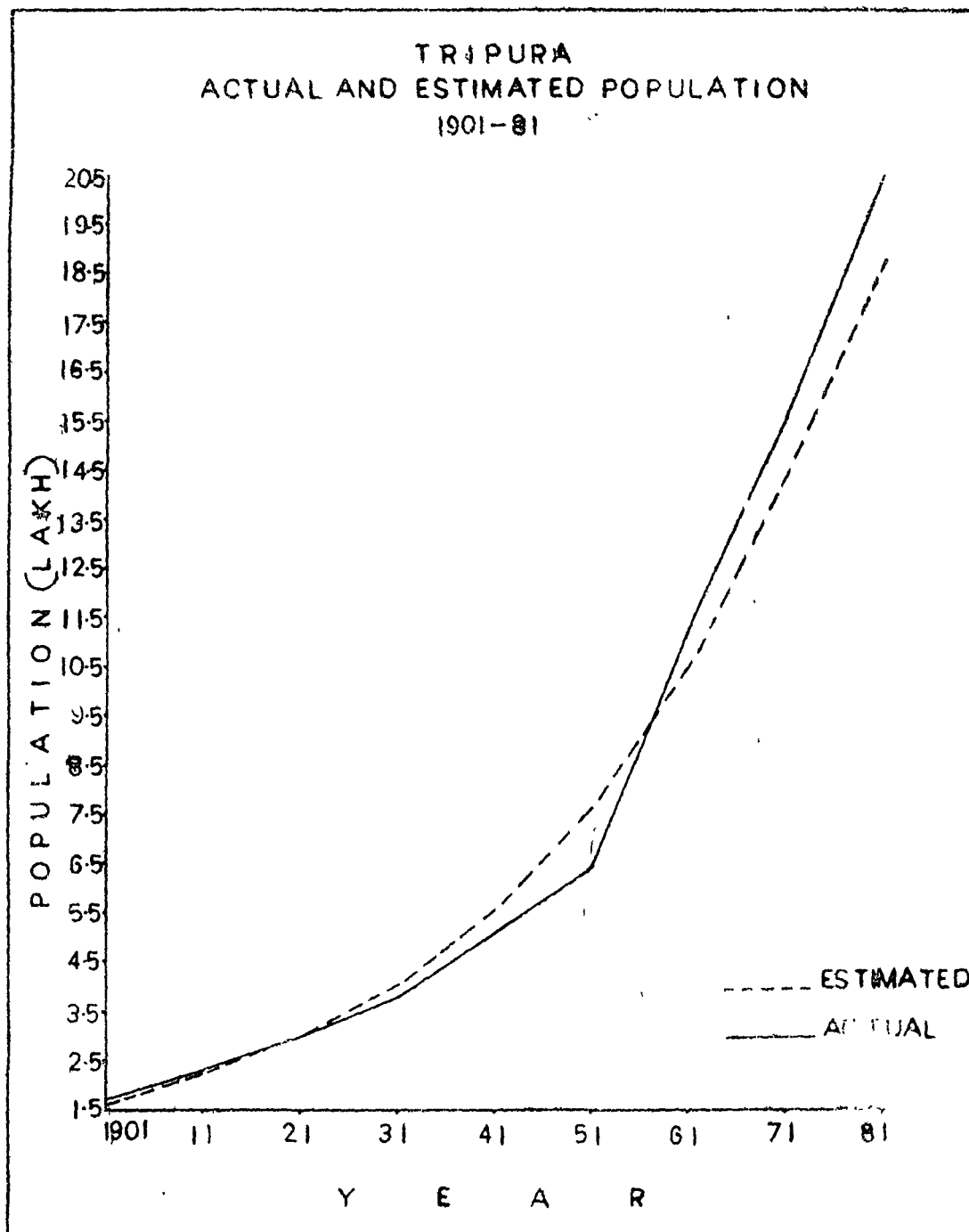


Fig 3.5(vii)

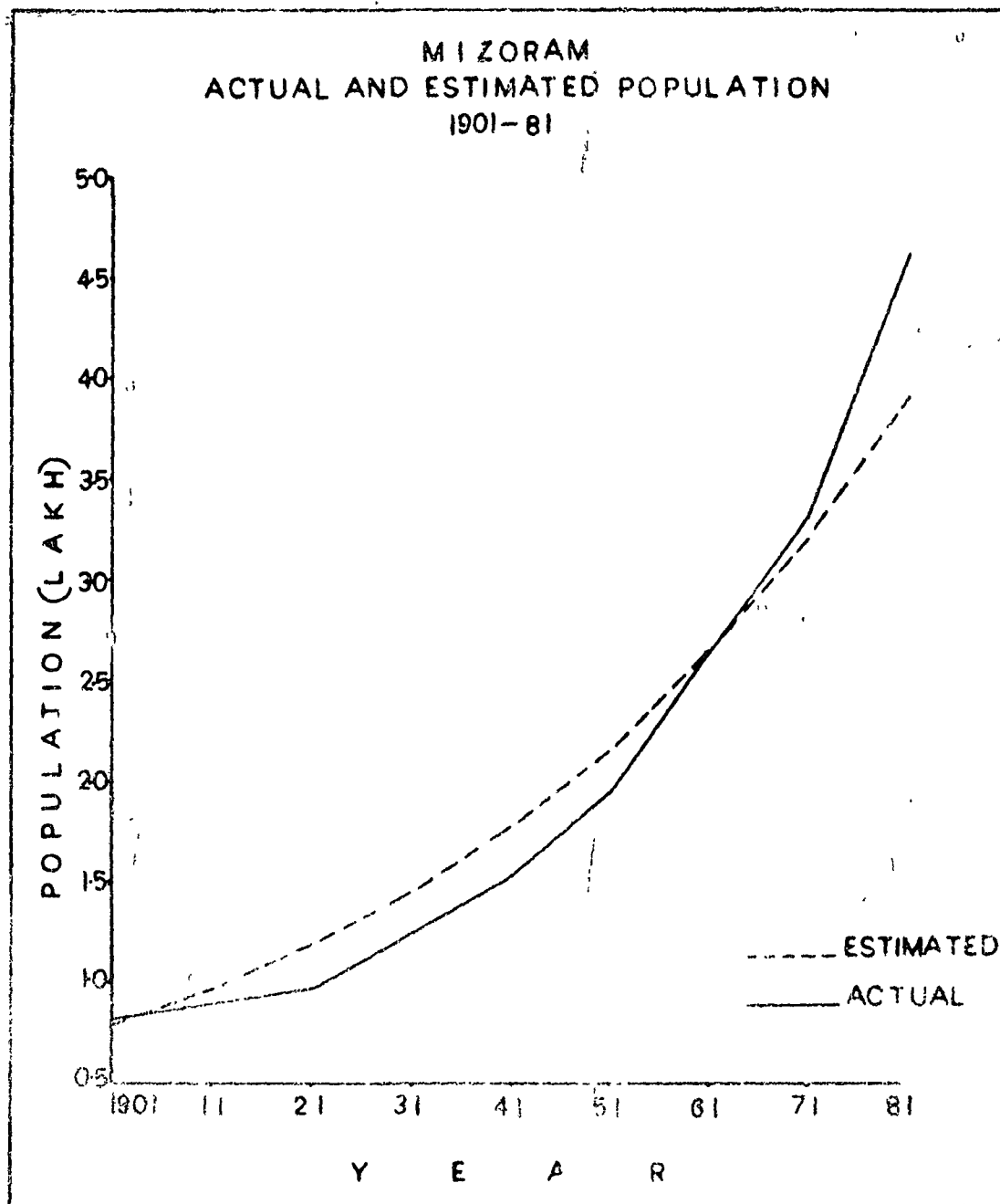


Fig 3.5 (viii)

TABLE 3.13 : ACTUAL AND COMPUTED VALUES OF POPULATION IN NORTH EAST INDIA AND ALL INDIA DURING 1901-81.

(Figures in 00000)		(Population in 000000)								
States/Union Territories		1901	1911	1921	1931	1941	1951	1961	1971	1981
Assam	Observed	32.90	38.49	46.37	55.61	66.94	80.24	108.37	146.25	199.03*
	Expected	29.70	37.12	46.40	58.00	72.50	90.63	113.28	141.60	177.00
Manipur	Observed	2.84	3.46	3.84	4.46	5.72	5.78	7.80	10.73	14.11
	Expected	2.73	3.19	3.73	4.37	5.11	5.98	7.00	8.18	9.58
Meghalaya	Observed	3.41	3.94	4.22	4.81	5.56	6.06	7.69	10.12	13.28
	Expected	3.07	3.63	4.28	5.05	5.96	7.03	8.30	9.79	11.56
Nagaland	Observed	1.02	1.49	1.59	1.79	1.90	2.13	3.69	5.16	7.73
	Expected	0.95	1.20	1.51	1.90	2.39	3.02	3.80	4.79	6.03
Tripura	Observed	1.73	2.30	3.04	3.82	5.13	6.46	11.42	15.56	20.47
	Expected	1.60	2.19	2.99	4.10	5.62	7.70	10.55	14.45	19.80

TABLE 3.12 (Contd.)

States/Union Territories		1901	1911	1921	1931	1941	1951	1961	1971	1981
Mizoram	Observed	0.82	0.91	0.98	1.24	1.53	1.96	2.66	3.32	4.88
	Expected	0.80	0.98	1.19	1.45	1.77	2.16	2.64	3.22	3.93
North Eastern Region	Observed	42.72	50.59	60.05	71.73	86.18	102.60	145.01	195.82	260.91
	Expected	38.77	48.46	60.58	75.72	94.05	118.31	147.89	184.86	231.08*
All India	Observed	23.83	25.20	25.12	27.89	31.85	36.10	43.91	54.80	68.38
	Expected	20.75	23.65	26.96	30.74	35.04	39.95	45.84	51.91	59.18*

* - The higher difference in 1981 figures may be due to the projected values for Assam and J & K.

Source: Calculations based on Appendix A.3.1.

that the computed value of X^2 is 8.1116 for North East India, whereas 3.2680 for the country as a whole. The tabulated value of X^2 is 18.17 and 15.51 at 1 percent and 5 percent confidence levels and at 8 degrees of freedom. When compared the two values i.e. computed and tabulated values of X^2 , it is found that the tabulated value is quite high than the computed values. Therefore, the difference between the actual and estimated values of population is quite insignificant. Hence, the hypothesis, that the Makeham's curve gives the best fit to the population of North Eastern Region as well as to the country

The states and union territories of the region also followed the same pattern as that of the region. The Logistic Curve does not fit well in the case of states and union territories of the region.

BIRTH AND DEATH RATES:

An attempt has been made to estimate the birth and death rates for the female population of the states and union territories of the region by using certain standard methods.⁸¹ The following Table 3.13 gives the values of birth and death rates

8. N.P. Goel: Fertility and Mortality in India, 1961-71
Mimeograph, IIPS, Bombay 1973.

TABLE 3.13: Estimates of Birth Rate and Death Rate in North East India for Female Population 1961-71.

State	Coale & Demney		Baurgeois Pichat		Reverse Survival ratio	
	B.R.	D.R.	B.R.	D.R.	B.R.	D.R.
A. Assam	52.71	21.43	56.35	25.07	50.09	18.81
B. Manipur	41.61	13.06	44.73	15.98	47.82	19.07
C. Meghalaya	50.89	30.39	47.72	27.22	45.84	25.34
D. Nagaland	36.64	9.34	36.30	9.00	40.19	12.89
E. Tripura	42.00	14.43	42.67	15.10	43.95	16.38

Source: Based on Age Table 1961 & 1971.

of population during the period 1961-71. From the table, it is clear that the median birth rate based on different methods lies in between 36.64 per 1000 in case of Nagaland, (the least value) and 52.71 per 1000 in case of Assam (the highest). There is a noticeable amount of consistency in the results obtained by using the three methods for all the states of the region. From the above table, it can be said that Assam had the highest birth rate whereas Nagaland showed the lowest. Nagaland had shown that it has lower birth rate compared to the country (41.0 per 1000)

as was estimated by Registrar General of India⁹ (RGI). When compared with the RGI figures, it is found that the rates for Assam are more or less same with the rates estimated by methods used here.

FINDINGS:

The analysis of the population ~~of~~ growth in the region is based on census data. The total population of the region increased at a considerably high rate and added nearly 22 million people during the last 80 years. The increase of population is quite significant during the decade of fifties. The intra-regional variations of growth are quite sharp and so is the case for decade variations. The growth rate has been explained in terms of coefficient of variations and rank correlation coefficient. From the analysis, it can be observed that the variations are quite significant for different decades since 1901. Similar analysis has been carried out for different States and Union Territories, which reveals the same pattern of high variations.

The trend of the population growths in the region is explained with the help of fitting exponential growth curves on

9. Census of India, 1971, Life Tables, Series 1, India, Paper 1 of 1977, p.38.

inter-state level and the variations of growth have been examined by comparing them with the observed data. The sex-wise growth of population in the region reveals that there is a general paucity of sex-ratio in the region except in Tripura, where the sex-ratio is the lowest. On the other hand, Mizoram recorded the highest sex-ratio. The Religion-wise growth of population reveals that different religious groups have different growth pattern. For example, Hindus recorded higher growth rates than the Muslims shortly after independence, which may be due to the influx of Hindu immigrants from nearby East Pakistan (now known as Bangladesh). Similarly, the analysis of the caste-wise population growth shows that Scheduled Caste population have registered higher growth than Scheduled Tribes population.

Interestingly, the universally accepted principle in the study of Demography (Logistic Law) does not give a good fit to the population growth mainly may be due to the higher influx of migration to this region. However, Makihan's Law, which takes into account of the migration and natural growth seem to be fits well to the population data of the region.

An attempt has also been made to estimate the birth rate and death rate of the region for different States and Union Territories by using three different methods viz., Coale Demney,

Bourgeois Pichet and Reverse Survival Ratio. It will be worthwhile to use these estimates to the existing population to forecast the future growth of population in the region.

CHAPTER IV

PATTERNS OF POPULATION MIGRATION

The size of the population of any region or a place is determined mainly by the absolute increase in the population. The increase may be due to various reasons viz. increase in the natural population (higher birth rate and lower death rate), higher immigration and lower out-migration etc. Like natural growth of population, migration also plays an important role in the process of population growth. The process of urbanisation has a close relationship with the process of migration.

Ratzel¹ gave special attention to migration, their classes and causes. He believed every migrant had an area of origin and a cause, a route of movement and destination. Among these aspects, the cause of migration seems to be most important. There are various causes of the human movement. One of these is population pressure, which often forces people to go out of the area in search of land, employment or any other means of subsistence or pleasure. On the other hand, better job opportunities in relatively more industrially or economically developed areas attract people

1. F. Ratzel: *Determinants and Consequences*, U.N. New York, 1976.

from economically backward areas.

According to Jain,² "The rapid urban growth is primarily due to rural-urban migration but its volume is not definitely known". Increasing literacy and better communication links in the rural areas also gave rise to the rural-urban migration. With the help of 'Push' and 'Pull' theory, it will be easy to understand the migration process. According to this theory, migration may occur as people move in search of a better opportunities to improve the standard of living. Some of the push factors which operate at the place, from where the people move are high rate of natural increase, drought, floods, depletion of natural resources and such other calamities and negative socio-political conditions. Pull factors are operative at the destination (the place of im-migration), may be due to the opening of new areas of human habitation, the emergence of new service and trade centres, development of new resources and opening of new industries etc. Therefore, Malhotra³ rightly points out, "Migration does not arise of its own. It is influenced by a

2. S.P. Jain: "Urbanization and Migration" in A Status Study on Population Research in India, Vol.II - Tata McGraw Hill Delhi p.82

3. G.K. Malhotra: "Birth Place Migration in India". Census of India 1971, Special Monograph No.1, New Delhi.

complex set of dis-satisfaction and aspirations, situations and opportunities, which are reflected in their histories and the characteristics of the migrants". It also, operates as a vital force in changing the space content and space relations in any specific area. It is responsible for population redistribution, nature and the magnitude of demographic mobility and which influences other demographic phenomena and processes. Further, the magnitude of migration, normally reflects the economic potentialities, expansion and diversification of economic activities of any region.⁴

According to Raza and Chattopadhyaya⁵ "The process of development leads to redistribution of sectoral relationship. The vertical changes in the sectoral structure of the economy, determine the nature and magnitude of the flow of people in space". The three factors, Industrialization, Urbanization and Migration are more or less inter-related but they interact in a complex manner. However, it is normally seen that the developing countries show a large proportion of immobile population.

In the present study an attempt has been made to analyse the population movements into different states and union territo-

4. G.S. Gosal: "Internal Migration in India - A Regional Analysis" The Indian Geographical Journal 36,3. 1961.

5. M. Raza & B. Chattopadhyaya: Regional Development Analytical Framework and Indicators, IJRS, Vol.7, No.1 1975, p.26.

ries of the North Eastern Region of India. This would not only help us in determining the demographic character of different areas, but also would reveal their geographic character.

On the basis of "place of birth" data the movement of population can be classified into four major classes.

- (1) Rural to Rural — Reverse Rural Turn Over.
- (2) Urban to Rural — Reverse Push Back
- (3) Rural to Urban — Push and Pull
- (4) Urban to Urban — Urban Turn Over.

The distribution of population movement within the country between the above four classes is closely related with the degree of economic and social development. The rural turn over among females arises largely due to their marriage. Among the males, it may be due to dependence on transferable occupation as in the case of landless agricultural labourers who move from village to village for short run or seasonal occupations. A large rural turnover could be considered as an indicator of very low economic growth.⁶

Rural urban migration is generally believed to be the

6. A. Bose: Internal Migration in India, Pakistan and Ceylon, Paper Presented at U.N. World Population Conference Belgrade, 1965.

classic stream which feeds urban growth. According to Mitra,⁷ the enduring assumption is that the overcrowding on agriculture and the consequent lack of subsistence in rural areas, pushes population out into urban areas, to which they are inexorably pulled by an ever increasing demand in tertiary activities and to a certain extent in secondary activities.

Reverse migration is mostly demographic in character by marriage, birth of child in urban centre etc. It is also, caused by lack of employment in urban areas and shortage of housing accomodation etc. Urban turnover is normally due to the transfer of services, family problems, change of profession etc.

'Birth Place' data is available at state level for the whole region for 1971. With the help of such data, it is possible to go into all the four different types of migration, which are the indicators of the relationship between distance and migration.

- (1) Short distance migration or intra-district migration
- (2) Medium distance migration or inter-district migration (within the State)
- (3) Long distance migration or inter-state migration
- (4) International Migration.

7. A. Mitra: Internal Migration and Urbanisation in India, Document Prepared for UNECAFE, Expert Working Group, Bangkok, Thailand 1967.

International migration occurs mainly due to better opportunities of education employment facilities in advanced countries. It may also be due to communal tensions, political oppression or partition of the country, as it happened in the case of the Indian Sub-Continent in 1947, Chinese aggression during 1962, Pakistan aggression in 1965 and the war of Liberation of Bangladesh in 1971.

During 1961-71, the percentages of in-migrants and out-migrants were calculated as 3.41 percent and 1.25* percent, respectively to the total population of the region. From these figures, it is revealed that any large scale in-migration has not taken place in recent times in this region. International and inter-state immigration may be said to have commenced in this region ever since 1826, when Assam was colonised by the Britishers.⁸ It is the Britishers, who in their effort to consolidate administration, development of transport and communication line for trade and exploitation of natural resources in this region had to bring in skilled and unskilled labourers from

* - These calculations are based on Basic Statistics of the North East Council Secretariate Shillong, 1978, Table A-8, p.8.

8. P. Chittaranjan: "Immigration into Urban Cities" in Urbanisation in the North East Region of India, M.Phil Dissertation, Department of Geography, NEHU, Shillong 1978, p.92.

other parts of the country. In a broad sense, in-migrants to this region can be divided into six major distinct communities. (i) The tea plantation labourers who came from Chhota Nagpur plateau, (ii) the East Bengal (now Bangladesh) Muslim peasants who came for agricultural livelihood, (iii) the Nepalis, who came as part of the war machine from the First World War onwards and later on, into animal husbandry and various other service occupations, (iv) the Bengali Hindus were brought by the Britishers to man various administrative and public utility services, as at those times the indigenous population was educationally unsuitable for these occupation, mostly, 'white-collar' jobs.⁹ (v) Hindu Bengalis also, had to come to this region from East Bengal (now Bangla Desh) for livelihood as the facilities of railway lines, Posts and Telegraphs, Steamer and Banking Agencies etc. improved. After the partition of the country in 1947, most of the Bengali refugees came from the erstwhile East Pakistan, mainly due to communal conflicts and political uncertainties. (vi) The Marwari migrants came to this region because of wide prospects of flourishing trade in forest, agricultural products, money lending and supply of consumer goods. It is an undenyng fact that this region was far more backward economically and industrially, as late as 1940s and it was only after the indepen-

9. P. Chittaranjan, op.cit., p.92.

dence of the country, the phase of industrialization, urbanization and socio-economic development could start in real terms.¹⁰

The movement of Hindustani in-migrants mainly from densely populated areas of Bihar and Uttar Pradesh, was in search of employment as manual labourers in Industries, Construction and Transport services, and also to have small business and miscellaneous semi-skilled work.¹¹

In this region, permanent migration started rising significantly from 1901, mainly due to the attraction of tea estates. The peak in labour recruitment seems to have been during 1911-21, when according to Immigrant Labour Reports, 769 thousands new in-migrant coolies entered Assam.¹² During the decade 1921-31, since there was a depression in the tea business, the recruitment was reduced. Again, when the tea business improved, the large scale recruitment started and continued right upto 1941. There was also, large labour deaths through epidemic and the unhealthy climate of

10. R.L. Singh: India, A Regional Geography, National Geographical Society of India, Varanasi, 1971.

11. M.C. Bhuyan: Immigrant Population of Assam, - An Analytic Synthetic Study, Unpublished Ph.D. thesis, Geography Department, Gauhati University, Gauhati, 1977.

12. P.J. Bhattacharjee & G.N. Shastri: Population in India, A Study of Inter-State Variations, Vikas Publishing House Pvt. Ltd. New Delhi, 1976, p.41.

the region. They had to be timely replemished, if the tea industry has to run undisturbed. The high rate of mortality due to Kala-Azar, Cholera and Malaria were prevailing to a great extent in this region during that period.¹³ After independence, the North Eastern Region experienced a large inflow of refugees from erstwhile Pakistan.

According to 1971 Census data, of the 19.6 million population of North Eastern Region of India, roughly 17.4 million were born in this region. In other words, 2.2 million consisting 11.46 percent of the total population were born outside the region (Table 4.1).

In 1961, there were about 14.2 million* persons living in North Eastern Region of India, out of which roughly 1.8 million persons living in this region were born outside the region. This percentage of those who were born outside this region was 12.9 percent of the total population of North East for 1961.

Among the persons who were born outside the region,

13. Kingsley Devis: The Population of India and Pakistan, Princeton University Press, Princeton, New Jersey 1951, p.111.

* - Excludes population of 297853 for Arunachal Pradesh for whom an abridged family Schedule was convassed instead of general all India individual slip and Household schedule.

TABLE 4.1: POPULATION CLASSIFIED BY PLACE OF BIRTH AND PLACE OF ENUMERATION IN NORTH EAST INDIA, 1971.

Birth place	Rural/ Urban classi- fica- tion	Person by place of birth in million	Persons by place of enumeration in millio	
			R	U
Total Population		19.58	17.73	1.85
A. I Within the State of Enumeration	R	16.1	15.87	0.27
	U	11.23	0.15	1.08
(a) in place of enumeration	R	12.16	12.16	-
	U	0.95	-	0.95
(b) elsewhere in dis- trict of enume- ration	R	3.36	3.17	0.19
	U	0.14	2.09	0.05
(c) in other district of enumeration	R	0.61	0.54	0.08
	U	0.14	0.07	0.08
II In India beyond the Region	R	0.45	0.32	0.13
	U	0.08	0.03	0.05
B. In other countries		1.63	1.33	0.30
Burma		0.006	0.004	0.001
Nepal		0.12	0.10	0.02
Pakistan (Bangladesh)		1.49	1.21	0.28
Others		6437 only	6157 only	780 only

Source: Census of India 1971, Population classified by Place of Birth. Table D-1, Migration Tables, Part I-D(i) Series I India.

roughly 1.3 million and 1.6 million were born in other countries beyond India during 1961 and 1971 respectively. Percentagewise these figures come out to be 9.10 percent and 8.26 percent to total population of respective periods. Thus, although, the absolute number of foreign-born in this region increased slightly in 1971 over 1961, yet the relative numerical position in the total population declined. Table 4.2, reveals that there was absolute increase of 33917 persons in 1971 over 1961, in the countries who were born in Burma (0.03 percent and 0.03 percent), Nepal (0.71 percent and 0.64 percent) and Bangladesh (8.28 percent and 7.61 percent) for 1961 and 1971 respectively, but enumerated in this region.

The Table 4.2 also reveals that mobility in this region is essentially, a short distance phenomenon restricted mainly to the district of enumeration for both the periods.

Table 4.3, presents distribution of in-migrants into state and union territories of the region. It reveals that the highest proportion of in-migrants is in Tripura, where more than one-third of the total population at present are outside their place of birth. The lowest proportion of mobile population is in Manipur (3.50 percent) followed by Nagaland (9.59 percent), Assam (10.18 percent) and Meghalaya (11.57 percent). Overall, the region has received a large number of in-migrants.

TABLE 4.2: POPULATION BY PLACE OF BIRTH IN NORTH EAST INDIA
DURING 1961 AND 1971. (in 00,000)

Place of Birth	1961		1971	
	Persons	Percentage to total Population	Persons	Percentage to total Population
1. Born in place of enumeration	95.94	67.55	131.10	66.95
2. Born elsewhere in district of enumeration	23.52	16.56	35.14	17.95
3. Born in other districts of the region	4.19	2.95	6.07	3.10
4. Born in other states of India beyond this region	5.47	3.85	7.22	3.69
5. Born in Nepal, Burma and Bangladesh	12.81	9.02	16.20	8.27
6. Born in other countries	0.11	0.08	0.10	0.05
7. Total Population	142.03	100.00	195.82	100.00

Source: Same as for Table 4.1

TABLE 4.3: STATE AND UNION TERRITORY WISE TOTAL, RURAL AND URBAN IN-MIGRATION
IN NORTH EAST INDIA 1971.

State/Union Territory	Percentage of in-migrants to total population	Percentage of rural-in-migrants to total in-migrants	Percentage born in other parts of the country to total population	Percentage born in other parts of the country to total population
Assam*	10.18	75.12	3.20	0.38
Manipur	3.50	82.63	1.00	1.33
Meghalaya	11.57	62.33	1.76	3.62
Nagaland	9.59	46.25	4.54	2.72
Tripura	35.69	86.42	0.83	0.78
Arunachal Pradesh	14.93	84.30	3.80	5.59

* - Includes Mizoram

Source: Computed from Census of India, 1971, Part II-D(i) Migration Tables, Place of Birth Tables.

Census of India 1971, classified migrants according to the duration of stay and last residence. Migrants staying for the period 0-10 years can be considered as fresh migrants during the inter-censal period i.e. 1961-71. Of the 3.13 million male migrants 54 percent migrated during the period 1961-71. Out of 3.45 million female migrants, 48 percent moved in the same period in the region (Table 4.4). In the country as a whole it was recorded that 52 percent and 37 percent migrated for the same categories respectively. This shows that the rate of male migration during 1961-71, was almost at par with the country, while female migration was higher in the region. The position within the states or union territories, Assam had recorded only 52 percent male migrants during 1961-71, while all other units of the region except Meghalaya which recorded only 48.62 percent, have recorded a quite higher rate of male movement. Nagaland is the state which has recorded as high as 72.05 percent male and 68.90 percent female migrants who have moved during 1961-71. Meghalaya is the state which has recorded the lowest in case of males (48.62 percent) while in case of females, it is Manipur (42.45 percent). Arunachal Pradesh is the only constituent unit which has recorded the migrants at par with the regional average. On the other hand, none of the unit recorded less than 42 percent whereas the country as a whole recorded only 37.41 percent during the same period.

TABLE 4.4: DISTRIBUTION OF MIGRANTS BY DURATION IN NORTH EAST INDIA 1961-71.

State/Union territory	Total Migrants		0-10 years duration migration			
	Male (in 00000)	Female	Male (in 00000)	Percent	Female (in 00000)	Percent
Assam*	23.30	27.24	12.21	52.40	12.68	46.53
Manipur	0.90	1.11	0.54	60.67	0.47	42.45
Meghalaya	1.90	1.33	0.93	48.62	0.68	50.90
Nagaland	0.63	0.29	0.45	72.05	0.20	68.90
Tripura	3.66	3.64	2.12	57.62	2.14	58.60
Arunachal Pradesh	0.88	0.84	0.63	71.53	0.40	47.38
North East India	31.26	34.45	16.88	53.99	16.46	47.77
All India	538.82	1138.90	280.20	52.00	426.03	37.41

Source: Census of India, 1971, Part I (D(1), D-II, Migration Tables. 'Place of Last Residence'.

The sex-ratio of the fresh migrants is 975 for the region, which is lower than that of all duration migrants (1102). This sex-ratio of fresh migrants is still higher than the sex-ratio for the total population of the region (906). This indicates that the decadal migration in this region is not very selective.

It is interesting to note that for the duration of residence less than one year at the place of enumeration, the sex-ratio is quite low compared to other durations (Table 4.5). The sex-ratio increases as the duration increases, showing that the permanent migration is mainly demographic. The number of male as well as female migrants for the period less than one year is least as compared to other periods, which shows that the males migrate in search of temporary casual work.¹⁴

The situation of migration in urban areas is completely different. The sex-ratio of fresh migrants is only 639 which is lower than the sex-ratio of the entire population. Thus, it can be said that the urban migration is primarily, due to economic reasons. The lowest sex-ratio is recorded in Nagaland (322) among fresh migrants and the highest is in Tripura (939) (Table

14. B.C. Mehta: 'Migration' in Regional Population Growth, Moonlight Printers, Jaipur, 1978 pp.90-92.

TABLE 4.5: IN-MIGRATION IN NORTH EAST INDIA, ACCORDING TO DURATION.

Category	Males	Females	Sex Ratio
All duration	3126371	3445267	1102
Less than 1 year	255689	181133	708
1 year to 5 years	830720	805549	970
6 year to 10 years	601436	665830	1107
Decadal Migration	1687845	1652512	979
<u>Urban Migration</u>			
All duration	537296	366016	681
Less than 1 year	51724	24625	476
1 year to 5 years	154779	97781	632
6 years to 10 years	97177	70095	721
Decadal Migration	303680	192501	639
<u>Rural Migration</u>			
All Duration	2589075	3079251	1189
Less than 1 year	203965	156508	767
1 year to 5 years	675941	707768	1047
6 years to 10 years	504259	595735	1181
Decadal Migration	1384165	1460011	1055

Source: Computed from Census of India 1971, Part II-D(1) All India Migration Tables.

TABLE 4.6: SEX-RATIO OF MIGRANTS 1971.

State/union territory	All Duration Migration			Fresh Migration		
	Total	Rural	Urban	Total	Rural	Urban
Assam*	1170	1275	676	1038	1132	630
Manipur	1234	1270	975	864	897	757
Meghalaya	697	701	679	729	694	707
Nagaland	465	565	337	444	541	322
Tripura	997	1004	941	1008	1017	939
Arunachal Pradesh	950	1016	337	630	666	343

Source: Computed from Migration Table Part II-D(i) D-II.

* - Includes Mizoram.

4.6). Except in Tripura, all the other constituent units of the region have urban migrants with low sex-ratio. The two units which are dominated by tribal population namely, Nagaland and Assamachal Pradesh show the lowest sex-ratio which can be attributed to purely 'service migration'.

To know, if any, relationship between marital status and migration exists, the information on age and marital status of migrants according to last residence is required. This relationship in this region as well as in the country as a whole is not very clear as has been revealed by Roy.¹⁵ The conventional age groups represent a two faced picture. In general, the age group 25-49 years represent a wider sector of migrants in the country as well as in this region (44.83 percent). The younger age group, 15-24 years occupy the second position (20.70 percent). The age groups 0-14 years and 50+ years have observed the same proportion (about 17 percent). It is also noticed that about 17.26 percent of the total rural migrants are in the age group, 0-14 years; Among these about 0.54 percent in this age group are married and 99.43 percent are never married. Although, the marital status of the migrants of 0-14 years in rural is more

15. B.K. Roy: Internal Migration in India's Manpower, The National Geographical Journal of India, Vol.XXV Part I, March 1979, B.H.U., Varanasi, pp.8-21.

pronounced in Arunachal Pradesh, it amounts to only 1.89 per cent of the total rural migrants in this age group. Tripura has observed the maximum proportion of married (2.27 percent) in the age group 0-14 of rural while Nagaland has the minimum (0.10 percent) for the same.

A detailed analysis of the migrants by their place of birth highlights remarkable facts, in all the four categories in this region. Looking at the intra-district in-migrants (Table 4.7), the regional average comes to be 58.91 percent of the total migrants in 1971; Manipur accounts as high as 74.32 percent and Tripura as low as 32.27 percent of their respective total migrants. This indicates that in Manipur the local population constitute the major part of the migrants, while in Tripura and Nagaland, the least proportion (32.27 percent and 40.08 percent respectively) of the local people have migrated within the district. The other constituent units of the region have conditions more or less at par with the region.

In case of inter-district migration, Assam is the only state which accounts for a maximum proportion of migrants, i.e. 11.88 percent of the total migrants into the state, while Meghalaya shows that only 3.25 percent of the inhabitants moved between districts, the regional average being 10.51 percent.

TABLE 4.7: INMIGRANTS IN NORTH EAST INDIA, 1971.

State/Union territory	Total migrants (in 000)	Intra- district migrants (in 000)	Inter- district migrants (in 000)	Percent of Col.(2) to Col.(1)	Percent of Col.(3) to Col.(1)
	(1)	(2)	(3)	(4)	(5)
Assam*	5053.87	3133.43	600.17	62.00	11.88
Manipur	200.33	148.89	20.32	74.32	10.14
Meghalaya	322.98	208.90	10.50	64.68	3.25
Nagaland	91.85	36.81	9.50	40.08	10.35
Tripura	730.02	235.57	42.73	32.27	5.85
Arunachal Pradesh	172.60	108.02	7.53	62.59	4.36
North East India	6571.64	3871.63	690.74	58.91	10.51

* - Includes Mizoram.

Source: Census of India, 1971, Geographic Distribution of Internal Migration in India.

This indicates the character of a closed society among the Khasis, Jaintia's and Garos. Arunachal Pradesh also shows a closed society since, this shows only 4.36 percent of the total migrants. In Manipur (10.14 percent) and Nagaland (10.35 percent) the inter-district migrations are almost at par with the regional average.

Out of the total 6.57 million persons enumerated outside the place of birth, 64.75 percent of the total migrants restricted their movements within the region. 66.73 percent of the total of all duration migration is in the nature of short distance migration (intra-district) which is essentially, demographic in nature in rural areas (S/R = 146d) and perhaps, economic in nature in urban areas (S/R = 879).

The decadal migration of males is 55.46 percent of the all duration male migration of intra-district character, whereas the same ratio for females is only 29.14 percent. Therefore, one can say that the short distance migration among females is more stable than males.

The low level of inter-district migration with low sex-ratio (870) for all duration and decadal migration (772) suggests that it is more in nature of family migration. Same pattern is also observed by Rural to Urban migration, as low

sex-ratio is observed for both decadal and all duration migration. Inter-district Urban to Urban migration (75579 persons) is lower than the intra-district Urban to Urban (82905 persons) migration for all duration (Table 4.8). This indicates that migrants like to move to better places within the districts. Interestingly enough, inter-district Urban to Urban migration is much greater than the inter-district Rural to Urban migration (even in case of fresh decadal migration), indicating that rural people move much less than urban people to other urban places. This is a generally, agreed position.

