# STUDY OF ENGLISH BAZAR TOWN AND PLANNING FOR ITS DEVELOPMENT

THESIS SUBMITTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN GEOGRAPHY AND APPLIED GEOGRAPHY IN
THE FACUTLY OF SCIENCE OF THE
UNIVERSITY OF NORTH BENGAL

By
*Mita Pal*



Guided by
Dr. M. M. Jana

**DEPARTMENT OF GEOGRAPHY AND APPLIED GEOGRAPHY**
**UNIVERSITY OF NORTH BENGAL**
**INDIA**
**2000**

Department of Geography and Applied Geography
**UNIVERSITY OF NORTH BENGAL**
P. O. NORTH BENGAL UNIVERSITY, DT. DARJILING, PIN - 734430, INDIA

**Dr. M. M. Jana,** Reader
M. Sc. Ph. D. (Cal) P. G. Dip in
R. S. Application in Geomorphology
Geology & Hydro - Geology
F. G. S. I. (Cal), F. I. N. C. A.,
F. A. A. G, (Washington)

W-295, N. B. U. Campus, (Wn. Sector)
P. O. NORTH BENGAL UNIVERSITY
DIST. DARJEELING W. B.
Phone - + 91-0353-450430 (D)
+ 91-0353-450245 (R)
Fax - + 91-0353-450546 (O)
E. Mail : Balasun Shlanet Com

*Ref, No.* :

*Date* :

## TO WHOM IT MAY CONCERN

4th January, 2000

I am pleased to certify that **Mita Pal** has completed her Ph. D. Thesis on "STUDY OF ENGLISH BAZAR TOWN AND PLANNING FOR ITS DEVELOPMENT" under my supervision. She prepared the Thesis from intensive field work in English Bazar town at different times during her research work. She visited many Government and Non Government Offices for collection of secondary data and information. She consulted different Libraries at the time of preparing this Thesis. It is an original work and so far my knowledge goes no one of this University worked on this topic.

She is sincere and methodical is her work. She bears a good moral character and I know nothing against her habits and behaviour.

I wish he success in life.

Dr. M. M. Jana

# Acknowledgement

*In the beginning I express my sincere gratitude to my reverend teacher Dr. M.M. Jana, Reader, Department of Geography and Applied Geography, University of North Bengal, India, but for whose unstinted guidance, preparation of my thesis would not have been possible. As supervisor, he took sincerest and most painstaking attention to give it present shape.*

*I am indebted Dr. Subir Sarkar, Head of the Deptt. of Geography and Applied Geography, University of North Bengal. In this regard, I must acknowledge my gratitude to Dr. H. K. Das Gupta, Principal, Union Christian Training College, Berhampore, Dr. Anuradha Sengupta, Lecturer of Malda Women's College. Malda, for their sincere co-operation to carry out this thesis in their own way.*

*I am grateful to different organisations and inhabitants of English Bazar town for their co-operation in collecting data and informations. I convey my sense of gratitude to Smt. Usha Chowdhury, Chairman of English Bazar Municipality and Sri Utpal Das, Sub-assistant Engineer. I am grateful to various Departments of Government of West Bengal (Department of Agriculture, land Reforms, Collectorate and Health Services) for there help at the time of field work.*

*Thanks are due to the staffs of the Central Library of the University of North Bengal, National Library, Calcutta for their support and help in locating the exact sources of informations which were necessary for the preparation of this work.*

*I am very much thankful to Babul Biswas who beared sufferings in computer typing the thesis and to Sri Kalyan Roy for his co-operation in different aspects I am thankful to Kh. E. Hoque, R. S for Bangladesh. and non-teaching staffs of the Deptt. of Geography and Applied Geography.*

*At last but not the least, I am a equally grateful to my father and family members as they have ungrudingly spared me to carry out my studies.*

*North Bengal University*
*Raja Rammohunpur*
*Dated : December 31, 1999.*

Mita Pal
***Mita Pal***

# PREFACE

The topic under study — "Study of English Bazar Town and planning for its development." is selected to unravel the different origin, trend, nature and scale of growth of the town. The town, headquarters of Malda District is a class 1 town according to district census which is a important district of Jalpaiguri Division. The town is one of the oldest in West Bengal and was established in the year 1869. The study hints to some proposals for the solution of many problems coming across in the town. Follow up of those proposals might shape the town to centre of economy of the North Bengal, a region of West Bengal.

The work has been divided into Eight Chapters preceded by an "Introduction". The introductory portion of the work is devoted to identify the location and history of the town. It also deals with the purpose and objectives of the study, methodology used for study and design of the thesis.

Chapter One deals with demographic studies i.e. population structure and its composition, its density pattern, growth and migration of the people. Literacy rate and the occupations of the town dwellers are also discussed in this Chapter.

The Chapter Two is devoted to study major landuse pattern. Distribution, characteristic and changes of landuses in the town have also been analysed in this chapter.

In Chapter Three different socio-economic amenities and their characteristics in the town which include housing and living condition of the people, different functional and cultural characteristics are discussed in detail.

The Chapter Four has been dealt with identification of various problems and their origin. It is followed by Chapter Five that throws some light on the formulation of strategies for development. This chapter is devoted to analysis any synthesis of statistical data obtained from field study, different mathematical observations as well as computational results.

In the Sixth Chapter examinations and analysis of the previous plans

prepared by various authorities are made and desired strategies for the development of the town is suggested. In the Seventh Chapter. a proposal for developing the town has mentioned. These developmental proposals lead to need of a master plan by combining the infrastructural resources.

Finally. summarising the problems and comparing different aspects in the town some suggestions has been mentioned for their master plan in Chapter Eight. The plan will also help to the development of the town. Thus the hinterland can also be developed. The master plan is to be framed in such a way that the future growth of population and the development of the town might take place side by side.

# Contents

# LIST OF TABLES

**Table No.**

# LIST OF FIGURES

## LIST OF PLATES

**Plate Nos.**

## GLOSSARY

| | |
|---|---|
| Barind | Special type of Topography of Old Alluvium Deposits |
| Bhavan | Building |
| B.H.U. | Benaras Hindu University |
| C.B.D | Central Business District |
| C.D.P. | Comprehensive Development Plan |
| D.S.A. | District Sports Association |
| E.B.M. | English Bazar Municipality |
| FCI | Food Corporation of India |
| IDP | Interim Development Plan |
| Kuncha | Unmetalled |
| More | Road crossing |
| N.H. | National Highway |
| ODP | Outline Development Plan |
| Pucca | Metalled |
| S.H | State Highway |

# LOCATION MAP
## (ENGLISH BAZAR TOWN)

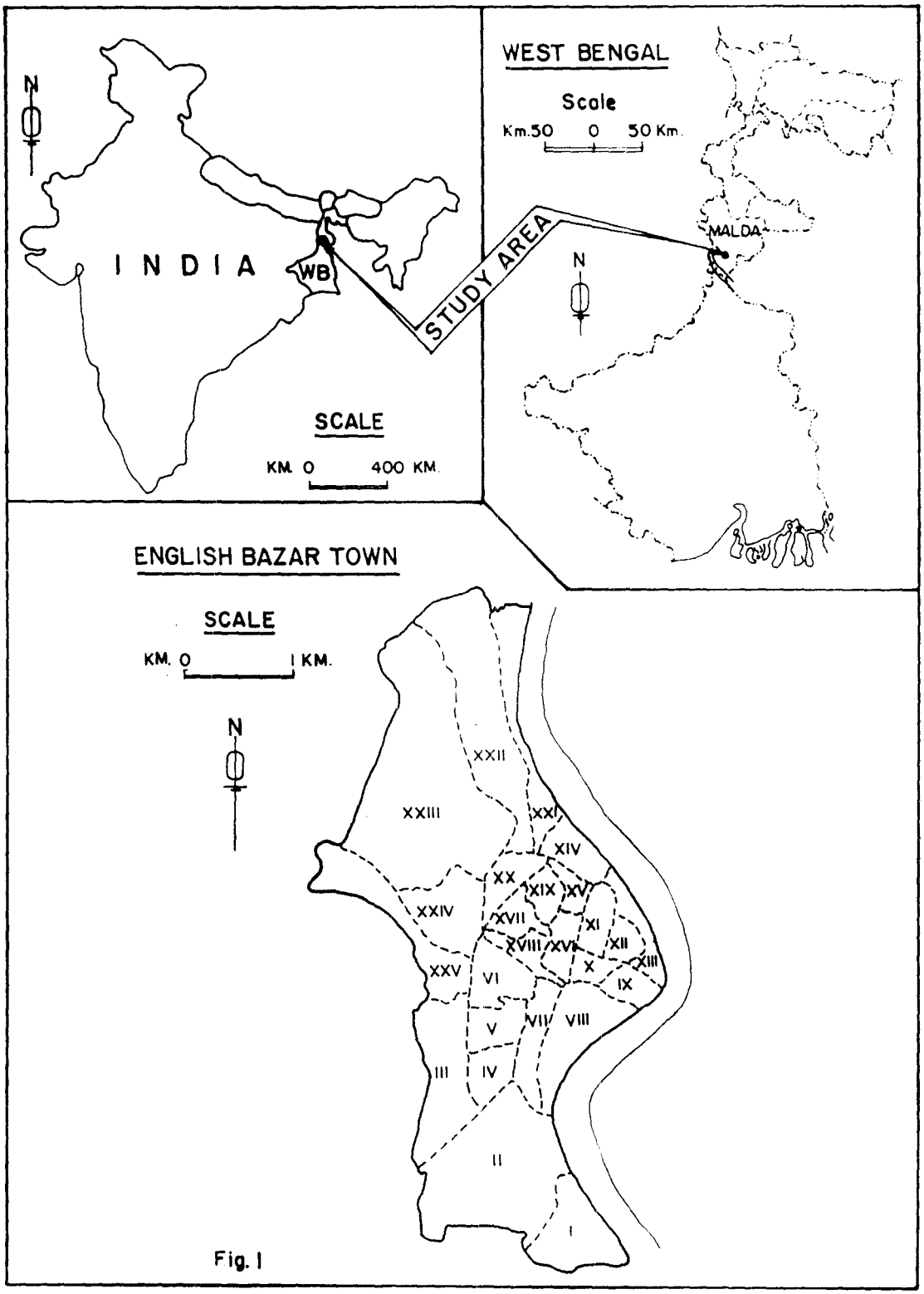



Fig. 1

# INTRODUCTION

## STUDY AREA

English Bazar town, head quarters of Malda District is a class I town in census category and is included in the Jalpaiguri Division. The town is one of the oldest in Bengal and was established in the year 1869. It is situated at 25°0' N latitudes and 88°9" E longitudes (Census, 1961). The town is elongated in a north-south alignment along the National Highway 34 and the river Mahananda (Fig. 1). The area of the town was 4.63km$^2$ upto 1983-84. But it's present area is 13.25km$^2$. The recent extension of the town has been taken place in the western direction taking an advantage of vacant land at a low price for residential purposes and also nearer to the centre point of the town. The town at present is divided into 24 municipality wards. (Fig.2).

Topographically the town is almost flat and on the levee of the river Mahananda. The town, about 200 km. north of Calcutta is located almost at the middle point in the State of West Bengal. it is a gateway of North Bengal from South Bengal and vice versa. The town is connected with Calcutta, Delhi and other parts of India by railways.

## BACKGROUND OF THE STUDY AREA

The present headquarters of the district known as English Bazar has however, originated from the factory built by the East India Company to carry on trade mainly in silk and cotton textiles. The town which gradually developed around the factory in course of time came to be known in those days as "Englezaved". The name Englezaved was later on converted to English Bazar which was mentioned by Hunter in his book as one of the five towns thriving in the whole region of North Bengal. Dr. Buchanan Hamilton, visiting the region in about 1810, found English Bazar emerging as a town and was highly impressed with the appearance of it with its excellent roads at least one of them being wide and straight along with many wood houses closely built resembled a city of Europe than most of the country towns of Bengal. (Hunter 1876).