According to Saxena,¹⁶ a heavy movement of population was noticed towards West Bengal, Maharashtra, Punjab, Madhya Pradesh and Assam during the decade of 1951-61. The situation in this region reveals that the heaviest migration took place in Assam followed by Tripura. The lowest in-migration was in Manipur. From Table 4.9, it is observed that about 0.53 million persons have come to Assam during 1961-71 whereas during 1951-61 the corresponding figure was 0.6 million.¹⁷ This shows that number of in-migrants from other states and union territories have declined during 1961-71 over 1951-61. The states and union

16. G.B. Saxena - Indian Population in Transition, Commercial Publications Bureau, New Delhi, 1971, pp.143-146.

17. G.B. Saxena: op.cit., p.143-147.

TABLE 4.8: IN-MIGRATION IN NORTH EAST INDIA ACCORDING
TO DURATION, 1971

	(in 000)			
	Intra District		Inter District	
	Male	Female	Male	Female
Duration less than one year				
Rural to Rural	102.6	99.6	20.7	14.7
Urban to Rural	8.1	4.5	4.8	2.8
Rural to Urban	13.6	7.2	4.6	2.3
Urban to Urban	5.1	2.7	5.9	3.2
Duration one year to five years				
Rural to Rural	393.4	94.2	72.9	65.1
Urban to Rural	21.7	18.0	13.3	9.1
Rural to Urban	40.1	30.6	12.7	7.4
Urban to Urban	13.7	9.8	15.8	11.6
Duration six years to ten years				
Rural to Rural	244.8	350.3	66.5	51.3
Urban to Rural	13.4	12.7	8.3	6.2
Rural to Urban	19.6	18.6	6.3	4.8
Urban to Urban	8.8	7.5	9.1	7.4
All Duration				
Rural to Rural	1375.6	2053.8	253.1	236.7
Urban to Rural	64.6	60.0	35.0	26.2
Rural to Urban	109.1	99.8	33.6	21.7
Urban to Urban	46.2	36.7	42.9	32.6

Source: Computed from Census of India, 1971, All India Migration Tables Part II-D(i).

TABLE 4.9: INTER-STATE MIGRATION IN NORTH EAST INDIA, 1961-71.

State/ Union territory	In-migrants (in 000)		Out- migrants (in 000)		Net migrants (in 000)		Net migrants as percent to Gross migrants	
	M	F	M	F	M	F	M	F
Assam*	364.10	170.34	107.61	85.27	256.49	85.07	36.64	11.69
Manipur	16.31	8.94	7.33	4.24	8.98	4.70	24.39	12.73
Meghalaya	33.39	21.18	15.55	14.18	17.84	7.00	21.16	8.30
Nagaland	30.44	7.12	4.02	3.07	26.42	4.05	59.17	9.07
Tripura	15.91	10.33	17.69	11.29	-1.78	-0.96	-3.93	-2.12
Arunachal Pradesh	32.31	12.03	1.50	0.78	30.81	11.25	66.09	24.13

* - Includes Mizoram.

Source: Based on Appendix A.5.1

territories which attracted the least number of persons are Manipur (25250 persons) and Tripura (26234 persons).

The state of Tripura has lost the persons due to out-migration, to the tune of 28986 persons. The net migration because of this high outmigration shows that Tripura has lost its population by 27400 persons. Assam has also lost a significant number of persons due to outmigration. Arunachal Pradesh, Nagaland and Manipur were the least affected ones by way of out-migration. Considering the net effect of migration, it can be observed that all the constituent units of the region have gained by population, except Tripura which has lost.

It may be of some interest to know that how gain or loss has affected population growth in the region during 1961-71. More precisely, the comparison between the natural and inter-censal increase in population of the states and union territories of the region. The estimates for natural increase have been derived by indirect method (by adding the net migration to the inter-censal increase*). Table 4.10, reveals that had there be no migration, what would have been possibly the actual rate of increase in the population from 1961- to 1971 for the states and

* - G.B. Saxena: op.cit. p.150

TABLE 4.10: INTER CENSAL AND NATURAL INCREASE NORTH EAST INDIA 1961-71.

State/Union Territory	Population		Inter censal increase	Net Decade migra- tion	Percent- age natural increase	Percent- age inter censal increase	Impact of migra- tion
	1961	1971					
	(1)	(2)	(3)	(4)	(5)-(3)	(4)-(3)	(7)-(6)
Assam*	11103392	14957542	3854150	1329585	34.66	34.71	0.05
Manipur	780037	1072753	292716	25976	29.71	37.53	7.82
Meghalaya	769380	1011699	242319	87336	32.58	31.50	-1.08
Nagaland	369200	516449	147249	42425	26.73	39.88	3.15
Tripura	1142005	1556342	414332	526481	60.45	36.28	-24.17
Arunachal Pradesh	336558	467511	130953	67545	42.46	38.91	-3.55

* - includes Mizoram

Source: Computed from Census of India 1971, Part II-D(i) & Part II-A(ii).

union territories of the region. According to these results, although, the natural increase of Manipur during 1961 and 1971 was only 29.71 percent, but due to positive net migration, the increase was quite high. The next comes Nagaland, where the balance of migration has contributed to the tune of about 3 percent to the total growth of population.

In Tripura, Arunachal Pradesh and Meghalaya, the net migration has not been favourable to the increase of the population and consequently, the inter-censal growth rate has been less than the natural increase. Only Assam, has little or virtually no effect on the rate of increase of population.

Moreover, if the states and union territories are discussed on the basis of the size of net migration, the situation is quite different. Among all the constituent units, being on the gaining side, Assam tops the list followed by Tripura. During the ten-year period, Assam recorded an increase of about 1.3 million as a result of migration. The tea plantation and oil fields are the strong magnets in attracting population from the other parts of the country and political instabilities in the neighbouring countries. Tripura also, showed tremendous immigration during the same period. In Meghalaya, the main town Shillong (which was the capital town of Assam till 1970 for the last 100 years) attracted persons from other areas of the country

as well as from the neighbouring countries, for business and services in Government and semi-Government organisations. In Arunachal Pradesh, the low level of literacy was the main cause of manpower to be imported from other parts of the country. In Nagaland and Manipur, the growth of small scale household industries, business and service activities have increased the demand of manpower from other areas. From the Table 4.11, it is clear that of all types of migration rural to rural migration (in-migration as well as out-migration) are the most important, both of them are pre-dominantly for demographic purposes.

Urban to rural migration both ways are:

Net in-migration to North East Region is the largest in case of rural to urban migration and much of it may be due to economic reasons. Similarly net urban to urban migration is also mainly due to economic reasons. This suggests that pull and push factors are operating in rural and urban North East India. Relatively large Rural to Urban in-migration due to economic reason suggests the potentialities of urbanization in the region.

Incoming Streams of Migration:

Table 4.12, deals in detail of in-migrants are presented in a synoptic form. (See Annex 7.1).

TABLE 4.11: IN-MIGRANTS INTO NORTH EASTERN REGION, INDIA, 1961-71.

Category	Rural to Rural to	Urban to Rural	Rural to Urban	Urban to Urban	Total
OUT-MIGRATION					
All Duration (Percentage of total)	53068 (33.20)	28358 (17.74)	25445 (15.92)	52960 (33.14)	159831 (100.00)
Fresh (Percentage of total)	16328 (23.89)	14850 (21.73)	12190 (17.84)	24952 (36.52)	68320 (100.00)
Fresh out-migration as percentage of all duration out-migration	30.77	52.37	47.91	47.11	42.75
IN-MIGRATION					
All Duration (Percentage of total)	265996 (56.59)	30910 (6.58)	116005 (24.68)	57102 (12.15)	470013 (100.00)
Fresh (Percentage of total)	990.80 (58.64)	15952 (8.31)	54476 (28.39)	22378 (11.66)	191886 (100.00)
Fresh in-migration as percentage of all duration in-migration	37.24	51.60	46.96	39.18	40.82

Source: Computed from Census of India 1971, Migration Tables, All India.

TABLE 4.12: INTER-STATE MIGRATION FROM AND TO 1971 (Percentage Distribution)

Migrated From	To	Assam*	Manipur	Meghalaya	Nagaland	Tripura	Arunachal Pradesh
Andhra Pradesh		1.37	0.93	0.18	0.79	1.27	0.44
Assam		-	51.28	63.80	26.89	44.74	57.12
Bihar		45.55	7.57	13.79	20.23	17.44	8.82
Gujarat		0.12	0.13	0.08	0.03	0.08	0.08
Haryana		0.71	2.49	0.21	1.66	0.86	1.40
Himachal Pradesh		0.09	0.99	0.06	0.83	1.06	0.78
Jammu & Kashmir		0.10	0.75	0.14	0.39	0.19	0.36
Kerala		0.86	3.02	1.02	5.73	1.03	3.82
Madhya Pradesh		2.61	1.68	0.22	0.80	1.05	0.49
Maharashtra		0.29	0.60	0.52	0.27	0.69	0.70
Manipur		1.10	-	1.14	8.00	0.85	0.28
Meghalaya		4.95	0.79	-	1.51	0.87	1.18
Mysore		0.14	0.28	0.14	0.25	0.27	0.88

TABLE 4.12 (Contd)

Migrated From	To	Assam*	Manipur	Meghalaya	Nagaland	Tripura	Arunachal Pradesh
Nagaland		0.87	1.23	0.92	-	0.18	0.90
Orissa		5.66	0.29	0.31	1.09	4.75	1.80
Punjab		1.64	3.30	1.93	2.31	0.91	2.12
Rajasthan		5.37	2.43	1.54	3.50	1.57	1.76
Sikkim		0.01	1.78	0.11	0.13	0.01	0.19
Tamil Nadu		0.57	0.82	0.41	1.10	0.30	0.99
Tripura		3.24	3.69	1.00	0.96	-	0.40
Uttar Pradesh		12.01	10.42	3.70	18.28	9.68	10.47
West Bengal		12.27	5.22	8.05	4.75	11.68	4.71
Arunachal Pradesh		0.27	0.03	0.31	0.14	0.04	-
Other Union Territories		0.20	0.28	0.45	0.35	0.50	0.30

Source: Census of India 1971, Geographic Distribution of Internal Migration in India.

* - Includes Mizoram.

Assam:

Roughly 46 percent of the total internal migrants to the state have come from Bihar, followed by West Bengal (the percentage being only, 12.28 percent). Other states, which seem to be of some significance are Orissa, Rajasthan and Meghalaya, roughly contributing 5 percent each of the total internal migrants.

Manipur:

As for in-migration to Manipur, the main source is Assam, contributing about 51 percent of the total in-migrants. The other states which contribute significantly, are Uttar Pradesh (10 percent) and Bihar (8 percent).

Meghalaya:

About 64 percent of the migrants are from Assam upto 1971, but this position has changed because of the shift of Assam's capital from Shillong (Meghalaya) to Dispur. Bihar has sent about 14 percent, while 8 percent has been sent by West Bengal. Combined, they constitute more than four-fifth of the total in-migrants. Next to these, states, Uttar Pradesh is the only state contributing 3.70 percent of the in-migrants.

Nagaland:

Roughly, 27 percent of migrants are from Assam, 20 percent

from Bihar and 18.27 percent from Uttar Pradesh, constituting three-fifth of the total in-migrants to the state. The other parts of the country which have contributed significantly are Manipur, 8 percent, Kerala 5.72 percent, West Bengal 4.75 percent, and Rajasthan 3.50 percent.

Tripura:

The maximum number of migrants to Tripura are drawn from Assam and constitute about 45 percent of the total migrants. Another 39 percent came from Bihar, West Bengal and Uttar Pradesh. As such, more than four-fifths of the total migrants are from these states.

Arunachal Pradesh:

More than four-fifths of the total in-migrants have come from Assam (57 percent), Uttar Pradesh (10.47 percent), Bihar (8.81 percent), and West Bengal (4.70 percent). The share of Kerala is also significant (3.81 percent).

From the above analysis, it is clear that a majority of in-migrants are from the bordering areas in this region. Except Assam, for which the main source is Bihar and West Bengal, the other constituent units of the region show movement within the

region itself. Assam is the main source of out-migration for all the units of the region.

Out Going Streams of Internal Migration:

Table No.4.13 also depicts the situation of out-migration streams in the region.

Assam:

The main stream of out-migration from Assam is directed towards West Bengal, Meghalaya, Arunachal Pradesh and Manipur. The states which can also be referred to are especially, Tripura and Nagaland.

Manipur:

The figures of the distribution of migrants from Manipur shows that the bulk constituting, (more than half) is spreaded over Assam. Nagaland also, received one-fourth of the total out-migrants from Manipur.

Meghalaya:

About 89 percent of the migrants from Meghalaya are found in Assam. Another 3 percent in West Bengal and 2 percent in Nagaland, are the other states who have received significant

TABLE 4.13: INTER-STATE OUT MIGRATION 1971 (in Percentage)

Migrated From	To	Assam*	Manipur	Meghalaya	Nagaland	Tripura	Arunachal Pradesh	Other States
Assam*		-	6.67	18.05	5.24	6.09	13.13	50.83
Manipur		51.03	-	5.36	25.98	1.92	1.07	14.65
Meghalaya		29.18	0.67	-	1.91	0.76	1.77	5.71
Nagaland		65.87	4.34	7.11	-	0.66	5.63	16.39
Tripura		59.82	3.19	1.89	1.25	-	0.61	33.24
Arunachal Pradesh		62.86	0.31	7.52	2.33	0.48	-	25.50

* - Includes Mizoram

Source: Based on Appendix A.5.1

proportion of migrants from Meghalaya.

Nagaland:

About two-third of the total migrants from Nagaland is directed towards Assam. The other states who have received persons from Nagaland are Meghalaya (7 percent), and 6 percent in Arunachal Pradesh.

Tripura:

The main out-flow from Tripura is directed towards Assam, West Bengal and these two states of the Indian Union attract about 60 percent and 26 percent, respectively, i.e. around 86 percent of the total out-migrants from Tripura. Manipur attracted about 3 percent and Meghalaya 1.89 percent. Gujarat is the lone state in the country where none of the migrants have come from Tripura.

Arunachal Pradesh:

Of the total out-migrants from Arunachal Pradesh, a heavier proportion (about 63 percent) have gone to Assam, while only 7.51 percent went to Meghalaya and 3.07 percent to West Bengal.

From the above, an attempt has been made to summarise the

inter-state flow of migration. The main conclusion that emerges from the above statistics is that inter-state migration in the region is mostly confined to the bordering states of the region which is Assam.

Heavy Stream of Inter-State Migration:

Looking at the Table 4.12, it is observed that the flow of migration is very much restricted within the region itself, during 1961-71. Before independence, it was restricted within a short region in the country as a whole, except Bengalis and Keralites.¹⁷ The data indicates that there are some well defined drifts of population movement which are given below.

- (1) One chain of drift is from Bihar to Assam, Assam to Meghalaya which shows that there is a drift from Bihar to this region and it culminates in Meghalaya.
- (2) The another notable drift is from Orissa and Rajasthan to Assam and from Assam to the different parts of the region. Thus, between this region the movement is both ways.
- (3) The third important drift is a two way from West Bengal to

17. P.J. Bhattacharjee and G.N. Shastri: *ibid.*, pp.45-46.

Assam and vice versa. Uttar Pradesh, Rajasthan and to some extent Kerala are also the states where the drift can be noticed quite significantly.

Therefore, it can be said that Assam is the main centre of attraction from the rest of the country in the region, which diverts the migrants to other parts of the region at a secondary level.

Inter-State Migration Classified by Rural-Urban Break Up:

The statistics provided in Table 4.11, convey an idea as to what are the main lines of movement of population in the region. Moreover, a better idea can be obtained by analysing the inter-state, rural-urban break up of migration. Important conclusions about inter-state migration in this region based on Table 4.14 are as follows.

- (i) Of all the types of migration, rural (R to R) in-migration is the most important. Net in-migration is the largest due to economic reasons.
- (ii) Urban to rural migration streams (in case of out-migration) are quite high whereas in case of in-migration also it is significant.
- (iii) Net in-migration is the second largest in the case of

TABLE 4.14: TYPES OF INTER-STATE MIGRATION, 1971

State/Union Territory	Gross Migrants	Percentage to Gross Migrants						
		In-Migrants		Out-Migrants		Net Migrants		
		Male	Female	Male	Female	Persons	Male	Female
RURAL TO RURAL								
Assam*	100.00	51.31	25.70	12.72	10.27	54.02	38.59	15.43
Manipur	100.00	49.42	26.76	14.29	9.53	52.36	35.13	17.23
Meghalaya	100.00	32.57	26.24	21.55	19.64	17.62	11.02	6.60
Nagaland	100.00	62.03	17.41	11.94	8.62	58.88	50.09	8.79
Tripura	100.00	32.00	19.45	31.61	16.94	2.90	0.39	2.51
Arunachal Pradesh	100.00	70.88	26.32	1.77	1.03	94.40	69.11	25.29
RURAL TO URBAN								
Assam	100.00	62.96	17.99	12.07	6.98	61.90	50.89	11.01
Manipur	100.00	34.05	19.48	31.77	14.70	7.06	2.28	4.78
Meghalaya	100.00	64.38	23.82	6.68	5.12	76.40	57.70	18.70
Nagaland	100.00	82.75	10.60	4.24	2.41	86.70	78.51	8.19
Tripura	100.00	15.06	10.67	43.46	30.81	-48.54	-28.40	-20.14
Arunachal Pradesh	100.00	73.38	15.80	7.86	2.96	78.36	65.52	12.84

TABLE 4.14 (Contd.)

State/Union Territory	Gross Migrants	Percentage to Gross Migrants						
		In-Migrants		Out-Migrants		Net Migrants		
		Male	Female	Male	Female	Persons	Male	Female
URBAN TO URBAN								
Assam	100.00	32.17	22.96	23.32	21.55	10.26	8.85	1.41
Manipur	100.00	31.08	18.47	34.06	16.39	-0.90	-2.98	2.08
Meghalaya	100.00	37.46	26.87	17.65	18.02	28.66	19.81	8.85
Nagaland	100.00	56.95	23.87	9.55	9.63	61.64	47.40	14.24
Tripura	100.00	20.22	21.73	31.63	26.42	-16.10	-11.41	-4.69
Arunachal Pradesh	100.00	54.56	28.73	10.00	6.71	66.58	44.56	22.02
URBAN TO RURAL								
Assam	100.00	34.61	21.28	24.78	19.33	11.78	9.83	1.95
Manipur	100.00	46.45	14.94	23.88	14.73	22.78	22.57	0.21
Meghalaya	100.00	31.14	20.15	26.63	21.88	2.58	4.31	-1.73
Nagaland	100.00	56.21	20.63	13.26	9.90	53.68	42.95	10.73
Tripura	100.00	40.44	27.55	20.60	11.41	35.98	19.84	16.14
Arunachal Pradesh	100.00	65.88	31.94	1.43	0.75	95.64	64.45	31.19

* - Includes Mizoram.

Source: Based on Appendix A.4.2

R — U migration and much of it may be due to economic reasons. Net U — U migration may also, be mainly due economic reasons (which is the least) among all the four categories of migrants; which suggests that in this region, pull factors are operating in rural areas and push factors at other parts of the country especially Bihar, West Bengal and U.P. (These state happen to be with very high density of population e.g. 324 and 402 for Bihar, 504 and 620 for West Bengal and 300 and 377 for U.P. in 1971 and 1981 respectively).

- (iv) Relatively large proportion of in-migrants of R — U suggests, the potential situation of urbanization in the region.
- (v) Both inter-state and intra-state migration is mainly rural-ward, as well as intra-rural in the region.

The two countries which have contributed the largest share of immigrants to this region are 'East' Pakistan (now Bangla Desh) and Nepal (Table 4.15). Out of the total in-migrants to this region, 69.29 percent have been born in other countries beyond India. Out of which 91.42 percent were boen in Bangla Desh and 7.63 percent in Nepal. The rest were in other European and Asian countries. The picture for India, out of the total foreign born nationals, only 5.62 percent were born in Nepal and 87.41 percent in East Pakistan (Bangla Desh). In case of in-migrants to

TABLE 4.15: IMMIGRANTS FROM OTHER COUNTRIES TO NORTH EAST INDIA, 1971

From	State/Union territories							All India
	Assam*	Manipur	Meghalaya	Naga-land	Tripura	Aruna-chal Pradesh	NER	
	(in 000)	(in 000)	(in 000)	(in 000)	(in 000)	(in 000)	(in 000)	(in 000)
OTHER COUNTRIES BEYOND INDIA								
T	987.0	12.5	62.5	12.0	530.2	25.5	1629.7	9358.4
R	783.1	11.0	46.3	7.2	461.0	22.3	1331.0	5093.4
U	203.9	1.5	16.2	4.7	69.2	3.2	298.7	4265.1
NEPAL								
T	78.3	6.94	13.4	9.3	0.9	15.6	124.4	526.5
R	67.6	6.2	8.9	6.4	0.6	13.2	102.8	383.9
U	10.7 (49.76%)	0.7 (3.25%)	4.5 (20.93%)	2.9 (13.48%)	0.3 (1.39%)	2.4 (11.16%)	21.5 (100%)	142.7
PAKISTAN								
T	903.4	2.3	47.8	2.0	527.4	7.4	1489.9	8180.7
R	711.5	1.7	36.0	0.3	458.7	6.7	1214.9	4268.7
U	192.0 (69.81%)	0.6 (0.21%)	11.4 (4.14%)	1.7 (0.61%)	68.7 (24.98%)	0.7 (.25%)	275.0 (100.00)	3913.0

TABLE 4.15 (Contd.)

Percent of immigrants to total immigrants From	State/Union territories							All India
	Assam*	Manipur	Meghala- ya	Waga- land	Tripura	Aruna- chal Pradesh	NER	
	(in 000)	(in 000)	(in 000)	(in 000)	(in 000)	(in 000)	(in 000)	(in 000)
NEPAL								
T	7.93	55.52	21.44	77.50	0.07	61.18	52.63	8.62
R	8.63	56.36	19.22	88.89	0.13	59.19	7.72	7.53
U	5.24	46.67	27.78	61.70	0.43	75.00	7.20	3.34
PAKISTAN								
T	91.52	18.40	75.84	16.67	99.47	29.02	91.42	87.41
R	90.85	15.45	77.75	4.17	99.50	30.04	91.28	83.80
U	94.16	40.00	70.40	36.17	99.30	21.90	92.07	91.72

* - Includes Mizoram

Source: Census of India 1971, 'Place of Birth', Migration Tables (D-I to D-IV), Series I, Part II-D(i), India, 1977.

urban areas in this region, it is more or less at par with the proportion of all India in case of East Pakistan in-migrants. But, in-migrants from Nepal settled in this region are more than double that of the share in the country. For rural areas, it is just an opposite situation. Nagaland, is the state which has received maximum proportion of foreign nationals from Nepali origin (77.50 percent; followed by Arunachal Pradesh (61.18 percent) and Manipur (55.52 percent). Tripura (0.17 percent) received the least. The situation in case of East Pakistani nationals, Tripura tops the list with 99.47 percent. Assam has received exactly in the same proportion as the region as a whole. Nagaland and Manipur are the states who have received less than 20 percent of the total foreign born nationals. Of the total urban immigrants, 92 percent are from East Pakistan and only 7.20 percent are from Nepal to the region, constituting more than 99 percent of the total immigrants from the other countries beyond India. Out of the total urban immigrants from the countries beyond India, to this region, 64.27 percent have come from East Pakistan and only 3.58 percent from Nepal, who were enumerated in urban areas of Assam. Tripura, the second largest receiver of East Pakistani nationals, received about 23 percent, and only 0.10 percent from Nepal, who are residing in urban areas. This may be due to a process called "adjacent creep".¹⁸ Geographically,

18. P. Chittaranjan, op.cit., p.97 - The process of peasant migration to relatively sparsely populated and agriculture underdeveloped neighbouring region from an area of high agriculture density may be likend to a process of 'adjacent creep'.

Tripura, except on the east, is encircled on all the other sides by the present Bangla Desh. Therefore, it is inevitable, that people from Bangladesh would migrate to Tripura because of overcrowding and other reason i.e. partition, political oppression etc. The same is true to a certain extent in case of Assam and Meghalaya, which are also adjoining to Bangla Desh. In case of Nagaland, and Arunachal Pradesh, the Nepalis dominate. They are mostly engaged in these areas as labourers and milkmen etc.

Findings:

In the above discussion, emphasis has been given to the migration of population in the North Eastern Region of India. From the analysis, one thing becomes very clear that the process of migration is a very complex and any conclusion drawn in the above analysis are based on the published census informations. Analyses relating to place of birth, place of residence, sex-ratio, duration of stay, direction of movement have been discussed in detail for the period 1961-and 1971.

Following are the main findings of the analysis,

1. A significant amount of migration of people from outside the region has taken place since 1826, a time when this region was annexed to British Raj.

2. At the initial stage, almost all the migrants came as plantation labourers, agricultural labourers and labourers brought by Britishers for maintaining official works and constructions (mainly roads and railway lines) followed by different waves of immigrants coming from the neighbouring countries due to political reasons.

3. The main characteristic of the migrants coming from outside the region is the overwhelming majority of male migrants, particularly among the groups who were staying at one place for less than one year. As the time passes the sex-ratio of migrants increases. This may reflect that male migrants precede the female counterpart and after settling down bring their families.

4. Another interesting aspect of migration within the region is that, the intra-district migration is much higher (58.9 percent) than that of the inter-district migration (10.5 percent). This may lead to conclude that there may be a significant difference in socio-cultural and economic opportunities in the region.

5. As regards to the percent of net migrants to gross migrants, although Arunachal Pradesh (66 percent) tops the list followed by Nagaland (59 percent) and Assam (37 percent) for males, in absolute terms, Assam has nearly 256000 male net migrants during 1961-71. The female net migrants during the same

period is very low. The only exception is Tripura, which loses nearly 4 percent of males and 2 percent of female migrants.

6. From the analysis of inter-state migration it is seen that there exists a heavy flow of migration to the plains of the region (specially Assam) and to some extent to Meghalaya in which Shillong is acting as the focus of attraction being the seat of many Central Government Agencies.

7. The analysis of four major classes of migration i.e. Rural to Rural, Rural to Urban, Urban to Rural and Urban to Urban, reveals that Rural to Rural migration seems to be a most important followed by Rural to Urban migration. The first aspect may be the indicator of social interaction, whereas, the second aspect indicates the lure for economic betterment to that of the rural areas. The Urban to Urban migration reflects the mobility of people and jobs available to them, while the Urban to Rural migration may reflect the implementation of planning policy envisaged by the Government of India in regards to the balanced regional growth in the rural areas. It is interesting to note that the percentage of net migration to gross migration from the urban areas to rural areas in Arunachal Pradesh is abnormally high (96 percent) followed by Nagaland (54 percent), Meghalaya on the other hand, registered the lowest (3 percent) in the region.

8. From the analysis of migration flows it has been found that migrants from Bangla Desh outnumbered all other streams which is followed by the Nepali's in recent years.

From the available data published by the various censuses are of limited nature from the point view of comparability and exhaustive nature. Therefore, further improvements in the analysis of population migration in the region can be made by selecting other demographic indices like, place of birth (actual birth place) direction of movement, religious and linguistic variations that were beyond the scope of the present study.

CHAPTER V

OCCUPATIONAL STRUCTURE OF POPULATION IN NORTH EAST INDIA

Occupation is perhaps the most important social characteristic influencing man's life.¹ It gives the degree of employment and unemployment and exerts its influence as one of the major determinants of several social, economic and demographic characteristics of the population. In Gosal's² words, "The occupation often reflects a variety of cultural traits of the workers, specially in a country like India where cultural moorings have strong bearing on what a person is to do for earning livelihood". It is, therefore, imperative to study the

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1. Alba, M. Edward: 'Preface' to Comparative occupation Statistics for the United States: 1870 to 1940, as cited by D.J. Bogue, Principles of Demography (New York, John Wiley, 1969) p.252 and R.S. Dube Population of the Rewa Plateau, A Geographical Analysis, Ph.D. thesis, Sangor University, 1974, p.281.
 2. G.S. Gosal: Occupational Structure of Punjab's Rural Population, 1961, The Indian Geographical Journal, 40: 1, 1965.

work force and its livelihood pattern, in order to understand the diverse demographic and socio-economic relationships.

In order to define the economic activity there are two main yard sticks; what is and what is not economic activity. The first is to ask each person what is his usual occupation or 'gainful work' without inquiring exactly when the work was done. The other type of standard defines the economically active population as the 'labour force'.³ This represents the number of people actually at work during some particular short period.

Both the standards are based on 'economically active' population as the group may be counted and classified. It is important to follow a fairly uniform practice in collection of statistics regarding economically active population, so that comparison can be made between two geographical regions. In Indian censuses, a different standard adopted, in 1951 for example, the population was labelled either as a 'self supporting person' or an 'earning dependent' or 'non-earning dependent'. The 1961 and 1971 censuses, first classified the entire population into working and non-working groups and the occupational classification covered only the working population.

3. George, W. Barclay: 'Manpower and Working Activities' in Techniques of Population Analysis, John Wiley & Sons Inc. New York 1958, p.264.

In the whole of North East India, worker's contributed about 43 percent of the total population in 1961*, which had reduced to only 30.75 percent in 1971. The corresponding figures for all India were 43 percent and 32.92 percent respectively. Work force of 1971 presents some new features — the work participation was very low. Only 30.75 percent against 43 percent in 1961. But directwise comparison of work participation rate is not always so simple in different census years. Because, almost in each census year, the definition of working population had undergone drastic changes.⁴ In 1961⁵ census, the percentage of working population registered a marked increase, because, the workers status was given liberty to include persons whose contribution to productive activity was insignificant. Therefore, the unusual fall in the work participation in 1971 was not due to depletion of working population but was on account of a change in the definition of workers in 1971 census. The lower proportion of working population in this region may be contributed to the population of Assam which

*excludes the figures for Arunachal Pradesh as no census schedule was convassed in 1961.

4. T.K. Chaudhury: 'Labour Force and Work Participation Rate in Demographic Trends in Assam.

5. Census of India, Series 3, paper I of 1961.

constitutes more than three-fourth of the region's total population in 1971. Therefore, Assam is the only state which overwhelmingly influences the values for the region as a whole. The female participation in other constituent units of the region is quite high as compared to Assam, that is why the participation rate has come down in the all India average for 1971. Secondly, the Scheduled Castes and Scheduled Tribes which show higher rate of participation in different economic pursuits, constitute quite a low proportion of population in Assam, while, in other units of the region, the proportion is high. Therefore, the participation rate is very much depending on the Assam's situation.

The participation rate of population in the region as a whole shows sharp variations in terms of sex and rural-urban break-up. Roughly, half (49.48 percent) of the total male population of the region is engaged in some work. As regards to participation rates of females for the region as a whole, the ratio has been lowered significantly by the overwhelming majority of female population in Assam and Tripura.

The rural-urban differences are negligible in this region as compared to all India (Table 5.1): Almost the same proportion of population was engaged in working force in rural and urban areas in the region. But the sex differentials in participation rates is quite wide in rural and urban areas of

TABLE 5.1: Work Force in North East Region and All India, 1971.

Region/Country		Percentage of workers to total Population		
		T	M	F
North East India	T	30.75	49.48	10.07
	R	30.78	49.49	10.45
	U	30.47	49.44	6.00
All India	T	32.92	52.50	11.65
	R	33.81	53.46	13.09
	U	29.33	48.82	6.61

Source: Census of India 1971, Union Primary Census Abstract, Series I, India Part II-A(ii).

the region. In the rural areas about 49.49 percent males are working against only 10.45 percent females. The difference in the participation ratio of males in rural-urban areas is negligible but among females, it is quite significant. About 10.45 percent females are working in rural areas as against only 6.00 percent in urban areas.* The situation for rural urban differentials at all India level is also not very much different, although the participation rate is somewhat higher.

*As the majority of Agricultural system in the region is subsistence type, the more participation of female labour force in rural areas, however, does not indicate any economic betterment. Further, it may also be conceived that the majority of the female workers may be underemployed or they may belong to lower caste groups.

Table 5.2 summarises the degree of variations in the working force of the region since 1911. The states of Manipur (45.89 percent), Meghalaya (52.31 percent) and Nagaland (59.40 percent) and Union Territory of Mizoram (47.24 percent) are the ones which have shown higher rate of participation than the regional average (43.43 percent) in 1961. Assam (42.53 percent) is more or less at par with the regional average, while Tripura (38.29 percent) is the lone state in 1961, which showed quite low rate of participation of the work force in the region. The situation of Tripura has improved in 1971 when compared with the regional average of 1971. But Assam, shows a decline in the female participation rate in 1971.

The male participation is highest in Nagaland (60.70 percent) and the lowest was in Tripura (39.36 percent) in 1961, as against Arunachal Pradesh (57.89 percent) and Tripura (28.20 percent) in 1971. Tripura is the only state in the region where participation rate for male-female was quite low in respect to the regional average for 1961, but in 1971, the situation is quite changed. Assam shows the lowest rate, whereas, in Tripura about 5 percent females are working. The higher proportion of male workers in Arunachal Pradesh and Nagaland is mainly due to higher proportion of Tribal population.

Among the female population, the districts where the

TABLE 5.2 : PERCENTAGE DISTRIBUTION OF LABOUR FORCE IN NORTH EAST REGION DURING 1911-81.

State or Union Territory	Year	Labour force (Nos.)	Percentage of Labour force Total
Assam	1911	2284	50.96
	1921	2693	50.64
	1931	3156	49.74
	1951	3918	43.32
	1961	5357	43.76
	1971	4949	30.02
	1981	-	-
Manipur	1911	136	39.12
	1921	197	51.33
	1931	202	45.33
	1951	299	51.78
	1961	388	45.89
	1971	370	34.57
	1981	649	41.88
Tripura	1911	107	46.64
	1921	132	43.32
	1931	105	27.25
	1951	266	41.68
	1961	437	38.29
	1971	433	27.79
	1981	660	29.61

TABLE 5.2 (Contd.)

State or Union Territory	Year	Labour force (,000)	Percentage of Labour force Total
North East Region			
	1911	2527	49.96
	1921	3022	50.32
	1931	3463	48.26
	1951	4483	43.69
	1961	6152	49.33
	1971	5752	30.09
	1981	-	-
All India			
	1911	121189	48.08
	1921	117864	46.91
	1931	121150	43.44
	1951	139984	38.78
	1961	188218	42.86
	1971	180373	32.91
	1981	-	-

* - Includes Meghalaya, Nagaland and Mizoram.

Source: Census of India 1961, Subsidiary Tables, Workers from 1901/11 to 1961, States and Union Territories, Paper 1 of 1967 and for 1971 Primary Census Abstract of each State and Union Territory, for 1981 - Provisional Population Totals for all respective units.

female participation rate is more than 50 percent are; Manipur East (51.52 percent), Kamang (52.89 percent), Subansiri (59.54 percent) and Siang (50.67 percent) This is more than five times the regional average rate of female participation and almost five times to the national average for 1971. In most of the districts of Assam and Tripura, the female participation rate is quite low (less than 10 percent). This may be attributed to social prejudices and customs prevalent in these parts.

The situation in rural urban areas is also not very different in case of female participation rate. In rural areas of the districts, in the region, the female participation rate is higher than that of urban female rate. In some districts, the percent variation is of the rate of 40 percent.

In 1911 and 1921, roughly 50 percent of the total population consisted the labour force of North East Region. In 1951, the same was dropped to 43.69 percent but again in 1961 increased to the level of 1911 decade. But in 1971, the labour force was drastically dropped to 29.37 percent of the total population of North East India. This drastic fall in the 1971 figures was not due to any dropout in working population but on account of a change in the definition of worker in 1971. North East Region's labour force in 1971 was quite lower than that of all India (32.91 percent) Table 5.2).

Table 5.3, presents district-wise distribution of population by workers and non-workers in 1971 and 1981*. In 1971, except Assam and Tripura, rest of the constituent units in the region had higher work participation rate than that of the regional average of 30.75 percent. In 1981, the same situation remained in Tripura, but with a slight increase of about 2 percent, while Nagaland, Mizoram and Arunachal Pradesh have recorded a decline in the percentage during the same period. In 1971, Arunachal Pradesh's working population was 57.65 percent, which was the highest in the region. It was so because both male (63.14 percent) and female (51.28 percent) workers were highest in the region in respect to other units of the region. The female participation rate in Arunachal Pradesh was more than five times the rate of the region. Among all the constituent units of the region, Tripura and Assam had the lowest participation rate in the region (about 27.8 and 27.9 percent respectively). Nagaland and Arunachal Pradesh had 50 percent or more workers in 1971, while in 1981, none of the constituent unit had more than 50 percent of the population as workers. In 1981, Arunachal Pradesh is leading in the case of work participation rate (49.19 percent). Nagaland, which had

*1981 figures are provisional.

TABLE 5.3 : DISTRICTWISE DISTRIBUTION OF POPULATION BY WORKERS AND NON-WORKERS IN 1971 AND 1981*
IN NORTH EAST INDIA.

State/Union Territories/Districts	Working Population			Percentage of workers to total Population					
	1981			1971			1981		
	T	M	F	T	M	F	T	M	F
Goalpara	-	-	-	26.91	50.45	1.54	-	-	-
Kamrup	-	-	-	26.09	47.77	1.72	-	-	-
Darrang	-	-	-	29.11	50.15	5.43	-	-	-
Nowgong	-	-	-	27.12	49.88	1.81	-	-	-
Sibsagar	-	-	-	28.48	45.68	9.06	-	-	-
Lakhimpur	-	-	-	29.08	46.77	8.73	-	-	-
Mikir Hills	-	-	-	31.16	53.38	5.75	-	-	-
North Cachar Hills	-	-	-	41.91	56.88	24.10	-	-	-
Cachar	-	-	-	28.77	50.77	4.93	-	-	-
<u>A. Assam</u>	-	-	-	27.96	68.83	4.66	-	-	-
Manipur North	78246	40488	37758	50.22	51.90	48.44	50.75	50.95	50.54
Manipur West	32878	16343	16535	49.28	49.56	49.00	52.83	51.74	63.95
Manipur Sough	62211	34795	27416	37.05	44.93	28.98	46.44	50.21	42.40

TABLE 5.3 (Contd.)

State/Union Territories/Districts	Working Population			Percentage of workers to total Population					
	1981			1971			1981		
	T	M	F	T	M	F	T	M	F
Tengnongpal	29315	16363	12952	43.41	51.68	34.93	52.96	57.55	48.12
Manipur Central	346855	205566	141289	29.39	43.75	14.81	37.59	44.33	30.79
Manipur East	38726	20623	18103	48.65	45.87	51.52	46.68	47.75	45.51
<u>B. Manipur</u>	588231	334178	254053	34.57	45.31	23.62	41.68	46.69	36.52
Jaintia Hills	76912	43946	32966	48.46	54.93	41.98	49.30	55.84	42.65
East Khasi Hills	208292	135592	72700	42.84	53.19	31.50	41.11	52.07	29.52
West Khasi Hills	83771	45329	38442	54.63	56.14	53.05	52.14	55.05	49.08
East Garo Hills	54605	33668	20937	38.18	49.66	25.83	40.19	48.04	31.83
West Garo Hills	163578	101734	61844	42.43	52.74	31.66	44.31	54.11	34.14
<u>C. Meghalaya</u>	587158	360269	226889	44.17	53.85	34.57	44.20	53.02	34.97
Kohima	108524	71597	36927	48.87	57.80	37.29	43.17	50.99	33.26
Phak	36472	18939	17533	57.04	54.78	59.55	51.61	50.75	52.56
Wokha	21051	11411	9640	47.89	46.46	49.35	38.09	40.59	35.50
Lunhebot	25770	13592	12178	48.08	48.91	47.23	42.50	44.17	40.77

TABLE 5.3 (Contd.)

State/Union Territories/Districts	Working Population			Percentage of workers to total Population					
	1981			1971			1981		
	T	M	F	T	M	F	T	M	F
Mokokchung	39733	23037	16696	45.24	51.49	37.74	38.11	42.08	33.72
Tuensang	76188	42491	33697	51.79	57.75	45.32	50.03	52.63	47.10
Mon	46364	26428	19936	59.26	62.76	55.30	58.88	62.70	54.48
<u>D. Nagaland</u>	354102	207495	145607	50.75	55.55	45.24	45.79	40.09	40.83
West Tripura	178455	234739	43716	26.73	47.67	4.37	28.66	47.25	9.21
North Tripura	163335	141284	22051	29.59	51.50	6.15	30.22	50.58	8.44
South Tripura	164363	139723	24640	27.95	50.23	4.38	30.71	50.79	9.47
<u>E. Tripura</u>	606153	515746	90407	27.79	49.43	4.83	29.61	49.06	9.08
Aizawl	137848	83477	54371	44.57	49.80	39.16	40.45	47.32	33.08
Lunglei	33673	21936	11737	49.24	57.33	39.63	40.77	51.61	29.28
Chhimituipui	29467	18402	11065	45.96	50.98	40.88	45.74	55.64	35.30
<u>F. Mizoram</u>	200988	123815	77173	45.61	51.43	39.46	41.21	49.14	32.73

TABLE 5.3 (Contd.)

State/Union Territories/Districts	Working Population			Percentage of workers to total Population					
	1981			1971			1981		
	T	M	F	T	M	F	T	M	F
West Kameng	31128	19533	11595	60.36	70.15	46.91	49.45	58.04	39.58
East Kameng	23688	13821	9867	64.12	67.53	60.46	55.45	62.87	47.57
Lower Subansiri	59447	34531	24916	60.95	62.02	59.81	52.47	57.40	46.88
Upper Subansiri	19439	10589	8850	60.18	62.72	57.52	49.33	52.93	45.58
West Siang	35661	20404	15257	54.91	61.25	47.46	48.09	52.61	43.14
East Siang	32471	20850	11621	57.54	61.74	52.72	46.21	54.89	35.99
Dibang Valley	1448	9460	5020	62.87	67.87	56.66	52.24	59.17	42.81
Lohit	31147	22750	8397	51.16	62.90	35.76	44.88	58.39	27.59
Tirap	61485	38300	23185	54.43	59.87	48.26	47.98	55.96	38.84
G. Arunachal Pradesh	308946	190238	118708	57.65	63.14	51.28	49.19	56.63	40.64
North East Region**	2645578	1731741	913837	30.75	49.48	10.07	39.63	50.22	28.31

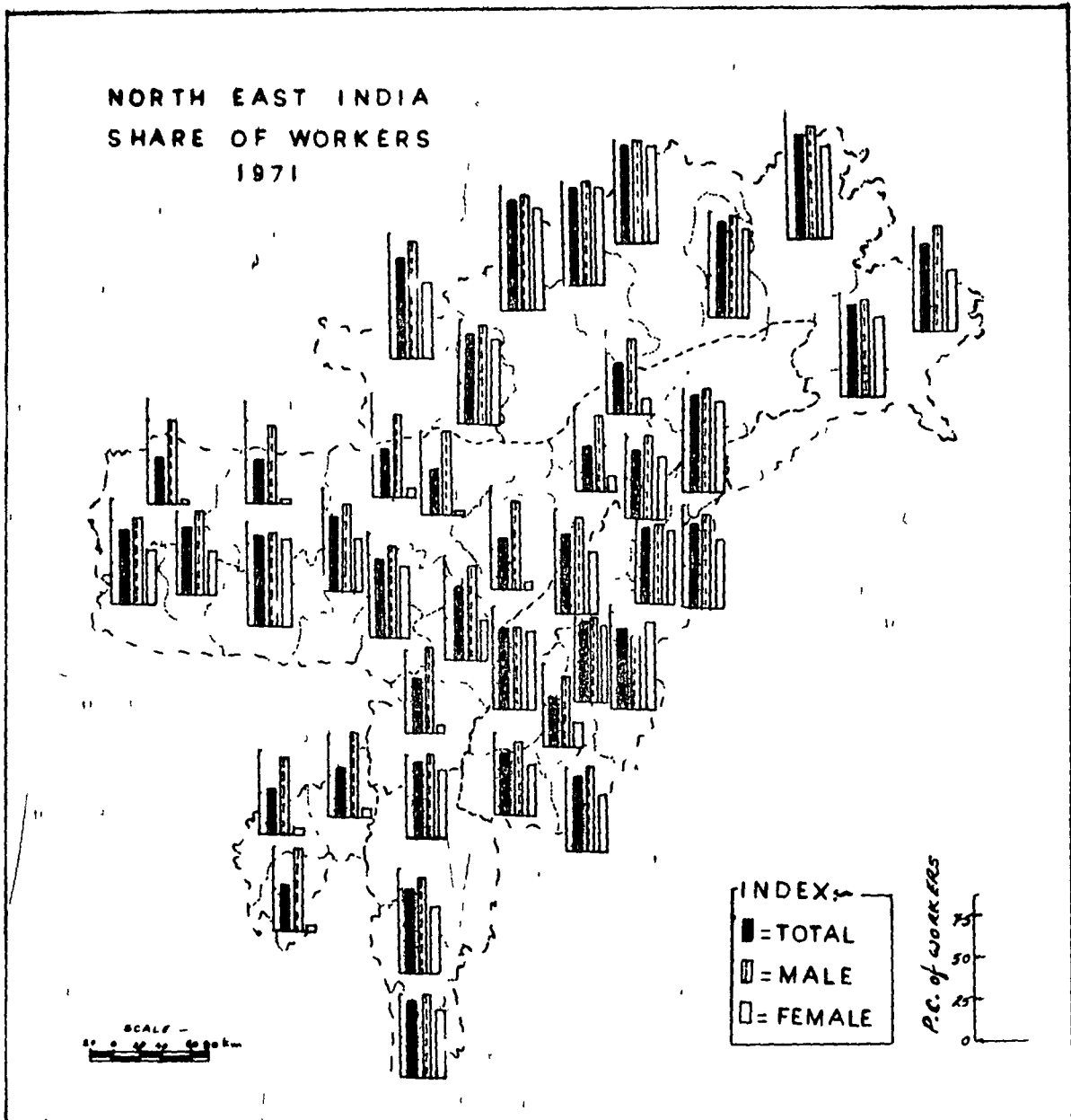
Source: Based on Census of India 1981, provisional Population Totals, for different states and union territories.

* - 1981 figures are provisional.

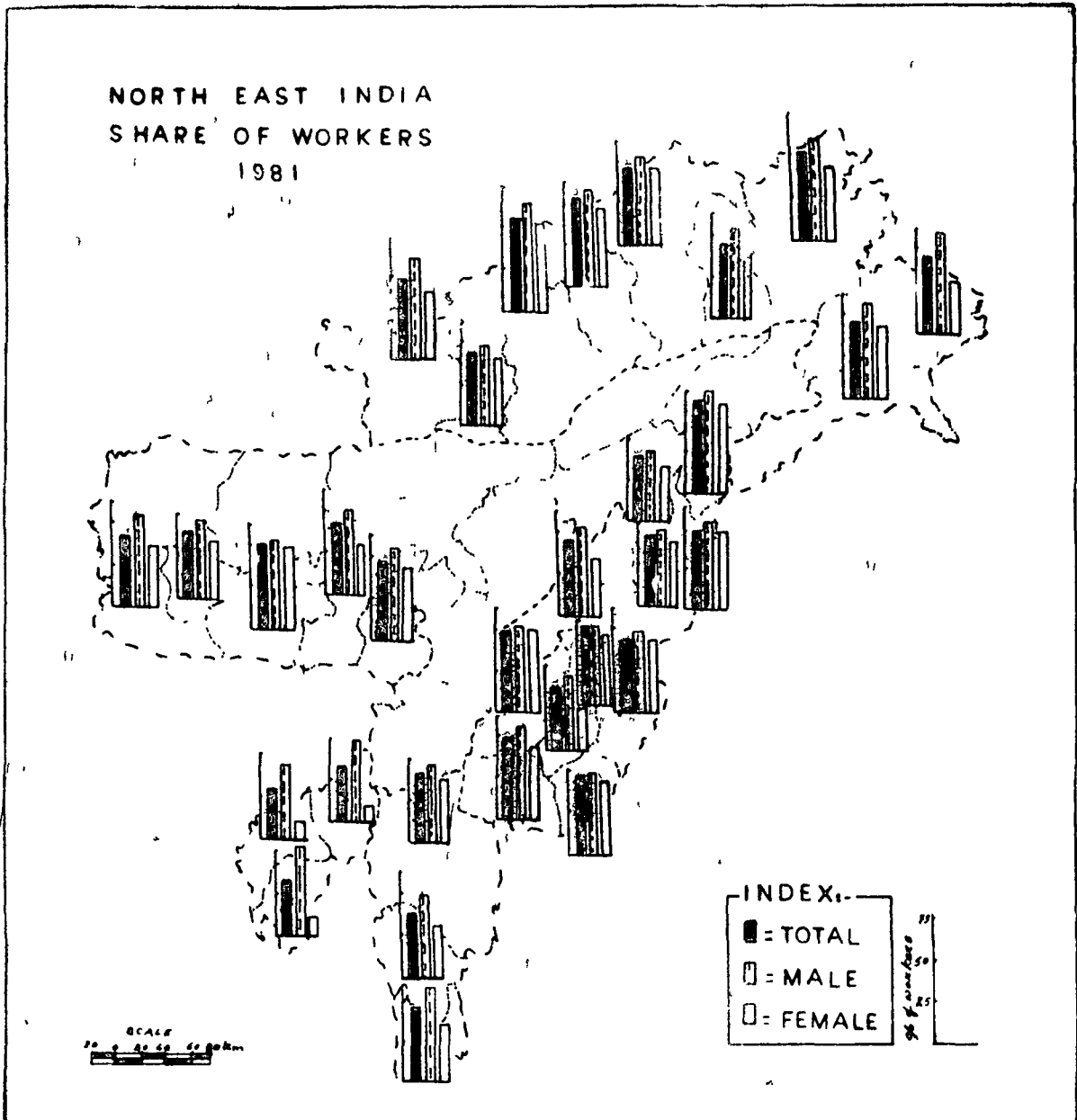
** - excludes Assam in 1981 as no census was done.

lower rate of female participation rate in 1971 than Arunachal Pradesh, has shown a slightly higher figure (40.83 percent) in 1981. In 1981 Tripura also recorded more than two-fold change over 1971 in female participation rate. Manipur also recorded a significant increase in female participation rate in 1981 over 1971, while Meghalaya has changed slightly. The rest have recorded a decline in female participation rate (Map 7, 8).

District level information has been presented in Table 5.3 (Map 9). It is noted that in 1971, all districts of Tripura, Manipura Central and all, except, Mikir Hills and North Cachar Hills in Assam have lower rate of work force than the regional average. But in 1981, in addition to districts of 1971, Lokha, Mokokchung also had lower working population than that of regional average. In 1971, 14 districts (Manipur North, West Khasi Hills, Phek, Tuensang, Mon and all districts of Arunachal Pradesh) had more than 50 percent of the population as workers. The variation was from as low as 26.09 percent in Kamrup to 64.12 percent in East Kameng in 1971. In 1981, the work participation rate was in between 28.66 percent in West Tripura and 58.88 percent in Mon. Goalpara, Kamrup Nowgong, West Tripura and South Tripura districts have miserably low female work participation rates viz. 1.54, 1.72, 1.81, 4.37 and 4.38 percent respectively in 1971. In 1981, the lowest female



Map-7



Map-8

workers percentage was 8.44 percent in North Tripura, while the regional average was 28.31 percent. Out of 33 districts in the region for which the labour force information is available for 1981, 25 districts have recorded more than 50 percent of the male population as working population. But in 1971, out of 42 districts, 29 districts had the male participation rate over 50 percent. Therefore, it is significant that, while about 50 percent of males belonged to working population, very low percent of females were engaged in any 'gainful work', in 1971, which ultimately brings down the overall work participation rate as well as pushes up the number of dependents on every gainfully employed worker. However, the situation in 1981, has improved significantly in case of females, while very slight change has been noticed in case of males.

In brief (i) North East Region has lower proportion of workers than India as a whole. This is because of very low female participation in Assam, which dominates the region's population. (ii) The rural areas have slightly higher participation than urban areas. It is mainly due to urban employment being age biased and school and college going younger population constituting a sizable part of the population. (iii) The higher proportion of working population characterise those areas where (a) the growth rate of population is high, (b) female partici-

pation rate is higher and (c) male workers constitute a fairly moderate proportion (more than 40 percent) and (iv) the higher male participation rate characterise the areas where Scheduled Tribes population have higher percentage total population.

STRUCTURAL ANALYSIS OF LABOUR FORCE, 1971, 1981:

Of the total workers in the region about 69 percent are engaged in agricultural occupation (Table 5.4) in 1971 while in 1981 the same is about 71 percent (excluding Assam in 1981). The proportion in 1971 is at par with the all India figures (69.67 percent). The cultivators who constitute about 60 percent of the total workers in the region show very high proportion in the region than that of all India (43.34 percent) in 1971. The situation in 1981 also remains more or less unchanged. But the most striking feature is that in the region there were only 9.28 percent agricultural workers as against all India's 26.3 percent in 1971. This shows that the region's agricultural population were mostly landowning (cultivators), a significant departure from the Indian norm. In 1981, the proportion of agricultural labourers has increased to 10.16 percent showing a slight increase over 1971. But the situation in Indian case as a whole remains same in 1981. Therefore, one

TABLE 5.4 : PERCENTAGE DISTRIBUTION OF OCCUPATIONAL STRUCTURE
IN NORTH EAST INDIA, 1971 AND 1981^a.

States/Union Territories	1971			1981			
	T	M	F	T	M	F	
1. CULTIVATORS							
Assam	T	55.86	61.31	4.33	-	-	-
	R	59.32	65.33	4.47	-	-	-
	U	15.34	16.22	1.40	-	-	-
Manipur	T	67.00	68.06	64.93	59.23	60.84	57.10
	R	72.63	73.76	70.48	67.29	70.11	63.85
	U	17.10	22.24	3.68	29.17	30.91	26.14
Meghalaya	T	69.15	63.55	78.30	63.56	59.08	70.67
	R	77.11	73.49	82.50	72.62	70.10	76.25
	U	2.35	1.99	3.88	3.07	2.47	5.02
Nagaland	T	77.58	64.21	96.44	70.49	56.09	90.87
	R	85.68	76.01	97.32	78.81	66.38	94.21
	U	3.65	1.80	33.75	6.06	3.56	19.08
Tripura	T	54.41	55.37	43.94	43.57	44.52	38.17
	R	59.31	60.18	49.56	48.00	48.98	42.36
	U	5.43	5.91	1.48	3.21	3.70	0.44
Mizoram	T	83.53	74.18	96.42	72.11	64.14	84.90
	R	86.68	78.06	93.04	84.97	78.74	94.23
	U	46.70	37.44	68.78	20.42	13.28	36.29

TABLE 5.4 (Contd.)

States/Union Territories		T	1971 M	F	T	1981 M	F
Arunachal Pradesh	T	78.38	66.76	94.90	72.29	59.60	92.62
	R	80.83	70.31	95.16	75.87	64.12	93.56
	U	5.50	2.89	43.38	5.68	3.10	27.42
North East India**	T	60.07	60.30	58.85	60.61	55.14	70.97
	R	65.65	66.44	61.58	67.65	62.82	76.40
	U	5.97	5.71	8.77	16.91	12.52	28.21
2. AGRICULTURAL LABOURERS							
Assam	T	9.92	10.82	1.41	-	-	-
	R	10.22	11.18	1.43	-	-	-
	U	6.36	6.70	0.97	-	-	-
Manipur	T	3.65	3.53	3.88	7.87	6.70	9.42
	R	3.80	3.66	4.07	8.10	6.97	9.49
	U	2.31	2.50	1.80	7.03	5.83	9.12
Meghalaya	T	9.88	9.34	10.75	9.92	9.20	11.05
	R	10.77	10.54	11.11	11.01	10.55	11.67
	U	2.41	1.92	4.45	2.65	2.29	3.82
Nagaland	T	1.45	1.61	1.23	1.87	2.21	1.39
	R	1.51	1.71	1.21	1.83	2.24	1.32
	U	0.92	0.82	2.66	2.18	2.05	2.81

TABLE 5.4 (Contd.)

States/Union Territories		T	1971 M	F	T	1981 M	F
Tripura	T	19.96	19.63	23.63	23.91	22.50	31.93
	R	21.57	21.11	26.62	26.17	24.57	35.30
	U	3.99	4.34	1.03	3.27	3.57	1.57
Mizoram	T	0.37	0.44	0.27	2.56	2.44	2.74
	R	0.24	0.29	0.17	1.99	1.99	1.99
	U	1.87	1.83	1.96	4.83	4.00	6.67
Arunachal Pradesh	T	1.96	1.86	2.11	2.45	2.75	1.97
	R	1.95	1.83	2.11	2.52	2.88	1.98
	U	2.49	2.48	2.61	1.17	1.21	0.90
North East India**	T	9.28	9.89	5.98	10.16	10.65	9.23
	R	10.06	10.81	6.02	11.11	11.91	9.66
	U	1.74	1.72	1.95	4.28	4.28	3.69

3. HOUSEHOLD INDUSTRY, MANUFACTURING SERVICES, PROCESSING AND REPAIRS

Assam	T	1.39	1.16	3.55	-	-	-
	R	1.13	0.90	3.20	-	-	-
	U	4.42	4.04	10.39	-	-	-

TABLE 5.4 (Contd.)

States/Union Territories		T	1971 M	F	T	1981 M	F
Manipur	T	9.34	2.40	22.91	10.89	3.25	20.94
	R	8.10	1.83	20.01	9.79	2.50	18.71
	U	20.29	6.98	55.00	15.00	5.68	31.20
Meghalaya	T	1.09	1.13	1.03	1.09	0.91	1.38
	R	0.96	0.96	0.95	1.01	0.82	1.29
	U	2.21	2.14	2.54	1.64	1.39	2.46
Nagaland	T	0.30	0.49	0.04	1.43	1.49	1.35
	R	0.14	0.25	0.02	0.72	0.77	0.66
	U	1.74	1.75	1.60	6.98	5.19	16.31
Tripura	T	1.40	1.34	2.04	1.62	1.42	2.75
	R	1.41	1.34	2.16	1.60	1.39	2.81
	U	1.31	1.33	1.13	1.85	1.77	2.29
Mizoram	T	0.32	0.43	0.18	1.28	1.14	1.52
	R	0.16	0.22	0.08	0.73	0.88	0.51
	U	2.22	2.42	1.76	3.51	2.05	6.74
Arunachal Pradesh	T	0.31	0.45	N	0.41	0.51	0.25
	R	0.26	0.39	N	0.33	0.40	0.23
	U	1.65	1.61	2.26	1.88	1.87	1.97

TABLE 5.4 (Contd.)

States/Union Territories		T	1971 M	F	T	1981 M	F
North East India**	T	1.73	1.15	4.88	3.37	1.56	6.82
	R	1.47	0.93	4.24	2.79	1.24	5.61
	U	4.26	3.09	16.71	6.96	3.33	16.29
4. OTHER SERVICES							
Assam	T	32.83	36.71	90.69	-	-	-
	R	29.33	22.59	90.90	-	-	-
	U	73.88	73.04	87.24	-	-	-
Manipur	T	20.01	8.28	22.01	22.01	29.21	12.54
	R	15.47	5.45	14.81	14.81	20.42	7.96
	U	60.31	68.27	39.53	48.81	57.59	33.54
Meghalaya	T	19.88	25.98	9.92	25.43	30.81	16.90
	R	11.16	15.01	5.44	15.36	18.53	10.80
	U	93.03	93.95	89.13	92.65	93.85	88.70
Nagaland	T	20.67	33.69	2.29	26.21	40.21	6.39
	R	12.67	21.99	1.45	18.65	30.62	3.81
	U	93.69	95.63	61.95	84.79	89.19	61.80
Tripura	T	24.23	23.66	30.39	30.90	31.56	27.15
	R	17.71	17.37	21.66	24.23	25.06	19.53
	U	89.27	88.42	96.36	91.67	90.95	95.70

TABLE 5.4 (contd.)

States/Union Territories		1971			1981		
	T	M	F	T	M	F	
	T	15.78	24.95	3.13	24.05	32.27	10.85
Mizoram	R	12.92	21.43	1.71	12.31	18.39	3.28
	U	49.21	58.31	27.50	71.24	80.66	50.31
	T	19.39	30.93	2.99	24.85	37.14	5.16
Arunachal Pradesh	R	16.96	27.47	2.64	21.28	32.61	4.23
	U	90.36	93.02	51.75	91.26	93.82	69.71
	T	28.82	28.66	30.29	25.86	32.65	12.98
North East India**	R	22.82	21.82	28.16	18.44	24.04	8.32
	U	88.03	89.48	72.57	71.84	80.47	49.68

Source: Census of India 1981, Provisional
Population Totals for different
states/union territories.

* - 1981 figures are provisional

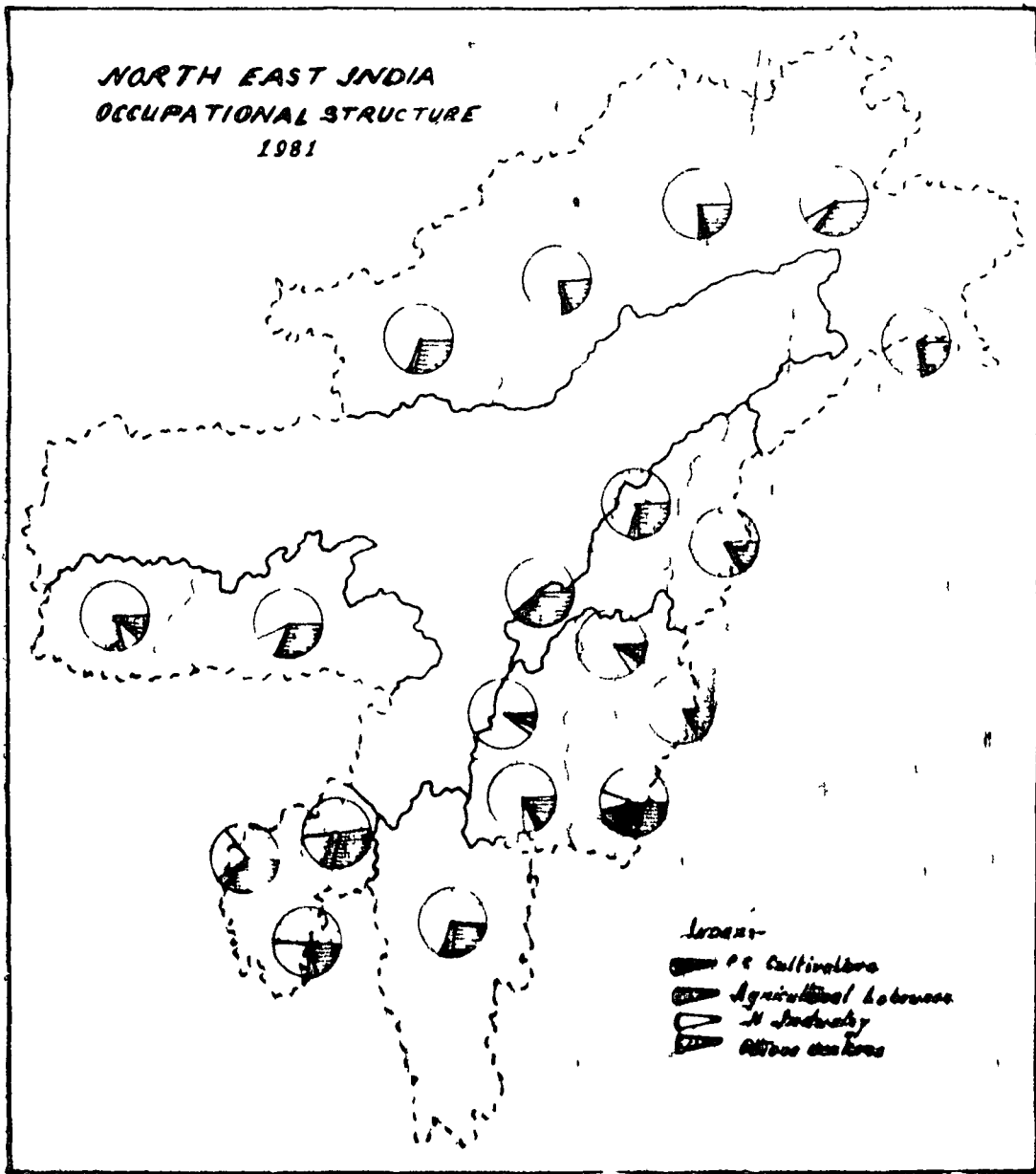
** - In 1981, excludes Assam as no census
has been conducted in 1981.

can say that the region's working population is mainly agrarian. In comparison to 1971, there was a slight increase of agricultural workers in 1981. In 1971, this was about 69.35 percent, which has increased to 70.77 percent in 1981 (Map 9).

The non-agricultural occupations comprise of only 30.65 percent and 29.23 percent in censuses of 1971 and 1981 respectively. The workers engaged in Mining and Quarrying are the least (0.26 percent) in 1971. The number of workers in other services is the highest in non-agricultural activities which comprises of about 11 percent of the total workers in the region. Proportion of workers in other occupational categories is also quite low. Thus, agricultural activities dominate the occupational character of the population of the region.

The female participation rate is quite low in all activities except that in cultivators for both 1971 and 1981. About 82 percent of the total female working force was engaged in cultivation in 1971, while in 1981, it came down to 70.91* percent. The females engaged in agricultural labourers are only 5.78 percent and 9.23 percent in 1971 and 1981 respectively, while those engaged in household industry and other

*For comparison, the figures for 1971 and 1981, does not include Assam.



services form 5.12 and 7.49 percent in 1971 and 6.82 and 12.98 percent in 1981 respectively.

The rural-urban differences in occupational structure are natural to exist, since both the areas support different types of economic activity, because of the difference in the economic base of the systems. In 1971, the urban places have shown higher proportion of workers in Manufacturing, Trade and Commerce, Transport and Communication and in other services. These activities comprises of about 81.5 percent of the total workers in the region. The rural areas are essentially agricultural in nature of occupation. About 75.71 percent of the workers are gaining their livelihood from these occupations in 1971.

The states and union territories of the region show sharp variations. Nagaland, Mizoram and Arunachal Pradesh recorded more than 75 percent of the total workers in 1971 as cultivators, while agricultural labourers were less than even 2 percent. Tripura and Assam are the two states which recorded the lowest proportion of cultivators in comparison to the regional average for 1971. On the other hand, Tripura has recorded more than double the share as agricultural labourers in 1971. In 1981, the proportion of cultivators was in between 43.57 percent in Tripura and 72.29 percent in Arunachal Pradesh.

Therefore, one can say that wherever, the proportion of cultivators is high, the share of agricultural workers was very low and vice-versa.

The areas with more than 75 percent cultivators cover 39 percent of the total number of districts in the region. Only 29 percent districts had cultivators share less than 60 percent, while remaining 32 percent of the districts comprised of 60 to 75 percent of workers as cultivators in 1971. About 45 percent of the districts in 1981 recorded 75 percent of workers as cultivators, whereas only 25 percent of the districts comprised of 60 to 75 percent of the workers as cultivators (Table 5.5).

Among all the districts in 1981, West Tripura had only 35.94 percent cultivators to the total working population, which is the lowest among all the districts. But in 1971, Lakhimpur and Sibsegar districts had only 44.5 percent and 45.4 percent as cultivators share in total workers. The percentage of agricultural labourers in 1981 was the lowest in Tuensang (0.82) followed by Subansiri (0.94). The pattern of agricultural population of Tuensang and Subansiri districts shows that most of the workers engaged in agriculture were cultivators or land owning population. It is, so because, these two areas though had very vast land areas, had very low density of

TABLE 5.5 : PERCENTAGE DISTRIBUTION OF OCCUPATION STRUCTURE
IN NORTH EAST INDIA AT DISTRICT LEVEL DURING 1971
AND 1981.

	T	1971 M	F	T	1981 M	F	
1. PERCENTAGE OF CULTIVATORS TO TOTAL WORKERS							
	T	89.28	81.94	97.55	84.19	78.40	90.41
Manipur North	R	89.28	81.94	97.55	85.45	80.30	90.93
	U	-	-	-	66.79	53.99	82.66
	T	89.79	81.14	98.60	86.36	79.97	92.69
Manipur West	R	89.79	81.14	98.60	87.57	81.73	93.27
	U	-	-	-	59.63	46.78	77.30
	T	85.29	79.05	95.28	75.44	67.84	85.10
Manipur South	R	88.00	82.61	96.16	82.69	78.53	87.28
	U	35.40	33.47	47.69	21.15	16.70	41.63
	T	51.97	62.39	20.69	44.01	52.71	31.34
Manipur Central	R	59.22	70.21	25.00	51.34	62.76	35.64
	U	16.11	21.51	2.55	27.32	31.48	20.40
	T	82.87	75.00	94.82	78.23	72.44	85.55
Tengnoupal	R	82.87	75.00	94.82	83.91	80.42	87.93
	U	-	-	-	13.29	12.04	18.69

TABLE 5.5 (Contd.)

		T	1971 M	F	T	1981 M	F
Manipur East	T	85.41	71.12	98.54	81.53	71.20	93.31
	R	85.41	71.12	98.54	83.48	73.76	94.44
	U	-	-	-	50.76	33.54	73.61
Manipur	T	67.00	68.06	64.93	59.23	60.84	57.10
	R	72.63	73.76	70.48	67.29	70.11	63.85
	U	17.10	22.24	3.68	29.17	30.91	26.14
Garo Hills	T	84.25	79.61	92.95	78.94	75.68	84.28
	R	86.36	82.47	93.21	83.17	81.25	86.17
	U	3.88	2.73	14.32	6.77	4.99	14.85
United Khasi & Jaintia Hills	T	60.04	53.24	70.49	54.46	49.08	62.85
	R	70.67	66.50	76.21	65.48	62.16	70.03
	U	2.20	1.91	3.36	2.37	1.96	3.64
Meghalaya	T	69.15	63.55	78.30	63.56	59.08	70.67
	R	77.11	73.49	82.50	72.62	70.10	76.25
	U	2.35	1.99	3.88	3.07	2.47	5.02
West Tripura	T	48.94	49.90	37.82	35.94	36.90	30.72
	R	56.08	56.78	47.25	41.69	42.69	36.27
	U	2.38	2.62	0.62	1.59	1.88	0.15

TABLE 5.5 (Contd.)

		T	1971 M	F	T	1981 M	F
	T	59.74	61.02	48.23	49.24	50.07	43.94
North Tripura	R	62.38	63.78	50.10	51.93	52.82	46.29
	U	14.80	15.58	5.21	6.84	7.61	1.05
	T	58.52	59.28	49.35	50.86	51.68	46.23
South Tripura	R	61.35	62.07	52.45	53.83	54.79	48.48
	U	8.64	9.18	3.18	6.11	6.72	1.52
	T	54.41	55.37	43.94	43.57	44.52	38.17
Tripura	R	59.31	60.18	49.56	48.00	48.98	42.36
	U	5.43	5.91	1.48	3.21	3.70	0.44
	T	68.56	52.01	95.70	60.20	44.92	85.60
Kohima	R	83.36	71.63	97.62	72.04	57.68	91.93
	U	3.86	1.69	35.90	4.17	2.76	11.16
	T	74.49	58.57	94.68	69.89	53.96	89.75
Mokokchung	R	84.05	72.84	95.54	76.65	62.62	92.09
	U	3.27	1.98	28.73	8.56	4.86	27.55
	T	88.66	81.28	98.57	83.10	72.26	97.03
Tuensang	R	88.66	81.28	98.57	87.24	78.37	97.87
	U	-	-	-	10.04	4.89	45.02

TABLE 5.5 (Contd.)

			1971			1981	
	T		M	F	T	M	F
Nagaland	T	77.58	64.21	96.44	70.49	56.09	90.87
	R	85.68	76.01	97.32	78.81	66.38	94.21
	U	3.65	1.80	33.75	6.06	3.56	19.08
Mizoram	T	83.53	74.18	96.42	72.11	64.14	84.90
	R	86.68	78.06	98.04	84.97	78.74	94.23
	U	46.70	37.44	68.78	20.42	13.28	36.29
Kameng	T	66.87	56.67	83.46	69.03	56.81	88.03
	R	69.22	59.74	83.89	70.97	59.06	88.95
	U	2.62	1.49	17.69	1.95	1.38	5.08
Subansiri	T	87.61	78.13	98.32	76.80	63.60	94.44
	R	87.61	78.13	98.32	83.40	72.65	96.21
	U	-	-	-	1.63	0.98	7.14
Siang	T	80.97	68.87	97.65	74.74	61.57	94.95
	R	86.71	77.37	98.25	80.25	68.99	95.83
	U	7.59	3.85	52.62	12.59	6.80	56.41
Lohit	T	65.84	52.21	93.45	58.22	46.59	86.15
	R	69.91	57.07	93.74	61.18	49.85	84.81
	U	3.05	1.90	40.32	2.77	1.38	24.11

TABLE 5.5 (Contd.)