From then English Bazar has started developing in size, population and activities, emerging as one of the leading towns of the region today. Apart from being the administrative headquarters of the district and acting as the gateway to South - Bengal and Bihar it is also the cultural capital of the district which is reflected in its fast growth. English Bazar is the administrative head quarters of Malda District. Its origin goes back to early colonial rule when it emerged as a trade centre,

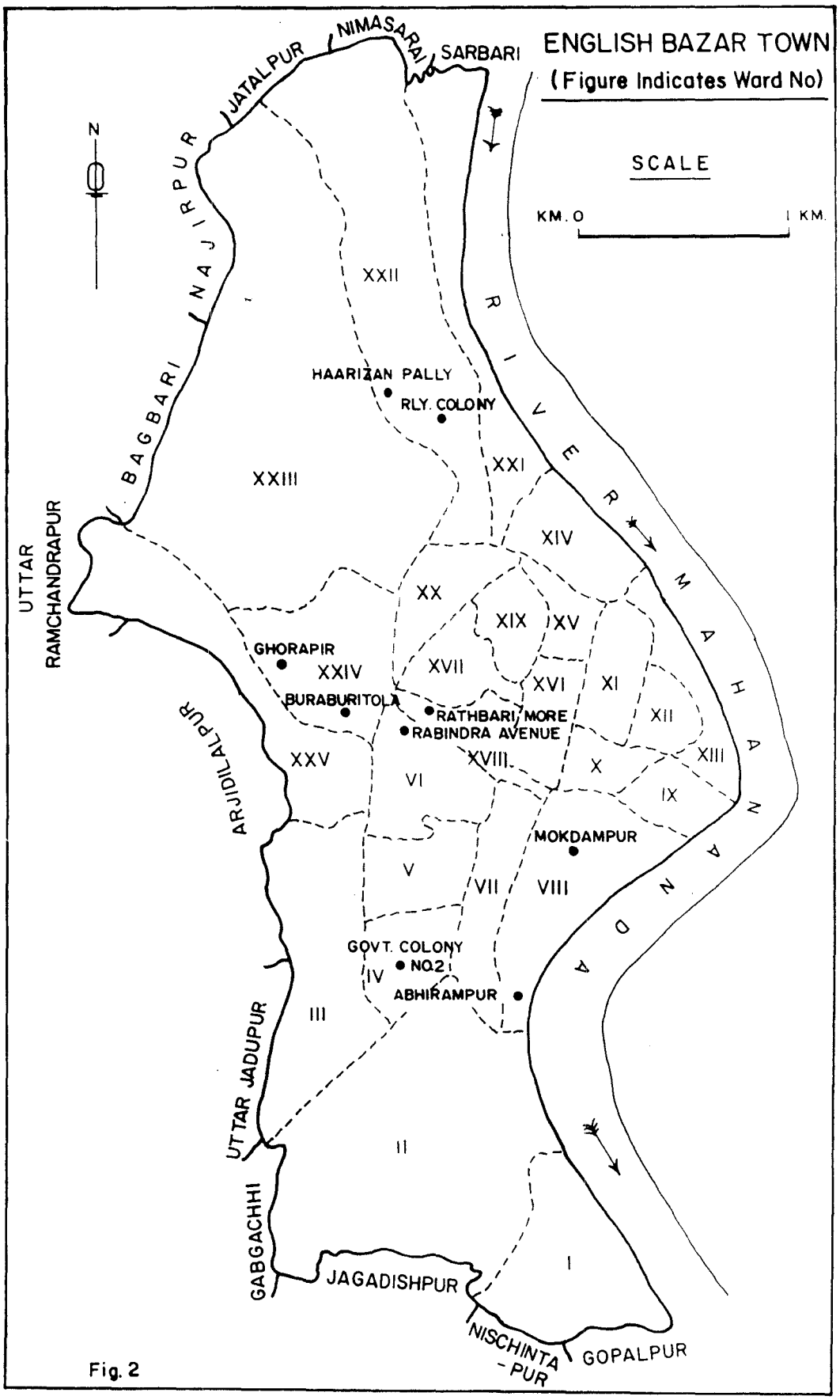

ENGLISH BAZAR TOWN
(Figure Indicates Ward No)
SCALE
KM. 0
1 KM.
N
NIMASARAI
SARBARI
JATALPUR
NAJIRPUR
BAGBARI
UTTAR RAMCHANDRAPUR
ARJUDILALPUR
UTTAR JADUPUR
GABGACHHI
JAGADISHPUR
NISCHINTA-PUR
GOPALPUR
MAHANANDA RIVER
HAARIJAN PALLY
RLY. COLONY
GHORAPIR
BURABURITOLA
RATHBARI MORE
RABINDRA AVENUE
MOKDAMPUR
GOVT. COLONY NO.2
ABHIRAMPUR
XXII
XXIII
XXI
XIV
XX
XIX
XV
XVII
XVI
XI
XII
XXIV
XXV
XVIII
X
XIII
VI
IX
V
VII
VIII
IV
III
II
I

Fig. 2

taking part in the riverine trade of the region. The English administrators established their factors here and some of the old buildings still exist to remind one of its glorious past. In the early part of the nineteenth century the place is referred to as one of the leading towns of Bengal having beautiful houses (Hamilton). The growth of the town since then has remained uninterrupted, the population has been increasing in almost even decade pussing pressure on the available facilities of the town. One of such basic facilities is housing which is become more scaree with increase of population. The situation has become more acute since the partition of Bengal when a large number of people migrated from adjoining districts of East Pakistan (now Bangladesh) have come to settle down in the town which was the nearest one in those days of early fifties to attract the migrants.

The major objective of this study is to make an assessment of the housing situation and problem in this growing urban centre which lying at the cross roads of the most important arterial roads (National Highways and State Highways) and railways across the Ganga giving direct access to north and south has already surveyed into a city. Having been located at a place very close to Bangladesh and Bihar on the one hand and Calcutta Industrial Belt and the rest of the North Bengal on the other English Bazar commands an unique geographical location. The significance has increased further in recent decades with the establishment of the giant Farakka Thermal Power Station and the Railway Administrative Complexes.

## SCOPE AND PURPOSE OF THE STUDY

1. Over population due to rapid growth of population.
2. Uneven distribution of socio-economic functions.
3. Insufficient amenities to serve the large people.
4. Trade Centre of this district as well as North Bengal.
5. Communication system within the town is poor,
6. Unplanned town,
7. No proper plan is implemented,
8. Need some plans after proper study of English Bazar Town.

## OBJECTIVES OF THE STUDY

The objective of the study are as follows :

1. To evaluate location, Physical set-up, Population structure, Occupational pattern, Landuses and socio-economic functions in the town.
2. To identify and examine the existing socio-economic functions and other amenities available in the town for the people and to analyse their maximum utilization.
3. To find out the functional and spatial gaps on the basis of population and other factors and to suggest various plans for the development of different amenities and associated functions.
4. To find out the problems for development and to evaluate various earlier strategies adopted in India and abroad for the development of urban areas and to suggest the most relevant strategy for the development of the town and for optimum utilization of existing infrastructure.
5. Finally to suggest a Master Plan for the development of the town in general and the people in particular.

## METHODOLOGY

As regards source materials, a good number of published reports, gazetteers, old reports and books have been consulted for strengthening the profile of the thesis. The work is largely based on field investigation, supplemented by primary as well as secondary data and information available from various sources. Field survey was started in the middle of 1996 and it was continued till the middle of 1998. In this connection very wide-ranging enquiries have been made at different offices and establishments.

The data were collected through personal enquiries by questionnaires done in every municipal ward of the town. Data collected from door to door survey has been tabulated and analysed. The various types of maps were prepared for analysis the data and information. Different statistical techniques were used for analysis the data and information.

To get the correct result from the different types of data, the help of computer is taken and these are analysed in different chapters in appropriate places. Different

statistical techniques are taken into consideration for analysis the data and information.

## DESIGN OF THE THESIS

The thesis contains in all, eight chapters. It is a complete picture of English Bazar Municipality. With the help of the manual maps, charts. tables from the real data the following chapters are formulated.

First Chapter — Population and demographic pattern of the town.
Second Chapter — Landuse and its changes,
Third Chapter — Urban amenities and their distribution.
Fourth Chapter — Identification of Major Problems in the town.
Fifth Chapter — Determination of Spatial and functional gaps.
Sixth Chapter — Analysis of Developmental Strategies
Seventh Chapter — Development and Planning.
Eighth Chapter — Suggestions and Conclusions.

## LIMITATIONS

(a) Regarding the landuse, observations have been made by the eye-estimation, visiting different areas in the town and by analysing the works on landuse pattern carried on previously.

(b) Due to insufficiency of published data, the data were collected on different aspects of socio-economic functions with the help of questionnaires and sampling.

(c) Field observations at different times were conducted and different offices and organisations also were visited.

(d) Due to large number of housholds in the town it was not possible to cover all the families for interview under different aspects of questionnaire made for the study. So 20 to 30 percent sample survey of the total households in a ward randomly have been taken into consideration for interview. So a large portion of the households have been remaining left out of the domain of the study.

# CHAPTER ONE

# POPULATION AND DEMOGRAPHIC PATTERN OF THE TOWN

## INTRODUCTION

Demography that studies population has its focus on measure. the rates and trends of various population characteristics such as distribution. growth, density, composition etc. In fact, there is practical value in measuring population growth to be able to plan for satisfying man's needs throughout life like food. clothing, shelter and many other necessities. The development of a towns and population growth are intimately related and homologous in nature. The enormous growth in population within a comparatively short span of time has brought in its wake, several interesting demography aspects which have greatly moulded the structural form and cultural life of the city (Singh 1972). Any comprehensive geographical analysis of a region should take into account the differential growth of the population. According to Trewartha, number, densities, distributions and qualities of the population provide the essential back ground for all geography (Trewartha, 1972). Demographic movement is at the heart of the forces which influence the change in time and space content. Population is the central element around which all other elements revolve. It is from population only that other elements derive geographical significance. Thus, the study of population is the single most important approach to Geography and one in which the regional concept has its broadest application (Ghosh, 1985).

## 1.1. AREA AND POPULATION DISTRIBUTION

Spatial distribution and arrangement of population are significant for the development of a town. Distribution of population refers to the way of people are spaced over the surface of the earth (Ghosh, 1985). In fact, the distributional pattern of population is an eloquent expression of the synthesis of all geographical phenomena operating in the area. (Singh, 1985).

The wards in the town have been classified for both area and population on the

basis of their mean (x) and standard deviation (sd); This are

below (x-1sd) = very low,

(x - 1sd) to x = low

x to (x+1sd) = moderate

(x + 1sd) to (x+2sd) = high

Above (x + 2sd) = very high

English Bazar town had an area of was 4.63 $km^2$ upto 1983-84. But it's present area is 13.25 $km^2$. In 1901 the total population of English Bazar was 13,667 and in 1991 it had reached to 1,40,861. From (Table 1.1) which it reveals that the population of the town has been increased many folds due to several factors. Only in 1921, its population was decreased due to epidemic and famine. While the population in all other decades had been accelerated by the great advances of medical facilities and natural growth. Death rates and infant mortality rates have been drastically reduced resulting in increase in population.

**Table 1.1 :** Number of wards in different categories of area (1991).

| Area in $sq^2$ | Category | Wards | No. of Wards |
|---|---|---|---|
| Below 0.400 | Small | I, II, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV. XV, XVI, XVII. | 16 |
| 0.400-0.800 | Medium | III, | 1 |
| 0.800 - 1.200 | Large | XIX, XX, XXI | 3 |
| Above 1.200 | Very large | XVIII, XXII, XXIII, XXIV | 4 |
| **Total** | | | **24** |

The distribution of population depends primarily on natural factors but to a large extent it depends also on human and cultural factors. The concentration of population rise widely within the town by physical, economic as well as social factors. The nature of the land, its location, the nature of activities and religion, ethnicity and languages, education, economic status etc. are some of such factors which define the distribution of population within the urban area. For instance,