		TTT	1971 M	F	T	1981 M	F
Tirap	T	83.83	73.67	98.11	77.12	66.13	95.28
	R	83.83	73.67	98.11	77.12	66.13	95.28
	U	-	-	-	-	-	-
Arunachal Pradesh	T	78.34	66.76	94.90	72.29	59.60	92.62
	R	80.83	70.31	95.16	75.87	64.12	93.56
	U	5.50	2.89	43.38	5.68	3.10	27.42
North East India	T	60.07	65.65	5.97	60.61	55.14	70.97
	R	60.30	66.44	5.71	67.65	62.82	76.40
	U	58.85	61.58	8.77	16.91	12.52	28.21
2. AGRICULTURAL LABOURERS							
Manipur North	T	0.32	0.45	0.17	6.14	6.22	6.04
	R	0.32	0.45	0.17	6.06	6.23	5.87
	U	-	-	-	7.23	6.12	8.61
Manipur West	T	0.20	0.32	0.09	4.23	4.03	4.43
	R	0.20	0.32	0.09	4.43	4.25	4.60
	U	-	-	-	-	-	-

TABLE 5.5 (Contd.)

		T	1971 M	F	T	1981 M	F
	T	1.92	2.49	1.02	6.32	6.45	6.15
Manipur South	R	1.65	2.10	0.98	6.34	6.53	6.13
	U	6.91	7.51	3.08	6.17	6.08	6.57
	T	5.80	4.87	8.60	9.65	7.66	12.55
Manipur Central	R	6.56	5.39	10.22	10.91	8.75	13.87
	U	2.06	2.18	1.76	6.80	5.35	9.20
	T	1.17	1.15	1.20	6.73	5.63	8.10
Tengnoupal	R	1.17	1.15	1.20	5.10	3.01	7.51
	U	--	-	-	25.35	25.48	24.77
	T	0.36	0.53	0.20	1.95	1.47	2.50
Manipur East	R	0.36	0.53	0.20	1.72	1.37	2.12
	U	-	-	-	5.61	2.97	9.10
	T	3.65	3.53	3.88	7.87	6.70	9.42
Manipur	R	3.80	3.66	4.07	8.10	6.97	9.49
	U	2.31	2.50	1.80	7.03	5.83	9.12
	T	6.18	6.96	4.77	8.44	7.52	9.34
Garo Hills	R	6.33	7.20	4.81	8.65	7.80	9.97
	U	0.58	0.62	0.23	4.90	4.05	8.77

TABLE 5.5 (Contd.)

			1971			1981	
	T		M	F	T	M	F
United Khasi & Jaintia Hills	T	12.11	10.87	14.01	10.79	10.21	11.70
	R	13.86	13.14	14.80	12.61	12.51	12.74
	U	2.59	2.07	4.66	2.22	1.93	3.13
Meghalaya	T	9.88	9.34	10.75	9.92	9.20	11.05
	R	10.77	10.54	11.11	11.01	10.55	11.67
	U	2.41	1.92	4.45	2.65	2.29	3.82
West Tripura	T	18.58	18.23	22.59	24.42	22.43	35.14
	R	21.10	20.56	28.05	28.21	25.80	41.36
	U	2.13	2.28	1.05	1.83	2.03	0.86
North Tripura	T	19.38	19.39	19.28	19.76	19.64	20.52
	R	19.99	19.98	20.07	20.76	20.63	21.52
	U	9.02	9.67	1.00	3.98	4.21	2.27
South Tripura	T	23.07	22.37	31.75	27.16	25.52	36.43
	R	24.01	23.21	33.82	28.41	26.69	38.01
	U	6.68	7.25	0.93	8.21	8.64	4.90
Tripura	T	19.96	19.63	23.63	23.91	22.50	31.93
	R	21.57	21.11	26.62	26.17	24.57	35.30
	U	3.99	4.34	1.03	3.27	3.57	1.57

TABLE 5.5 (Contd.)

		T	1971 M	F	T	1981 M	F
Kohima	T	11.51	2.02	0.68	2.23	2.83	1.23
	R	1.72	2.56	0.70	2.32	3.12	1.21
	U	0.61	0.64	0.19	1.80	1.86	1.50
Mokokchung	T	2.35	2.26	2.47	2.74	2.73	2.76
	R	2.47	2.55	2.39	2.75	2.76	2.73
	U	1.48	1.12	8.46	2.72	2.53	3.71
Tuensang	T	0.64	0.65	0.62	0.82	1.03	0.56
	R	0.64	0.65	0.62	0.70	0.92	0.44
	U	-	-	-	2.92	2.18	7.94
Nagaland	T	1.45	1.61	1.23	1.87	2.21	1.39
	R	1.51	1.75	1.21	1.83	2.24	1.32
	U	0.92	0.82	2.66	2.18	2.05	2.81
Mizoram	T	0.37	0.44	0.27	2.56	2.44	2.74
	R	0.24	0.29	0.17	1.99	1.99	1.99
	U	1.67	1.83	1.96	4.83	4.00	6.67
Kameng	T	4.48	2.64	2.47	1.51	1.46	1.57
	R	4.64	2.78	7.51	1.52	1.49	1.58
	U	0.11	0.11	-	0.91	0.84	1.27

TABLE 5.5 (Contd.)

		T	1971 M	F	T	1981 M	F
Subansiri	T	0.70	0.73	0.66	0.94	1.01	0.84
	R	0.70	0.73	0.66	0.99	1.12	0.84
	U	-	-	-	0.30	0.25	0.74
Siang	T	1.14	1.63	0.45	3.29	4.12	2.01
	R	0.93	1.36	0.41	3.34	4.28	2.03
	U	3.73	3.72	3.93	2.69	2.92	0.93
Lohit	T	3.92	4.10	3.56	6.48	6.27	6.96
	R	4.07	4.33	3.58	6.81	6.72	7.02
	U	1.65	1.70	-	0.13	0.09	0.71
Tirap	T	0.71	0.86	0.49	1.32	1.50	1.03
	R	0.71	0.86	0.49	1.32	1.50	1.03
	U	-	-	-	-	-	-
Arunachal Pradesh	T	1.96	1.86	2.11	2.45	2.75	1.97
	R	1.95	1.83	2.11	2.52	2.88	1.98
	U	2.49	2.48	2.61	1.17	1.21	0.90
North East India	T	9.28	10.06	1.74	10.16	10.65	9.23
	R	9.89	10.81	1.72	11.11	11.91	9.66
	U	5.98	6.02	1.95	4.28	3.69	5.82

TABLE 5.5 (Contd.)

		T	1971 M	F	T	1981 M	F
3, HOUSEHOLD INDUSTRY, MANUFACTURING, PROCESSING, SERVICESING AND REPAIRS							
	T	0.67	0.28	1.12	1.12	1.07	1.18
Manipur North	R	0.67	0.28	1.12	1.13	1.05	1.22
	U	-	-	-	1.04	1.40	0.59
	T	0.45	0.40	0.50	0.51	0.48	0.54
Manipur West	R	0.45	0.40	0.50	0.47	0.40	0.55
	U	-	-	-	1.27	1.94	0.33
	T	1.04	0.47	1.97	2.58	1.62	3.79
Manipur South	R	0.89	0.22	1.90	2.14	0.93	3.48
	U	3.90	3.61	5.77	5.81	4.92	9.93
	T	15.90	3.53	53.02	17.55	4.67	36.39
Manipur Central	R	14.83	2.83	52.25	17.78	3.95	36.78
	U	21.17	7.20	56.26	17.03	6.18	35.08
	T	0.44	0.30	0.64	1.33	0.96	1.80
Tengnoupal	R	0.44	0.30	0.64	1.06	0.77	1.40
	U	-	-	-	4.42	2.41	13.06

TABLE 5.5 (Contd.)

			1971			1981	
	T		M	F	T	M	F
	T	0.13	0.13	0.14	0.40	0.18	0.68
Manipur East	R	0.13	0.13	0.14	0.31	0.14	0.50
	U	-	-	-	1.78	0.76	3.13
	T	9.34	2.40	22.91	10.89	3.25	20.94
Manipur	T	8.10	1.83	20.01	9.79	2.50	18.71
	U	20.29	6.98	55.00	15.00	5.68	31.20
	T	0.94	0.99	0.84	1.06	0.95	1.24
Garo Hills	R	0.92	0.98	0.81	1.03	0.95	1.16
	U	1.76	1.37	5.40	1.53	0.91	4.34
	T	1.18	1.21	1.14	1.11	0.89	0.72
United Khasi & Jaintia Hills	R	0.98	0.95	1.03	0.99	0.72	1.37
	U	2.26	2.22	2.40	1.66	1.49	2.19
	T	1.09	1.13	1.03	1.09	0.91	1.38
Meghalaya	R	0.96	0.96	0.95	1.01	0.82	1.29
	U	2.21	2.14	2.54	1.64	1.39	2.46
	T	1.68	1.61	2.39	2.22	2.00	3.42
West Tripura	R	1.74	1.66	2.76	2.22	1.98	3.57
	U	1.29	1.34	0.93	2.21	2.13	2.56

TABLE 5.5 (Contd.)

		T	1971 M	F	T	1981 M	F
North Tripura	T	1.04	0.98	1.62	1.13	0.87	2.79
	R	1.04	0.97	1.63	1.13	0.86	2.83
	U	1.13	1.10	1.40	1.15	1.04	2.01
South Tripura	T	1.28	1.22	1.97	1.10	1.02	1.55
	R	1.27	1.21	1.97	1.10	1.01	1.58
	U	1.57	1.52	2.06	1.14	1.15	1.01
Tripura	T	1.40	1.34	2.04	1.62	1.42	2.75
	R	1.41	1.34	2.06	1.60	1.39	2.81
	U	1.31	1.33	1.13	1.85	1.77	2.29
Kohima	T	0.46	0.69	0.09	2.32	2.15	2.58
	R	0.13	0.21	0.03	0.72	0.58	0.92
	U	1.93	1.93	1.90	9.85	7.36	22.13
Mokokchung	T	0.31	0.54	0.03	1.32	1.75	0.78
	R	0.16	0.31	0.01	1.09	1.60	0.54
	U	1.40	1.43	0.89	3.36	2.63	7.14
Tuensang	T	0.14	0.24	0.00	0.47	0.44	0.52
	R	0.14	0.24	0.00	0.46	0.44	0.50
	U	-	-	-	0.67	0.45	2.13

TABLE 5.5 (Contd.)

		1971			1981		
	T	M	F	T	M	F	
Nagaland	T	0.30	0.49	0.04	1.43	1.49	1.35
	R	0.14	0.25	0.02	0.72	0.77	0.66
	U	1.74	1.75	1.60	6.98	5.19	16.31
Mizoram	T	0.32	0.43	0.18	1.28	1.14	1.52
	R	0.16	0.22	0.08	0.73	0.88	0.51
	U	2.22	2.42	1.76	3.51	2.05	6.74
Kameng	T	0.35	0.45	0.20	0.47	0.37	0.62
	R	0.33	0.43	0.16	0.44	0.37	0.56
	U	1.12	0.75	6.15	1.36	0.38	6.78
Subansiri	T	0.10	0.14	0.06	0.42	0.49	0.31
	R	0.10	0.14	0.06	0.33	0.40	0.24
	U	-	-	-	1.44	1.12	4.17
Siang	T	0.18	0.27	0.06	0.62	0.94	0.15
	R	0.14	0.22	0.05	0.41	0.57	0.19
	U	0.72	0.67	1.31	3.01	3.19	1.70
Lohit	T	1.14	1.67	0.80	0.30	0.38	0.08
	R	0.93	1.39	0.08	0.27	0.36	0.08
	U	4.36	4.49	-	0.74	0.78	-

TABLE 5.5 (Contd.)

		1971			1981		
		T	M	F	T	M	F
Tirap	T	0.13	0.13	0.12	0.20	0.29	0.05
	R	0.13	0.13	0.12	0.20	0.29	0.05
	U	-	-	-	-	-	-
Arunachal Pradesh	T	0.31	0.85	N	0.41	0.51	0.25
	R	0.26	0.39	0.09	0.33	0.40	0.23
	U	1.65	1.61	2.26	1.88	1.87	1.97
North East India	T	1.73	1.47	4.26	3.37	1.56	6.82
	R	1.15	0.93	3.09	2.79	1.24	5.61
	U	4.88	4.24	16.71	6.96	3.33	16.29
4. OTHER WORKERS							
Manipur North	T	9.73	17.33	1.16	8.54	14.31	2.37
	R	9.73	17.33	1.16	7.36	12.43	1.98
	U	-	-	-	24.93	38.49	8.14
Manipur West	T	9.55	18.15	0.81	8.89	15.53	2.34
	R	9.55	18.15	0.81	7.53	13.63	1.59
	U	-	-	-	39.10	51.28	22.37
Manipur South	T	11.75	17.99	1.73	15.56	24.09	4.96
	R	9.46	15.07	0.96	8.82	14.00	3.11
	U	53.79	55.41	43.46	66.86	72.30	41.86

TABLE 5.5 (Contd.)

		1971			1981		
		T	M	F	T	M	F
Manipur Central	T	26.33	29.22	17.69	28.79	34.96	19.72
	R	19.38	21.58	12.53	19.98	24.53	13.72
	U	60.66	69.11	39.43	48.85	57.00	35.31
Tengnoupal	T	15.52	23.55	3.34	13.72	20.97	4.55
	R	15.52	23.55	3.34	9.94	15.80	3.17
	U	-	-	-	56.94	60.07	43.47
Manipur East	T	14.10	28.22	1.12	16.12	27.15	3.55
	R	14.10	28.22	1.12	14.50	24.74	2.94
	U	-	-	-	41.85	62.75	14.16
Manipur	T	20.01	26.02	8.28	22.01	29.21	12.54
	R	15.47	20.76	5.45	14.81	20.42	7.96
	U	60.31	68.27	39.53	48.81	57.59	33.54
Garo Hills	T	8.63	12.44	1.44	11.56	15.85	4.54
	R	6.39	9.35	1.17	7.15	10.01	2.71
	U	93.78	95.28	80.05	86.79	90.06	72.04
United Khasi & Jaintia	T	26.67	34.68	14.36	33.64	39.82	24.00
	R	14.49	19.41	7.96	20.92	24.61	15.87
	U	92.95	93.80	89.58	93.75	94.62	91.04

TABLE 5.5 (Contd.)

		T	1971 M	S	T	1981 M	F
	T	19.88	25.98	9.92	25.43	30.81	16.90
Meghalaya	R	11.16	15.01	5.44	15.36	18.53	10.80
	U	93.03	93.95	89.13	92.65	93.85	88.70
	T	30.80	30.26	37.20	37.42	38.67	30.72
West Tripura	R	21.08	21.00	21.94	27.87	29.54	18.79
	U	94.20	93.76	97.40	94.37	93.96	96.43
	T	19.84	18.61	30.87	29.87	29.42	32.75
North Tripura	R	16.59	15.27	28.20	26.18	25.68	29.36
	U	75.05	73.65	92.39	88.03	87.15	94.67
	T	17.11	17.13	16.93	20.88	21.78	15.79
South Tripura	R	13.37	13.51	11.76	16.67	17.52	11.92
	U	83.11	82.05	93.83	84.54	83.49	92.56
	T	24.23	23.66	30.39	30.90	31.56	27.15
Tripura	R	17.71	17.37	21.66	24.23	25.06	19.53
	U	89.27	88.42	96.36	91.67	90.95	95.70
	T	29.47	43.28	3.53	35.26	50.10	10.59
Kohima	R	14.79	25.60	1.65	24.92	38.62	5.95
	U	93.60	95.74	62.01	84.18	86.03	65.21

TABLE 5.5 (Contd.)

		1971			1981		
	T	M	F	T	M	F	
Mokokchung	T	22.85	38.63	2.82	26.05	41.56	6.71
	R	13.32	24.30	2.06	19.51	33.02	4.64
	U	93.85	95.47	61.90	85.36	89.99	61.60
Tuensang	T	10.56	17.83	0.81	15.60	26.28	1.89
	R	10.56	17.83	0.81	11.59	20.27	1.20
	U	-	-	-	86.37	92.48	44.91
Nagaland	T	20.67	33.69	2.29	26.21	40.21	6.39
	R	12.67	21.99	1.45	13.65	30.61	3.81
	U	93.69	95.63	61.95	84.70	89.19	61.80
Mizoram	T	15.78	24.95	3.13	24.05	32.27	10.85
	R	12.92	21.43	1.71	12.31	18.39	3.28
	U	49.21	58.31	27.50	71.24	80.66	50.31
Kameng	T	28.30	40.24	8.87	29.00	41.37	9.76
	R	25.81	37.05	8.44	27.07	39.09	8.92
	U	96.15	97.65	75.16	95.78	97.39	86.86
Subansiri	T	11.59	21.00	0.96	21.85	34.90	2.71
	R	11.59	21.00	0.96	15.28	25.82	4.91
	U	-	-	-	96.63	97.65	87.95

TABLE 5.5 (Contd.)

		1971			1981		
		T	M	F	T	M	F
Siang	T	17.71	29.23	1.84	21.35	33.37	2.89
	R	12.32	22.05	1.29	16.00	26.15	1.95
	U	87.96	91.76	42.14	81.70	87.09	40.96
Lohit	T	29.10	42.02	2.19	35.00	46.75	6.80
	R	25.09	37.21	2.60	31.73	43.07	6.08
	U	90.94	91.91	59.68	96.36	97.74	75.18
Tirap	T	15.33	25.34	1.28	21.36	32.08	3.64
	R	15.33	24.34	1.28	21.36	32.08	3.64
	U	-	-	-	-	-	-
Arunachal Pradesh	T	19.39	30.93	2.99	24.85	37.14	5.16
	R	16.96	27.47	2.64	21.28	32.61	4.23
	U	90.36	93.02	51.75	91.26	93.82	69.71
North East India	T	28.92	22.82	88.03	25.86	32.65	12.98
	R	28.66	21.82	89.48	18.44	24.04	8.32
	U	30.29	28.16	72.57	71.84	80.47	49.68

Source: Census of India 1981, Provisional Population Totals, Paper I of 1981, Supplement, for each State and Union Territory.

population. Tripura as a whole had an agrarian character with more than 20 percent workers engaged as agricultural labourers in 1981. In 1971, Tripura had about 20 percent as agricultural labourers and 54.41 percent as cultivators. The proportion of cultivators was much lower than that of the regional average but, the share of agricultural labourers was the highest in the districts as well as in the state than the region. Taken together (cultivators and agricultural labourers), Tripura had 64.37 percent of total workers engaged in agricultural activity. Thus, among the total agricultural labourers in 1971, Tripura contributes second highest (15.44 percent) of the agricultural labourers.

In the category of Household industry, North Eastern Region had only 3.37 percent of workers to the total workers in 1981. Among all the states and union territories, Manipur had the highest percentage of such workers (10.89 percent), almost three times the regional average. It is so, because most of the females are working in Household industries in rural as well as in urban areas.

In the category of other workers, North East Region had 25.86 percent of workers to the total labour force in 1981. Among all the districts, West Tripura (37.42 percent), Kohima

(35.26 percent) and Lohit (35.00 percent) districts had highest percentage of such workers, which was much higher than the regional average. It is so, because, in these three districts very large number of workers are engaged in services. All the districts of Manipur except, Manipur Central, had very low percentage of workers in services than the regional average of 25.86 percent. This again shows that all these districts are mostly agrarian in their employment pattern which has already been stated.

CHANGES IN OCCUPATIONAL STRUCTURE, 1911-61, 71:

As already pointed out in the preceding sections, occupational data of population at the different censuses are not comparable. However, some broad pattern of changes in occupation may be deviced.

Table 5.6 presents data on different occupation for different years. From the table, it is observed that from 1911 to 1951, the proportion of cultivators recorded a declining trend from 68.22 percent to 61.75 percent but in 1961, it was increased from 61.75 percent to 65.54 percent. In 1971, again the cultivators recorded a decline from 65.54 percent to 59.22 percent. On the contrary, Agricultural Labourers recording a

TABEE 5.6 : PERCENTAGE OF WORKERS IN EACH STATE IN OCCUPATIONAL CATEGORIES, NORTH EAST REGION AND INDIA DURING 1911-71.

		Cultivators			Agricultural Labourers		
		T	M	F	T	M	F
Assam*	1911	67.6	67.9	67.2	1.2	1.4	0.8
	1921	65.5	67.5	62.0	2.0	1.7	2.6
	1931	59.3	64.2	49.4	1.4	1.8	0.5
	1951	61.6	64.6	55.6	3.3	3.1	3.7
	1961	65.7	64.4	68.0	3.5	4.5	1.7
	1971	59.06	60.07	52.50	9.17	9.65	6.06
Manipur	1911	59.7	87.5	20.9	0.1	0.2	0.0
	1921	73.1	87.4	59.1	0.2	0.4	0.0
	1931	76.3	85.5	65.2	0.2	0.2	0.2
	1951	61.9	78.3	45.5	0.3	0.3	0.2
	1961	65.4	77.1	53.2	0.6	0.6	0.6
	1971	67.0	68.06	64.93	3.65	3.53	3.88
Tripura	1911	91.2	89.0	95.9	1.0	1.0	1.0
	1921	61.9	62.7	60.0	9.3	12.9	0.4
	1931	69.9	74.2	51.5	6.9	7.9	2.4
	1951	63.1	62.4	64.6	8.9	8.5	9.8
	1961	64.3	61.9	70.8	7.5	9.1	3.1
	1971	54.41	55.37	43.94	19.96	19.63	23.64

TABLE 5.6 (Contd.)

	Cultivators			Agricultural Labourers		
	T	M	F	T	M	F
North East India						
1911	68.22	69.82	65.46	1.12	1.33	0.75
1921	65.88	68.26	61.64	2.23	2.18	2.31
1931	64.16	65.60	60.77	1.55	1.96	0.57
1951	61.75	65.18	55.15	3.44	3.30	3.71
1961	65.54	64.84	66.90	3.66	4.70	1.67
1971	59.22	60.09	54.01	9.63	10.15	6.50
All India						
1911	48.1	51.8	41.3	19.9	14.9	29.3
1921	52.3	54.6	47.9	16.7	13.1	23.6
1931	47.4	50.8	40.2	18.2	15.1	24.7
1951	50.0	51.7	45.7	19.5	14.8	31.1
1961	52.8	51.5	55.8	16.7	13.4	23.8
1971	43.34	46.23	29.61	26.33	21.26	50.46

TABLE 5.6 (Contd.)

	Plantation, fishing forestry, Livestock etc.			Mining and Quarrying		
	T	M	F	T	M	F
Assam*						
1911	20.4	18.1	24.5	0.2	0.2	0.1
1921	23.1	19.4	29.9	0.3	0.4	0.2
1931	22.7	21.1	25.9	0.5	0.7	0.1
1951	14.5	12.7	18.1	0.2	0.2	0.1
1961	9.6	8.1	12.5	0.1	0.2	0.0
1971	9.28	6.20	29.20	0.31	0.34	0.10
Manipur						
1911	0.5	0.6	0.3	0.3	0.3	0.4
1921	1.7	2.2	1.2	0.1	0.1	0.1
1931	2.8	3.2	2.2	0.2	0.3	0.2
1951	0.5	0.8	0.2	0.1	0.2	0.0
1961	0.3	0.4	0.2	-	-	-
1971	0.63	0.83	0.22	0.02	0.03	0.01

TABLE 5.6 (Contd.)

		Plantation, fishing forestry, Livestock etc.			Mining and Quarrying		
		T	M	F	T	M	F
Tripura	1911	0.5	0.6	0.1	-	-	-
	1921	4.7	5.1	3.6	-	-	-
	1931	6.3	4.6	13.7	-	-	-
	1951	3.2	3.2	3.3	-	-	-
	1961	2.9	2.9	4.0	-	-	-
	1971	2.21	1.58	9.08	-	-	-
North East India	1911	18.52	16.41	22.13	0.20	0.24	0.13
	1921	20.86	17.80	26.31	0.27	0.34	0.15
	1931	22.31	19.64	28.57	0.52	0.69	0.12
	1951	12.86	11.47	15.52	0.16	0.22	0.03
	1961	8.54	7.28	10.96	0.12	0.16	0.03
	1971	8.19	5.86	23.97	0.27	0.39	0.08
All India	1911	4.3	5.0	3.1	0.2	0.2	0.2
	1921	4.0	4.5	3.1	0.3	0.3	0.3
	1931	4.6	5.1	3.5	0.2	0.3	0.2
	1951	2.5	2.5	2.4	0.4	0.5	0.3
	1961	3.4	3.7	2.7	0.5	0.6	0.3
	1971	2.38	2.36	2.50	0.51	0.54	0.40

TABLE 5.6 (contd.)

		Manufacturing including Household industry			Construction		
		T	M	F	T	M	F
Assam*	1911	1.8	1.6	1.9	0.6	0.8	0.2
	1921	1.8	1.7	1.9	0.7	0.9	0.2
	1931	8.3	2.1	20.4	0.7	1.0	0.2
	1951	8.0	4.0	16.1	0.2	0.4	0.0
	1961	7.2	3.4	14.5	0.7	1.1	0.1
	1971	3.71	3.72	3.65	9.85	1.11	0.19
Manipur	1911	28.5	2.1	65.4	0.1	0.1	0.0
	1921	16.6	2.1	30.7	0.1	0.3	0.0
	1931	13.6	3.0	26.4	0.2	0.3	0.0
	1951	26.9	8.9	45.1	0.3	0.6	0.0
	1961	22.4	4.4	41.2	0.6	1.1	0.1
	1971	10.98	4.26	24.14	1.25	1.85	0.07
Tripura	1911	1.0	1.0	1.1	0.8	1.1	0.3
	1921	16.3	8.9	34.3	1.1	1.6	-
	1931	6.2	1.2	27.7	1.2	1.4	0.4
	1951	7.4	0.49	12.7	0.1	0.1	0.1
	1961	8.1	4.8	17.2	1.0	1.2	0.1
	1971	3.52	3.45	4.32	0.73	0.77	0.23

TABLE 5.6 (Contd.)

	Manufacturing including Household industry			Construction		
	T	M	F	T	M	F
North East India						
1911	3.15	1.64	5.74	0.56	0.78	0.17
1921	3.38	2.05	5.74	0.66	0.92	0.18
1931	3.09	2.16	5.25	0.77	0.98	0.27
1951	9.23	4.30	18.71	0.24	0.35	0.03
1961	8.12	3.55	16.90	0.76	1.10	0.09
1971	4.16	3.72	6.79	0.98	1.12	0.17
All India						
1911	9.5	9.2	10.0	0.9	1.1	0.7
1921	8.7	8.8	8.6	0.8	0.9	0.7
1931	8.2	8.3	7.8	1.0	1.1	0.7
1951	9.3	10.0	7.6	0.9	1.1	0.5
1961	9.5	10.1	8.2	1.1	1.4	0.4
1971	9.46	9.98	7.02	1.23	1.35	0.65

TABLE 5.6 (Contd.)

		Trade & Commerce			Transport, Storage & Communication		
		T	M	F	T	M	F
Assam*	1911	2.9	3.2	2.5	1.1	1.6	0.3
	1921	2.6	3.0	2.0	0.9	1.2	0.2
	1931	2.7	3.3	1.7	0.8	1.2	0.0
	1951	3.9	4.9	1.8	1.2	1.7	0.2
	1961	3.5	5.0	0.5	1.4	2.1	0.1
	1971	5.07	5.68	1.13	2.25	2.56	0.28
Manipur	1911	6.4	2.1	12.5	0.5	0.9	0.0
	1921	5.3	2.2	8.4	0.4	0.8	-
	1931	3.8	2.4	5.6	0.3	0.6	-
	1951	5.7	4.1	7.2	0.6	1.0	0.2
	1961	3.3	2.9	3.8	0.9	1.6	0.0
	1971	3.55	3.12	4.87	1.89	3.63	0.04
Tripura	1911	1.6	2.1	0.6	0.3	0.4	-
	1921	2.8	3.7	0.8	0.5	0.7	-
	1931	3.0	3.4	1.2	0.6	0.7	-
	1951	6.4	7.5	3.9	0.7	0.7	0.7
	1961	4.2	5.6	0.5	1.1	1.5	0.0
	1971	5.65	6.03	1.57	1.43	1.55	0.16

TABLE 5.6 (Contd.)

	Trade & Commerce			Transport, Storage & Communication		
	T	M	F	T	M	F
North East India						
1911	3.06	3.06	3.06	1.06	1.53	0.26
1921	2.83	2.98	2.55	0.82	1.18	0.16
1931	2.98	3.23	2.59	0.79	1.11	0.04
1951	4.15	5.03	2.46	1.11	1.57	0.23
1961	3.52	4.93	0.81	1.37	2.06	0.05
1971	5.02	5.58	1.64	2.12	2.43	0.21
All India						
1911	5.3	5.3	5.2	1.1	1.5	0.2
1921	5.4	5.5	5.1	0.9	1.2	0.2
1931	5.1	5.4	4.5	0.9	1.3	0.1
1951	5.2	6.2	2.8	1.5	2.0	0.3
1961	4.1	5.3	1.4	1.6	2.3	0.1
1971	5.57	6.36	1.78	2.44	2.85	0.47

TABLE 5.6 (Contd.)

		Other Services					
		T	M	F	T	M	F
Assam*	1911	2.3	3.3	0.6			
	1921	2.4	3.3	0.7			
	1931	2.6	3.5	0.9			
	1951	3.8	4.7	1.9			
	1961	5.5	7.6	1.4			
	1971	10.16	10.67	6.89			
Manipur	1911	3.5	5.6	0.5			
	1921	2.3	4.2	0.4			
	1931	2.4	4.2	0.2			
	1951	3.0	4.7	1.3			
	1961	5.9	10.7	0.8			
	1971	11.83	16.69	2.33			
Tripura	1911	3.0	3.9	1.0			
	1921	2.9	3.8	0.9			
	1931	3.7	4.0	2.4			
	1951	4.0	5.2	1.4			
	1961	6.4	7.8	2.5			
	1971	12.08	11.63	17.07			

TABLE 5.6 (Contd.)

	Other Services					
	T	M	F	T	M	F
North East India						
1911	2.37	3.40	0.60	1.75	1.77	1.71
1921	2.43	3.40	0.72	0.89	0.98	0.28
1931	2.78	3.51	1.07	1.55	1.11	1.15
1951	3.73	4.72	1.83	1.58	1.17	1.12
1961	5.61	7.77	1.45	2.77	3.62	1.14
1971	10.41	11.04	6.65	-	-	-
All India						
1911	7.1	7.9	5.5			
1921	6.5	7.3	5.1			
1931	8.5	7.6	10.4			
1951	7.2	7.8	5.7			
1961	6.2	7.6	3.3			
1971	8.74	9.08	7.12			

* - Includes Meghalaya, Nagaland and Mizoram.

Source: Census of India, 1961, Subsidiary Tables, Workers from 1901/11 to 1961 by States and Union Territory, Paper I of 1967, pp. 3-27. and for 1971 from Census of India, Part II-A of respective states and union territories.

constant increase from 1911 to 1971 for region. The situation of India is not very clear for both cultivators as well as for agricultural labourers. It shows fluctuations throughout the period. In case of 1961, the participation rate in cultivation got inflated at the expense of agricultural labours. According to Chandrasekhar,⁶ "Many land owning agricultural labourers have declared themselves as cultivators as they were perhaps tempted to upraise their social status in those days of land reforms". Therefore, the increase in 1961 may be attributed to this reason. Furthermore, the liberality in definition of workers in 1961, exaggerated the size of cultivators, was another possible reason for increase in cultivators in 1961. The declining proportion of cultivators may be attributed to the increase in literacy level and to the employment of literates in non-agricultural activities. On one hand, this decreased the proportion of cultivators but on the other hand, increased the necessity of agricultural labourers.

The proportion of non-agricultural population has increased from 28.92 percent in 1911 to 31.15 percent in 1971. This may be due to the development in non-agricultural activities. The individual occupations, however, show fluctuations, like

6. A. Chandrasekhar, Census of India, 1971, paper I of 1971, - Supplement p.27.

manufacturing including household industry increases upto 1951 then decreased in 1961 and further in 1971. This decrease may be due to the decline of female workers in this group. The workers engaged in Trade and Commerce declined in 1911-21 but increased during 1921-51, again declined during 1951-61 and again increased during 1961-71. This decline after independence may be due to disturbance in 1947. The increase in 1961-71, may be contributed to the development in the communication facilities (like Bridge over Brahmaputra river, which is upto now the only bridge on this giant river). The increase in Transport and Communication after independence further strengthen the development of trade and commerce. Increase in other services after independence further strengthen the statement of development in non-agricultural activities.

CHANGES OF URBAN MALE WORK FORCE IN THE NORTH EASTERN REGION:

By using the principle component analysis all together two components or dimensions of change have been identified. First component explains 65 percent and second explains nearly 20 percent of the total variations. These two dimensions of change all together were capable of explaining as much as 85 percent of the total variations of the variables (Table 5.7).

The normalised vectors in component I and II are

TABLE 5.7: Percentage Variation Explained by Two Dimensions.

Dimension	Eign Values	Variance explained in percent
I	4.6	65
II	1.3	20

Source: Based on Appendix A(b).

summarised in Table 5.8. From the table (taking only highest factor loadings) it can be observed that, the first component (dimension of change) can be identified by the change in the secondary/tertiary activities in the region. As may be observed from the factor loadings on this component, it can be said that the change that have taken place in all the seven occupational categories are positively correlated with the dimension and the highest association with activities like trade and Commerce (0.4119) followed by Transport, Storage and Communication (0.4075), Construction (0.3989), other than household industry (0.3913) and other services (0.3828). The positive association of the changed variates with the component is a clear indicator of economic development and occupational shifts that have been taking place in the districts of North East India. The positive loadings may also be indicative of the diversification of activities in the region. This component of change may clearly

be considered as a scale of development in the region.

The second component which has high positive factor loadings with household industry (0.6839) and primary activities like fishing, mining, quarrying, livestock, etc (0.3729) may be considered as an indicator of rural-urban shifts in the occupational change in the districts of the region. Interestingly, the negative association of the variables like, other services (-0.4290) and trade and commerce (-0.3747), further strengthen the character of this component. In another word, the districts may be assessed in this component and their level of backwardness in terms of less diversified occupational changes may also be determined. Therefore, the first component may be considered as the indicator of the level of economic diversification, the second may be considered as the indicator of rural-urban shift in occupational structure.

The orthogonality of the above two components are utilised through the evaluation of factor scores (Table 5.9) and spatial character of the districts as shown in Fig. 5.1. From Fig. 1, it may be observed that districts like Goalpara, Darrang, Sibsagar and Cachar, have relatively high economic diversification, showing positive change in the tertiary activity and also, high rural-urban shifts in the occupational structure, showing higher change in household and primary

NORTH EAST INDIA
 RELATIONSHIP BETWEEN COMPONENT OF
 ECONOMIC DIVERSIFICATION AND
 RURAL URBAN SHIFT IN OCCUPATION
 1961-71

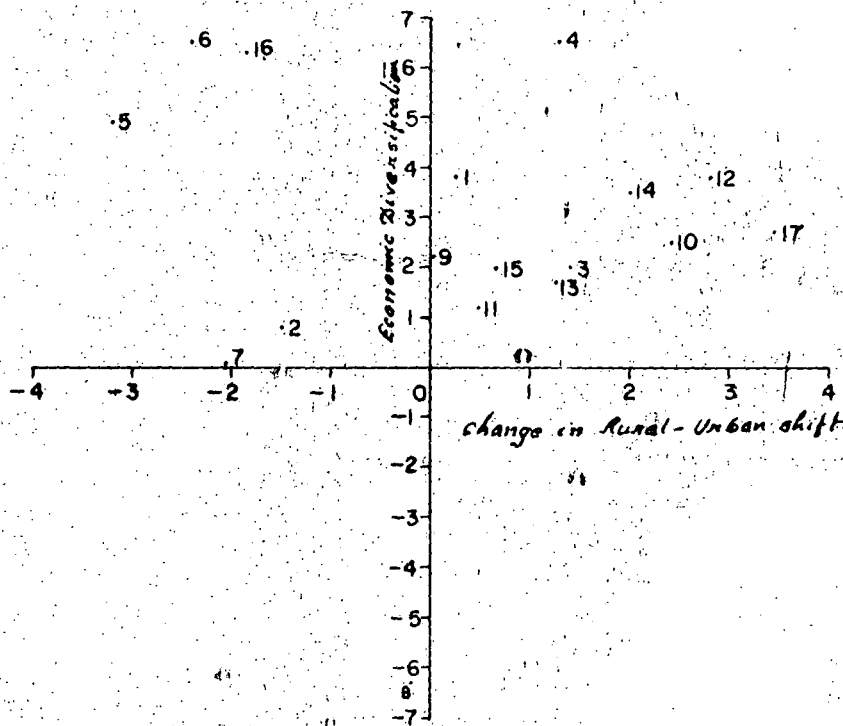


TABLE 5.8 : FACTOR LOADINGS OR NORMALISED VECTOR
CORRESPONDING TO COMPONENT I & II.

Occupational Category	Factor Loadings	
	$\lambda=4.6005$	$\lambda = 1.2870$
1. Fishing, Mining, Quarrying, Hunting, Livestock etc.	0.3819	0.3729
2. Household Industry	0.2443	0.6839
3. Other than Household Industry	0.3913	-0.0862
4. Construction	0.3989	0.2212
5. Trade & Commerce	0.4119	-0.3747
6. Transport, Storage & Communication	0.4075	-0.1115
7. Other Services	0.3828	-0.4290

Source: Based on Appendix A.5.1.

TABLE 5.9 : FACTOR SCORES ON MAIN DIMENSIONS OF CHANGE IN
THE ECONOMIC STRUCTURES OF 17 DISTRICTS.

Districts	Factor I	Scores II
1. Manipur Central	3.76	0.27
2. Garo Hills	0.85	-1.50
3. United Khasi & Jaintia Hill	2.00	1.40
4. Kohima	6.54	1.29
5. Mokokchung	4.89	-3.19
6. North Tripura	6.45	-2.39
7. South Tripura	0.13	-2.07
8. West Tripura	-6.28	-0.22
9. Mizoram	2.31	0.02
10. Goalpara	2.51	2.40
11. Kamrup	1.20	0.47
12. Darrang	3.82	2.79
13. Nowgong	1.70	1.24
14. Sibsagar	3.55	1.99
15. Lakhimpur	2.08	0.62
16. United Mikir & North Cachar Hills	6.34	-1.85
17. Cachar	2.66	3.45

Source: Computed from percentage change of occupational
Structure.

activity like mining, fishing, hunting etc. The lone district of Kohima, shows the highest level of economic diversification whereas, change in household industry is comparatively less than that of the above districts. Districts like Manipur Central, United Khasi and Jaintia Hills, Mizoram, Kamrup, Nowgong and Lakhimpur have shown a relatively stable conditions in terms of the changes in the occupational structure. On the other hand, district like, Mokokchung, North Tripura and United Mikir and North Cachar Hills, show high economic diversification but less rural-urban or more rural orientation of the shifts in the household occupation. Interestingly, district of West Tripura, has the lowest economic diversification as well as low rural-urban shift in household occupation. The districts in the first group mentioned earlier, may be considered as the most developed districts where rapid changes in the occupational structure have taken place during 1961-71, whereas, West Tripura, is the sole representative of the most backward one in the region. It may also be worthwhile to mention that no district in the region has shown low economic diversification and high rural-urban shifts in the occupational structure of the population of North Eastern Region of India during 1961-71.

FINDINGS:

The spatial distribution of the occupational structure

of North East Region of India is of varied nature. The analysis given in this chapter of the study reveals that the participation rate among male and females are quite conspicuous. The female participation rate is invariably high in the hills than that of the plains. That may be due to the subsistence type of agricultural system and comparatively lower socio-economic development in the hills. Similarly the rural areas registered higher participation rates. It is also interesting to note that the participation rates are higher among the Scheduled Tribe population. This may also indicate the same picture as outlined above.

The structural analysis of the labour force of 1971 and 1981, reveals that agriculture occupies the leading sector of economy engaging nearly 69 percent of the total workers in the region in 1971 and 71 percent in 1981. Among the non-agricultural occupation workers in other services is quite low for total population as well as for the females. The spatial variations between the rural and urban areas is also very high in terms of agricultural activity and other non-agricultural activities. Further, there is a sharp variations in the workers among the states and union territories of the region. Most of hill states registered higher proportion of agriculture to that of the plains of the region.

The changes in the occupational structure has been examined since 1911. The analysis reveals that cultivators recorded a declining trend till 1971 except for 1961. On the other hand, the proportion of workers in the non-agricultural activities recorded a constant and slow increase (29 percent in 1911 to 31 percent in 1971).

In the last section of this Chapter changes of urban male work force for the region has been examined through a multivariate statistical technique viz., Principle Component Analysis for the years 1961-71. Two independent components have been identified which together explained 85 percent of the total variations. The first component may be termed as "the Indicator of Economic Development and Occupational Shift", which alone explained as much as 65 percent. The second component which can be termed as "Rural-Urban Shift" in the occupational structure that explained 20 percent of the variations. With the help of these two dimensions of change all the districts have been grouped in terms of their levels of economic diversification and rural-urban shift in occupational structure. The analysis reveals that districts like Goalpara, Darrang, Sibsagar and Cachar have high economic diversification and also high rural-urban shift in the occupational structure. The lone district of Kohima shows the highest level of economic diversification whereas change in household industry is comparatively less than

that of the above districts. Districts like Manipur Central, United Khasi and Jaintia Hills, Mizo Hills, Kamrup, Nowgong and Lakhimpur have shown a relatively stable conditions in terms of the changes in the occupational structure. On the other hand, districts like Mokokchung, North Tripura and United Mikir and North Cachar Hills show high economic diversification but less rural-urban or more rural orientation of the shifts in the household occupation. Interestingly, district of West Tripura has the lowest economic diversification as well as low rural-urban shift in household occupation. The districts in the first group mentioned earlier, may be considered as the most developed districts where rapid changes in the occupational structure have taken place during 1961-71, whereas, West Tripura is the sole representative of the most backward one in the region. It may also be worthwhile to mention that no district in the region has shown low economic diversification and high rural-urban shifts in the occupational structure of the population of North Eastern Region of India during 1961-71.

CHAPTER VI

URBANISATION

Urbanisation is a process of population concentration. It proceeds in two ways: the multiplication of the points of concentration and the increase in the size of individual concentration¹. Both the above processes are taking place in developing and underdeveloped countries as it was in the industrialized countries at the same stage of development. Kingsley Davis has substantiated this fact by saying that "in their urbanisation, the underdeveloped countries are definitely not repeating past history".² Further, Davis has brought out the differences between developed and under-developed countries regarding urbanisation stated "The first thing to note is that today's under-developed countries are urbanising not only rapidly than the industrial nations are now but more rapidly

1. H. Tisdale : "The Process of Urbanisation" *Social Forces* (1942) pp.311-316 as quoted in B.J.L. Berry (ed.) "The Human Consequences of Urbanisation" p.27.

2. K. Davis : "The Urbanisation of human Population in Gerald Brease's" (ed.). *The city of newly developing countries*, p.15 Pub. Prentice Hall's I.N.C. New Jersey.

than the industrial nations did in the hey-day of their urban growth... The cities in underdeveloped areas are far outstripping the cities boom of the industrialising era in the 19th century".³

All the above facts indicates that the process of urbanisation is not a phenomenon which follows a set pattern but to a great extent depends on the characteristics of the urban system within which it is taking place,⁴

The process of urbanisation for any region reveals temporal and spatial distribution of various characteristics of urbanisation indicating its pattern and dimension. The most important among all is the degree or level of urbanisation.

Levels of Urbanisation:

The crude measure of Levels of Urbanisation of any region is the percentage of urban population to its total population. For the North East Region, this percentage is increased from 5.33 percent in 1901 to 16.78 percent in 1981 (excluding Assam) as against the All India figures of 10.84

3. K. Davis : Op.cit.

4. A.L. Mobogunje : Urbanisation in Nigeria, University of London Press, 1968.

TABLE 6.1: LEVELS OF URBANISATION 1901-81*

(Urban Population as Percent of Total Population)

States/Union Territory	1901	1911	1921	1931	1941	1951	1961	1971	1981
Assam	2.34	2.41	2.74	2.92	3.11	4.29	7.21	8.82	-
Manipur	25.39	21.56	20.83	19.26	19.47	0.50	8.68	13.19	26.44
Meghalaya	2.82	3.46	4.07	5.51	6.87	9.66	15.27	14.55	18.03
Nagaland	3.05	1.63	1.76	1.54	1.85	1.94	5.19	9.95	15.54
Tripura	3.70	2.98	2.54	2.50	3.45	6.67	9.02	10.43	10.98
Assam	-	-	-	-	-	-	-	3.71	6.32
Mizoram	-	-	-	-	-	3.54	5.36	11.36	25.17
North East Region	5.33	4.58	4.56	4.52	4.96	3.80	7.25	10.29	16.78
All India	10.80	10.29	11.18	11.99	13.86	17.29	17.98	19.91	23.73

Source: Computed from Census of India Part II-A(1) General Population Tables for 1971 for respective states and union territories and for 1981, Provisional Population Totals for respective states.

percent to 23.73 percent (excluding Assam and Jammu and Kashmir) respectively (Table 6.1). From this, it can be seen that the low level of urbanisation is prevalent in this region. The level of urbanization in 1981, to some extent has improved.

From the Table 6.1, it is observed that the most significant increase in the levels of urbanisation for the region has been taken place in the decade of 1971-81 (16.78 percent). The increase during 1961-71 was 10.29 percent. This increase in 1961-71, was due to the emergence of large number of urban places, 19 in Assam, 7 in Manipur, all the 4 in Arunachal Pradesh and 1 in Mizoram, were treated as urban centres for the first time in 1971. This sudden increase in urban population may be attributed partly to natural increase in population brought out by eradication of diseases like malaria, cholera etc., improved medical facilities and a considerable number of population in towns who have come from other states into this region for job opportunities. It may also be due to strategic importance attached to it, as is evident in the case of Arunachal Pradesh, where all the 4 towns have emerged only after Chinese aggression in 1962.

The steep fall in the level of urbanisation have been observed during 1941-51 in Manipur. This could be attributed to World War II, for which a large number of people moved from the

Imphal town for safety to villages in the early part of the decade and found it difficult to get back to the town even by 1951 for economic reasons.⁵ During the War, epidemic also resulted in decimating large number of people. The increase in the level during 1951-61 in Manipur from 0.50 percent to 8.68 percent was due to the extension of the physical limit of Imphal town from 2 sq. miles in 1951 to 6.75 sq. miles in 1961 (urban variation of population during 1941-51 and 1951-61 was -97 percent to 2266 percent).

Table 6.2, describes the level of urbanisation at district level for the North Eastern Region of India. It can be observed from the Table that out of 28 districts under study, there were 6 districts viz. Subansiri, Tirap, North, East and West districts of Manipur and Tuensang were entirely rural in character in 1971. In 1981, out of 33 districts for which informations are available only 5 districts were rural in character (except Tirap, all are new districts). In 1971, out of 22 districts where urban population exists accounts 98 towns for the entire region differ greatly in their degree of urbanisation. In Assam, the level ranges from 2.7 percent to

5. P. Chittaranjan M. Phil Dissertation on "Urbanisation in the N.E. Region of India" submitted in Department of Geography NEHU, Shillong, 1978, p.34.

TABLE 6.2: URBAN POPULATION AS PERCENTAGE TO TOTAL POPULATION 1901-81* (Districtwise).

Districts/ States	1901	1911	1921	1931	1941	1951	1961	1971	1981
Goalpara	2.17	1.96	2.26	2.43	2.54	3.67	6.62	7.33	-
Kamrup	3.46	3.47	8.05	5.23	4.38	4.96	10.64	10.65	-
Darrang	1.51	1.42	1.74	2.83	1.88	2.43	3.90	5.98	-
Noungong	1.70	1.80	2.40	2.40	2.59	4.91	6.71	7.10	-
Sibsagar	1.83	2.29	2.22	2.48	2.70	3.24	5.09	6.22	-
Lekhimpur	3.03	3.11	3.54	3.59	3.82	5.01	9.68	11.17	-
Cachar	2.37	2.35	2.26	2.58	3.07	5.50	7.02	7.92	-
Mikir Hills	Nil	Nil	Nil	Nil	Nil	Nil	Nil	2.69	-
North Cachar Hills	Nil	-	-	-	1.03	1.31	6.01	6.83	-
<u>A. Assam</u>	2.34	2.41	2.74	2.92	3.11	4.29	7.21	8.82	-
Manipur Central	-	-	-	-	-	-	-	17.40	33.52
Manipur East	-	-	-	-	-	-	-	8.87	6.95
Manipur North	-	-	-	-	-	-	-	-	6.19
Manipur South	-	-	-	-	-	-	-	-	18.93

TABLE 6.2 (Contd.)

Districts/ State	1901	1911	1921	1931	1941	1951	1961	1971	1981
Manipur West	-	-	-	-	-	-	-	-	6.88
<u>B. Manipur</u>	25.39	21.56	20.83	19.26	19.47	0.50	8.68	13.19	26.44
Garo Hills	Nil	-	-	-	-	-	2.89	3.80	8.62
United Khasi & Jaintia Hills	4.76	5.80	7.07	9.15	11.49	16.09	23.50	21.76	23.80
<u>C. Meghalaya</u>	2.82	3.46	4.07	5.51	6.87	9.66	15.26	14.55	18.03
Kohima	5.36	2.82	3.14	2.78	3.55	4.21	11.93	19.39	21.21
Mokokchung	Nil	-	-	-	-	-	4.89	10.36	15.09
Tuensang	Nil	-	-	-	-	-	-	-	8.07
<u>D. Nagaland</u>	3.05	1.63	1.76	1.54	1.85	1.94	5.19	9.95	15.54
North Tripura	-	-	-	-	-	-	-	6.78	6.92
South Tripura	-	-	-	-	-	-	-	6.33	7.26
West Tripura	-	-	-	-	-	-	-	14.58	15.30
<u>E. Tripura</u>	3.70	2.98	2.54	2.50	3.45	6.67	9.02	10.43	10.98

TABLE 622 (Contd.)

Districts/ States	1901	1911	1921	1931	1941	1951	1961	1971	1981
Kameng	-	-	-	-	-	-	-	3.69	3.60
Lohit	-	-	-	-	-	-	-	6.65	6.42
Siang	-	-	-	-	-	-	-	8.15	10.82
Subansiri	-	-	-	-	-	-	-	N11	9.20
Tirap	-	-	-	-	-	-	-	N11	-
<u>F.</u> Arunachal Pradesh	-	-	-	-	-	-	-	3.70	6.32
<u>G.</u> Mizoram	-	-	-	-	-	3.54	5.36	11.36	25.17

Source: Census of India 1971, General Population Tables Part II-A of respective states and union territories and for 1981, Provisional Population Totals for respective states and union territories.

11.2 percent in 1971, of these, Kamrup and Lakhimpur districts shows a slightly higher level than the regional average of 10.3 percent and Mikir Hills district is at the lowest range of ladder.

In case of Manipur, urban population was concentrated in the central district, accounting 93.85 percent of the state's urban population in 1971 which came down to about 86 percent.

In 1981, this district can claim the distinction of having highest level of urbanisation (33.52 percent) in the region. In 1971, this situation was due to 7 out of 8 towns in Manipur were in Central Manipur and 23 out of 32 in 1981. The South Manipur had one town, and the number has risen to three in 1981. The other districts in 1971 had no town, but now North Manipur is having 3 new towns and other districts also have got one town each in 1981.

In Meghalaya, the United Khasi and Jaintia Hills districts claimed to have the third highest urban population (23.80 percent) in 1981 in the region. This may be due to the presence of Shillong Urban Agglomeration (U.A.) which falls within this district, and accounts for 72.26 percent of total urban population in 1981. This town is in existence for more than 100 years and enjoyed the status of being the capital of united Assam and now Meghalaya (from 1970). This town is also

the pioneer town for the educational centres for the region ever since its existence. The Garo Hills district in contrast to United Khasi & Jaintia Hills does not have much urban population.

Mizoram was a part of Assam till April 1, 1971 known as Mizo Hills district, and since January 1972, it has been separated and known as Mizoram Union Territory.⁵ The levels of urbanisation has shown an increase since 1951, when for the first time, Aizawl the capital of Mizoram was treated as town. In 1981, the level has reached the second highest level (25.17 percent) and in 1971, it became 11.436 percent marginally higher than the regional average. In Nagaland, the level of urbanisation is relatively higher in Kohima, the capital as compared to Mokokchung and Tuensang. In Tripura, it is West Tripura district which has moderately high levels of urbanisation compared to regional average. The North and South districts of Tripura are below the State's as well as regional average. Arunachal Pradesh is the least populated territories not only in this region but also in the country. The level of urbanisation is quite low and all the towns were treated as such first time in 1971 only. Siang district has the highest level of

5. Under the North Eastern Areas Re-organisation Act No.81 of 1971.

TABLE 6.3: LOCATION QUOTIENT OF URBAN POPULATION OF NORTH EAST REGION OF INDIA, 1901-81*

States/Union Territories/Districts	1901	1911	1921	1931	1941	1951	1961	1971	1981*
Goalpara	0.50	0.50	0.50	0.50	0.75	1.00	0.88	0.78	-
Kamrup	0.75	0.75	1.00	1.00	1.00	1.25	1.38	1.22	-
Darrang	0.50	0.25	0.50	0.50	0.50	0.50	0.50	0.67	-
Nowgong	0.50	0.50	0.50	0.50	0.75	1.25	0.88	0.78	-
Sibsagar	0.50	0.50	0.50	0.50	0.75	0.75	0.63	0.67	-
Lakhimpur	0.75	0.75	1.00	1.00	1.00	1.25	1.25	1.22	-
Cachar	-	-	-	-	-	-	-	0.33	-
Mikir Hills	-	-	-	-	0.25	0.25	0.88	0.78	-
North Cachar Hills	0.50	0.50	0.50	0.75	0.75	1.50	0.88	0.89	-
A. Assam	0.50	0.50	0.75	0.75	0.75	1.00	0.88	1.00	-
Manipur Central	-	-	-	-	-	-	-	1.89	2.00
Manipur East	-	-	-	-	-	-	-	-	0.41
Manipur North	-	-	-	-	-	-	-	-	0.37
Manipur South	-	-	-	-	-	-	-	1.00	1.13

TABLE 6.3 (Contd.)

States/Union Territory/Districts	1901	1911	1921	1931	1941	1951	1961	1971	1981*
Manipur West	-	-	-	-	-	-	-	-	0.41
<u>B.</u> Manipur	6.25	5.50	5.25	4.75	4.75	0.00	1.13	1.44	1.58
Garo Hills	-	-	-	-	-	-	0.39	0.44	0.51
United Khasi & Jaintia Hills	1.25	1.50	1.75	2.25	2.75	4.00	2.88	2.44	1.42
<u>C.</u> Meghalaya	0.75	0.75	1.00	1.50	1.75	2.50	1.88	1.67	1.07
Kohima	1.25	0.75	0.75	0.75	1.00	1.00	1.50	2.11	1.26
Mokokchung	-	-	-	-	-	-	0.63	1.11	0.90
Tuensang	-	-	-	-	-	-	-	-	0.48
<u>D.</u> Nagaland	0.75	0.50	0.50	0.50	0.50	0.50	0.63	1.11	0.93
North Tripura	-	-	-	-	-	-	-	0.78	0.41
South Tripura	-	-	-	-	-	-	-	0.67	0.43
West Tripura	-	-	-	-	-	-	-	0.11	0.91
<u>E.</u> Tripura	1.00	0.75	0.75	0.75	0.75	1.75	1.13	1.11	0.65

TABLE 6.3 (Contd.)

State/Union Territory/District	1901	1911	1921	1931	1941	1951	1961	1971	1981*
Kameng	-	-	-	-	-	-	-	0.44	0.21
Lohit	-	-	-	-	-	-	-	0.78	0.38
Siang	-	-	-	-	-	-	-	0.89	0.64
Subansiri	-	-	-	-	-	-	-	-	0.55
Tirap	-	-	-	-	-	-	-	-	-
<u>F.</u> Arunachal Pradesh	-	-	-	-	-	-	-	0.44	0.38
<u>G.</u> Mizoram	-	-	-	-	-	1.00	0.63	1.22	1.50

* - does not include Assam's population while calculating regional population.

Source: Calculations based on General Population Tables Part II-A of respective states and union territories for 1971 and for 1981, Provisional Population Totals.

urbanisation (10.82 percent) whereas Kameng has the lowest (3.60 percent) in 1981, Tirap district does not have any urban population i.e. entirely rural in character.

From the graph (Fig. 6.1), it is revealed that Meghalaya shows not only considerable rising trend in Level of Urbanisation but the rate of growth is also quite fast than the rest of the units of the region. The level of urbanisation has been rapid since 1951 for the entire region. This rapid rate may be attributed to the processes generated after the independence of the country and also due to the influx of refugees from the erstwhile East Pakistan (now Bangla Desh) and large rate of in-migration from other parts of the country.

Analysis of the Degree of Urbanisation : Location Quotient:

The location quotient (L.Q.) of urban population of any area is a quantitative method in order to measure the degree of urbanisation in relation to the degree of urbanisation of the region or country. It gives the spatial pattern of urban development and its areal disparities.

Table 6.3 presents the numerical values of L.Q. from 1901-81. From Table 6.3, the rate of proportion of urbanisation in North East India can be easily observed. It is observed

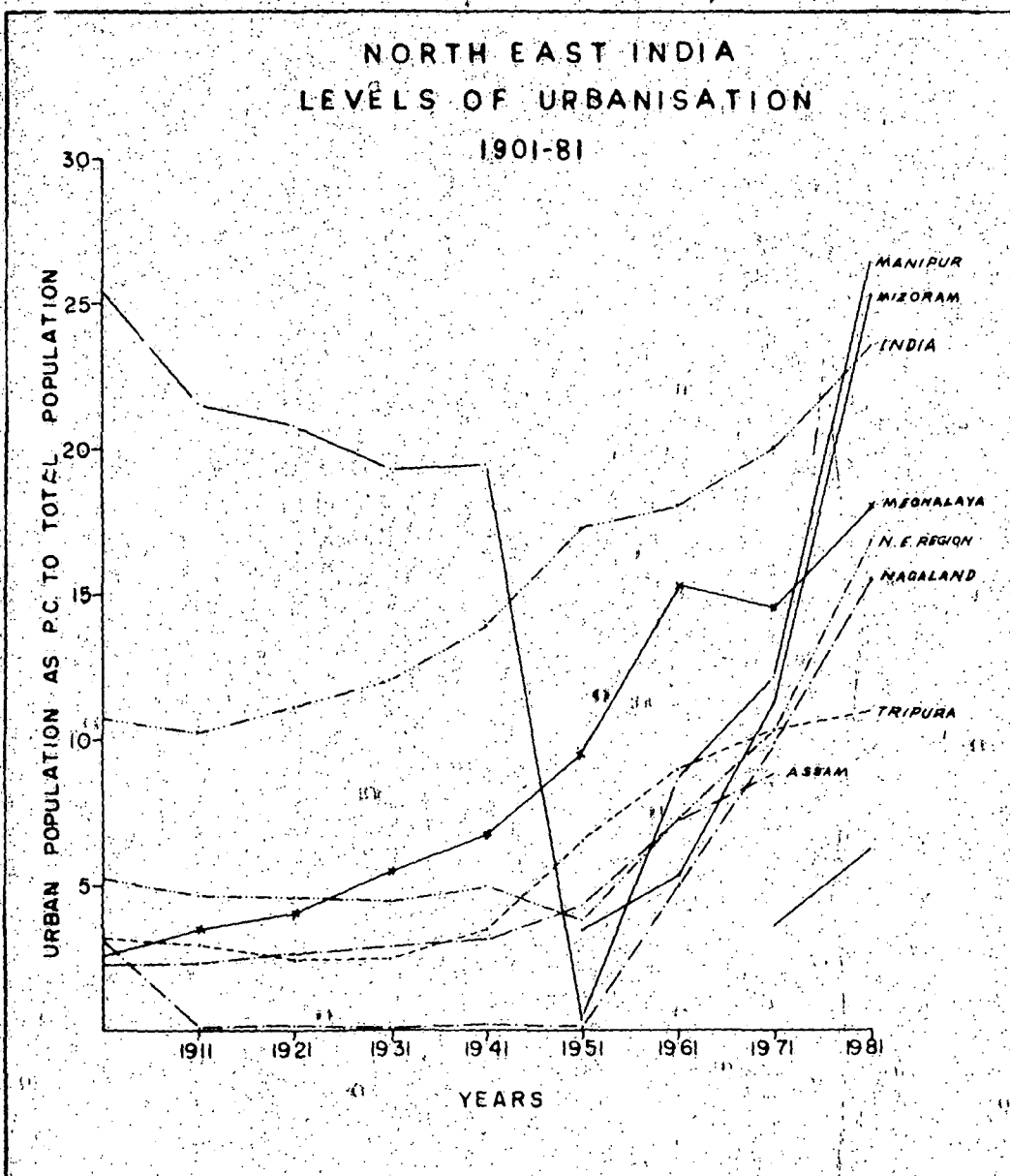


Fig-6.1

that the degree of urbanisation at district level in relation to the region is not consistent. The L.Q. show higher concentration of urban population in Manipur Central, Manipur South, United Khasi & Jaintia Hills, Kohima and Mizo Hills (as $L.Q > 1$). Goalpara, Nongong and North Cachar Hills, districts shows quite balanced urban population after 1951 despite the quite higher dispersion till 1941.

Growth of Urban Population:

In order to study the relationship between urban population growth and total population growth and also to trace the influence if any, it is better to analyse the growth of urban and total population simultaneously. The total population of the entire North Eastern Region, has been increasing at a very sluggish rate (moving at snail's pace from 1901-51) and at a much higher rate during 1951-71 (Fig. 8.2). This rapid growth may be due to (1) natural increase in population as has been observed throughout the country because after independence, the country has initiated the social welfare programmes, (2) easy mobility from other parts of the country into this region for economic opportunities and (3) by huge influx of refugees from the erstwhile East Pakistan.

The rate of decennial growth of urban population in

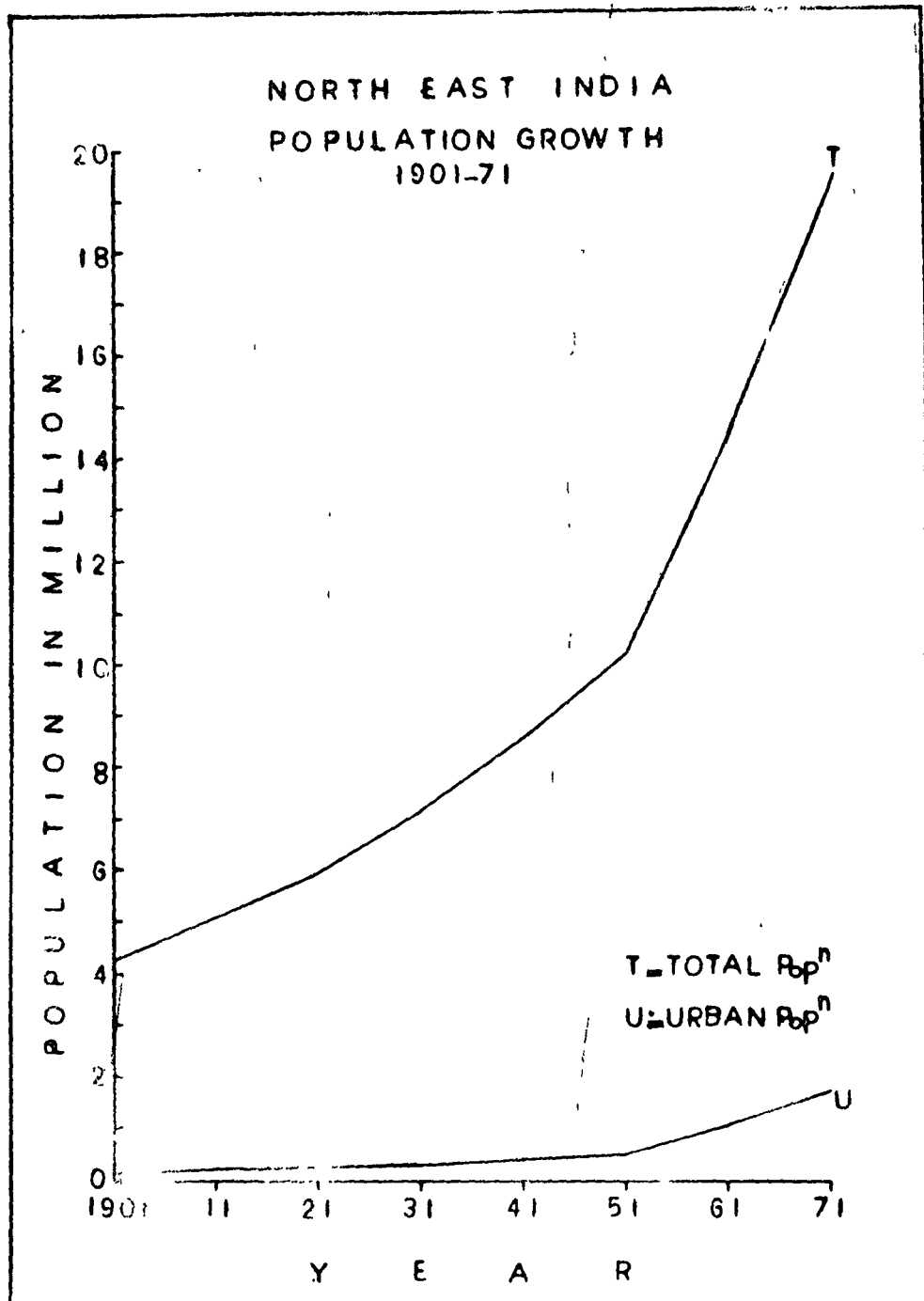


Fig 6.2

the region was quite slow during 1901-51, whereas during the last 2 decades it has increase heavily, showing more than double itself in absolute numbers (139.83 percent in 1951-61) (Table 6.4(a)). This sudden increase is due to emergence of 39 new towns during the 1961 census and 31 towns in 1971 (Table 6.4(b))

TABLE 6.4(b): NUMBER OF TOWNS IN THE NORTH EAST REGION 1901-71

1901	1911	1921	1931	1941	1951	1961	1971
16	18	25	25	27	28	67	98

Source: Based on Census of India 1971, Part II-A(1), General Population Tables.

TABLE 6.4(a): DECADEAL VARIATION OF POPULATION IN NORTH EAST INDIA SINCE 1901. (in percentage)

Decades	Urban	Total
1901-11	13.07	18.42
1911-21	23.31	18.71
1921-31	22.14	19.44
1931-41	28.00	20.15
1941-51	25.25	19.06
1951-61	139.83	41.33
1961-71	67.44	35.04
1901-71	996.37	358.39

Source: Calculated on the basis of Census of India, General Population Tables Part II-A, 1971.

TABLE 6.5 : DECADAL GROWTH OF POPULATION AT STATE AND UNION TERRITORIES DURING 1901-81.

States/Union Territories		1901-11	1911-21	1921-31	1931-41	1941-51	1951-61	1961-71	1971-81	1901-81
Assam	Urban	20.55	36.86	27.58	28.30	69.07	126.15	66.80	-	-
	Total	16.84	20.19	20.05	20.45	20.15	34.99	34.71	-	-
Manipur	Urban	3.84	7.17	7.25	16.25	97.13	2266.07	108.95	163.77	-
	Total	21.71	10.92	16.04	14.92	12.80	35.09	37.12	31.57	396.83
Meghalaya	Urban	41.76	26.13	54.25	43.93	53.20	100.78	25.27	62.74	-
	Total	15.70	7.21	13.83	15.59	8.97	27.03	31.05	31.30	289.44
Nagaland	Urban	-21.66	15.15	-1.11	27.11	17.62	364.41	161.34	133.84	-
	Total	46.76	6.55	12.62	6.04	8.60	14.07	60.85	49.73	657.84
Tripura	Urban	6.48	13.35	23.72	84.69	140.74	141.81	57.64	38.51	-
	Total	32.48	22.58	25.63	34.14	44.56	78.71	36.82	31.55	1083.24
Mizoram	Urban	Nil	Nil	Nil	Nil	Nil	105.15	164.84	225.13	-
	Total	10.64	7.90	26.42	22.81	28.42	35.61	24.93	46.75	495.12

Note: The data for Arunachal Pradesh was not available for 1901-51 as it was not censused.

Source: Calculated from Census of India 1971, Part II-A for respective states and union territories and for 1981, Provisional Population Totals.

From Table 6.5, it can be inferred that except the state of Manipur and Nagaland the other units of the region have more or less followed the regional pattern i.e. slow growth rate during 1901-51 and accelerated growth both in total as well as in urban populations thereafter. The urban population growth was highest during 1951-61. In Nagaland and Manipur many fluctuations have been recorded mainly due to the II World War, when these two states bore the brunt of the Japanese invasion and a considerable number of population was either decimated or left the urban centres for the safety of the interior rural regions.⁷ Boundary changes may also contribute to the urban population fluctuations.

Growth Coefficient of Population:

The growth coefficient indicates the number of times the population has increased in the current year over the base year. From the Table 6.6 (Fig.6.3) it is observed that the total population of the region has increased 4.5 times during the last 7 decades, the rural population has shown an increase of 4.3 times whereas urban population has shown 11 fold increase during the same period. The growth coefficient for the country on the other hand, has increased 2.30, 2.07 and 4.22 times for the total, rural and urban populations respectively during the

7. P. Chittaranjan: Urbanisation in the N.E. Region of India, M.Phil Dissertation submitted at Geography Deptt. NEHU, Shillong 1978, p.51.