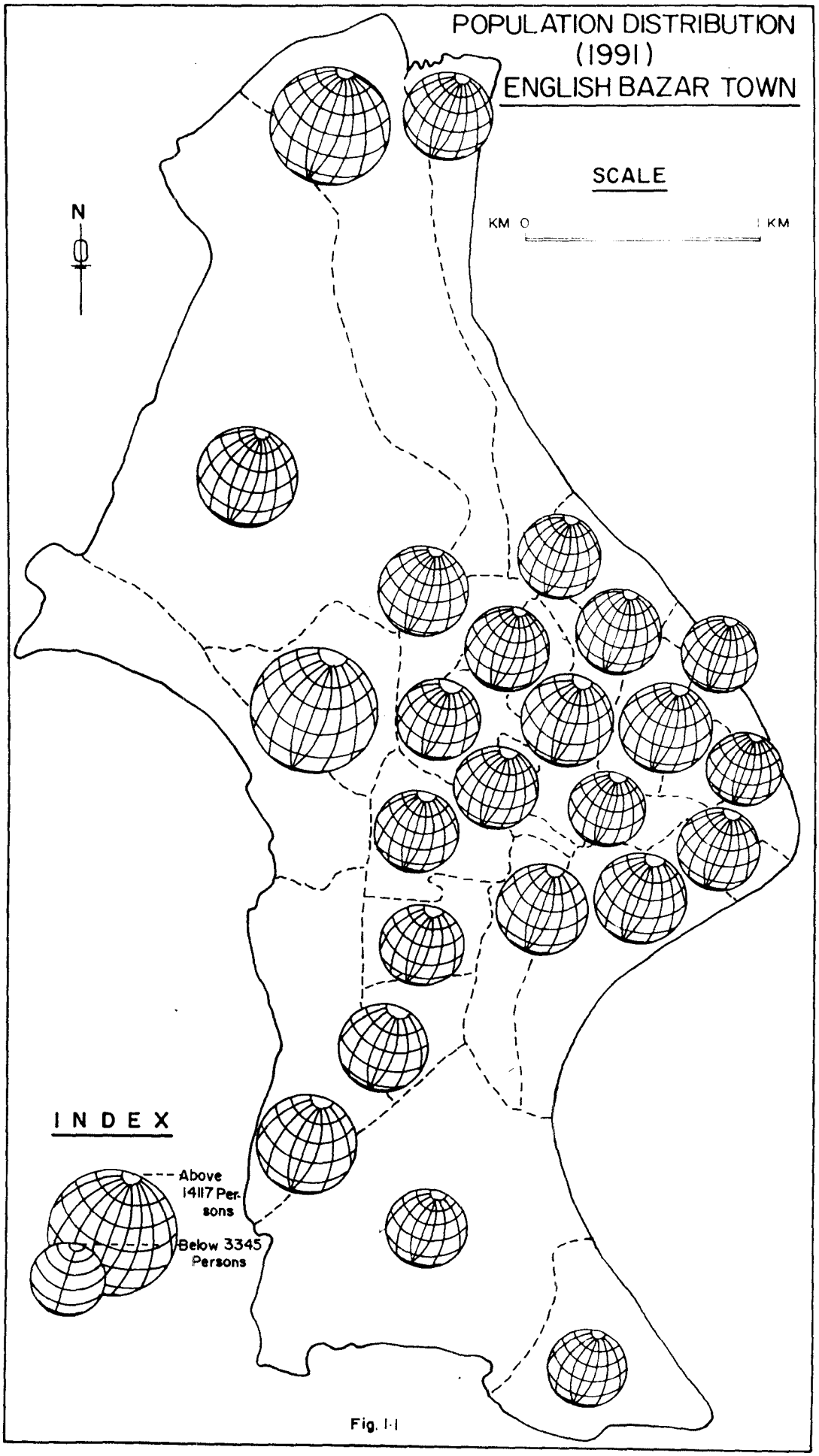

POPULATION DISTRIBUTION
(1991)
ENGLISH BAZAR TOWN
SCALE
KM 0
1 KM
N
INDEX
Above 14117 Persons
Below 3345 Persons

Fig. 1.1

the low lying areas of the town have less density of population. Areas inhabited by rich people have occupied large area consequently have lower densities than those areas inhabited by people of low income groups. People speak in particular language of different religions may give rise to concentration of people belonging to the same group.

### 1.1.1. Distribution of population of English Bazar

The distribution of population in the town is not uniform due to various factors. It is seen that the area of wards in English Bazar town is not uniformly demarcated for administrative purposes. As a result, the ward population varies from ward to ward. (Fig.1.2) The area of the wards located at the core area is smaller compared to the wards located at the periphery. So the larger wards have larger population. The population distribution of English Bazar town depends on availability of certain urban amenities, accessibility, nearest to the market centre and other cultural factors. From the field study, it is revealed that the wards those are located near the highway, markets, are highly concentrated with population where as the wards having low infrastructural facilities are thinly populated. This non-uniformity of distribution of population creates certain problems because the urban amenities are generally concentrated on certain points or places. Moreover uneven population distribution crates congestion, crowding and hapazards growth of houses. These create problems for development.

The town has 24 municipality wards and the sizes of the ward in area and population are very irregular. (Appendix - 1). The ward XXIV covers the largest area (1.470Km$^2$) where as the wards IX has the smallest area (0.1.3Km$^2$). On the basis of the sizes, the wards can be classified for comparative studies.

**Table : 1.2.** Number of wards in different categories of population size (1991)

| Population | Category | Wards | No. of Wards |
|---|---|---|---|
| Below 5000 | Low | II,IV,V,VI,X, XII,XIII, XIV,XV,XVIII | 10 |
| 5000-8000 | Moderate | I,VII,VIII,IX,XI,XVI, XVIII,XIX,XX,XXI,XXIII | 11 |
| 8000-11000 | High | III | 1 |
| Above-11000 | Very high | XXII, XXIV | 2 |
| **Total** | | | **24** |

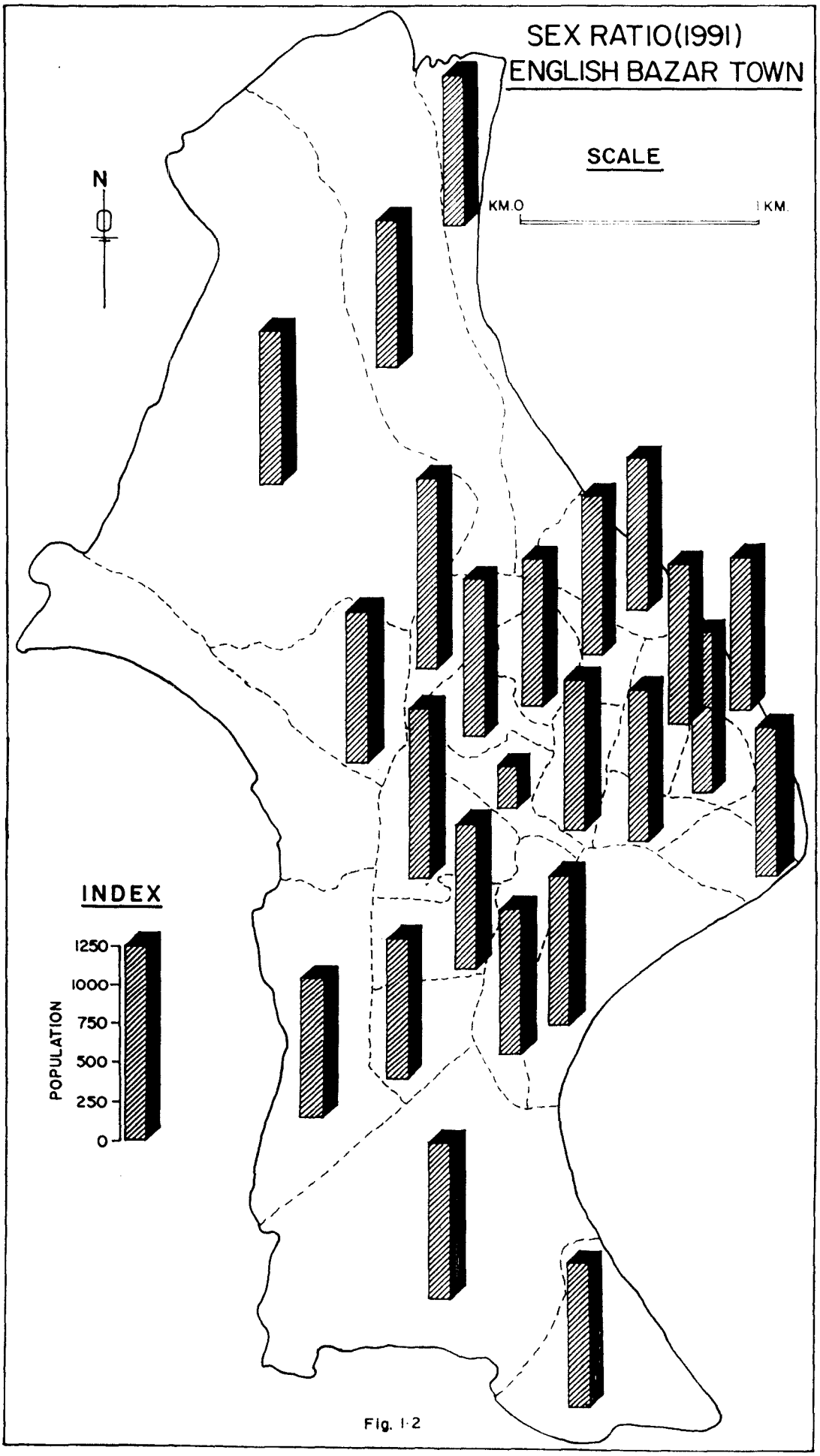

SEX RATIO(1991)
ENGLISH BAZAR TOWN
SCALE
KM.0
1 KM.
N
INDEX
POPULATION
1250
1000
750
500
250
0

Fig. 1·2

Like area, the population is also highest (14.117 persons) in the ward XXIV and lowest (3345 persons) in ward X, The classification of the wards on the basis of population (Table 1.1) reveals that population in majority of the wards (10 out of 24 wards) is below the average population (below 5000) of the wards and it is high (above 11,000) in two wards. From Fig.1.2 the location, area and population of wards can be revealed that the wards lying mainly at the centre are smaller in sizes as well as in population than those on the periphery of the town. The wards XXII and XXIV have very high population and only ward III is high category.

## 1.2 COMPOSITION OF POPULATION

### 1.2.1. Sex ratio

Under demographic studies sex composition in a city deserves special attention as it has bearing on socio-economic aspect of city life. The cities of India have a higher proportion of male population and Malda is no exception to it. Sex ratio does not influence marriage, birth and death rates only but many economic and social relationships are also closely related to the balanced or disparity between males and females (Singh,1985).

In English Bazar town total, number of males and females are 71,504 and 67,700 respectively (Census 1991). The ratio of females per 1000 males was 960 which is the highest and is 253 which is the lowest. It indicates that most of the people live in the town with their families. Because English Bazar being the seat of the Divisional Commissioner's Office has more potentialities of service opportunities. A continuous increase of female ratio has been noticed in different decades in the town due to flow of refugees from the neighbouring districts and Bangladesh. (Formation of Bangladesh in 1972). From the study it has been noticed that the sex ratio different varies wards. Highest and lowest sex ratio are found in ward XX and XVIII respecting (Fig. 1.3). It is also seen that sex ratio in ward XVIII is very low because it is dominated by commercial function and there is no scope for residential uses.

### 1.2.2. Scheduled Castes and Scheduled Tribes

Two fundamental and primary strata within the Hindu Society are the ritually higher castes, and the untouchable, officially are called Scheduled Castes (Bhardwaj, 1975). These minority groups of people in urban areas are very often found to settle in most underdeveloped localities. Owing to their low income and poor standard of living, they prefer to reside in old delighted residential areas where livelihood is less costly.

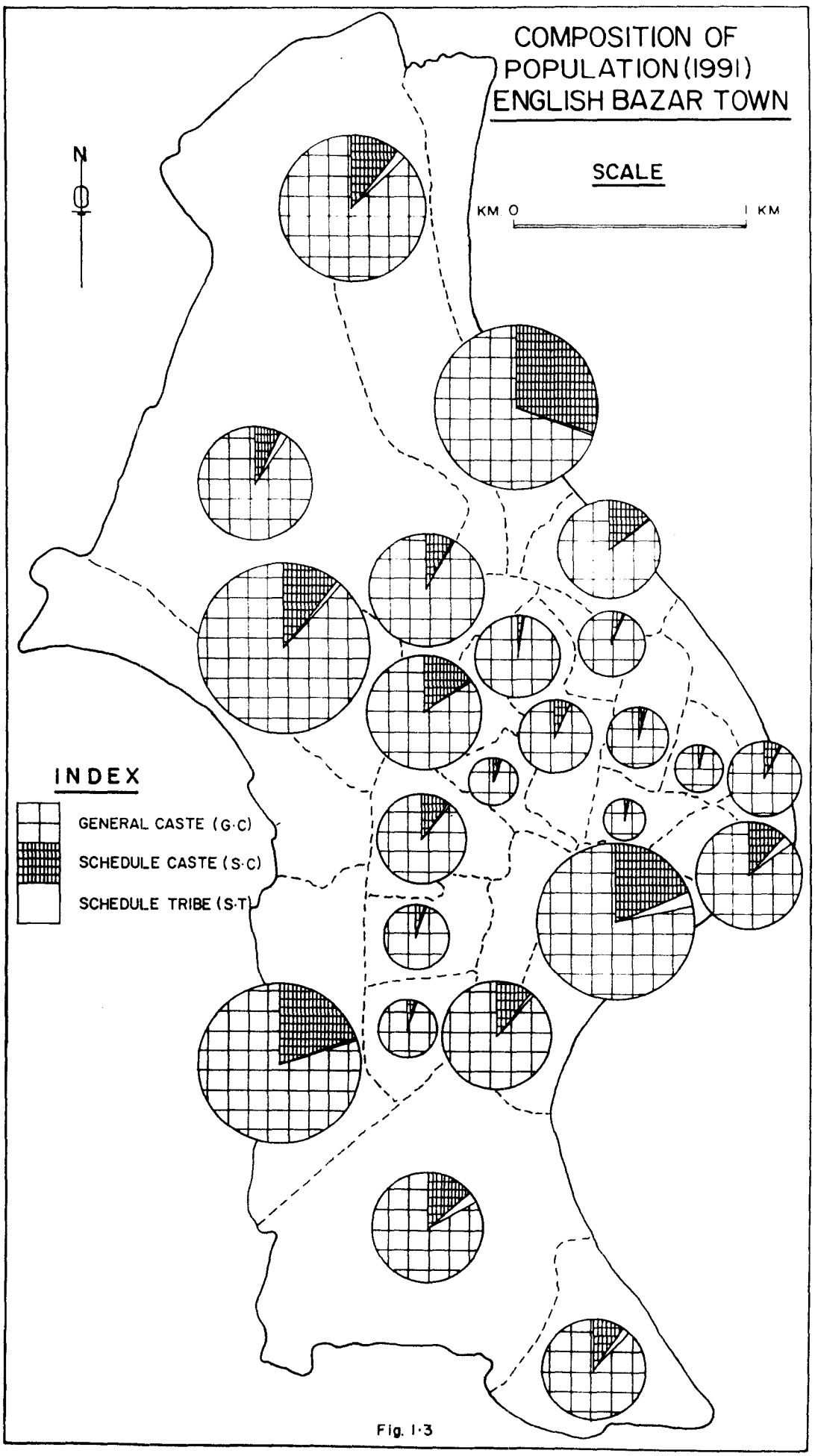

COMPOSITION OF
POPULATION (1991)
ENGLISH BAZAR TOWN
N
SCALE
KM 0
1 KM
INDEX
GENERAL CASTE (G·C)
SCHEDULE CASTE (S·C)
SCHEDULE TRIBE (S·T)