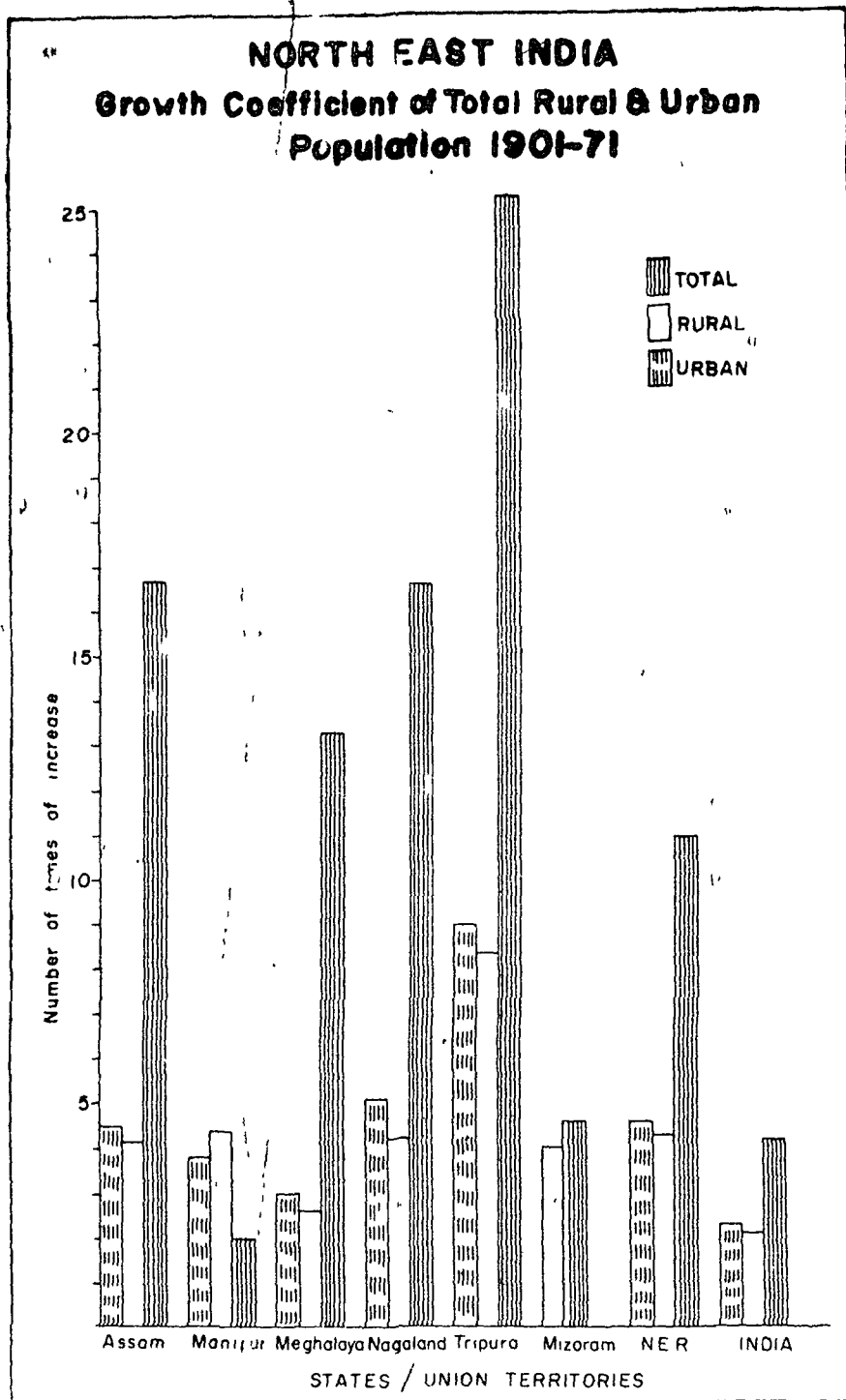


Fig-63

TABLE 6.6 : GROWTH COEFFICIENT OF TOTAL, RURAL AND URBAN POPULATION FOR 1961 TO 1971.

State/Union Territory	Total	Rural	Urban
Assam	4.45	4.15	16.73
Manipur	3.77	4.39	1.96
Meghalaya	2.97	2.61	15.38
Nagaland	5.09	4.72	16.62
Tripura	8.98	8.35	25.31
Mizoram	4.03	4.57	N.P.
North Eastern Region	4.58	4.32	10.96
All India	2.30	2.07	4.22

N.P. = Not Possible to Calculate.

Source: Computed from Census of India General Population Tables, Part II-A Series 1971.

same period. From this, it can be inferred that the North Eastern Region has shown healthy signs of urban growth, whereby the entire system of urban centres have developed.

The growth coefficient for the states and union territories are also presented in Table 6.6. It is observed that the urban population has the highest coefficient in Tripura (25.31) followed by Assam (16.73), Nagaland (16.62) and Meghalaya (15.30) from 1901 to 1971. Manipur have recorded the least growth coefficient of urban population in the region may be due to changes in its urban definition and boundary changes.

Among the urban centres of the region which have been treated as towns since 1901, Agartala has registered the highest increase of growth coefficient (15.63) followed by Shillong and Nowgong both have recorded the same growth coefficient of 12.76. Other towns which are worth to be mentioned are Gauhati (10.62), Jorhat (10.47) and Dhubri (9.77). Interestingly the towns mentioned above, all have attained the status of urban Agglomeration except Nowgong during the census of 1971. Hence, it can ^{be} predicted that Nowgong has every chance of becoming an Urban Agglomeration in the near future (Table 6.7).

Quantitative Indicators of Change in Levels of Urbanisation:

According to Hatt and Reiss,⁸ "urbanisation is the

8. Hatt, P.K. & Reiss, A.J.(ed.): Cities and Society. The revised Reader in Urban Sociology, The Free Press, 1959.

TABLE 6.7 : URBAN GROWTH COEFFICIENT OF TOWNS THAT HAVE BEEN IN EXISTENCE SINCE 1901-71 IN NORTH EAST REGION.

Towns	Growth coefficient	Towns	Growth coefficient
Gauhati	10.62	Tezpur	7.87
Shillong	12.76	Barpeta	3.03
Imphal	1.39	Goalpara	2.66
Agartala	15.63	Jorhat	10.47
Kohima	6.97	Golaghat	7.88
Dibrugarh	7.16	Nowgong	12.76
Silchar	5.68	Dhubri	9.77
Kerimganj	5.55	Sibeagar	4.88

Source: Calculations based on Census of India General Population Tables 1971, Part II-A of respective states.

Table 6.8 reveals that although the urban growth coefficient index for Nagaland (38.86) is highest, it has not recorded the highest increase in level of urbanisation because the Kr index (Rural growth coefficient index) is proportionately higher.

The share of ^{the} district urban population in the regional urban population is the function of urban population of that district as well as of the other districts of the region. Furthermore, any change in the districts share also depends on its share in the urban population of the region at the beginning of the time. In order to know the change in the share of urban population of the district in its regional context, the quantitative indicators have been used by using Davidovich¹¹ relation.

The increase in the share of any district depends upon K_0 and K_1 values of the districts. From Table 6.9, it is clear that except Sibsagar and Cachar where the changes in the share of a district in the urban population of the region is negative because initially the share of urban population was higher than the share of urban population of 1971. This also proves

11. V.G. Davidovich : *ibid.*

process of urban population concentration in any area increases in the ratio of urban population to total population". Thus, urbanisation is an increase in the urban population over the total population over a period of time. As the total population is a function of rural and urban population the level of urbanisation is therefore, a function of both urban and rural population.

According to Bose,⁹ "there can be urban growth without urbanisation (theoretically)". In other words, if both the rural and urban populations grow at the same rate, there will be growth of urban population but without urbanisation in as much as the proportions of urban populations to the total population will remain constant in spite of the growth of urban population".

The basic indicators of the extent rate and character of urbanisation for analysing the changes in levels of urbanisation between any two periods have been derived by using Davidovich¹⁰ relation.

9. Ashish Bose: Studies in India's Urbanisation 1901-71, Tata McGraw Hill Publishing Co. Ltd., New Delhi 1974, p.64.

10.V.D. Davidovich: Quantitative Regularities in the Urbanisation of the USSR., Geographical Polonics Vol. 27, 1973.

TABLE 6.8: QUANTITATIVE INDICATORS OF CHANGE IN THE LEVEL OF URBANISATION IN THE NORTH EASTERN REGION BETWEEN 1901-81.

State/Union Territory	Level of Urbanisation		Urban Growth coefficient	Rural Growth coefficient	Ku - Kr	Increase in Levels of Urbanisation I = Ue-Ub
	1901	1981				
	Ub	Ue	Ku	Kr		
Assam*	2.34	8.82	16.73	4.15	4.03	6.48
Manipur	25.39	26.46	5.17	4.89	1.06	1.07
Meghalaya	2.83	18.06	24.89	3.29	7.57	15.23
Nagaland	3.05	15.57	38.86	6.63	5.86	12.52
Tripura	3.70	10.98	35.06	10.92	3.21	7.28
North East Region**	9.30	16.77	12.26	6.24	1.96	7.47
	(3.94)	(9.43)	(10.96) (1971)	(4.32)	(2.54)	(5.49)

* - only for 1971.

** - in calculating Ku and Kr, Assam has been excluded at base period also.

Source: Computed by the Author.

TABLE 6.9; QUANTITATIVE INDICATORS OF CHANGE IN THE SHARE OF URBAN POPULATION OF THE DISTRICTS IN THE TOTAL URBAN POPULATION OF NORTH EASTERN REGION OF INDIA 1901 AND 1971.

District	Urban Popula- tion growth coefficient for the District	Urban Popula- tion growth coefficient for other districts	District's share of urban popu- lation		Increase or Decrease
			1901	1971	
Goalpara	16.28	10.63	5.95	8.84	2.89
Kamrup	14.89	10.42	12.12	16.45	4.33
Darrang	20.47	10.67	3.01	5.62	2.61
Nowgong	26.94	10.53	2.63	6.46	3.83
Sibsagar	10.42	11.00	6.51	6.19	-0.32
Lakhimpur	21.11	10.24	6.67	12.84	6.17
Cachar	9.08	11.15	8.87	7.35	-1.52
United Khasi & Jaintia Hills	13.69	10.80	5.71	7.13	1.42
Kohima	10.98	10.96	1.84	1.84	0

Source: Computed by the Author.

that the level of urbanisation in Sibsagar (-0.32) and Cachar (-1.52) have declined from 1901-71.

Therefore, it can be concluded that the changes in the districts' share in the urban population of the region depends not only on the rate of change of urban population of the district but also on the rate of change of urban population of other districts of the region.

Emergence, Stagnation and Declining of Towns:

Any settlement is classified as rural or urban or town only when its economy digresses from the primary sector. This may be due to the agricultural sector uses land as its basic requirement, the distribution of people involved in agricultural activities are normally dispersed. On the other hand, the secondary sector uses land as a site only and therefore, are cluster in location. This results in agglomeration of persons and hence emergence of towns.

A town whose development depends on a strong secondary sector always flourishes. Conversely, a town which is not based on a strong secondary sector generally tends towards the stagnation or sometimes to deminishing position. Certain towns due to availability of natural resources comes up e.g. mining towns, coal towns, oil towns etc. [Makun (coal), Margherite

(coal), Moran (oil)₇. Such towns flourish as long as their economic activities are supporting them. As soon as the resources starts diminishes, these towns tends towards stagnation and gradually starts decaying.

Spatial Distribution and Relations:

In the earlier pages, the town in the region has been considered on an aggregate basis, which does not reveal much about the relationship among the towns. In order to study the relationship of one or more urban units to that of other or variations according to size "Rank Size Rule"¹² is one of the method which deals the relationship among the cities and towns.

"The Rank Size Rule is an investigative hypothesis, a theoretical model or a norm to express the relationship of the observed regularity in the city size."¹³ It is like a pyramidal distribution on top which are a few large urban centres, many medium-sized urban centres and a large number of small urban centres. Thus, the cities forms a hierarchy according to

12. A. Mahmood: A Statistical Methods in Geographical Studies, Rajesh Publications, New Delhi, 1977, p.77.

13. N.B.K. Reddy: "Urban Rank Size Relationship in Krishna Godavari Deltas" Symposium on "Quantitative Methods in Geography". Calcutta 1971, p.72.

their population.

According to the Rank Size Rule, the population of a town is related with its rank follows the Pareto's law¹⁴ of Income distribution.

$$P_r = KR^{-b}$$

where ' P_r ' is the population of the town whose Rank is ' R '.
 K and b are constants.

By using the values of P_r and R , the values of K and b can be found out. The respective values of ' K ' and ' b ' are calculated as 334425.97, 226151.77 and -0.9240, -0.9916 for 1971 and 1981 respectively, after fitting the regression equation of the Pareto's law. By putting these values of ' K ' and ' b ' in the equation, the estimated values of P_r (the estimated population corresponding to the rank ' R ') can be obtained by putting the values of ' R ' in the following equation.

$$\log P_r = \log K - b \log R$$

$$\text{or } P_r = KR^{-b}$$

The estimated and actual populations for 1971 and 1981 have

14. H. Tisdale; The Process of Urbanisation, Social Forces (1942) pp.311-316 as quoted in B.J.L. Berry (ed.) "The human consequences of Urbanisation" p.27.

Note: The decade 1911-1941 have been neglected in this study due to slow rate of growth of towns during this period.

TABLE 6.10: RANK SIZE RULE, 1971

Towns	Rank (R)	Actual Popula- tion (Pr)	log R = X	log Pr = Y	Estima- ted Po- pulation (6)	Diffe- rence Col.6- Col.3. (7)	Percent- age diffe- rence $\frac{\text{Col.}(7)}{\text{Col.}(3)} \times 100$ (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gauhati	1	146026	0	5.1644	334426	188400	129.02
Imphal	2	100366	0.3010	5.0016	176238	75872	75.60
Agartala	3	100264	0.4771	5.0011	121171	20907	20.85
Shillong	4	87659	0.6021	4.9428	92875	5216	5.95
Dibrugarh	5	80348	0.6989	4.9050	75579	-4769	-5.94
Jorhat	6	70674	0.7781	4.8493	63856	-6818	-9.65
Nowgong	7	56537	0.8450	4.7523	55386	-1151	-2.04
Tinsukia	8	54911	0.9030	4.7397	48955	-5956	-10.85
Silchar	9	52596	0.9542	4.7397	43904	-8692	-16.53
Pandu	10	47954	1.0000	4.6808	398829	-8125	-16.94
Dhubri	11	45589	1.0413	4.6589	36475	-9114	-19.99
Tezpur	12	39870	1.0791	4.6006	33659	-6211	-15.58
Aizawl	13	31740	1.1139	4.5016	31261	-479	-1.51

TABLE 6.10 (Contd.)

Towns	Rank (R)	Actual Popula- tion (Pr)	log R = X	log Pr = Y	Estima- ted Po- pula- tion	Diffe- rence Col.6- Col.3	Percent- age diffe- rence Col.(7) Col.(3) x100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Karimganj	14	31618	1.1461	4.4999	29188	-2430	-7.69
Lumding	15	29253	1.1760	4.4662	27384	-1869	-6.39
Sibsagar	16	27426	1.2041	4.4382	25799	-1627	-5.93
Barpeta Road	17	26479	1.2304	4.4229	24395	-2084	-7.87
Hojai	18	22769	1.2553	4.3573	23142	373	1.64
Kohima	19	21545	1.2787	4.3333	22014	469	2.18
North Lakhimpur	20	20094	1.3010	4.3031	20994	900	4.48
Goleghat	21	18590	1.3222	4.2693	20068	1478	7.95
Mokokchung	22	17423	1.3424	4.2411	19222	1799	10.33
Kokrajhar	23	17060	1.3617	4.2320	18450	1390	8.15
Barpeta	24	16987	1.3802	4.2301	17738	751	4.42
Dharamnagar	25	16858	1.3979	4.2268	17080	222	1.32
Goalpara	26	16703	1.4150	4.2228	16474	-239	-1.43

TABLE 6.10 (Contd.)

Towns	Rank (R)	Actual Popula- tion (pr)	log R = X (4)	log Pr = Y (5)	Estima- ted Po- pula- tion (6)	Diffe- rence Col.6- Col.3 (7)	Percent- age diffe- rence $\frac{\text{Col.}(7)}{\text{Col.}(3)} \times 100$ (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Hailakandi	27	16644	1.4314	4.2213	15907	-737	-4.43
Digboi	28	16538	1.4472	4.2185	15385	-1153	-6.97
Nongthymmai	29	16103	1.4624	4.2069	14894	-1209	-7.51
Digboi Oil Town	30	15850	1.4771	4.20003	14436	-1414	-8.92

Source: Calculations based on Census of India 1971, General Population Tables Part II(A) of respective States and Union Territories.

TABLE 6.11: RANK SIZE RULE, 1981

Towns	Rank (R)	Actual Popula- tion (Pr)	log R = X	log Pr = Y	Estima- ted Popula- tion	Diffe- rence Col.6- Col.3	Percent- age diffe- rence $\frac{\text{Col. (7)}}{\text{Col. (3)}} \times 100$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Imphal	1	155639	0	5.1921	226412	70773	45.47
Agartala	2	131513	0.3010	5.1190	113737	-17773	-13.51
Shillong	3	107673	0.4771	5.0321	76085	-31588	-29.34
Aizawl	4	75971	0.6021	4.8806	57201	-18770	-24.71
Kohima	5	36014	0.6989	4.5565	45846	9832	27.30
Tura	6	35131	0.7781	4.5457	38265	3134	8.92
Dimapur	7	32315	0.8450	4.5094	32840	525	1.62
Nongthymmai	8	21563	0.9030	4.3337	28767	7204	33.41
Kakching	9	21145	0.9542	4.3252	25598	4453	21.06
Churachandpur	10	20970	1.0000	4.3216	23057	2087	9.95
Dheramnagar	11	20802	1.0413	4.3181	20980	178	0.86
Mawla i	12	20280	1.0791	4.3071	19244	-1036	-5.11

TABLE 6.11 (Contd.)

Towns	Rank (R)	Actual Popula- tion (Pr)	log R = X	log Pr = Y	Estima- ted Popula- tion	Diffe- rence Col.6- Col.3	Percent- age diffe- rence $\frac{\text{Col.}(7)}{\text{Col.}(3)} \times 100$
Rokokchung	13	18423	1.1139	4.2654	17775	-648	-3.52
Tboubal	14	17613	1.1461	4.2458	16516	-1097	-6.23
Radhakishorepur	15	16301	1.1760	4.2122	15424	-877	-5.38
Nambol	16	13088	1.2041	4.1169	14468	1380	10.54
Kailasahar	17	12936	1.2304	4.1118	13624	688	5.32
Jowai	18	12908	1.2553	4.1109	12874	-34	-0.26
Moirang	19	12805	1.2787	4.1074	12201	-604	-4.72
Belonia	20	12050	1.3010	4.0810	11596	151	1.25
Tuensang	21	11324	1.3222	4.0540	11048	272	2.40
Lilong	22	11132	1.3424	4.0466	10551	-84	-0.75
Khowai	23	10722	1.3617	4.0303	10096	-171	-1.59
Pasighat	24	9225	1.3802	3.9602	9678	971	10.64
Samurou	25	8718	1.3979	3.9404	9295	960	11.01

TABLE 6.11 (Contd.)

Towns	Rank (R)	Actual Popula- tion (Pr)	log R = X	log Pr = Y	Estima- ted Popula- tion (6)	Diffe- rence Col.6- Col.3 (7)	Percent- age diffe- rence $\frac{\text{Col. (7)}}{\text{Col. (3)}} \times 100$ (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Kp̄asāh	26	8256	1.4150	3.9168	8939	1039	12.58
Wokha	27	7973	1.4314	3.9016	8610	966	12.12
Moreh	28	7676	1.4472	3.8851	8305	934	12.17
Old Itanagar	29	7656	1.4624	3.8840	8022	649	8.48
Mayang Imphal	30	7321	1.4771	3.8646	7757	701	9.58

Source: Census of India, 1981, Provisional Population Totals,
for respective State and Union Territory.

been presented in Table 6.10 and 6.11. The values for 1901, 1951 and 1961 have also been estimated by using the same procedure, but have not been presented in this text, only graph has been drawn (Fig. 6.4 (i-v)).

The value of 'b' here are negatively highly significant both for 1971 and 1981.

The original equation after substituting the values of constants can be written as

$$P_r = 334426 R^{-0.9240}$$

$$\text{and } P_r = 226152 R^{-0.9916}$$

for 1971 and 1981 respectively.

If in the above equations, the values of R (i.e. 1, 2, 3, 4, 5, etc.) is substituted, the corresponding populations of the towns ranking first, second third, fourth, fifth, etc. according to rank-size rule is obtained. As no urban system fits completely into the rank size rule the actual and estimated populations may not be equal. Same way, if the coefficient of determination (R^2) is large the difference between actual and estimated values is not supposed to be very high. The population of all towns in 1971 and 1981 of North East India are estimated according to the fitted Rank-size relationship. The results for the first thirty towns for 1971 and 1981 are

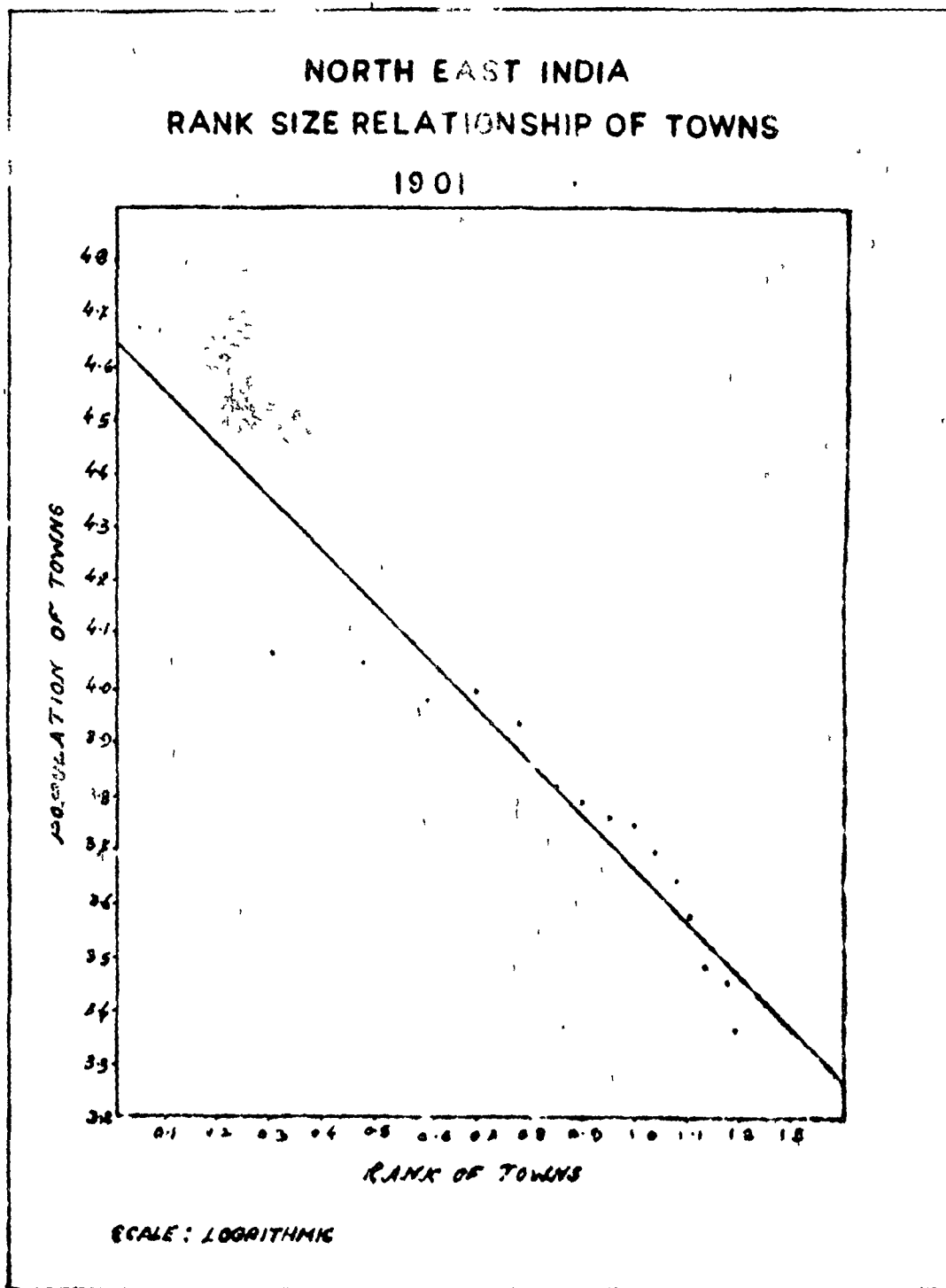
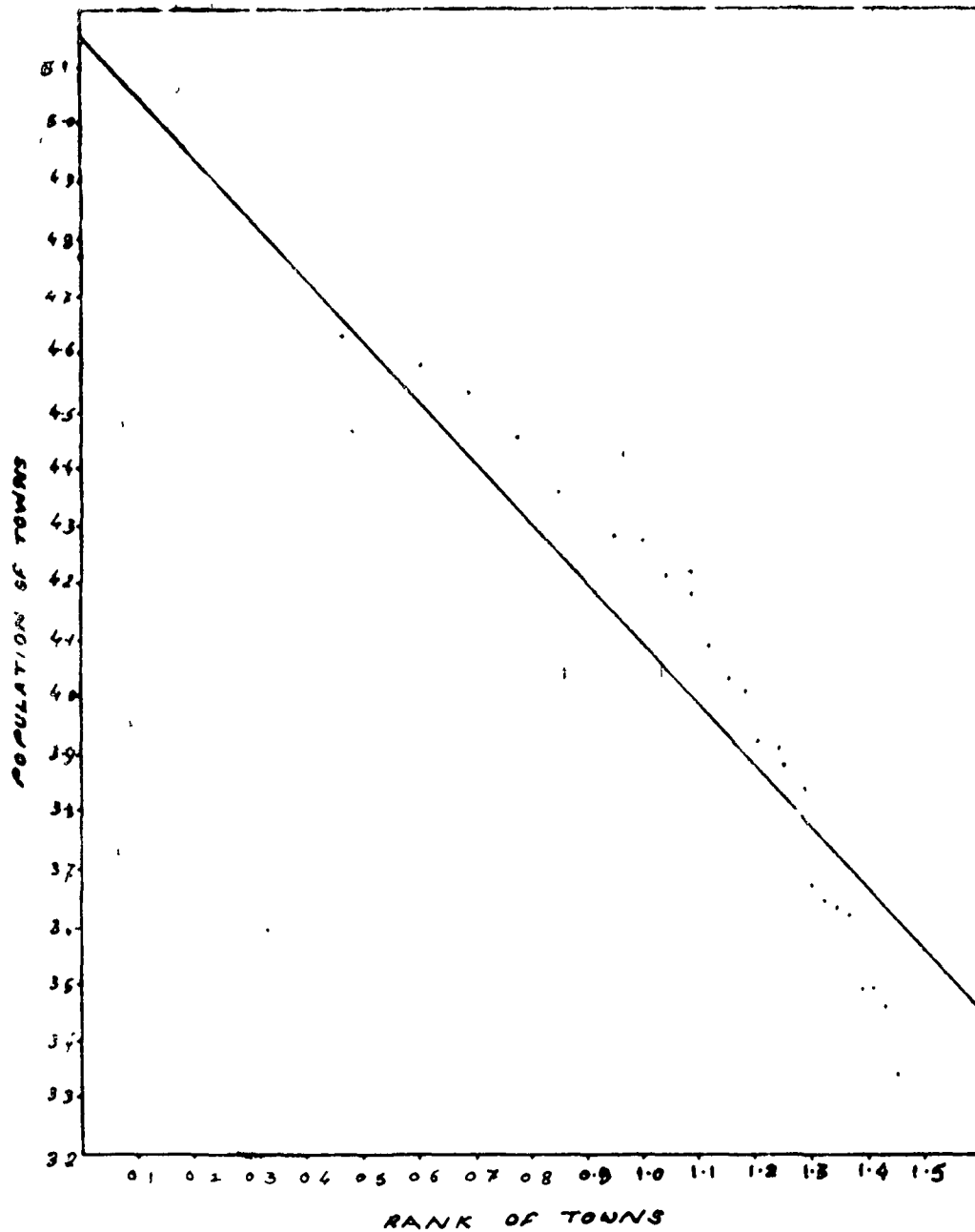


Fig-6.4U

NORTH EAST INDIA
 RANK SIZE RELATIONSHIP OF TOWNS
 1951



SCALE : LOGRITHMIC

Fig-6.4(vi)

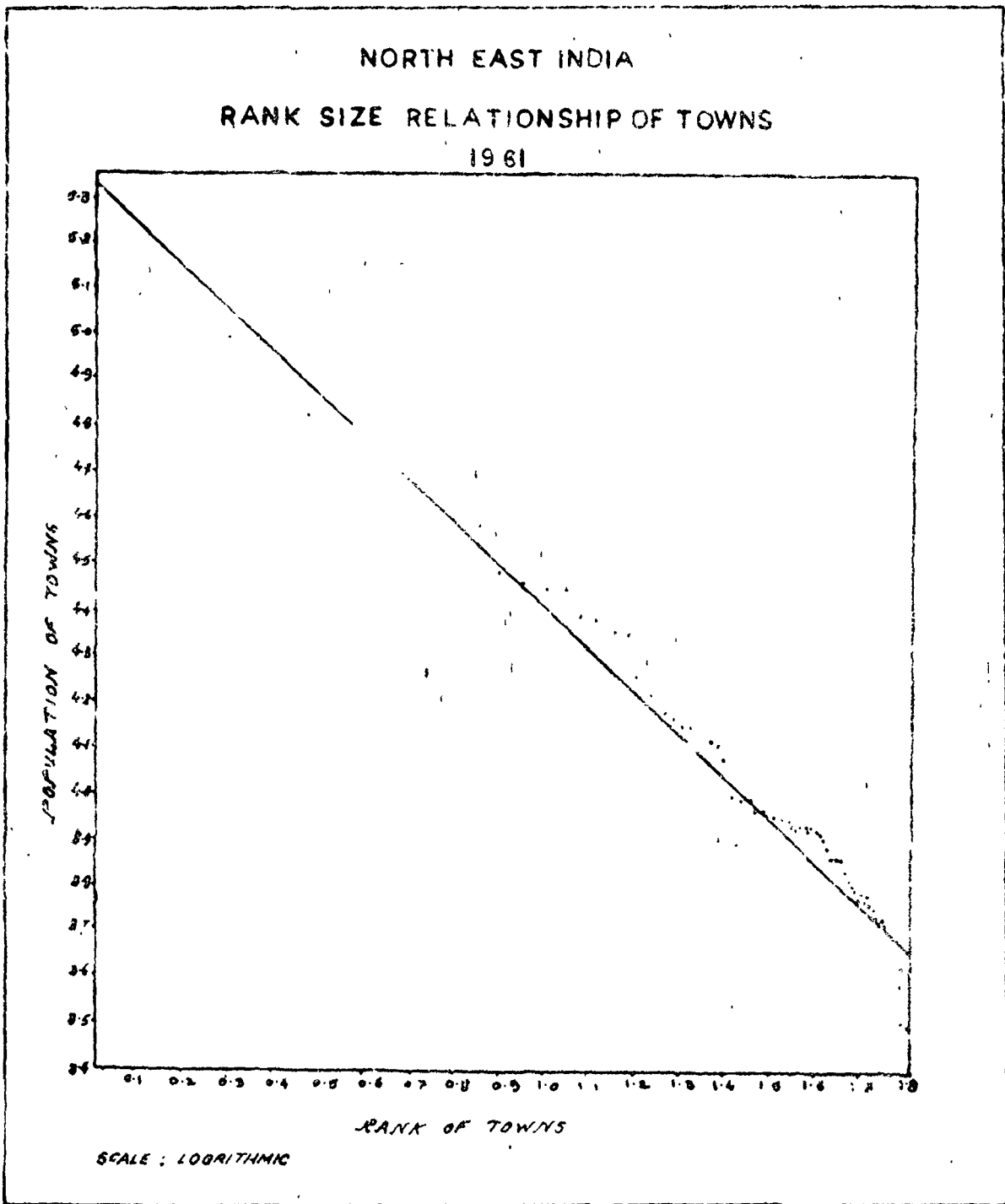


Fig-6.4(41)

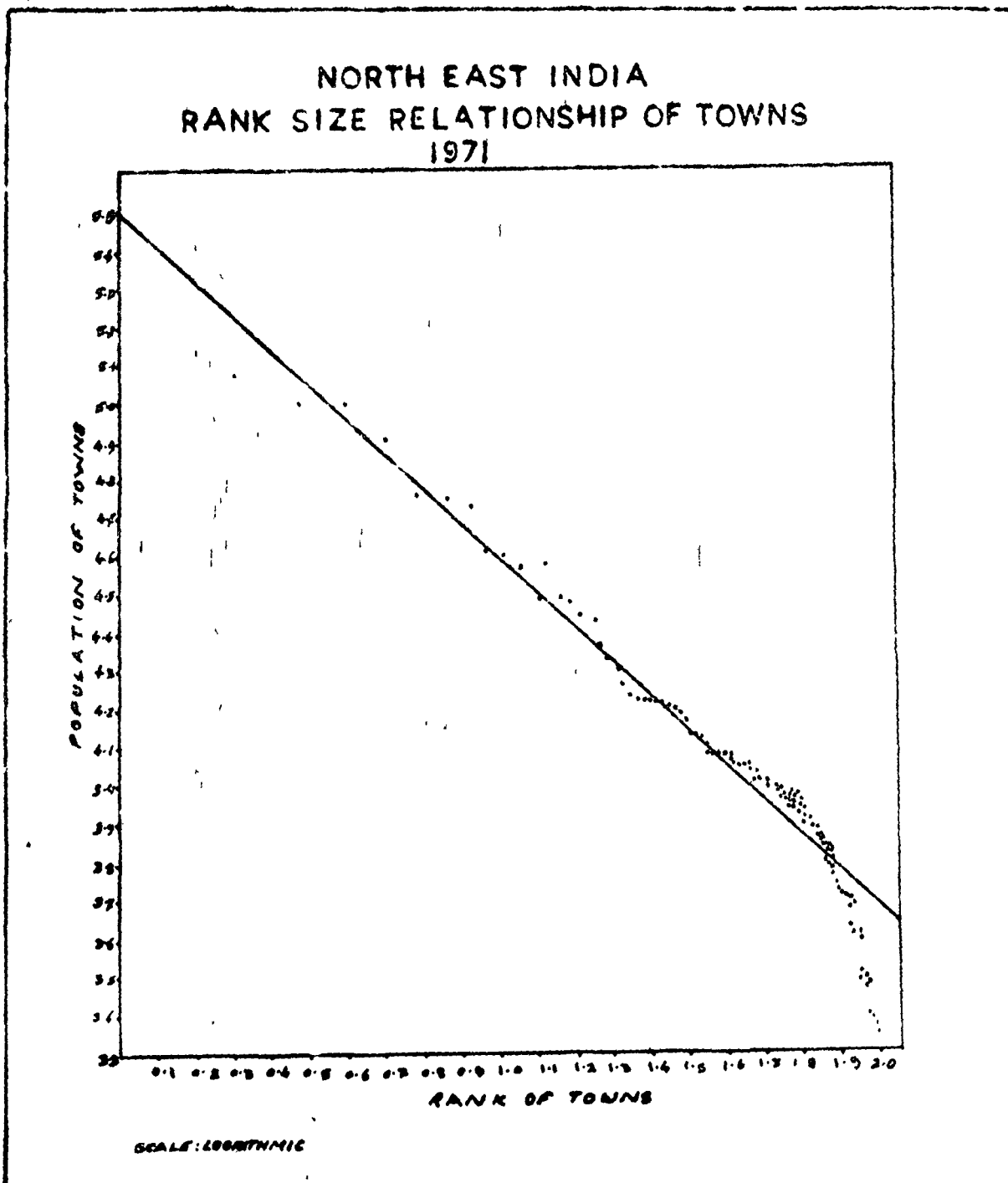


fig-6-4 (iv)

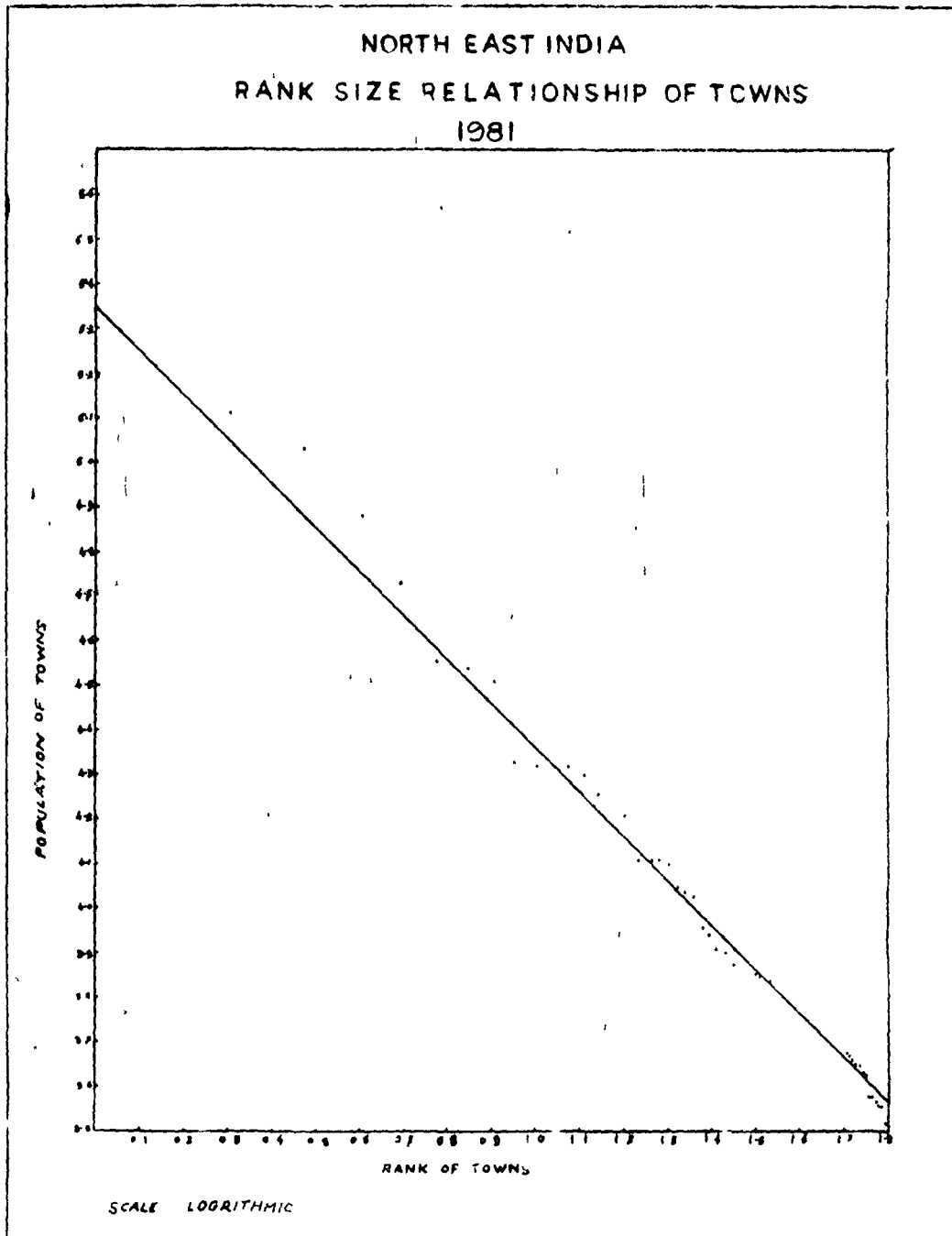


Fig-6.4(v)

shown in Table 6.10 and 6.11 respectively with expected population and deviations in percentage. A comparison can be made between actual and estimated values of population reveals that the estimated and actual size distributions are by no means the same. The variation of the actual rank size is pronounced, although a few individual towns in all decades have shown this rank size regularity. For example, in 1901 Agartala's actual population deviates from the estimated population by only 1.81 percent. Silchar also with a 2.55 percent difference have had optimum population during 1901. In 1951, once again Agartala was very close to approaching the estimated population value with a difference of just 0.50 percent. In 1971, Dharamnagar with 1.32 percent difference, Goalpara with -1.43 percent, Aizawl with -1.51 percent, Hojai with 1.64 percent, Nowgong with -2.04 percent and Kohima with 2.18 percent difference between actual and estimated population values have reached the Rank Size regularity to a considerable extent. In the last decade (1981, leaving Assam) Jowai with -0.26 percent, Lilong with -0.75 percent, Dharamnagar with 0.86 percent, Balonia with 1.25 percent, Khowai with -2.59 percent, Dimapur with 1.62 percent and Tuensang with 2.40 percent difference have had optimum population during this decade.