Fig. 1·3

In total population of the town includes 14416 scheduled castes and 1275 scheduled tribes (Census, 1981). Their percentages are 10.23 and 0.91 respectively of the total population of the town and these are less than the district averages. Recently, number of backward population has been increasing in galloping rate, as they settled in slum areas for getting more facilities in livelihood and selection of odd jobs. To avail these facilities they are coming to the town from rural areas more in number and settle in different parts of the town. Field survey suggests that most of the scheduled castes are "Vhunmali" who have concentrated in the wards away from CBD. (Fig.1.3) Higher land-value as well as economic insolvency and infiltrations of higher caste people with better economic capability have pushed away the scheduled caste people in the fringe area from their original places.

### 1.2.3. Religion

The religion is one of the aspects of study in urban centre because it directly effects agglomeration of people in a particular area of the town. As a result, standard of living, culture and development depend on the people of different religions. At the time of field investigations, growth of different pockets of localities inhabited by people of different religions were observed in the town. In a pocket, people of the same religion use to prefer to live for better understanding, co-operation and security.

The town is situated near the border of Bengladesh. The town is also a cosmopolitan town where people of different religions live together. In 1991 percentages of Hindus were 70% and Muslims shared 25% of total population. The percentage increase for the Muslims during 1971-81 was almost equal to that of Hindus. The percentages of other religions viz. Buddhists, Christians, Jains are very small compared to the Hindus and the Muslims. But a tremendous increase of Chistians during 1981-91 occurred in the town.

### 1.2.4. Literacy

Among the different qualities of population, literacy perhaps is the most important. A low degree of literacy is an obstacle to economic growth. The most basic minimum measurement of educational status is the degree of literacy. But it is very difficult to measure the degree of literacy in accurate terms. (Ghosh, 1985).

**Table : 1.3:** Literacy group in different wards 1991

| Literacy group in percentage | Category | Wards | No. of wards |
|---|---|---|---|
| Below 30 | Low | II | 1 |
| 30-60 | Moderate | I,III,IX,XXIV,XXII | 5 |
| Above 60 | High | XI,V,VI,VIII,VIII, X,XI,XII,XIII,XIV XV, XVI,XVII, XVIII, XIX. XX, XXI, XXIII. | 18 |

In English Bazar, the total number of literates in 1991 were. 86,323. Of which 47,716 are males and 38.606 are females (Census1991). The percentage of literacy in the town is 61. 28 to the total population. About 33.87 percent males and 27.41% females are literates. Analysing the wardwise distribution of literacy it is found that ward XIII records the highest percentage of literates (89.23%) where as ward II shows the lowest (28.79%) rate. Among 24, wards, 6 have below average literacy rates (60%) due to high concentration of backward class population. The grouping of wards on the basis of percentages shows that out of 24 wards only one is in the low group (below 30%) where as 5 are in the moderate group (30-60%). and 18 are in the high group (above 60%). The literacy rate is high in the central part and moderate in the southern and northern part of the town.

## 1.3. DENSITY OF POPULATION

The distribution of arithmetic density of population can also be explained by analysing the density pattern. Population density a useful abstraction, assisting in the analysis of diversity of population in the town is uneven. The people mainly are concentrated in wards VIII, XIX, X, XIV, XVI where the density of population is above 20, 000 persons per $Km^2$. (Fig.1.4) The people are mainly concentrated here because of agglomeration of large number of service facilities like market, hospital, banks, post offices, schools and others.

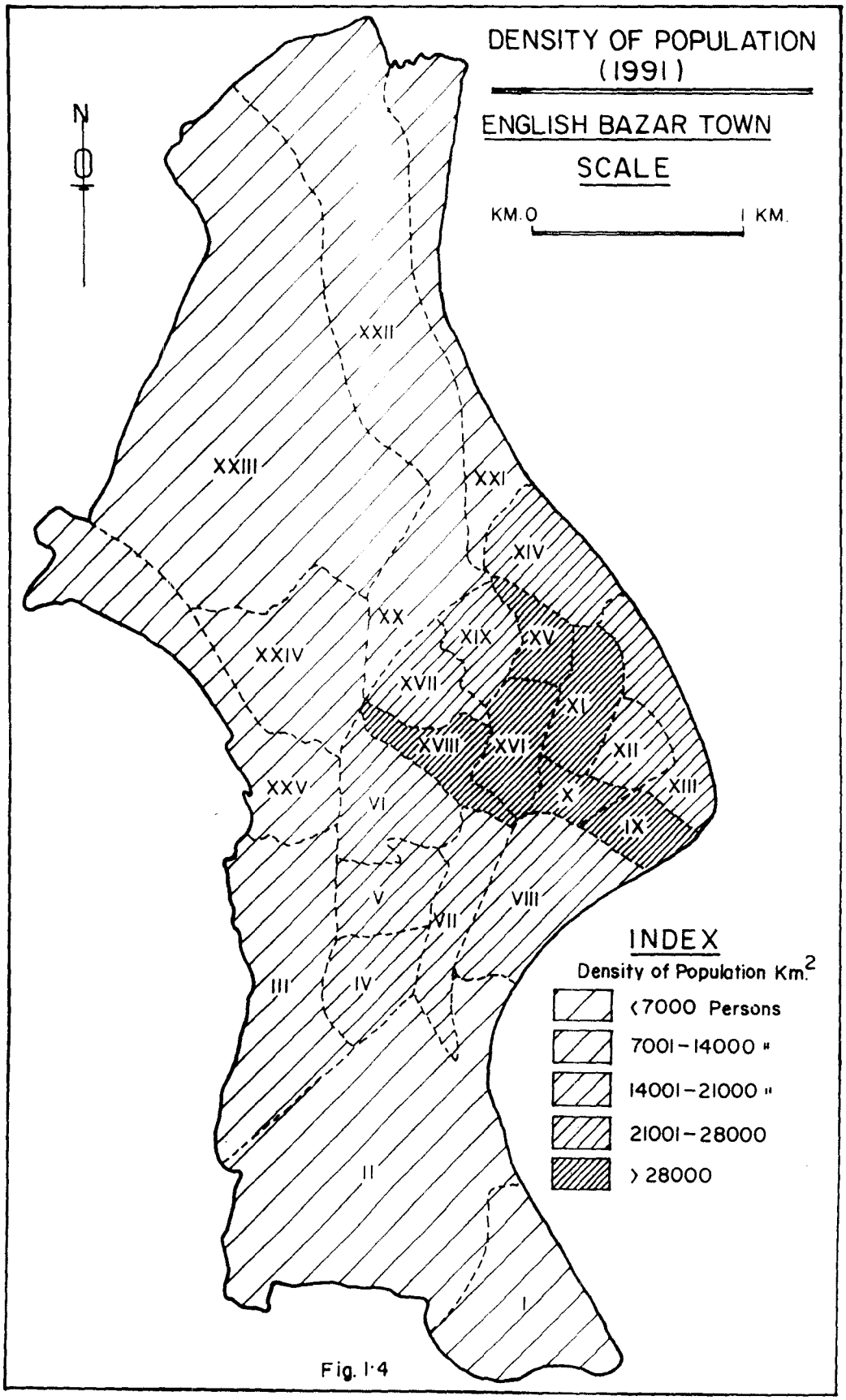

DENSITY OF POPULATION
(1991)
ENGLISH BAZAR TOWN
SCALE
KM. 0
1 KM.
N
XXII
XXIII
XXI
XIV
XX
XIX
XV
XXIV
XVII
XI
XVIII
XVI
XII
XXV
VI
X
XIII
IX
V
VIII
VII
III
IV
II
I
INDEX
Density of Population Km.2
<7000 Persons
7001-14000 "
14001-21000 "
21001-28000
> 28000

Fig. 1·4

**Table 1.4 :** Density of population per km$^2$ in different ward of English Bazar Town from in 1991.

| Category | Density per / km$^2$ | Wards | No. of Wards |
|---|---|---|---|
| Very low | < 7000 | II,III,XXII,XXIII | 4 |
| Low | 7001-14000 | I,VII,XXI,XXIV | 4 |
| Moderate | 14,001-21,000 | IV,V,VI,VIII & XX | 5 |
| High | 21,001-28,000 | XII,XIII,XIV,XV,XVII & XVIII | 6 |
| Very high | 28,001-35,000 | IX,X,XI,XVI and XIX | 5 |

Analysing the diversity of population of 1991 it is found that the lowest density is found in both the wards. III and VI. The means cause of the low density in ward III is the lack of facility. The market area is far from this ward and it lies at the boundary of the town. Also there is no facility of municipal water connections. A housing estate and an Industrial Technical Institute (I.T.I), are located in the ward. Ward VI has also the low density because a large part of it is occupied by recreational grounds like playground, D.S.A., Exhibition ground, swimming pool and Inspection Bungalow. These two wards having density 7001-14000 persons per km$^2$.

On the other hand density of 7001-14,000 persons per km$^2$. is found in wards I, VII, XIII. These wards are also situated along the periphery of the town & far from the main market area. In ward II Krishnapally is also located in a low density area.

The density is high in wards V, VII, XII, XVII, These are the old part of English Bazar Municipality. Municipal facility is satisfactory here and having a density of 14,000-21,000 persons per km$^2$. The wards IV and XI have low density (7001-14,000 per km$^2$. Ward I is situated far from the heart of the town where most of the facilities are not available. Municipal facilities like water connections and others are very little in the ward.

The people are mainly concentrate in wards VII, VIII, X, XIV, and XVI. The high density is found in these wards which is 21,000-28,000 persons per km$^2$. Here, the high density has resulted from the availability of service facilities. I, II, III and XIII which is 7001-14,000 per km$^2$. These wards are situated extreme northwest and the extreme southwest corner of the municipality. Distance from the market and leave of other facilities are the main reasons for the low density.

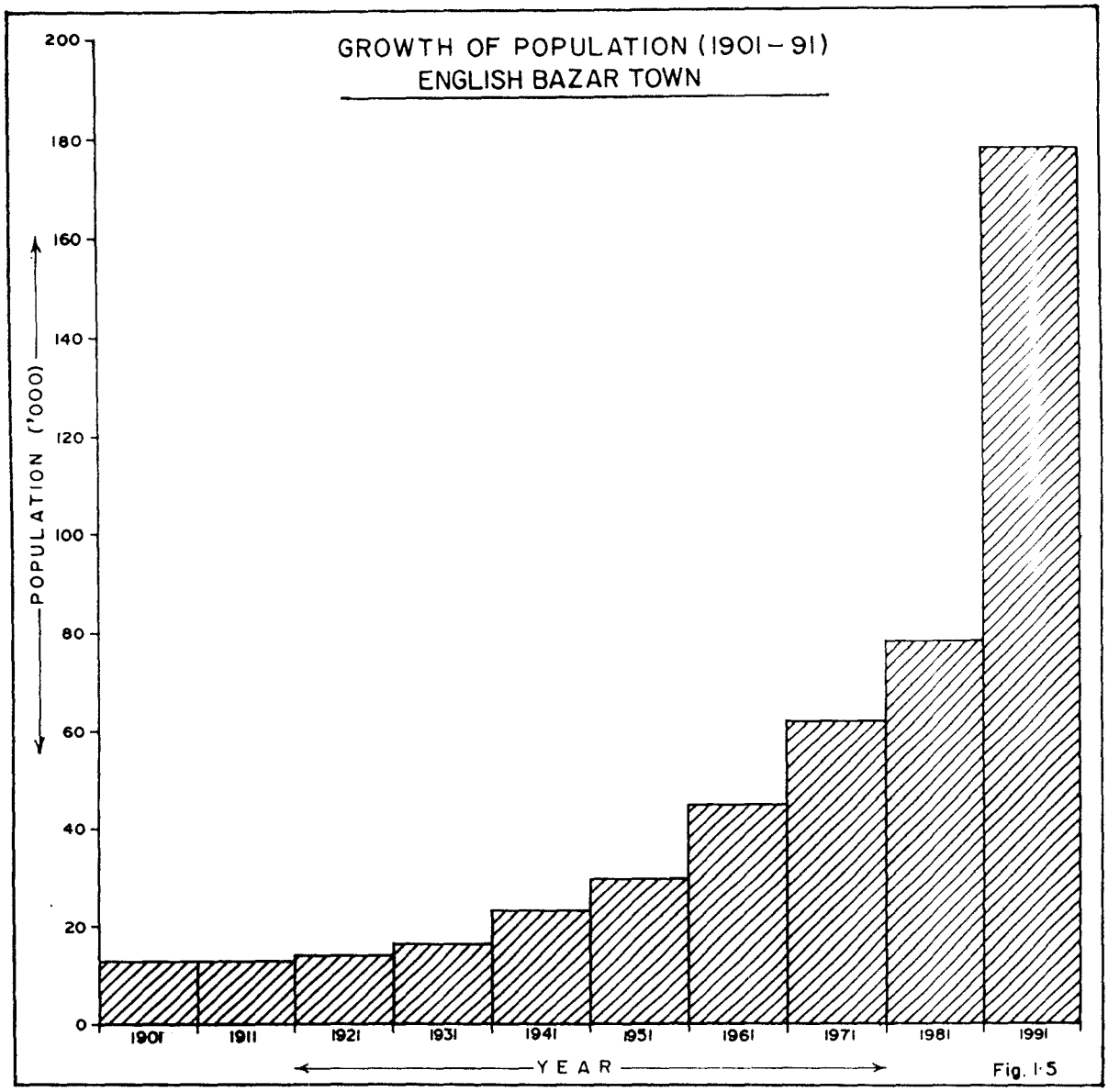
Moderate density 14,001-21,000 is found in wards V, XI, and XV. A high density of 21,001 to 28000 persons in found in ward IX, XIII and XVII which have easy access to a large number of service facilities. In general, the density is high in the central part of the town, where the major roads converge, and decreased gradually outwards becoming minimum along the periphery of the urban centre.

A very high density in certain wards of the town is due to water supply transportation, market and recreational facility. Relatively high density in some wards are also mainly due to location of educational institutions like college, school, cinema halls, water supply facilities transport Route (N.H.34), tourist lodge, Industrial Estate. In a few wards, the density of population is moderate though certain amenities like college, veterinary hospital, District hospital, water supply, Ramkrishna Mission, Exhibition Ground, Indian Oil, Mill, Saw Mills, Steel Factory are located.

## 1.4. GROWTH OF POPULATION

Changes in population are more normal than stable states, so it is no surprise that observes attempt to isolated those elements which combine to produce output measures of population (Baxter and Williams,1978). A population is constantly in a state of influx. During this process, the size of population varies and develops potentialities for unlimited growth (Ramkumar, 1986). The dynamics of population growth of an area over a certain length of time is the sum of the net migration in the region during the period under consideration (Singh, 1985).

English Bazar town, a tiny settlement in 1901 had 13,667 population. In 1911 the population increased from 13,667 to 14,322; the actual growth rate (1901-1911) was + 4.79%. But in 1921, the population of English Bazar Municipality decreased slightly. It was then 14,057 persons. So the growth rate was coming down to 1.85%. In 1931, the urban population of the municipal area increased at a higher rate (Fig.1.5). The growth rate in 1921-31 was + 20.27% which is meant an over all increases of 2850 persons between 1921 and 1931. The population also increased in the next decade, and rate of increase was + 38.00%. The trend was thus a graduate increase from decade to decade In 1951 the municipal population also increased, but the rate of increase was slow than the previous decade. The actual growth rate was +31.4%. During 1951-61, the population were increased at a higher rate which was +49.69% in the previous decade to + 33.63. Also in 1981 the population increased to 79,014 recording a growth rate of 42.82%. It was slightly lower than that of the previous decade.


GROWTH OF POPULATION (1901 – 91)
ENGLISH BAZAR TOWN
POPULATION ('000)
200
180
160
140
120
100
80
60
40
20
0
1901
1911
1921
1931
1941
1951
1961
1971
1981
1991
YEAR
Fig. 1·5

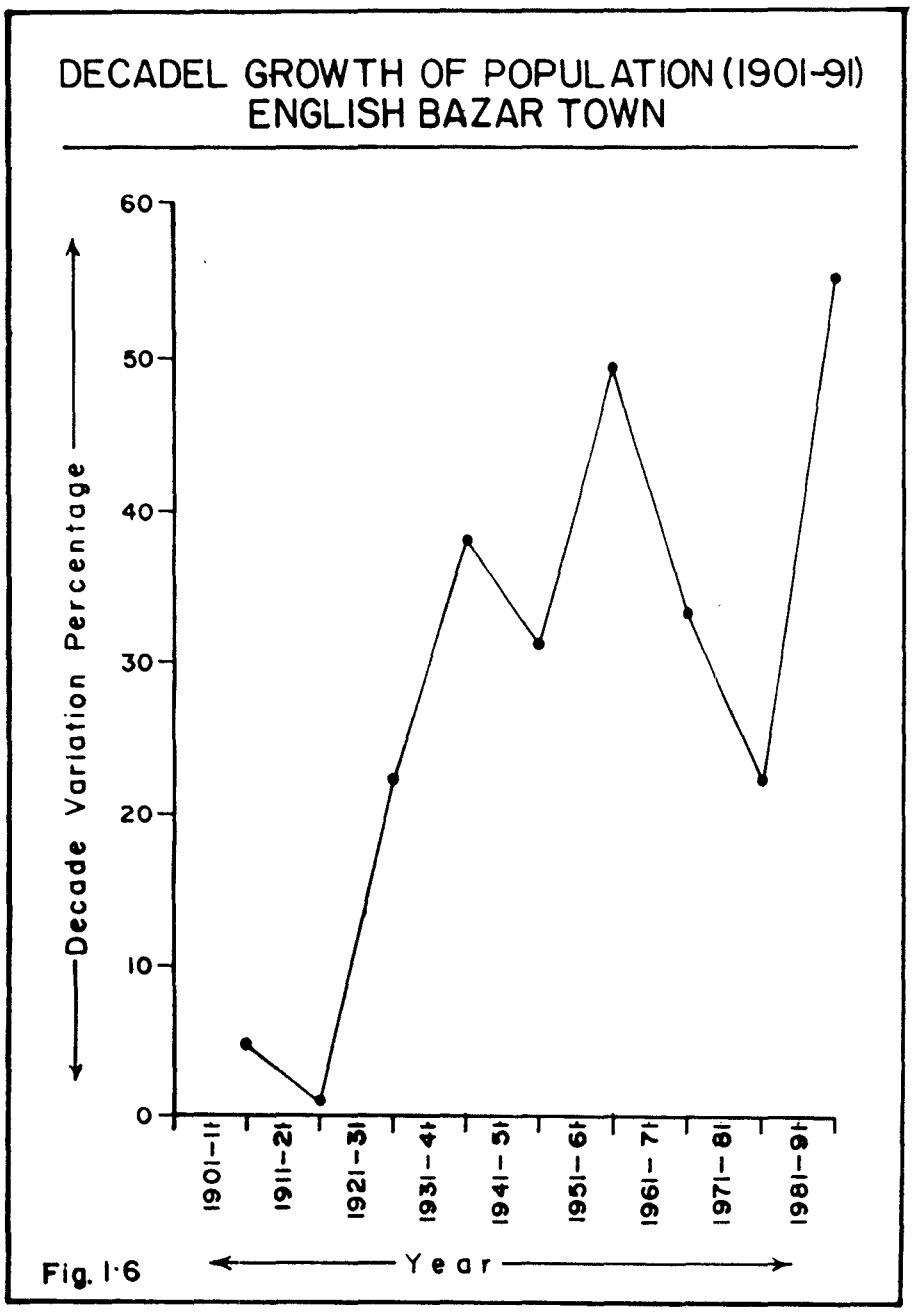

DECADEL GROWTH OF POPULATION (1901-91)
ENGLISH BAZAR TOWN
Decade Variation Percentage
60
50
40
30
20
10
0
1901-11
1911-21
1921-31
1931-41
1941-51
1951-61
1961-71
1971-81
1981-91
Year

Fig. 1·6

But there is a distinct change in 1991. The population increase was so much in 1991 that it recorded an all time high of + 75.94% in 1981-91, turning the town into a city. (Fig.1.6). The decadal growth and index of growth it population in English Bazar town are shown in Table 1.5.

**Table 1.5 :** Growth rate of population in (1901-1991).

| Year | Population | Decadal Growth in % | Index of growth in % |
|---|---|---|---|
| 1901 | 13,667 | — | 100 |
| 1911 | 14,322 | + 4.79 | 105 |
| 1921 | 14,057 | - 1.85 | 103 |
| 1931 | 16,907 | - 20.27 | 124 |
| 1941 | 23,333 | + 38.00 | 178 |
| 1951 | 30,663 | + 31.41 | 224 |
| 1961 | 45,900 | + 49.69 | 336 |
| 1971 | 61,335 | + 33.63 | 449 |
| 1981 | 79,014 | + 28.82 | 578 |
| 1991 | 1,39,018 | + 75.94 | 1017 |

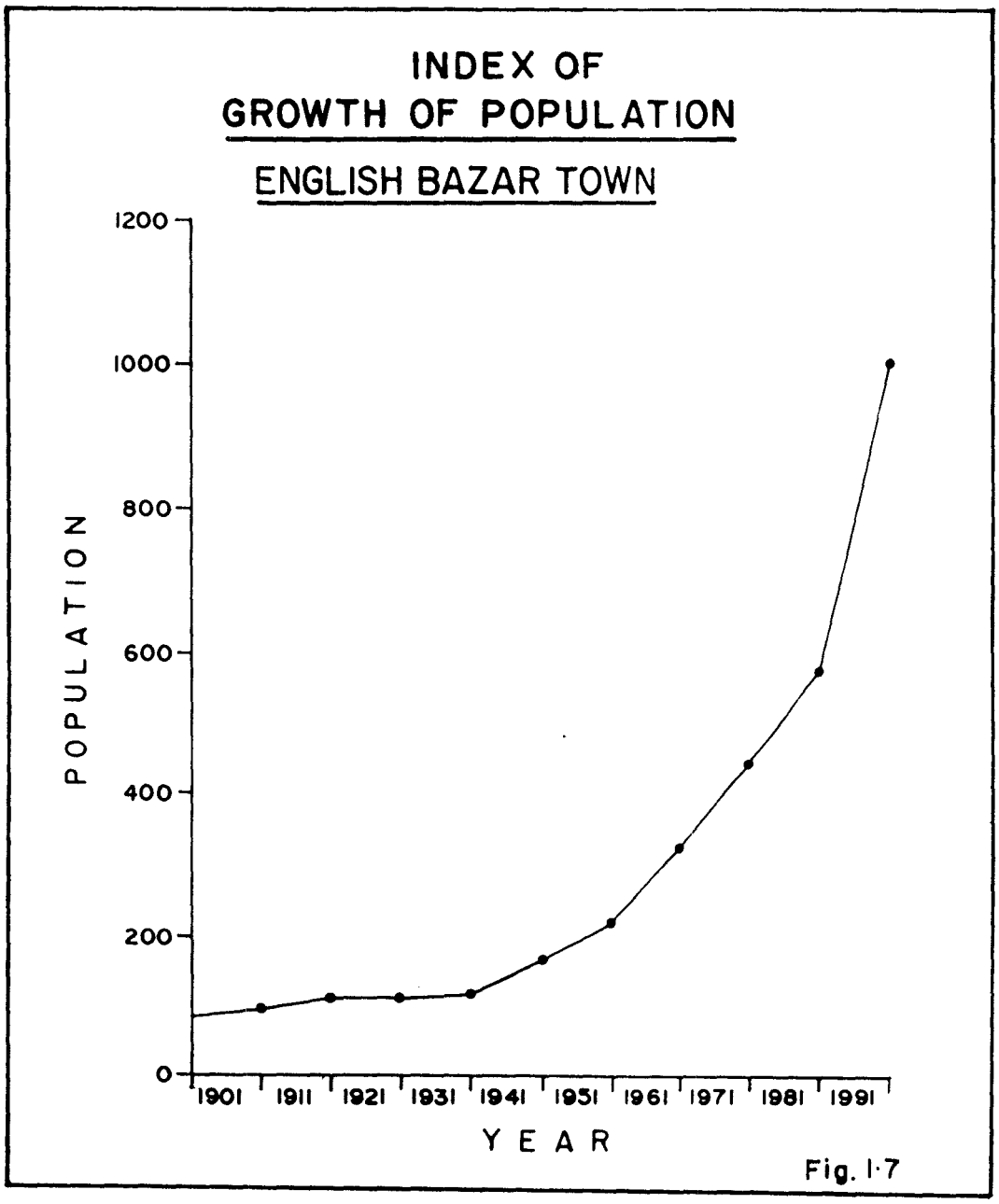
From the table 1.5 it is revealed that the index of population growth of English Bazar town was not so high during the three decades. But it became double and triple in 1961 and 1971 respectively (Fig. 1.7).