Rank-Size is a log linear relationship. Therefore,

the coefficient of correlation between the log values of population and log of ranks should be -1. It has been observed that the correlation coefficient for all the periods under study are highly negative (significant) and it ranges between -0.93 to -0.98.

The degree of correspondence between the actual and expected distribution from the Rank-Size Rule, the absolute difference between the actual and estimated population is summed up and then the total difference is divided by 2 gives the overall index of deviation.¹⁵ The resultant is then expressed as percent of the total urban population for that particular decade. This represents the percent urban residents who would have to move from one town to another town to bring about perfect correspondence between the urban hierarchy and the rank size rule. This index calculated for different years for the towns of North East Region is as follows:

4.75 (1901), 3.19 (1951), 4.56 (1961), 4.75 (1971) and 5.47 (1981).

An attempt has been made to study the spatial pattern of urban settlement in the hill regions of North East India in

15. J.P. Gibbs: Urban Research Methods. Van Nostrand, London 1961, p.394.

1981. In order to study the above aspect, a statistical model based on probability is considered to describe the distribution pattern of urban settlement in the region.¹⁶ If any settlement is selected from any region or area at random, it follows the 'Poisson Law'. On the basis of this law, the pattern of urban settlement has been analysed in the following lines.

The areas considered for this purpose are Manipur (excluding Manipur Central District because of peculiar population concentration of 23 urban settlements in 1981 out of 32 located in and around Imphal), Meghalaya, Nagaland, Tripura, Arunachal Pradesh and Mizoram. The state of Assam have been excluded because no census data is available for 1981.

In all there are 52 sub-divisions can be marked on the map showing the 50 urban settlements in the hilly areas of the region. The value of the parameter (m) in the law is the median value (since the frequency table is an open frequency table), is 1.111. (Map 10)

The probability (P_r) that ' r ' urban settlements shall be in a small quadrant or sub divisions is given in Table 6.12.

A comparison has been made between actual number of

16. P. Deka : A Probabilistic Approach to Analyse the Distribution Pattern of Urban Settlements in Hill Regions. Mimeograph, Deptt. of Geography, NEMU, Shillong, 1982.

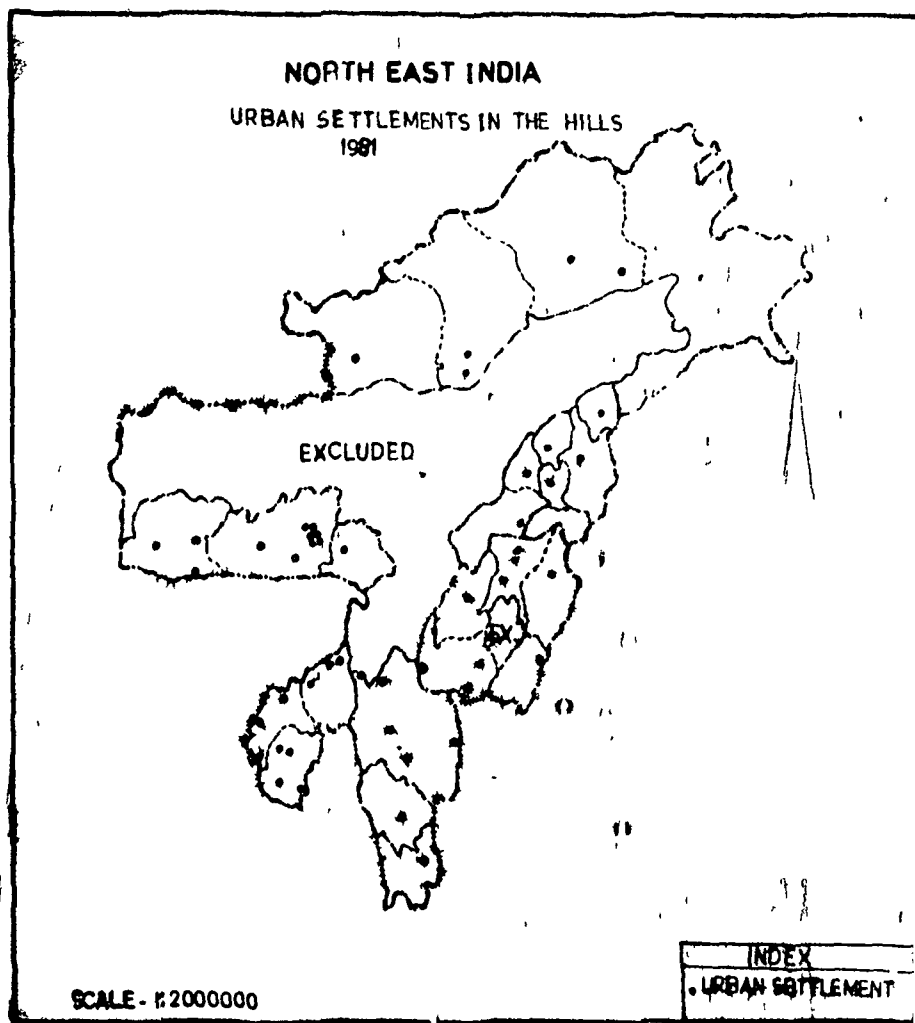


TABLE 6.12: PROBABILITY OF QUADRANTS FOR NUMBER OF SETTLEMENTS.

Number of Settlements (r)	Number of quadrants	Probability (Pr)
0	24	0.33
1	18	0.37
2	5	0.20
3	2	0.08
4	2	0.02
5 and above	1	0.005

Source: Computed by the author.

urban settlements with those of expected number of settlements that could have occurred following the above law, is presented in Table 6.13.

TABLE 6.13: FREQUENCY DISTRIBUTION OF ACTUAL AND EXPECTED NUMBER OF QUADRANTS FOR SPECIFIED NUMBER OF URBAN SETTLEMENTS.

r	Actual Number of quadrants	Expected Number of quadrants ($n \cdot Pr.$)
0	24	17.12
1	18	19.02
2	5	10.57
3	2	3.91
4	2	1.09
5 and above	1	0.24

Source: Computed by author

In order to test whether there is any difference between the actual and expected number of quadrants, χ^2 (Chi-Square) test have been used. It is found that the calculated value of χ^2 (9.85) is smaller than that of the tabulated value of χ^2 (11.07) for 4 degrees of freedom at 5 percent levels of confidence. Hence it can be concluded that there is no difference between the actual and expected number of quadrants in

the

the hill regions of the North East Region of India in 1981. Whatever the difference is there, may be attributed to random factors operating on them. Therefore, it can be concluded that the distribution pattern of the urban settlements in the hill areas of the region follows a random distribution. This can be described accurately by following the model based on probability law. As expected, the close correspondence between the hill areas, does indicate the predominance of the influence of natural factors and relatively low impact of human decisions which may lead towards a bias distribution showing a departure from randomness.

Findings:

In the North Eastern Region, urbanisation in true sense has not prevailed even after three decades of independence. A review of urbanisation acquires great importance in focussing attention on the comparatively low level of urban development, which can be compensated by an overall economic transformation of the region. Keeping this view, this study intends to highlight some of the demographic aspects of urbanisation in this region.

In the North Eastern Region, out of 28 districts only 22 districts were urbanised accounting 1.85 million urban population in 1971, the remaining 6 districts viz., Subansiri,

Tirap districts of Arunachal Pradesh, Manipur East, North and West districts of Manipur and Tuensang district of Nagaland are completely rural in character. In 1981*, out of 33 districts for which the information is available, 28 districts are urbanised accounting around one million urban population, the remaining 5 districts viz. East Kameng, Upper Subansiri, Dibang Valley, Tirap in Arunachal Pradesh and Phek in Nagaland are yet to see the light of urbanisation. Out of these five districts four are new entrants in this census. There are 68 towns in North East Region excluding Assam in 1981 (as no information is available for Assam due to some unavoidable reasons) and 98 towns in 1971 including Assam. In 1981, Manipur accounting for 32, Meghalaya -12, Nagaland -7, Tripura -10, Arunachal Pradesh -6 and Mizoram -6. Out of these, 3 towns namely Imphal, Shillong and Agartala have attained Class I status, Class II-1, Class III-6, Class IV - 12, Class V - 24 and Class VI - 22 in 1981 census.

There is great disparity in the levels of urbanisation between Arunachal Pradesh on the one hand and rest of the constituent units of the region on the other hand. Arunachal Pradesh, the union territory accounts for just 6.3 percent in 1981 whereas in 1971 it was just 3.7 percent of urban population

*Assam figures are not included in 1981.

while Manipur which has highest level of urbanisation accounts for 26.40 percent in 1981. The reason for the low level of urbanisation in Arunachal Pradesh is that only during 1971, 4 towns viz. Bomdilla, Tezu, Allong and Pasighat were treated as such for the first time for strategic reasons, especially after Chinese aggression and 2 towns were treated as urban centres only in 1981.

The urban and rural growth coefficient of population of this region, for the past 7 decades has increased 11 fold and 4 fold respectively as compared to the national average of 4 and 2 folds. This tremendous increase in this region has been brought about by streams of in-migration that this region has witnessed since the colonial past.

The rank-size rule depicted for 5 decades (1901, 1951, 1961, 1971 and 1981) for the towns of this region does not have a perfect fit, as can be expected in an under-developed region. It brings out a pyramidal distribution on top of which there are few large towns (Shillong, Agartala, Imphal in 1981), many medium sized urban centres and large number of small urban centres (Class IV-VI). It is also to be noted that few towns viz. Silchar, Pandu, Kerimganj, Dibrugarh, Aizawl, Kohima, Jowai, Lilong, Dharmenagar, Dimapur etc. have registered rank-size regularity to a considerable extent at various decades.

Furthermore, the correlation coefficient in all the decades under study has been highly significant (negatively) ranging from -0.93 to -0.98.

An attempt has been made to study the spatial pattern of urban settlement in the hilly areas of the region in 1981 through statistical model based on probability. The hill region of the North East India is still less accessible and economic exploitation is also of limited nature. Most of the urban settlements growing in these parts of the region are backed by political consideration rather than of economic consideration. Among all the urban settlements, most of them are growing to meet the administrative requirements. The process is reflected in random manner and a significant deviations are yet to be generated to show the human decision biases. The results obtained in this study by using Poisson Probability Law is encouraging in this direction. On the basis of probability law, we may conclude that every small sub-areas with a region have had equal chance of having at least one urban settlement as other sub-areas of equal size. In reality, the chance of having an urban settlement is very-very small in those areas where the impact of physical environment is unfavourable for the growth of urban centres and economically also these areas are backward. Therefore, in those regions, the

urban settlement distribution pattern would essentially be random and could be well explained with the help of Poisson Model. Any deviation from the randomness may be accounted for by the impact of locational biases of human limitations.

CHAPTER VII

CONCLUSION

The temporal and spatial analysis of the composition of population in North East India reveals the following facts.

(1) On district level, the growth rate pattern is relatively uniform but there appears to be significant differences in composition and growth at state level of aggregation. These findings may lead to the fact that there exists homogeneity within the state with respect to population growth and structure but the differences are more and more prominent among the states and union territories.

(2) From the analysis of the age distribution through 'aging index' and 'maturity index', the overall economic and social conditions of the region are being reflected. It is interesting to note that while the aging index is lower in the region than that of the country, the maturity index of the population is also lower than that of the national figure. Both the indices reflect the general inadequacy of survival facilities in the region and its backwardness.

(3). In the North Eastern Region, there exists a sharp spatial variation with respect to the sex composition and distribution. As a whole the urban areas have relatively more males than its rural counterpart. It clearly indicates the social immobility

of the females. There also exist a high variation in sex ratio among different districts/union territories and as well as among various religious groups. Smaller religious groups show higher variation in sex ratios, may be due to the age-selectivity of the in-migrants to the region.

(4) The analysis of the religious composition and the composition of Scheduled Caste and Scheduled Tribes of the region throws some interesting lights. For example, while the major religious groups of the region viz., Hindus and Muslims are wide spread, the other minor groups are relatively clustered. Similar nature may be observed in case of the distribution of Scheduled Castes and Scheduled Tribes. But examining the temporal trend it has been found that the variation have been declining.

(5) As a whole the literacy rate of the region is lower (28.72 percent) than that of the national average (29.45 percent).

Although the literacy rate is increasing steadily, the picture becomes more disappointing when the rate of literacy has been studied separately for males and females. Female literacy in the region is very very low (only 19.34 percent in 1971). Among the states and union territories of the region in 1971, Mizoram tops (50.8 %) the list followed by Meghalaya (29.47%), Manipur (32.91 percent), Assam (28.95 percent) and Tripura (30.98 percent), and Nagaland (27.4 %). Arunachal Pradesh recorded the lowest literacy (14.29 %). At the district level, some of the plain

districts have higher literacy rates than that of the state average. It is also interesting to note that the urban areas are much more advanced whether in the plains or in the hills (more than 50 percent literacy) as compared to their rural counterparts, only with a few exceptions (viz. in Mizoram rural literacy is very high). Looking at the temporal perspective, it can be seen that the variations have been declining for all categories including males and females, Scheduled Castes and Scheduled Tribes, Urban-rural and the people of plains and of hills.

In the growth of population, the total population of the region increased at a considerably high rate and added nearly 22 million people during the last 80 years. The increase of population is quite significant during the decade of fifties. The intra-regional variations of growth are quite sharp and so is the case for decade variations. The growth rate has been explained in terms of coefficient of variations and rank correlation coefficient. From the analysis, it can be observed that the variations are quite significant for different decades since 1901. Similar analysis has been carried out for different states and union territories, which reveals the same pattern of high variations.

The trend of the population growth in the region is explained with the help of fitting exponential growth curves on inter-state level and the variations of growth have been examined

by comparing them with the observed data. The sex-wise growth of population in the region reveals that there is a general paucity of sex-ratio in the region except in Tripura, where the sex-ratio is the lowest. On the other hand, Mizoram recorded the highest sex-ratio. The religion-wise growth of population reveals that different religious groups have different growth patterns. For example, Hindus recorded higher growth rates than the Muslims shortly after the independence of the country, which may be attributed to the influx of Hindu immigrants from nearby East Pakistan (now known as Bangla Desh). Similarly the analysis of caste-wise population growth shows that Scheduled Caste population have registered higher growth than Scheduled Tribe population.

Interestingly, the universally accepted principle in the study of Demography (Logistic Law) does not fit to the population growth, mainly may be due to the higher rate of immigrants to this region. However, Makeham's Law, which takes into account of the migration and natural growth seem to be fits well to the population data of this region.

An attempt has also been made to estimate the birth rate and death rate of female population in the region for different states and union territories by using three different methods viz., Coale and Demney, Bourgeois Pichat and Reverse Survival

Ratio. It will be worthwhile to use these estimates to the existing population to forecast the future growth of population in the region.

In Chapter Four, emphasis has been given to the migration of population in the North Eastern Region of India. From the analysis of migration data, one thing becomes very clear that the process of migration is a very complex and any conclusion drawn is entirely based on the published census informations. Analysis relating to place of birth, place of residence, sex-ratio, duration of stay, direction of movement have been discussed in detail for the periods 1961 and 1971.

Following are the main findings of the analysis,

- (1) A significant amount of migration of people from outside the region has taken place since $\frac{1826}{e}$ time when this region was annexed to British Raj.
- (2) At the initial stage, almost all the migrants came as plantation labourers, agricultural labourers and labourers brought by Britishers for maintaining official works and constructions (mainly roads and railway lines) followed by different waves of im-migrants coming from the neighbouring states.
- (3) The main characteristic of the migrants coming from outside the region is the overwhelming majority of male migrants, particularly among the groups who were staying at one place for less than one year. As the time passes, the sex-ratio of

migrants increases. This may reflect that male migrants proceed the female counterpart and after settling down brings their families. .

(4) Another interesting aspect of migration within the region is that, the intra-district migration is much higher (58.9 percent) than that of the inter-district migration (10.5 percent). This may lead to conclude that there may be a significant difference in socio-cultural and economic opportunities in the region.

(5) As regards to the percent of net migrants to gross migrants, although Arunachal Pradesh (66 percent) tops the list followed by Nagaland (59 percent) and Assam (47 percent) for males, in absolute terms, Assam has nearly 2,56,000 male net migrants during 1961-71. The female net migrants during the same decade is very low. The only exception is Tripura, which loses nearly 4 percent of males and 2 percent of female migrants.

(6) From the analysis of inter-state migration, it is seen that there exists a heavy flow of migration to the plains of the region (specially Assam) and to some extent to Meghalaya in which Shillong is acting as the focus of attraction being the seat of many Central Government Agencies.

(7) The analysis of four major classes of migration viz. Rural to Rural, Rural to Urban, Urban to Rural and Urban to Urban, reveals that Rural to Rural migration seems to be a most important followed by Rural to Urban migration. The first aspect may be

the indicator of social interaction, whereas, the second aspect indicates the lure for economic betterment to that of the rural areas. The urban to urban migration reflects the mobility of people and jobs available to them, while the urban to rural migration may reflect the implementation of planning policy envisaged by the Government of India in regards to the balanced regional growth in the rural areas. It is interesting to note that the percentage of net migration to gross migration from the urban areas to rural areas in Arunachal Pradesh is abnormally high (96 percent) followed by Nagaland (54 percent). Meghalaya, on the other hand, registered the lowest (3 percent) in the region.

From the available data published by the various censuses are of limited nature from the point-view of comparability and exhaustive nature. Therefore, further improvements in the analysis of population migration in the region can be made by selecting other demographic indices like- place of birth (actual birth place), direction of movement, religious and linguistic variations that were beyond the scope of the present study.

The spatial distribution of the occupational structure of North Eastern Region of India is of varied nature. The analysis given in this chapter of the study reveals that the participation rate among male and females are quite conspicuous and female

participation is invariably high in the hills region than that of the plains. That may be due to the subsistence type of Agricultural system and comparatively lower socio economic development in the hills. Similarly the rural areas registered higher participation rates of females. It is also interesting to note that the participation rates are higher among the Scheduled Tribe population. This may also indicate the same picture as outlines above.

The structural analysis of the Labour force of 1971 and 1981, reveals that Agriculture occupies the leading sector of economy engaging nearly 69 percent of the total workers in the region in 1971 and 71 percent in 1981. Among the non-agricultural occupation, workers in other services is quite low for total population as well as for the females. The spatial variations between the rural and urban areas is also very wide in terms of agricultural activity and other non-agricultural activities. Further, there is a sharp variations in the workers among the states and union territories of the region. Most of the hill states registered higher proportion of agricultural workers to that of the plains of the region.

The changes in the occupational structure has been examined since 1911. The analysis reveals that cultivators recorded a declining trend till 1971 except for 1961. On the

other hand, the proportion of workers in the non-agricultural activities recorded a constant and slow increase (29 percent in 1911 to 31 percent in 1971).

In the last section of this chapter, changes of urban male work force for the region has been examined through a multivariate statistical technique viz., Principle Component Analysis for the years 1961-71. Two independent components have been identified which together explained 85 percent of the total variations. The first component may be termed as the indicator of economic development and occupational shift, which alone explained as much as 65 percent. The second component which can be termed as Rural-Urban shift in the occupational structure, that explained 20 percent of the variations. With the help of these two dimensions of change, the spatial distribution of the districts of North East Region has been studied and the areas of rapid change and least development have been identified. The present study may throw some light into the better understanding of the structural characteristics and associated changes that have taken place in the region.

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which can be compensated by an overall economic transformation of the region. Keeping this view, this study intends to highlight some of the demographic aspects of urbanisation in this region.

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^{*} Assam figures are not included in 1981.

Class IV - 12, Class V - 24 and Class VI - 22 in 1981 census.

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few large towns (Shillong, Agartala, Imphal in 1981), many medium sized urban centres and large number of small urban centres (Class IV-VI). It is also to be noted that few towns viz., Silchar, Pandu, Karimgang, Dibrugarh, Aizawl, Kohima, Jowai, Lilong, Dharmanagar, Dimapur etc. have registered rank-size regularity to a considerable extent at various decades. Furthermore, the correlation coefficient in all the decades under study has been highly significant (negatively) ranging from -0.93 to -0.98.

An attempt has been made to study the spatial pattern of urban settlement in the hilly areas of the region in 1981 through statistical model based on probability. The hill region of the North East India is still less accessible and economic exploitation is also of limited nature. Most of the urban settlements growing in these parts of the region are backed by political consideration rather than of economic consideration. Among all the urban settlements, most of them are growing to meet the administrative requirements. The process is reflected in random manner and significant deviations are yet to be generated to show the human decision biases. The results obtained in this study by using Poisson Probability Law is encouraging in this direction. On the basis of probability law, we may conclude that every small sub-areas with a region have had equal chance of having at least one urban settlement as other sub-areas

of equal size. In reality, the chance of having an urban settlement is very very small in those areas where the impact of physical, environment is unfavourable for the growth of urban centres and economically also these areas are backward. Therefore, in those regions, the urban settlement distribution pattern would essentially be random and could be well explained with the help of Poisson Model. Any deviation from the randomness may be accounted for by the impact of locational biases of human limitations.

Suggestions for future studies

In the present study all the aspects of demographic structure and growth of population in North East India could not be incorporated mainly due to the limitations of time and space. Only some of the major aspects have been discussed and analysed. Therefore, there is a need to study the aspects which were beyond the scope of the present study by the researchers in the field of population in order to have a better understanding of the subject.

It has been felt that the impact of transport and communications on population is of significant importance which should be studied in a greater detail in future. Secondly, it is also interesting to note that there is no adequate life tables available for the region which also stands as a major challenge

to the researchers in the field. Similarly, studies relating to marital status, mortality rates for both males and females and for rural and urban areas, fertility rates and infant mortality rates could well be undertaken by the future researchers. Lastly, another important aspect of population which may pose a great challenge to the researchers is the population projections, particularly in this region, where, there is tremendous influx of migrants from outside the region.

A better understanding of the above aspects alongwith the findings of the present study will certainly throw some major insights into the demographic structure and growth of population in the region.

Due to unavoidable circumstances the Census operation of 1981 could not take place in Assam and thus due to absence of data for Assam, the study of population growth, density, literacy and process of urbanization etc. could not be compared with 1971 data. On the other hand this study has been taken to analyse the data upto district level. It was done only because of vastness of the area and variation in size of the smaller units of states and union territories. In future, the demographic study on further smaller units may give better results in understanding of population growth, composition, literacy and working force etc. This study may enrich the knowledge in the field of demography. It will also fill the gap in better understanding of the region.

APPENDIX - A.2.1.1: PERCENTAGE DISTRIBUTION OF POPULATION ACCORDING TO AGE AND SEX IN NORTH EAST REGION OF INDIA 1961.

Age group	Assam*			Manipur			Nagaland		
	T	M	F	T	M	F	T	M	F
0-4	18.80	17.4	20.4	17.5	17.9	17.0	16.2	16.0	16.5
5-9	14.6	13.8	15.5	14.5	14.8	14.2	13.1	12.9	13.3
10-14	12.0	11.5	12.6	11.8	11.9	11.7	11.5	11.2	11.8
15-19	10.0	9.7	10.3	9.6	9.4	9.7	9.9	9.7	10.2
20-24	8.4	8.3	8.5	8.3	8.0	8.6	8.6	8.4	8.7
25-29	7.5	7.6	7.3	7.6	7.4	7.9	7.6	7.6	7.7
30-34	6.6	7.0	6.2	6.7	6.6	6.7	6.8	6.9	6.7
35-39	5.5	6.0	4.9	5.5	5.6	5.4	5.9	6.1	5.7
40-44	4.3	4.9	3.7	4.5	4.5	4.4	4.9	5.2	4.6
45-49	3.5	4.0	3.0	3.6	3.7	3.6	3.9	4.1	3.6
50-54	2.8	3.2	2.3	3.0	3.0	3.0	3.0	3.1	2.8
55-59	2.1	2.4	1.8	2.4	2.4	2.5	2.3	2.4	2.2
60-64	1.5	1.7	1.3	1.9	1.9	1.9	1.8	1.9	1.8
65-69	1.0	1.1	0.9	1.2	1.2	1.3	1.4	1.3	1.3
70+	1.4	1.4	1.3	1.9	1.7	2.1	3.1	3.2	3.1

* - Includes Meghalaya and Mizoram.

APPENDIX - A.2.1.1 : (Contd.)

Age group	Tripura			North East India			All India &		
	T	M	F	T	M	F	T	M	F
0-4	17.9	17.4	18.5	17.25	16.42	18.18	16.6	16.2	16.9
5-9	14.4	14.0	14.7	15.32	14.75	15.95	13.2	13.1	13.4
10-14	11.2	11.0	11.4	12.70	12.34	13.10	11.3	11.3	11.4
15-19	9.2	8.8	9.6	9.89	9.71	10.08	9.8	9.8	9.8
20-24	8.5	8.0	9.1	8.33	8.17	8.49	8.7	8.6	8.7
25-29	8.0	7.8	8.1	7.47	7.42	7.51	7.8	7.8	7.8
30-34	6.9	7.1	6.7	6.49	6.67	6.29	6.9	7.0	6.9
35-39	5.6	6.1	5.2	5.44	5.77	5.07	5.9	6.0	5.7
40-44	4.6	5.0	4.1	4.39	4.78	3.97	4.9	5.1	4.7
45-49	3.7	4.1	3.3	3.50	3.87	3.10	4.1	4.3	4.0
50-54	3.0	3.3	2.6	2.75	3.04	2.42	3.4	3.4	3.2
55-59	2.3	2.5	2.1	2.12	2.34	1.89	2.6	2.7	2.5
60-64	1.7	1.9	1.1	1.59	1.74	1.44	1.9	1.9	1.9
65-69	1.1	1.2	1.1	1.12	1.21	1.02	1.3	1.3	1.3
70+	1.8	1.8	1.8	1.64	1.76	1.51	1.6	1.5	1.8

APPENDIX - A.2.1.2 : PERCENTAGE DISTRIBUTION OF POPULATION ACCORDING TO AGE AND SEX IN
NORTH EAST REGION OF INDIA, 1971.

Age group	Assam*			Manipur			Meghalaya		
	T	M	F	T	M	F	T	M	F
0-4	17.5	16.5	18.5	18.9	19.1	18.7	16.8	15.9	17.7
5-9	15.7	15.0	14.4	14.0	13.9	14.1	14.4	14.1	14.8
10-14	12.9	12.5	13.3	12.0	11.9	12.2	11.9	11.6	12.3
15-19	9.9	9.7	10.1	9.9	9.7	10.1	10.1	9.8	10.3
20-24	8.3	8.1	8.5	8.2	8.2	8.3	8.7	8.5	8.9
25-29	7.5	7.5	7.5	6.9	6.8	7.0	7.6	7.5	7.7
30-34	6.5	6.7	6.3	5.9	5.8	6.0	6.7	6.7	6.6
35-39	5.4	5.8	5.0	5.2	5.2	5.1	5.7	6.1	5.2
40-44	4.3	4.7	3.8	4.5	4.6	4.3	4.7	5.2	4.3
45-49	3.4	3.8	3.0	3.6	3.8	3.5	3.8	4.2	2.4
50-54	2.7	3.0	2.3	2.9	3.0	2.8	2.9	3.2	2.6
55-59	2.0	2.3	1.8	2.4	2.4	2.3	2.2	2.4	2.0
60-64	1.5	1.7	1.3	1.9	1.9	1.9	1.6	1.8	1.5
65-69	1.0	0.1	0.9	1.5	1.5	1.5	1.2	1.2	1.2
70 +	1.4	1.6	1.3	2.2	2.2	2.3	1.7	1.8	1.7

* - Includes Mizoram.

APPENDIX - A.2.1.2 : (Contd.)

Age group	Nagaland			Tripura			Arunachal Pradesh		
	T	M	F	T	M	F	T	M	F
0-4	13.9	13.1	14.9	15.7	15.3	16.2	15.7	14.5	17.1
5-9	12.6	12.0	13.3	14.3	14.2	14.4	13.0	12.3	13.7
10-14	11.5	11.2	11.7	12.4	12.0	12.8	9.9	9.5	10.3
15-19	10.2	10.3	10.2	9.7	9.8	9.6	9.0	8.9	9.0
20-24	9.1	9.4	8.8	8.1	8.3	7.9	8.8	9.1	8.4
25-29	8.2	8.4	7.9	7.1	7.0	7.3	8.4	8.9	7.9
30-34	7.2	7.4	6.9	6.3	6.2	6.5	7.8	8.3	7.3
35-39	6.0	6.2	5.9	5.8	5.8	5.4	6.9	7.1	6.5
40-44	5.0	5.1	4.9	4.7	4.8	4.5	5.7	6.0	5.3
45-49	4.1	4.2	4.0	3.9	4.1	3.7	4.5	4.9	4.2
50-54	3.2	3.3	3.0	3.4	3.4	3.0	3.4	3.6	3.1
55-59	2.4	2.5	2.3	2.6	2.8	2.5	2.4	2.5	2.4
60-64	1.9	1.9	1.8	2.1	2.2	2.0	1.7	1.7	1.8
65-69	1.5	1.6	1.4	1.6	1.7	1.6	1.2	1.2	1.3
70 +	3.2	3.4	2.9	2.7	2.8	2.6	1.6	1.5	1.7

APPENDIX - A.2.1.2 : (Contd.)

Age group	North East India			North East India**			All India		
	T	M	F	T	M	F	T	M	F
0-4	17.2	16.4	18.2	18.61	17.43	19.95	16.2	15.9	16.4
5-9	15.3	14.7	15.9	14.52	13.81	15.33	14.1	14.0	14.2
10-14	12.6	12.3	13.0	11.91	11.48	12.39	11.9	11.9	11.8
15-19	9.9	9.7	10.1	9.89	9.57	10.24	9.8	9.8	9.9
20-24	8.3	8.2	8.5	8.42	8.28	8.58	8.4	8.3	8.5
25-29	7.5	7.5	7.5	7.52	7.63	7.40	7.4	7.3	7.6
30-34	6.5	6.7	6.3	6.68	7.03	6.28	6.5	6.5	6.6
35-39	5.5	5.8	5.1	5.52	6.02	4.95	5.7	5.8	5.8
40-44	4.4	4.8	4.0	4.39	4.90	3.82	4.9	5.0	4.9
45-49	3.5	3.9	3.1	3.53	3.98	3.03	4.1	4.2	4.0
50-54	2.8	3.1	2.4	2.81	3.16	2.41	3.2	3.4	3.1
55-59	2.1	2.3	1.9	2.16	2.42	1.88	2.6	2.7	2.5
60-64	1.6	1.7	1.4	1.56	1.71	1.40	2.0	2.0	1.9
65-69	1.1	1.2	1.0	1.02	1.10	0.94	1.4	1.4	1.3
70 +	1.6	1.8	1.5	1.46	1.51	1.42	1.8	1.8	1.6

** - Excludes Arunachal Pradesh

Source: Census of India 1961 & 1971, Age Tables, Paper No.2 of 1963 and Paper No.3 of 1977 Series I.

APPENDIX - A.2.2.1 : SEX RATIO OF POPULATION BY RELIGION AND COMMUNITYWISE IN NORTH EAST REGION
OF INDIA 1961.

States/Union Territories & Districts	Hindu	Muslim	Christian	Sikh	Bud-dhist	Jain	Others	Sche-duled Caste	Sche-duled Tribe
Goalpara	887	915	889	615	171	485	985	899	942
Kamrup	843	898	909	258	794	626	892	840	947
Darrang	847	873	955	318	838	432	825	918	920
Nowgong	900	842	894	842	969	508	652	880	918
Sibsagar	870	805	851	770	818	537	776	892	951
Lakhimpur	834	766	940	574	763	1048	192	813	840
Cachar	895	928	917	182	787	852	1129	920	942
United Mikir & North Cachar Hills	857	320	932	229	1193	115	979	815	909
<u>A.</u> Assam	859	885	963	540	742	587	997	882	965
<u>B.</u> Manipur	1016	973	1004	803	2186	875	1054	943	1030
Garo Hills	868	904	932	238	731	-	1020	800	976

APPENDIX - A.2.2.1 (Contd.)

States/Union Territories & Districts	Hindu	Muslim	Christian	Sikh	Buddhist	Jain	Others	Scheduled Caste	Scheduled Tribe
United Khasi & Jaintia Hills	636	298	1048	529	683	407	1002	789	1020
<u>C.</u> Meghalaya	714	702	1009	508	696	344	1010	796	1001
Kohima	698	382	934	693	300	596	985	NA	NA
Mokokchung	134	82	1057	33	-	-	908	NA	NA
Tuensang	504	486	1000	-	706	-	946	NA	NA
<u>D.</u> Nagaland	532	377	1016	281	556	575	954	575	1007
<u>E.</u> Tripura	925	958	984	633	924	667	2000	929	955
<u>F.</u> Arunachal Pradesh	198	140	324	84	588	-	430	-	472
<u>G.</u> Mizoram	707	245	1041	-	900	-	979	-	1026
North East India	868	891	992	502	847	603	991	890	966
All India	942	935	989	849	981	924	1018		

Source: Calculations based on Census of India 1961, Religion Tables.

NA - Not available.

APPENDIX - A.2.2.2 : SEX RATIO OF POPULATION BY RELIGION AND COMMUNITYWISE IN NORTH EAST REGION
OF INDIA, 1971.