## 1.5. MIGRATION

Migration has its relative role in the growth of population. The study of migration to city is an essential aspect of planning. The concept of migration along with natural increase has great significance in population changes. The demographic dynamics of the town particularly during the post-Independence period is not only reflected in the phenomenal high rate of its population increase, but also in migration of its inhabitants to some extent (Sing, 1985).

The distinguishing characteristic of migration is that its direction and volume are entirely the results of human actions and reactions to situations. Hence, it is not easy to arrive at Universe acceptable definitions and methods of measurement (Ram Kumar, 1986). The causes of migration are described as due to "Push and Pull" factors. Some of the important push-pull factors of English Bazar is :

**1. Push Factor :** (a) Unemployment and under employment in the rural areas. (b) Low wage and salary of agricultural workers (c) Desire for better urban life, (d) High man-land ratio in the neighbouring areas.


INDEX OF
GROWTH OF POPULATION
ENGLISH BAZAR TOWN
POPULATION
1200
1000
800
600
400
200
0
1901
1911
1921
1931
1941
1951
1961
1971
1981
1991
YEAR
Fig. 1·7

WARDWISE DECADEL GROWTH OF POPULATION
ENGLISH BAZAR TOWN

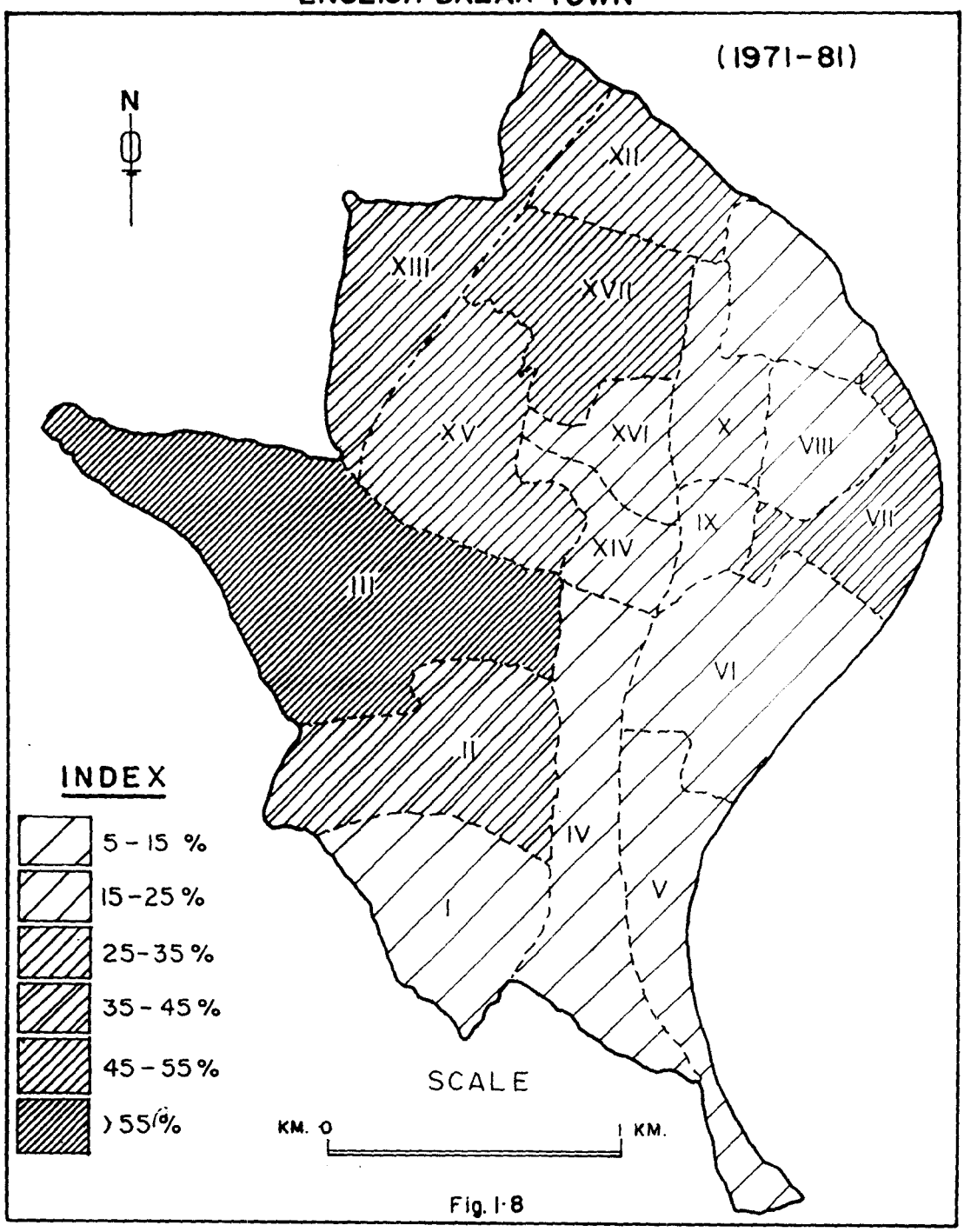



Fig. 1·8

**2. Pull Factors** : (a) Better economic prospects, better living way of life in the town. (b) Better working conditions and employment opportunities in trade and commerce (c) Increasing demand for labour and skill in tertiary activities (d) Better transport and communication facilities between rural areas and the town.

In estimating the future population of the city special stress of immigration has to be thoroughly evaluated. Unfortunately the latest census of migration of the town under study is not available. As such quantitative measurement of migration in these towns is really very difficult.

English Bazar's population growth is very much dependent on its increasing prosperity due to growth of agriculture in this region (Table 1.6). In fact, the whole history of the growth of population in the tract which is also known as western part is nothing but history of immigration to the various part of the town. For official work the clerks and for legal advice, the advocates, came with their families to the town followed by doctors and teachers to provide medical assistance and teaching respectively. So from the very beginning, a continuous flow of migration to the town took place which was accentuated after the partition of India. The household survey report (Table 1.6) shows the nature of migration.

**Table 1.6 :** Migration from different places in the town 1991.

| Original birth place | Migration in percentage to their total migrants |
|---|---|
| Bangladesh (East Pakistan) | 70 |
| Malda town and surroundings | 9 |
| Other districts of W.B. | 10 |
| Other states | 67 |
| Other countries | 4 |
| | **100** |

***Source :*** *Field work (1998).*

So, 70% people came from the then East Pakistan and have settled more in number in the northern half of the town and those who came from other states have mostly settled in the heart of the town as well as in business area.

## 1.6. OCCUPATIONAL STRUCTURE

Work is considered the activity that is performed in the occupational role. The occupation determines the individual's relationships with other individuals in the

same and other occupations (Hall, 1975). Occupation reveals the nature of economic progress of a country. It depends upon the degree of economic development and sophistication of a country (Ghosh, 1985).

Occupational structure is the unitary relationship pattern of the 3 occupational components, primary, secondary and tertiary working population of an area, which constitute the core of the economic system. Among all of the social attributes of a given individual or group, occupation is of paramount importance. It is particularly significant for the population analysis, since to a considerable extent, the nature of work determines the surroundings, both physical and cultural. (Smith, 1948).

**Total Workers** : Total workers in the town is 37582 or 26.68% of the total population where as in the district (urban) it is 20.62% (Census 1991). The growth of total workers during 1971-81 was considerably low both for males and females. It means the population growth cannot keep pace with the growth of total workers. The growth of female workers was tremendous during 1981-91. An increase in total workers in 1991 might be due to rapid expansion of different activities. The percentage of female workers in this town is very low. The wards around the CBD have less number of female workers because less number of families are living in this area.

The workers of different activities are divided into various categories. It is obvious that the percentages of workers in agricultural activities in the town is extremely low compared with that of workers in other activities. The percentages of workers in household industries are also very low due to lack of resources for industries and less incentives. The high percentage of workers in other activities reveals the importance of the town in tertiary activities. Most of the immigrants worked as agricultural labourers or as labourers in small scale industries.

## 1.7. SIZE OF HOUSEHOLDS

### Density of Households

A study of the density and spatial distribution of households in any town gives an idea about the housing facilities available for the urban residents. In English Bazar Municipality, there are 33,011 households. Out of which 27,095 are residential and 3916 are non-residential. From the data available the ward wise distribution is very uneven, the actual number is varying from a minimum of 598 in ward I to a maximum of 3,834 in ward XXIV.

In the municipality, ward X and XIII have very low number of households 598 and 784 respectives Here the household density is very low because, Their areas are very small and also ward XIII is situated in the periphery of the town along the river bank.

In contrast, the wards having households 801-1100 are I, II, IV, V, VI, IX, XII, XIV, XIX, XXI. These wards are located in central and southern part of the municipality. Four wards namely, VII, VIII, XI and XX have a very large households viz. 1205, 1252, 1172 and 1259 respectively. This is the oldest part of the Town. High concentration of households is found in part of Makdampur, Pirojpur is in Netaji Subhash Road, Kalitala. Immambari, Golapatty, Mission road etc.

The density of households is high in wards XXIII and III, each having respectively 1607 and 1560 households. Concentration of households is high due to presence of a large number of facilities.

The concentration of households rises from 2147 in ward XXII to the highest number of 3834 households in ward XXIV which is very large in area and also is nearer to the market area. The land price is still low here with vacant lands available for housing purpose.

## 1.8. BACKWARD POPULATION

The development of slums is another important feature of this town. The municipal area of English Bazar is divided into 24 wards. In this spatial distribution most of the slums are confined to certain wards while other wards are free of them. As for example V,VI,X,XIV, XV,XVI have no slums. (Fig.1.9) They represent economically the best parts of the town.

In terms of the number of slum families living in respective wards, a size classification has been made. The study shows that there are 86 families living in slums of ward IV. Similarly ward XII has 44 slum families and ward XVII has 27 slum families. The ward XVII has 52 slum families, ward XIX-53, Ward XX-54 & XXII-40 slum families. Actually slums have grown up outside of the developed areas. The availability of land is very low in the developed area which keeps the price high with a high standard of living.