State/Union Territory's & Districts	Hindu	Muslim	Christian	Sikh	Bud-dhist	Jain	Others	Sche- duled Caste	Sche- duled Tribe
Goalpara	916	943	940	838	821	657	-	938	973
Kamrup	880	914	914	852	809	767	-	910	970
Darrang	882	910	922	624	921	508	-	935	966
Nowgong	892	913	885	814	930	550	-	901	967
Sibsagar	887	866	898	935	944	619	-	914	1394
Lakhimpur	869	835	919	770	845	761	-	368	953
Cachar	923	924	919	469	913	550	-	939	924
United Mikir & North Cachar Hills	868	486	932	861	887	464	-	864	927
<u>A.</u> Assam	888	918	922	794	875	654	-	917	960
Manipur Central	741	558	999	80	782	-	1042	146	1013
Manipur East	490	-	1047	-	-	-	1102	1-	1057
Manipur North	637	771	997	941	600	500	1113	764	1002
Manipur South	988	980	944	454	1724	830	981	933	975

APPENDIX - A.2.2.2 (Contd.)

State/Union Territory's & Districts	Hindu	Muslim	Christian	Sikh	Bud-dhist	Jain	Others	Sche-duled Caste	Sche-duled Tribe
Manipur West	248	111	1016	1133	43	846	899	286	675
<u>B.</u> Manipur	969	975	999	442	875	831	1017	914	1009
Garo Hills	722	577	1008	717	662	693	980	1078	972
United Khasi & Jaintia Hills	867	917	956	571	942	563	999	738	1013
<u>C.</u> Meghalaya	779	850	989	715	782	654	988	900	996
Kohima	465	288	947	506	167	554	922	-	950
Wokokchung	251	97	1008	120	744	-	1123	-	1019
Tuensang	348	747	928	279	353	1000	980	-	952
<u>D.</u> Nagaland	392	290	967	326	421	556	965	-	973
North Tripura	934	957	921	6211	914	226	-	945	965
South Tripura	946	941	925	836	929	1500	-	941	950
West Tripura	986	943	856	96	953	617	-	928	942
<u>E.</u> Tripura	943	948	916	1163	922	349	-	940	954

APPENDIX - A.2.2.2(Contd.)

State/Union Territory's & Districts	Hindu	Muslim	Christian	Sikh	Bud-dhist	Jain	Others	Sche-duled Caste	Sche-duled Tribe
Kameng	335	389	300	487	949	-	1015	750	984
Subansiri	575	238	695	150	918	-	1016	250	1015
Siang	334	247	301	261	861	1000	1020	-	1018
Lohit	608	388	799	342	950	385	1018	933	1018
Tirap	636	470	652	606	947	-	104	-	996
<u>F.</u> Arunachal Pradesh	510	314	619	272	942	393	1015	904	1007
<u>G.</u> Mizoram	294	498	1032	13	907	-	743	38	1021
North East India	888	919	977	662	918	654	998	920	980
All India	930	922	986	859	962	940	1011	935	982

Source: Calculations based on Census of India 1971, Religion Tables.

APPENDIX - A.2.3.1 : PERCENTAGE OF EACH RELIGION TO TOTAL POPULATION IN NORTH EAST REGION OF INDIA, 1961.

State/Union Territory's & Districts	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Goalpara	50.95	43.32	3.34	0.02	0.07	0.13	2.17
Kamrup	69.19	29.36	0.89	0.05	0.02	0.11	0.38
Darrang	75.72	19.35	4.64	0.07	0.12	0.09	0.01
Nowgong	57.94	41.24	0.59	0.11	0.03	0.07	0.02
Sibsagar	91.70	5.83	1.93	0.11	0.27	0.06	0.10
Lakhimpur	89.97	5.64	3.47	0.17	0.53	0.10	0.11
Cachar	59.60	39.13	1.10	N	0.02	0.03	0.11
United Mikir & North Cachar Hills	81.22	1.25	9.85	0.09	0.32	0.01	7.26
<u>A.</u> Assam	71.27	25.30	2.43	0.08	0.16	0.09	0.62
<u>B.</u> Manipur	61.68	6.23	19.49	0.07	0.04	0.10	12.39
Garo Hills	16.89	5.59	28.42	0.03	0.09	N	48.99
United Khasi & Jaintia Hills	19.16	1.27	39.73	0.27	0.16	0.02	31.10
<u>C.</u> Meghalaya	18.26	2.99	35.21	0.17	0.13	0.02	42.93

APPENDIX - A.2.3.1 (Contd.)

State/Union Territory's & Districts	Hindu	Muslim	Christian	Sikh	Bud-dhist	Jain	Others
Kohima	22.36	0.62	38.27	0.12	0.01	0.24	38.38
Mokokchung	5.23	0.04	85.93	0.10	-	N	8.69
Tuensang	2.77	0.12	33.98	N	0.02	N	63.10
<u>D.</u> Nagaland	9.39	0.24	52.98	0.07	0.01	0.07	37.23
<u>E.</u> Tripura	76.01	20.14	0.88	N	2.95	0.02	N
<u>F.</u> Arunachal Pradesh	66.14	2.60	4.43	1.92	15.01	0.04	9.86
<u>G.</u> Mizoram	5.18	0.08	86.64	N	7.04	0.01	1.06
North East India	64.10	21.01	7.75	0.08	0.32	0.07	4.41
All India	83.50	10.70	2.44	1.79	0.74	0.46	0.37

Note: Manipur, Tripura and Arunachal Pradesh, district information Religionwise was not available.

Source: Census of India 1961, Religion Tables, Paper No.1 of 1963.

APPENDIX - A.2.3.2 : PERCENTAGE OF EACH RELIGION TO TOTAL POPULATION IN NORTH EAST REGION OF INDIA, 1971.

State/Union Territory's & Districts	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Goalpara	53.92	42.25	3.59	0.04	0.02	0.18	-
Kamrup	69.96	28.93	0.88	0.09	0.04	0.10	-
Darrang	78.45	16.19	5.06	0.06	0.17	0.07	-
Nowgong	59.70	39.39	0.71	0.11	0.01	0.08	-
Sibsagar	92.22	5.27	2.09	0.12	0.24	0.06	-
Lakhimpur	91.45	4.59	3.21	0.14	0.54	0.07	-
Cachar	58.71	39.89	1.32	0.01	0.02	0.05	-
United Mikir & North Cachar Hills	88.06	1.23	10.31	0.07	0.33	0.01	-
<u>A.</u> Assam	72.51	24.02	2.55	0.08	0.30	0.09	-
Manipur Central	78.97	9.22	5.39	0.12	0.02	0.18	5.89
Manipur East	3.33	0.05	92.00	0.05	0.04	0.04	4.46
Manipur North	19.20	0.36	56.13	0.05	0.21	0.01	22.92
Manipur South	5.68	0.19	89.11	0.03	0.09	0.01	3.88

APPENDIX - A.2.3.2 : (Contd.)

State/Union Territory's & Districts	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Manipur West	4.91	0.08	77.61	0.04	0.01	0.01	17.30
<u>B.</u> Manipur	58.97	6.61	26.03	0.10	0.05	0.13	7.75
Caro Hills	19.20	5.39	40.75	0.01	0.22	0.02	34.22
United Khasi & Jaintia Hills	18.03	0.73	51.16	0.20	0.17	0.03	29.59
<u>C.</u> Meghalaya	18.50	2.60	46.98	0.12	0.19	0.03	31.45
Kohima	21.05	1.07	55.81	0.22	0.02	0.36	21.47
Wokokchung	8.31	0.38	88.62	0.14	0.04	-	2.51
Tuensang	4.73	0.26	56.60	0.03	0.04	N	38.34
<u>D.</u> Nagaland	11.43	0.58	66.76	0.13	0.04	0.12	20.94
North Tripura	82.50	9.38	2.84	0.03	5.19	0.06	-
South Tripura	89.69	4.34	0.71	0.03	5.23	N	-
West Tripura	93.27	6.47	0.18	0.01	0.05	0.02	-
<u>E.</u> Tripura	89.55	6.68	1.01	0.02	2.72	0.02	-

APPENDIX - A.2.3.2 : (Contd.)

State/Union Territory's & Districts	Hindu	Muslim	Chris- tian	Sikh	Bud- dhist	Jain	Others
Kameng	19.68	0.12	0.33	0.32	37.98	-	41.57
Subansiri	13.32	0.13	0.79	0.55	0.75	N	84.46
Siang	13.27	0.26	0.43	0.19	3.07	N	82.14
Lohit	49.96	0.40	2.39	0.24	12.94	0.06	34.01
Tirap	25.75	0.05	0.60	0.05	16.54	-	57.01
<u>F.</u> Arunachal Pradesh	21.99	0.18	0.79	0.27	13.13	0.01	63.46
<u>G.</u> Mizoram	6.39	0.57	86.09	0.13	6.81	N	0.01
North East India	66.39	19.40	9.12	0.09	0.77	0.08	4.12
All India	82.72	11.21	2.60	1.89	0.70	0.47	0.40

Source: Census of India 1971, Religion Tables, Paper No. 2 of 1972.

APPENDIX - A.2.4 : PERCENTAGE SHARE OF SCHEDULED CASTES AND SCHEDULED TRIBES TO TOTAL POPULATION
IN NORTH EAST INDIA. (1961 & 1971).

States/Union Territories & Districts	Scheduled Castes						Scheduled Tribes					
	1961			1971			1961			1971		
	T	M	F	T	M	F	T	M	F	T	M	F
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Goalpara	5.06	5.05	5.06	5.39	5.36	5.42	14.67	14.35	15.02	13.85	13.54	14.20
Kamrup	5.74	5.80	5.67	5.77	5.71	5.84	10.78	10.30	11.35	10.44	10.02	10.92
Darrang	4.87	4.71	5.05	4.44	4.33	4.56	10.88	10.52	11.30	10.69	10.27	11.17
Nowgong	8.11	8.35	8.40	9.95	9.94	9.96	7.23	7.07	7.41	7.44	7.19	7.23
Sibsagar	6.23	6.14	6.34	4.69	4.62	4.77	6.36	6.08	6.69	6.82	6.37	7.11
Lakhimpur	4.94	4.99	4.88	3.66	3.67	3.66	10.65	10.60	10.71	13.49	12.90	14.16
Cachar	13.99	13.90	14.08	12.19	12.09	12.30	1.02	1.00	1.04	0.89	0.89	0.89
United Mikir & North Cachar Hills	2.43	2.49	2.35	2.34	2.34	2.33	75.55	73.74	77.65	57.67	55.65	60.00
<u>A.</u> Assam	6.31	6.28	6.35	6.24	6.17	6.32	10.75	10.47	11.06	10.99	10.63	11.39
Manipur Central	NA	NA	NA	2.08	2.13	2.02	NA	NA	NA	7.32	7.35	7.28
Manipur East	NA	NA	NA	0.04	0.07	0.02	NA	NA	NA	96.30	94.27	98.40

APPENDIX - A.2.4 : (Contd.)

States/Union Territories & Districts	Scheduled Castes						Scheduled Tribes					
	1961		1971		1971		1961			1971		
	T	M	F	T	M	F	T	M	F	T	M	F
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Manipur North	NA	NA	NA	0.11	0.19	0.03	NA	NA	NA	79.39	76.90	82.01
Manipur South	NA	NA	NA	0.32	0.36	0.28	NA	NA	NA	93.75	92.52	95.01
Manipur West	NA	NA	NA	0.10	0.20	-	NA	NA	NA	97.82	95.87	99.75
<u>B. Manipur</u>	1.71	1.78	1.65	1.53	1.58	1.47	31.93	31.82	32.03	31.18	30.74	31.63
Garo Hills	0.28	0.30	0.25	0.39	0.46	0.52	85.61	84.93	86.31	80.14	79.24	81.09
United Khasi & Jaintia Hills	0.09	0.10	0.08	0.31	0.35	0.27	81.39	77.42	85.71	80.71	77.65	83.97
<u>C. Meghalaya</u>	0.16	0.18	0.15	0.38	0.39	0.37	83.07	80.38	85.95	80.48	78.29	82.81
Kohima	NA	NA	NA	-	-	-	NA	NA	NA	80.00	78.02	87.85
Mokokchung	NA	NA	NA	-	-	-	NA	NA	NA	91.30	86.22	96.90
Tuensang	NA	NA	NA	-	-	-	NA	NA	NA	94.70	92.55	97.07
<u>D. Nagaland</u>	0.03	0.04	0.03	-	-	-	93.09	89.66	96.80	88.60	85.60	93.89

APPENDIX - A.2.4 : (Contd.)

States/Union Territories & Districts	Scheduled Castes						Scheduled Tribes					
	1961			1971			1961			1971		
	T	M	F	T	M	F	T	M	F	T	M	F
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
North Tripura	NA	NA	NA	13.16	13.17	13.16	NA	NA	NA	26.46	26.21	26.73
South Tripura	NA	NA	NA	12.42	12.45	12.39	NA	NA	NA	35.80	35.72	35.89
West Tripura	NA	NA	NA	10.94	10.98	10.89	NA	NA	NA	26.80	26.71	26.90
<u>E. Tripura</u>	10.48	10.50	10.47	12.39	12.41	12.37	31.53	31.15	31.94	28.95	28.78	29.13
Kameng	-	-	-	0.02	0.02	0.02	NA	NA	NA	78.93	71.80	87.78
Subansiri	-	-	-	0.01	0.01	N	NA	NA	NA	90.93	87.14	95.02
Siang	-	-	-	N	N	N	NA	NA	NA	86.79	80.75	93.68
Lohit	-	-	-	0.51	0.47	0.56	NA	NA	NA	58.24	51.16	67.40
Tirap	-	-	-	-	-	-	NA	NA	NA	70.63	66.62	75.69
<u>F. Brunachal Pradesh</u>	-	-	-	0.07	0.07	0.07	85.68	83.36	94.44	79.02	73.27	85.69

APPENDIX - A.2.4 : (Contd.)

States/Union Territories & Districts	Scheduled Castes						Scheduled Tribes					
	1961			1971			1961			1971		
	T	M	F	T	M	F	T	M	F	T	M	F
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
G. Mizoram	-	-	-	0.02	0.05	N	98.10	97.26	98.94	94.26	90.75	97.97
North East India	5.97	5.97	5.97	5.75	5.71	5.80	21.04	20.32	21.85	22.19	21.37	23.11

N - Stands for Negligible

NA - Stands for Not Available

Source: Census of India 1961 and 1971, General Population Tables
Part II-A of Respective States and Union Territories.

APPENDIX - A.2.5 : PERCENTAGE SHARE OF LITERATE POPULATION TO TOTAL POPULATION IN NORTH EAST INDIA, (1961, 1971 and 1981*)

State/Union Territory/ District's		1961			1971			1981		
		T	M	F	T	M	F	T	M	F
Goalpara	T	21.1	30.3	10.8	21.98	30.27	13.03			
	R	19.1	28.3	9.0	19.55	27.79	10.78			
	U	48.5	55.9	34.4	50.82	57.69	42.25			
Kamrup	T	27.4	39.2	13.6	28.77	38.19	18.18			
	R	23.7	35.4	10.6	24.81	34.18	14.57			
	U	58.1	66.2	44.8	58.51	65.35	49.06			
Darrang	T	22.9	31.7	12.7	22.76	30.26	14.30			
	R	21.9	30.6	11.8	20.61	28.02	12.38			
	U	48.9	55.6	38.1	56.48	61.96	48.75			
Noungong	T	27.3	36.4	16.8	28.92	36.97	19.96			
	R	25.3	34.3	15.1	26.61	34.65	17.79			
	U	54.9	63.0	43.6	59.11	65.02	51.33			
Sibsagar	T	34.3	46.0	21.9	36.62	44.32	27.92			
	R	32.9	43.7	20.6	34.38	42.11	25.80			
	U	60.5	66.2	51.3	60.93	66.04	53.88			

APPENDIX - A.2.5 (Contd.)

State/Union Territory & District		1961			1971			1981		
		T	M	F	T	M	F	T	M	F
Lakhimpur	T	28.7	38.9	16.4	29.94	38.42	20.19			
	R	25.8	36.2	13.5	26.01	34.61	16.39			
	U	55.6	60.4	48.0	59.03	63.98	52.39			
Cachar	T	28.6	40.2	15.8	30.57	40.42	19.90			
	R	25.9	37.6	13.1	27.79	37.90	16.89			
	U	64.5	73.1	53.7	62.89	68.86	56.06			
United Mikir & North Cachar Hills	T	17.4	25.8	7.7	20.52	28.37	11.47			
	R	17.0	25.3	7.3	10.02	26.70	10.29			
	U	58.5	63.7	50.4	63.28	69.18	53.45			
A. Assam	T	26.98	37.30	15.11	28.15	36.68	18.63			
	R	24.69	34.98	13.08	25.24	33.76	15.89			
	U	56.49	63.52	45.86	58.29	64.19	50.35			
Manipur Central	T	NA	NA	NA	34.64	46.84	20.21	42.97	55.40	30.38
	R	NA	NA	NA	30.77	45.28	16.03	38.67	51.22	25.97
	U	NA	NA	NA	53.02	65.83	40.08	51.48	63.65	39.13

APPENDIX - A.2.5 (Contd.)

State/Union Territory & Districts	1961			1971			1981			
	T	M	F	T	M	F	T	M	F	
Manipur East	T	NA	NA	NA	34.10	45.71	22.11	42.12	51.18	33.95
	R	NA	NA	NA	34.10	45.71	22.11	41.21	49.42	32.33
	U	NA	NA	NA	-	-	-	65.72	74.12	56.19
Manipur North	T	NA	NA	NA	22.65	32.89	11.88	30.81	40.21	28.81
	R	NA	NA	NA	22.65	32.89	11.88	30.45	39.83	20.53
	U	NA	NA	NA	-	-	-	36.24	45.69	25.26
Manipur South	T	NA	NA	NA	34.68	44.84	24.28	44.30	51.32	36.77
	R	NA	NA	NA	32.54	42.66	22.21	41.24	48.01	34.16
	U	NA	NA	NA	56.66	66.88	45.88	57.39	64.71	48.72
Manipur West	T	NA	NA	NA	21.87	32.29	11.62	37.50	46.63	28.09
	R	NA	NA	NA	21.87	32.29	11.62	36.70	45.70	27.45
	U	NA	NA	NA	-	-	-	48.75	58.57	37.37
B. Manipur	T	30.42	45.12	15.93	32.91	46.04	19.53	41.52	52.67	30.05
	R	28.48	42.69	14.54	29.83	43.04	16.35	37.87	48.83	26.61
	U	50.77	70.35	30.88	53.24	65.80	40.43	51.68	63.35	29.63

APPENDIX - A.2.5 (C9ntd.)

State/Union Territory & Districts	1961			1971			1981			
	T	M	F	T	M	F	T	M	F	
Garó Hills	T	20.0	25.9	13.8	23.57	29.64	17.17	27.28	33.18	21.11
	R	18.8	24.5	12.9	21.88	27.85	15.65	26.50	30.27	18.52
	U	60.2	64.9	52.8	66.06	70.73	60.07	56.72	62.70	49.92
United Khasi & Jaintia Hills	T	31.5	36.5	26.1	33.46	37.11	29.57	37.09	39.29	34.74
	R	22.5	25.9	19.0	24.66	27.54	21.65	28.80	30.15	27.40
	U	61.0	67.6	52.5	65.12	69.84	59.85	63.54	66.66	58.91
<u>D.</u> Meghalaya	T	26.9	32.3	21.2	29.47	34.12	24.56	33.35	36.97	29.55
<u>C.</u> Meghalaya	R	20.8	25.3	16.2	26.99	27.68	18.94	26.98	30.20	23.64
	U	60.9	67.4	52.5	65.22	69.93	59.69	62.30	66.72	57.40
	T	NA	NA	NA	40.93	40.80	18.79	46.36	54.81	35.96
Kohima	R	NA	NA	NA	23.99	32.95	13.97	41.68	50.76	31.14
	U	NA	NA	NA	60.12	66.66	47.08	63.72	68.13	56.93
	T	NA	NA	NA	38.15	45.76	29.82	51.75	58.52	44.75
Mokokchung	R	NA	NA	NA	35.39	42.56	28.11	50.13	57.23	42.84
	U	NA	NA	NA	62.10	65.15	54.77	60.87	63.73	57.08

APPENDIX - A.2.5 (Contd.)

State/union Territory & Districts	1961			Y	1971			1981		
	T	M	F		T	M	F	T	M	F
Tuensang	T	NA	NA	NA	13.31	10.42	7.68	26.60	32.53	19.86
	R	NA	NA	NA	13.31	18.42	7.68	23.48	29.07	17.31
	U	NA	NA	NA	-	-	-	62.11	66.52	55.23
D. Nagaland	T	17.91	24.04	11.34	27.40	35.02	18.65	41.99	49.16	33.72
	R	15.82	21.39	9.96	23.71	30.52	16.39	38.18	45.49	30.13
	U	56.12	64.30	43.11	60.79	66.13	49.47	62.68	66.71	56.72
North Tripura	T	NA	NA	NA	32.17	41.32	22.38	41.92	50.66	32.58
	R	NA	NA	NA	29.87	39.21	19.89	39.54	48.61	29.84
	U	NA	NA	NA	63.85	70.01	57.11	73.93	78.39	69.22
South Tripura	T	NA	NA	NA	26.69	36.62	16.17	34.45	44.11	24.23
	R	NA	NA	NA	24.60	34.88	14.22	39.73	44.52	24.88
	U	NA	NA	NA	57.52	69.38	45.01	69.23	76.98	60.92
West Tripura	T	NA	NA	NA	32.61	41.42	23.23	45.74	55.57	35.45
	R	NA	NA	NA	26.89	35.95	17.82	40.59	51.15	29.51
	U	NA	NA	NA	65.66	73.72	56.84	74.26	80.33	68.01

APPENDIX - A.2.5 (Contd.)

State/Union Territory & Districts		1961			1971			1981		
		T	M	F	T	M	F	T	M	F
	T	20.24	29.61	10.19	30.98	40.20	21.19	41.78	51.27	31.77
<u>E. Tripura</u>	R	17.06	26.32	7.16	27.13	36.43	17.27	37.89	47.82	27.68
	U	52.13	61.33	41.74	64.01	72.42	55.03	73.34	79.42	67.00
	T	NA	NA	NA	9.61	15.00	2.80	15.59	21.79	8.68
<u>Kameng</u>	R	NA	NA	NA	8.01	12.84	2.15	14.33	20.26	7.78
	U	NA	NA	NA	51.32	59.82	29.89	49.29	55.10	35.81
	T	NA	NA	NA	6.89	11.58	1.65	17.26	25.15	8.54
<u>Subansiri</u>	R	NA	NA	NA	6.89	11.58	1.85	13.57	20.73	5.96
	U	NA	NA	NA	-	-	-	53.60	61.47	40.86
	T	NA	NA	NA	12.97	20.59	4.29	23.67	32.09	14.10
<u>Siang</u>	R	NA	NA	NA	9.62	16.04	2.68	19.84	27.69	11.25
	U	NA	NA	NA	50.82	59.38	32.08	55.23	63.41	42.64
	T	NA	NA	NA	17.39	25.14	7.37	26.68	35.10	15.70
<u>Lohit</u>	R	NA	NA	NA	15.14	22.30	6.15	24.72	33.08	13.95
	U	NA	NA	NA	46.97	58.60	30.02	55.24	62.66	43.92

APPENDIX - A.2.5 (Contd.)

State/Union Territory & Districts	1961			1971			1981			
	T	M	F	T	M	F	T	M	F	
Tirap	T	NA	NA	NA	11.22	18.06	3.48	18.17	26.00	9.18
	R	NA	NA	NA	11.22	18.06	3.48	18.17	26.00	9.18
	U	NA	NA	NA	-	-	-	-	-	-
E. Arunachal Pradesh	T	NA	NA	NA	11.29	17.82	3.71	20.09	27.98	11.02
	R	NA	NA	NA	9.79	15.77	3.00	17.80	25.33	9.30
	U	-	-	-	50.46	69.28	39.28	54.08	62.28	41.53
G. Mizoram	T	44.00	53.4	34.7	53.8	60.5	46.7	59.5	66.0	52.6
	R	42.8	52.3	33.4	51.4	58.3	44.1	54.7	62.1	46.8
	U	66.0	71.5	59.8	61.2	77.6	67.2	73.9	77.2	70.2
North East India	T	18.88	25.40	11.47	28.72	37.20	19.34			
	R	17.90	24.70	10.31	23.41	31.17	14.97			
	U	30.57	32.93	2.20	79.72	90.78	65.46			

APPENDIX - A.2.5 (Contd.)

State/Union Territory & Districts	1961			1971			1981		
	T	M	F	T	M	F	T	M	F
	T	24.00	34.40	13.00	29.45	39.45	18.70	34.80	
All India	R				23.74	33.76	13.17		
	U				52.44	61.28	42.14		

Source: Census of India, 1961 and 1971, General Population Tables Part II-A of respective States and Union Territories and for 1981, Provisional Population Tables.

NA - Not available.

APPENDIX - A.3.1 : POPULATION OF NORTH EAST INDIA FROM 1901-81.

		1901	1911	1921	1931	1941	1951	1961	1971	1981*
Assam										
	T	3289680	3848617	4636980	5560371	6694790	8028856	10837329	14625152	19902826
	M	1714316	2010211	2435300	2966568	3569762	4298773	5798376	7714240	10472712
	F	1575364	1838406	2191680	2593803	3125028	3730143	5038953	6910912	9430114
Manipur										
	T	284465	346222	384016	445606	512069	577635	780037	1072753	1411375
	M	139632	170666	188119	215815	249183	283685	387058	541675	715718
	F	144833	175556	195897	229791	262886	293950	392979	531078	695657
Meghalaya										
	T	340524	394005	422403	480837	555820	605674	769380	1011699	1328343
	M	167256	195706	211216	243993	282666	310706	397288	520967	679519
	F	173268	198299	211187	236844	273154	294968	372092	490732	648824
Nagaland										
	T	101550	149038	158801	178844	189641	212975	369200	516449	773281
	M	51473	74796	79738	89536	93831	106551	191027	276084	414231
	F	173268	198299	211187	236844	273154	294968	372092	490732	359050

APPENDIX - A.3.1 (Contd.)

	1901	1911	1921	1931	1941	1951	1961	1971	1981*
Tripura									
T	1173325	229633	304437	382450	513010	639029	1142005	1556342	2048351
M	92495	121820	161515	202932	272025	335589	591237	801126	1051240
F	80830	107793	142922	179518	240985	303440	550768	755216	996111
Arunachal Pradesh									
T	-	-	-	-	-	-	336558	467511	628050
M	-	-	-	-	-	-	177680	251231	335941
F	-	-	-	-	-	-	158878	216280	292109
Mizoram									
T	283082434	91204	98406	124404	152786	196202	266063	332390	487774
M	39004	43028	46652	59186	73855	96136	132465	170824	365009
F	43430	48176	51754	65218	78931	100006	133598	161566	122765
North Eastern India									
T	4271978	5058699	6005043	7172512	8618116	10260371	14500572	19582296	26091226
M	2204176	2616227	3132540	3778030	4541322	5431440	7675131	10276147	13920713
F	2067802	2442472	2872503	3394482	4076794	4828931	6825441	9306149	12657818

APPENDIX - A.3.1 (Contd.)

	1901	1911	1921	1931	1941	1951	1961	1971	1981*
All India									
T	238396327	252093390	251321213	278977238	318660580	361088090	439234771	54815962	683810051
M	120791301	128385368	128546225	142929689	163685302	185528462	226293201	284049276	
F	117358672	123708022	122774988	135788921	154690267	175559628	212941570	264110576	

Growth 1901-81 in percentage

Assam	505.01
Manipur	396.15
Meghalaya	290.09
Nagaland	661.48
Tripura	1081.22
Mizoram	491.71
NER	510.75
All India	186.84

Growth 1951-81 in percentage

NER	154.29
All India	89.37

APPENDIX - A.3.2 i Exponential growth rate in Percentage 1901-81*

	1901	1911	1921	1931	1941	1951	1961	1971	1981
Assam									
T	-	1.57	1.86	1.82	1.86	1.82	3.00	3.00	3.08
R	1.85	1.56	1.83	1.80	1.84	1.69	2.69	2.82	MA
U	1.87	1.87	3.13	2.44	2.49	5.05	8.18	5.01	MA
Manipur									
T	-	1.96	1.02	1.49	1.39	1.20	3.00	3.19	2.74
R	-	2.47	1.13	1.68	1.36	3.32	2.15	2.68	1.09
U	-	0.33	0.69	0.70	1.50	-35.51	31.64	7.37	9.70
Meghalaya									
T	-	1.46	0.70	1.30	1.45	0.86	2.39	2.74	2.72
R	-	1.39	0.63	1.14	1.30	0.55	1.75	2.82	2.31
U	-	3.49	2.32	4.33	3.64	4.27	6.97	2.25	4.87
Nagaland									
T	-	3.84	0.63	1.19	0.59	1.16	5.50	3.36	4.04
R	-	3.84	0.63	1.19	0.59	1.16	5.50	2.31	3.40
U	-	-	-	-	-	-	-	-	8.49

APPENDIX - A.3.2 (Contd.)

	1901	1911	1921	1931	1941	1951	1961	1971	1981
Tripura									
T	-	2.81	2.82	2.28	2.94	2.20	5.81	3.10	2.74
R	-	2.89	2.87	2.29	2.84	1.86	5.55	2.94	2.68
U	-	0.63	1.25	2.13	6.13	8.79	8.83	4.55	3.26
Arunachal Pradesh									
T	-	-	-	-	-	-	-	3.29	2.95
R	-	-	-	-	-	-	-	2.91	2.68
U	-	-	-	-	-	-	-	-	8.32
Mizoram									
T	-	1.01	0.76	2.34	2.06	2.50	3.05	2.23	3.84
R	-	1.01	0.76	2.34	2.06	2.14	2.86	1.57	2.14
U	-	-	-	-	-	-	7.19	9.74	11.79
North Eastern Region									
T	-	1.69	1.71	1.78	1.84	1.74	3.46	3.00	2.87
R	-	1.71	1.70	1.77	1.81	1.72	3.13	2.80	
U	-	1.23	2.09	2.00	2.47	2.25	8.75	5.68	

APPENDIX - A.3.2 (Contd.)

	1901	1911	1921	1931	1941	1951	1961	1971	1981
All India									
T	-	0.56	-0.03	1.04	1.33	1.25	1.96	2.22	2.21
R	-	0.62	-0.13	0.95	1.12	0.84	1.88	1.98	NA
U	-	0.03	0.83	1.75	2.77	3.47	2.34	3.24	NA

* - Provisional figures for 1981 and for Assam 1981 Projected.

APPENDIX - A.4.1: INTER -STATE MIGRATION FROM AND TO in 1971.

Migrated From	To	Assam	Manipur	Meghalaya	Nagaland	Tripura	Arunachal Pradesh	Total (including other states)
Andhra Pradesh		7330	234	96	296	332	193	1061274
Assam ^t		-	12856	34813	10100	11738	25325	192876
Bihar		243915	1898	7525	7598	4576	3909	2201399
Gujarat		650	33	42	11	20	36	865187
Haryana		3780	624	112	625	226	621	837519
Himachal Pradesh		495	247	31	313	277	349	223266
Jammu & Kashmir		560	189	74	146	49	158	80465
Kerala		4620	756	554	2151	270	1693	942639
Madhya Pradesh		13965	420	118	299	275	219	977153
Maharashtra		1525	151	285	102	182	311	1139809
Manipur		5905	-	620	3006	222	124	11572
Meghalaya		26513	199	-	569	227	525	29730
Mysore		750	70	76	95	71	388	1120698
Nagaland		4670	308	504	-	47	399	7090
Orissa		30310	73	167	411	1246	798	493501

APPENDIX - A.4.1 (Contd.)

Migrated From	To	Assam	Manipur	Meghalaya	Nagaland	Tripura	Arunachal Pradesh	Total (including other states)
Punjab		8785	828	1052	867	238	941	1193277
Rajasthan		28727	609	840	1316	411	782	1366082
Sikkim		50	446	59	48	3	86	8108
Tamil Nadu		3070	205	223	413	80	439	1083434
Tripura		17340	925	548	361	-	178	28986
Uttar Pradesh		64323	2611	2019	6865	2539	4643	3460923
West Bengal		65671	1309	4391	1785	3064	2088	779982
Arunachal Pradesh		1430	7	171	53	11	-	2275
Other Union Territories		1050	70	243	132	130	131	515596
	Total*	535434	25068	54563	37562	26234	44336	18622841
	Grand Total*	1522461	37548	117066	49515	555467	69820	27986737

^t - includes Mizoram

* - Migrants from abroad are also included

** - Details for each State irrespective of 5468 persons (3737 males and 1731 females) enumerated in Urban areas of Sikkim are not available.

Source: Census of India 1971, Geographical Distribution of Internal Migration in India.

APPENDIX-A.4.2 : TYPES OF INTER-STATE MIGRATION, 1971

State/Union Territory	Gross Migrants	In-Migrants		Out-Migrants		Net-Migrants		
		Male	Female	Male	Female	Persons	Male	Female
RURAL TO RURAL								
Assam*	413913	212400	106360	52663	42490	223607	159737	63870
Manipur	22395	11067	5994	3201	2133	11727	7866	3861
Meghalaya	34758	11322	9119	7489	6828	6124	3833	2291
Nagaland	14809	9187	2578	1768	1276	8721	7419	1302
Tripura	28491	9119	5549	9006	4824	23825	23153	7214
Arunachal Pradesh	30046	21296	7909	531	310	28364	20765	7599
RURAL TO URBAN								
Assam	140425	88412	25265	16943	9805	86929	71469	15460
Manipur	5225	1779	1018	1660	768	369	119	250
Meghalaya	12705	8180	3026	849	650	9707	7331	2376
Nagaland	17465	14453	1851	741	420	15143	13712	1431
Tripura	7773	1171	729	3378	2395	-3773	-2207	-1566
Arunachal Pradesh	6386	4686	1009	502	189	5004	4184	820

APPENDIX-A.4.2 (Contd.)

State/Union Territory	Gross Migrants	In-Migrants		Out-Migrants		Net-Migrants		
		Male	Female	Male	Female	Persons	Male	Female
URBAN TO URBAN								
Assam	83399	26829	19148	19451	17971	8555	7378	1177
Manipur	3471	1079	641	1182	569	-31	-103	72
Meghalaya	22097	8278	5938	3899	3982	6335	4379	1956
Nagaland	6790	3867	1621	648	654	4186	3219	967
Tripura	8977	1815	1951	2839	2372	-1445	-1024	-421
Arunachal Pradesh	2489	1358	715	249	167	1657	1109	548
URBAN TO RURAL								
Assam	57128	19770	12160	14155	14043	6732	5615	1117
Manipur	3903	1813	583	932	575	889	881	8
Meghalaya	10955	3412	2207	2939	2397	283	473	-190
Nagaland	5021	2822	1036	666	497	2695	2156	539
Tripura	6111	2471	1684	1259	697	2199	1212	987
Arunachal Pradesh	7439	4901	2376	106	56	7115	4795	2320

* - Includes Mizoram

Source: Census of India 1971, Geographical Distribution of Internal Migration in India.

APPENDIX A.5.1 : CORRELATION MATRIX (R).

		1	2	3	4	5	6	7
(a)	1	1.00	.67	0.77	0.72	0.50	0.61	0.44
	2	0.67	1.00	0.27	0.60	0.17	0.39	0.13
	3	0.77	0.27	1.00	0.62	0.74	0.58	0.68
	4	0.72	0.60	0.62	1.00	0.67	0.71	0.54
	5	0.50	0.17	0.74	0.67	1.00	0.82	0.94
	6	0.61	0.39	0.58	0.71	0.82	1.00	0.76
	7	0.44	0.13	0.68	0.54	0.94	0.76	1.00

(b) = 4.60, 1.29, 0.54, 0.26, 0.21, 0.07, 0.03

(c) P_1 (for = 4.60) : 0.3819, 0.2443, 0.3913, 0.3989,
0.4119, 0.4074, 0.3828.

P_2 (for = 1.29) : 0.3729, 0.6839, -0.0662, 0.2242,
-0.3747, -0.1115, -0.4290.

Source: Computed by the Author.

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