The number of slum families increases in ward III, XIII and XXI each consisting 118,111 &109 families continuously. The number increased further in ward I, II,VII,VIII,IX with 321, 259, 336 , 362, 301 respectively. This area is situated

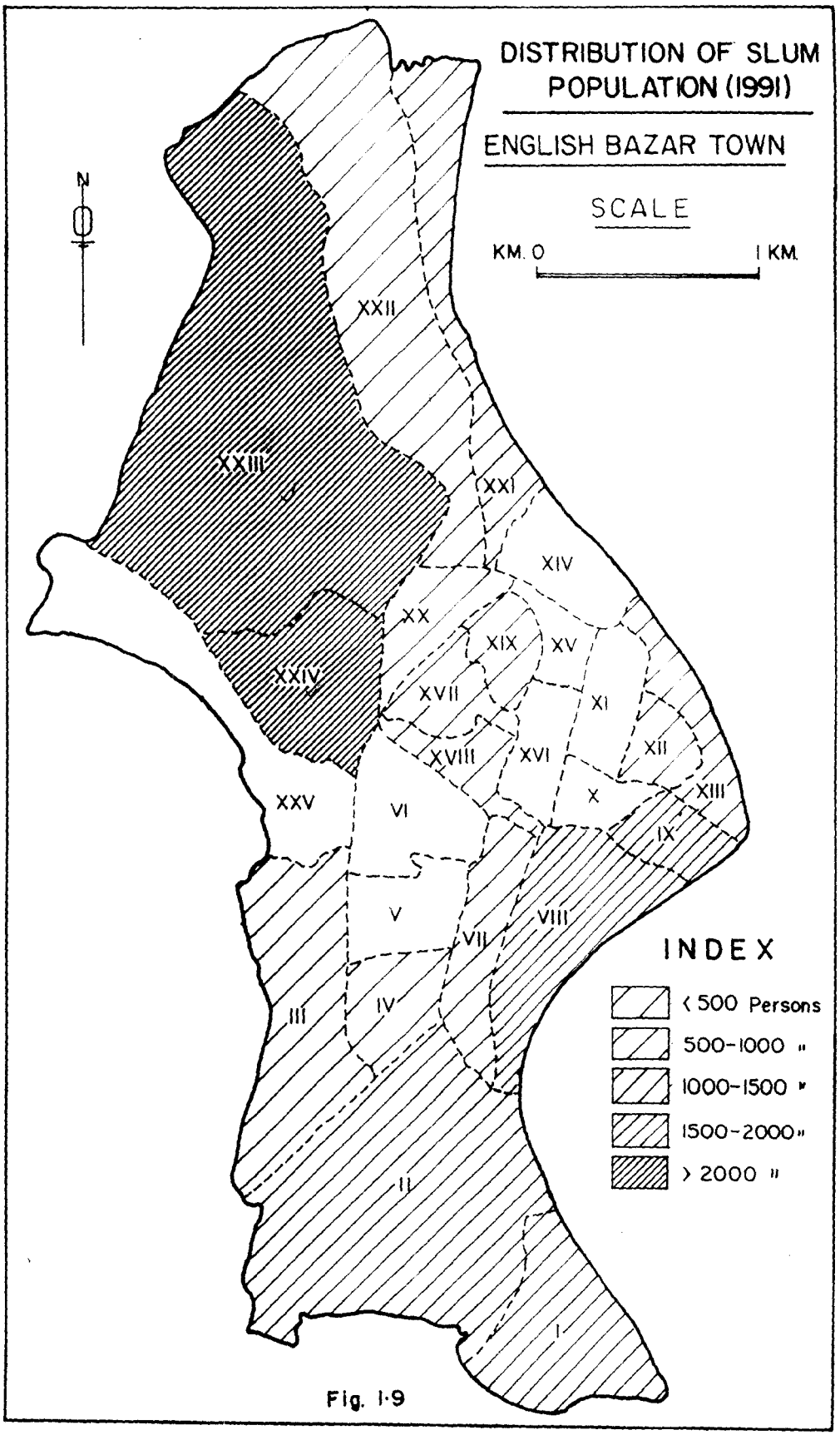

DISTRIBUTION OF SLUM POPULATION (1991)
ENGLISH BAZAR TOWN
SCALE
KM. 0
1 KM.
N
XXII
XXIII
XXI
XIV
XX
XIX
XV
XXIV
XVII
XI
XVIII
XVI
XII
XXV
VI
X
XIII
IX
V
VIII
VII
III
IV
II
I
INDEX
< 500 Persons
500-1000 "
1000-1500 "
1500-2000 "
> 2000 "

Fig. 1·9

south eastern part of the municipality. Here, ward II is mainly covered with paddy fields, wheat fields and mango gardens. In ward VII, slum families are found in the southern, part, while in ward VIII they are mainly found near the river. On the river bank, slum families are highly concentrated on the Bandh Road. They have also developed on the Burning Ghat Road. in Baluchar I and Baluchar II which belong to ward IX.

Ward XXII has 523 slum families concentrated Talipukur, Bishghar colony and along the Rail line. After 1983 this area came under the municipality and a number of mango orchards is located in ward XXIV which has 1888 slum families. Mainly lower class people have concentrated in this remote part of the town. But now the town has extended to cover this ward. Slum families are found here in Buraburitala & Ghorapir south.

The number of people living in the slum in English Bazar is very varied from the lowest of 137 persons to the highest of 9441 persons between different wards. According to the data available the ward XVII has the lowest number of 137 persons which is mainly a market area. There number increase slightly, ranging between 204 and 431 in wards XXII, XII, XVIII, XIX and IV. There number increases further in wards XXI, XIII,III & VII with a variation from 548 to 681 heads.

It is, however, in wards II, I, VIII, IX and XXIV the slum population is still large ranging from 1296 to 9441 heads. The last one have the highest record for the town in number of slum family & its population.

## CONCLUSION

English Bazar is a district headquarters and its area and population is 13.25 $Km^2$ and 1,40, 861. respectively. The trend of growth rates in the last few decades were of geometrical progression upto 1951. In the '40s higher growth rate in the town was due to high influx of population from. East Pakistan, neighbouring districts of West Bengal and other States of India. The growth of population and other demographic characters have almost no significant positive development in English Bazar during the last few decades. In general, characteristics of the town is cosmopolitan in nature.

In English Bazar Municipality, the total population was 13,667 in 1901 and now it is 1,40,861. The population increase is very faster rate than the other towns in

the neighbouring districts. The town is situated in a north-south alinement but with the increase of population, the town is spreading in the western direction. Mainly people are concentrated in various wards. Analysing the growth rate of population in different wards the concentration of population can be revealed. 42% of the total population residing in the town for 2-3 generations are mostly confined in the central part, where as 50% have been residing particularly in the northern and southern part since independence. Field survey suggests that most of the scheduled castes are "Vhunmali" who have mainly concentrated in the wards from CBD, The percentages of Hindus are 70% Muslims shared 25% of total population. Households density gives an idea about the housing facilities available for the urban residents. Here it is found that there are 30,011 households. Out of which 27,493 are residential and 5,518 are non-residential. From the data it is observed that large number of residential houses are in ward XXIV. Slums population are also growing up in the urban area, rapidly. In English Bazar Municipality slum population is found in many wards but the number of slum families occupy in large number in Buraburitala and Ghorapir.

In English Bazar Municipality, 9240 holdings are occupied with buildings. Where as 5110 house hold are with water connection, 937 households are with service privies. 1180 households are with vacant land and ponds. In English Bazar, houses are mainly one storied with cemented floor, brick walls and concrete roofs. Maximum houses are constructed within 1000 to 1500m. where people live in their own houses with three to four and five to six family members. Head of the family is mainly service holder or businessman. Mainly houses are furnished with three to four bed rooms, one drawing room, one kitchen, two bathrooms and latrine. It is noticed that each and every house has connected with electricity. Maximum number of residential houses are connected with water lines.

# CHAPTER TWO

# LANDUSE AND ITS CHANGES

## INTRODUCTION

The concept of 'Land-use' is often considered a relatively stable subject, related mainly to the use which the land in a certain region at a certain time is put (Vink, 1975). There are several general definitions of land use, the earliest of which was given in connection with the first land utilization survey of Britain from 1931 onwards. It started quite simply that the object of survey was to discover "for what purpose the surface of the country is used" (Stamp, 1948). According to Vink, "the use of the land is the result of a continuous field of tension created between available resources and human needs and acts by human efforts. Thus, by landuse it is implied that it is mankind's adaptation of the land surface and man's need of different magnitudes for space for different uses. (Northam, 1979).

Recently, the pattern of land utilization has become of paramount important in urban activities and it is imperative to define and develop a systematic and comprehensive land policy which should aim at providing guidance in the use and re-use, in curbing the misuse, in preventing the abuse, and in regulating the non-use of the land in the better interest of people (Abrams, 1964). But before starting actual planning, a proper study of the existing landuse is imperative.

These stimulating trends in urban studies have given birth to the concept of functional zones of a city. As an inevitable result of overall population growth and industrial expansion, immigration to urban centres has been taking place which in turn is leading to more intensive use, misuse of urban land and gradually space in urban centres are becoming very scarce.

## 2.1. CLASSIFICATION

As in anybody of organised knowledge, classification is vital to the study of urban landuse. It is impossible to deal with the large number of landuses in the city without some groupings of similar uses, which is to say uses with similar characteristics. But most urban landuse classifications have originated in the field of urban planning where the system was developed to fit the needs of a

single city or a relatively small number of cities. As a result, there has not developed a generally accepted and formalized landuse classification system, although attempts in this direction have been made recently (Northam, 1975).

One earliest classification was made by Bartholomew (1955) in United States. He divided a town primarily as developed and undeveloped area. The developed area was again sub-divided into privately developed (e.g. residential, commercial and industrial) and publicly developed area (such as parks and play ground, public and semi-public property, streets and transport property). But it was not entirely applicable. The major landuse categories in Britain today are residential, open space, public buildings and institutions, industrial, commercial, statutory, undertakings, vacant and derelict buildings (Colling, 1965). Later, American Institute of Planners focused on landuse characteristics alone as basis for classifications. In this classification main division was "Functional characteristics" and "Other characteristics."

In India, recognised landuse categories are of two types, the category used by town planners and the other by urban geographers. Town planner categories the landuses into residential, commercial, industrial, transport and communication, public utilities, public and semi public uses, open space, agricultural, vacant land & water bodies (Gowda, 1972). On the other hand, urban geographers recognise residential areas, agricultural areas, open space, military lands, parks and playgrounds, commercial, administrative, educational, industrial and burial grounds, (Singh, 1964). Thus, land must be carefully utilized, so that it may fulfil, man's varied needs. The best use of each parcel of land requires scientific a and methodically appreciable classification of the present landuse which may help in investigating the landuse problems and be the basis of planning for the best use of land after considering the major landuse categories (Mondal, 1982).

Based on landuse classification by different planning organisations and urban geographers, the following landuse categories for the present study are shown in Fig. 2.1. On the basis of the landuse maps, the area of each landuse has been calculated and these have been shown (Table-2.1) in percentage under different landuses (Fig.2.2).

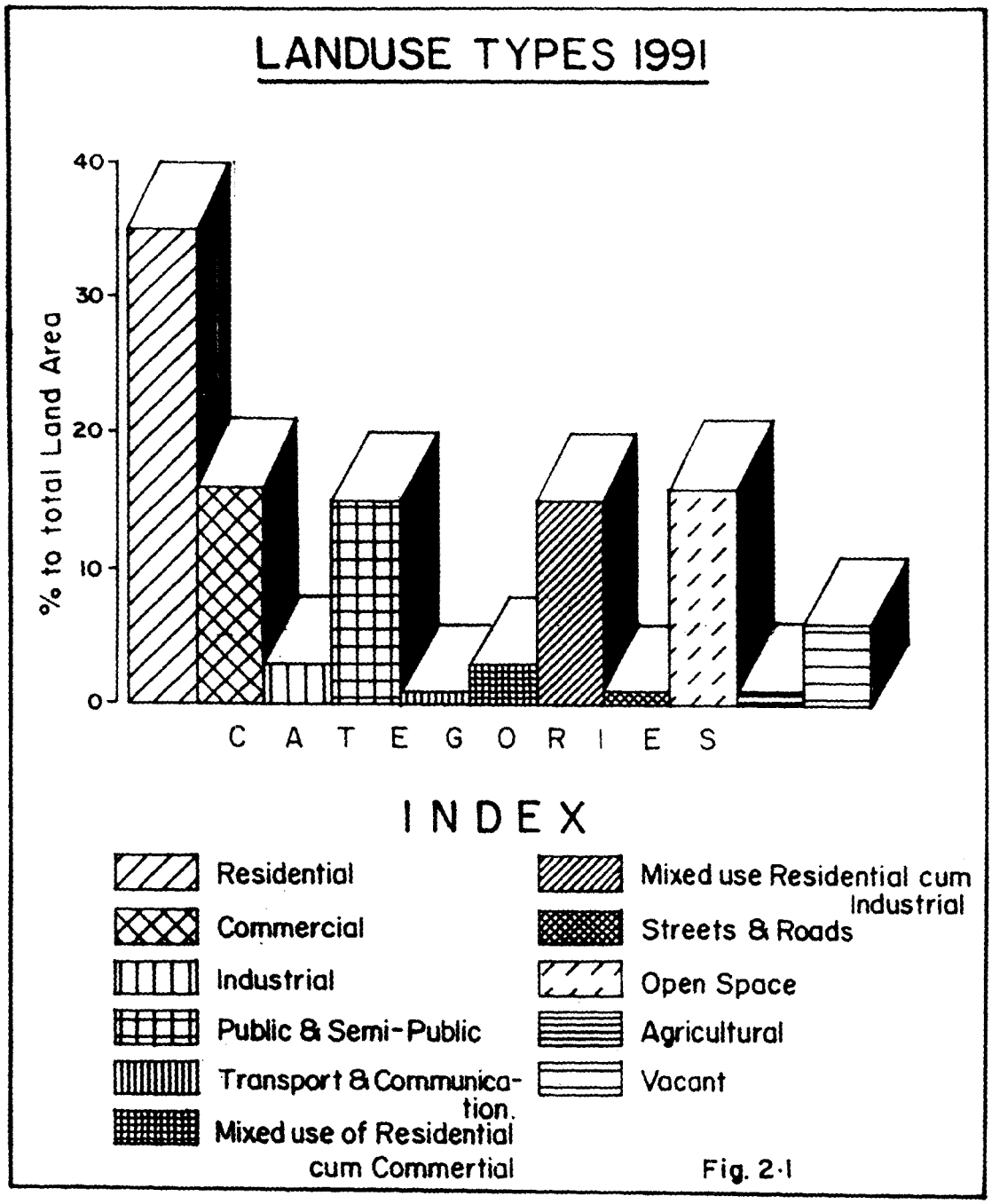

LANDUSE TYPES 1991
40
30
20
10
0
% to total Land Area
C A T E G O R I E S
INDEX
Residential
Commercial
Industrial
Public & Semi-Public
Transport & Communication.
Mixed use of Residential cum Commertial
Mixed use Residential cum Industrial
Streets & Roads
Open Space
Agricultural
Vacant

Fig. 2·1

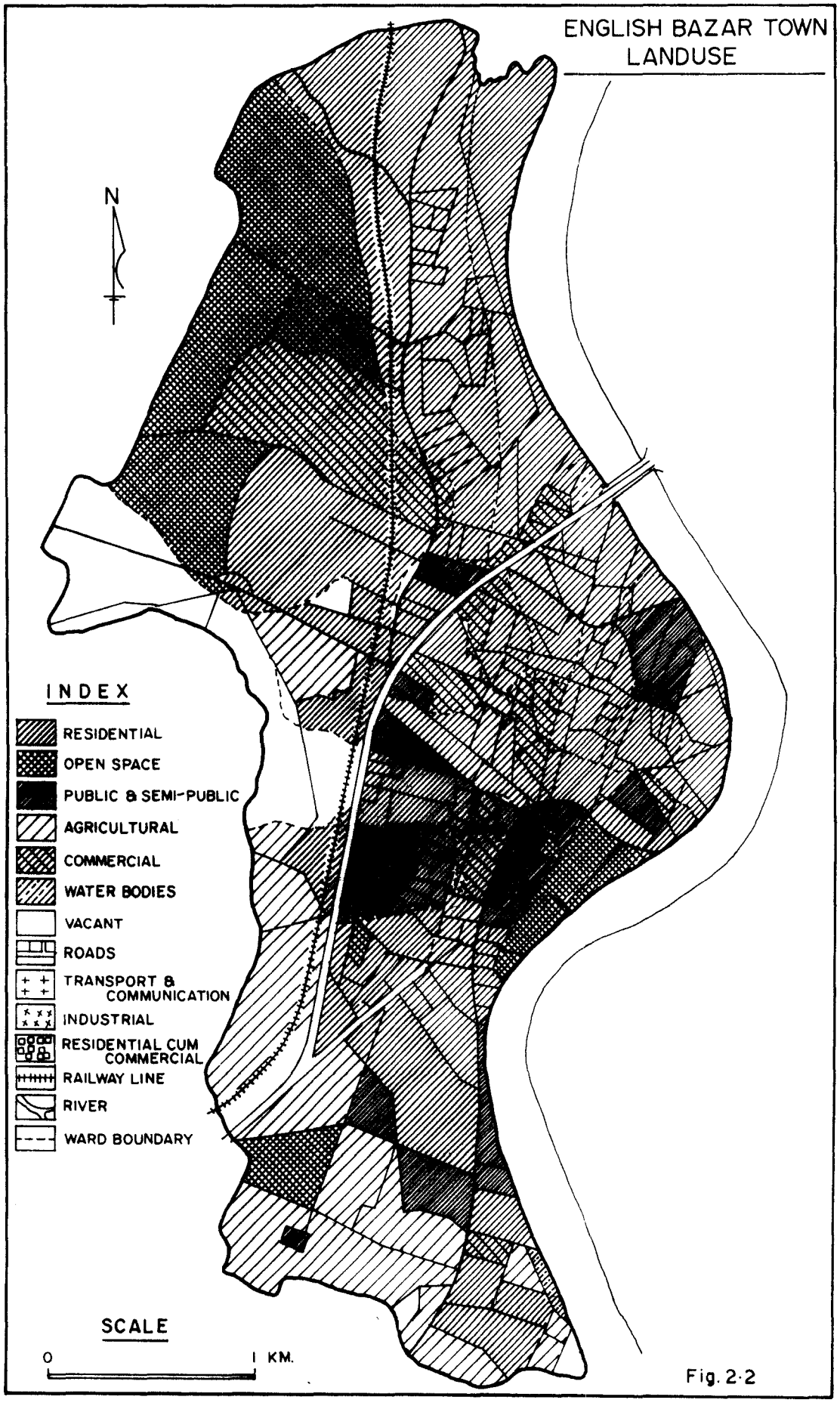

ENGLISH BAZAR TOWN
LANDUSE
N
INDEX
RESIDENTIAL
OPEN SPACE
PUBLIC & SEMI-PUBLIC
AGRICULTURAL
COMMERCIAL
WATER BODIES
VACANT
ROADS
TRANSPORT & COMMUNICATION
INDUSTRIAL
RESIDENTIAL CUM COMMERCIAL
RAILWAY LINE
RIVER
WARD BOUNDARY
SCALE
0
1 KM.

Fig. 2·2

**Table 2.1** : Percentages of land under different uses.

| Sl. No. | Categories | Share in percentages |
|---|---|---|
| 1. | Residential | 34.5 |
| 2. | Commercial | 14.2 |
| 3. | Industrial | 3.0 |
| 4. | Public and semi-public utilities | 15.0 |
| 5. | Transport and communication | 1.8 |
| 6. | Mixed use of residential cum commercial | 3.0 |
| 7. | Streets or roads | 10.5 |
| 8. | Open space | 1.0 |
| 9. | Agricultural | 10.4 |
| 10. | Water bodies | 1.0 |
| 11. | Vacant | 5.6 |
| **Total** | | **100.0** |

Wardwise distribution of landuses has shown in (Fig. 2.3 - 2.26).

### 2.1.1. Residential

The residential landuse in the town is the largest proportion of urban land and plays a significant role in shaping the urban morphology. There is an inverse relationship between the size of a town and the space occupied by residences. That is to say, the smaller the town the larger the area under this use (Ataullah, 1985). The location of residential area in urban centre under study is controlled mainly by a variety of factors, like nature and value of land, growth and distribution of non-residential lands, time-distance from the place of work, urban amenities etc. The proportion of lands devoted to residential use is 34.5% of the respective total area of English Bazar Town.

### 2.1.2. Commercial

Trade and commerce play an important role in the development of urban life and activity. Since a town is an agglomeration of people, the development of commerce is necessary to meet the demand of the local and surrounding rural population. The demand of land for commercial activities is related to the business profits anticipated from its use. The competition for the most advantageous places a higher market value on commercial land than can be commanded by most

other uses of urban land (Bartholomew, 1955). Once the commercial centre is established, it starts affecting the residential growth. In order to minimise the travel, the people like to reside close to the commercial centre. The Central Business District becomes the hub of all activities. The business centres thus play an important role in controlling the urban growth and in turn they themselves are affected and modified by it (Singh, 1980). The proportion of lands devoted to commercial use is 14.2% of the respective total area of English Bazar town.

### 2.1.3. Industrial

The light industrial area of central cities has in the past centred on the main business district of the city. This area sometimes surrounds the business core, but most often is to one side or another of the major commercial concentration. While some light industry has been located in peripheral area to gain larger cities, there are still strong times between certain light manufacturing processes and the central area (Bartholomew, 1955). The percentage of area under industrial use is 3% in English Bazar town. So the industrial landuse is not related to the size of the town. The smallest percentage of urban land is being devoted to industrial use.

### 2.1.4. Public and semi public

These uses are either scattered or isolated in the town. Though these cover a small percentage of land area is (15%) but these are important or essential in the social life. In an urban centre, institutional landuse is expected to increase at a faster rate than the administrative use, as the former use is directly related to the population and hence has a greater potentiality to expand. Educational and medical institutions are bound to develop with an increase in population (Ataullah, 1985). The cultural and religious institutions play a great role in the social life of man. The distribution of such institutions gives a broad view of the type of people living at any place (Singh. 1980).

### 2.1.5. Transport and communication

Transport is an important influence in landuse economics, and the amount of land given over to railroad property varies from community to community according to each city economic functions and its position in the transportation network (Bartholomew, 1955). The percentage under this use in English Bazar town is 1%. The percentage is comparatively low considering the size of the town.

### 2.1.6. Roads & streets

The amount of space devoted to streets and roads varies according to the characteristics of individual town, although there is a fairly constant ratio of land so used to population. Varying standard of street widths, prevailing policies of land sub division control and the density of development are all factors in the use of land for streets. The percentage under this use in the town is 15%.

### 2.1.7. Open space

Open space is inversely related to the size of a town. The larger is the town the smaller is the open space. This is because urban development takes place at the expense of non-urban uses. Thus, the open space has been decreasing in all the towns. The percentage of open space is 1.% of the total area of the town.

## 2.2. LANDUSE PATTERN

In a town there may have multifarious uses of lands. The deposition of various landuses is related with the type of activity in different parts of the city and give rise to some structural form to the city. In order to conceive an integrated city structure, it is necessary to know the existing landuse pattern and its inter-relationship. Such study also enables to determine the future land deposition.

Landuses evolve through time. Land economics is not the sole determinant of its potential and actual use. Quite often, potentially valuable land does not always have the most intensive use reflecting to some extent the cultural values, the technological stage, the historical forces and the economic factors. This accounts for the patches of anomalous uses in otherwise homogeneous situation (Misra, 1978). The residential use is spread throughout the length and breadth of a town, while commercial, administrative and industrial uses are localized. Commercial landuse is necessarily concentrated at the core of the built up area and along important roads in almost all the towns. In each case the most easily accessible land in the city centre is devoted to this use. All roads leading to these centres also show ribbon development of shops. As regards to zonal distribution of this use, some differences exist between the large and small towns. The large town sometimes has more than one commercial nuclei.

In the locational aspect of administrative use also, the large and small towns exhibit differences. In the largest town this use dominates the peripheral areas, while in small ones it is still situated at the congested central areas, the main residential zone surrounds the central business area in all the towns. In the

large towns however it occupies a considerable area in the outer zones. But, on the whole, the commercial and industrial landuses are the least space occupants. Thus, the landuse pattern of an urban centre is an outcome of both natural resources and their utilisation by human beings whether a particular settlement can be recognised as a town depends on its functional structure which also determines the level of its growth. Hence, the landuse pattern of the town gives a full account of the evolution, demographic character, morphology and above all the functional structure of the settlement (Ataullah, 1985). The major difficulties faced in the present study were the limited time and man power available for collecting information as well as general lack of published materials. The work was made twice because of non-availability of past land used maps. No wardwise data was available regarding the proportion of landused by different functions. These handicaps had to be circumvented by suitable application of research techniques and adoption of methods to suit local conditions.

The pattern of landuse in the town has been influenced by various historical and geographical factors. As such as landuse pattern, also the shape, size and degree of specialisation of functional zones differ from town to town. Coming to the zonal distribution of different landuses, the commercial zone covers the central area of the town. But it also has spread outward along narrow but long ribbons following important roads. The residential zone surrounds the nucleus in the town but it has a tendency to expand outwards, specially out of municipal boundary.

The types of landuse in the Indian and western cities are not spatially distributed in the same manner. The highly mixed landuse in India urban area differ markedly from the usual segregation of landuse in Anglo-American cities (Breese, 1969). This appears to be the result of compact development and continuing necessity of walking between places of residence and the places of work. With some exceptions, residential areas in town have surrounded the centrally located commercial zone. Within the commercial area itself, residential use in mixed up with commercial use.

## 2.3. DISTRIBUTION OF FUNCTIONAL ZONES

The inter relation between morphology and functions of a town is fundamental to the integration of the whole field of urban geography. Dickinson has stressed that "The city is not merely an assembly of patterns and empty buildings. It is a habit and the arrangement of these parts must be examined in the light of the process that determine their function" (Dickinson, 1963). A closer link between

the two approaches is provided by the realisation that certain functional type of towns produces specific morphologies (Smailes, 1955). The processes responsible for the spatial variations in urban morphology should be studied in the light of their inter-relationship with function. Since the "raison detre' of any urban area rests upon the main function it performs, and is the point around which all other aspects revolve, it is necessary to start from this basis and consider all forms, i.e. morphology as springing from this function (Davis,1968). The function of a town may be studied by dividing it into certain functional zones. But unplanned town under study cannot have such clear-cut zones. On the basis of field survey and other sources of informations the distribution of different landuses in English Bazar town has been illustrated in figures (2.3 - 2.26).

Studying the landuse in English Bazar and from the Fig. 2.2 different landuse zones can be identified on the basis of continuity and concentration (Appendix-V). The zones of different landuses on the basis of location are :

1. Four Residential Zones
2. One Commercial Zone
3. Two Agricultural Zones
4. Three Public and Semi-Public Zones
5. Two Transport and Communication Zones.

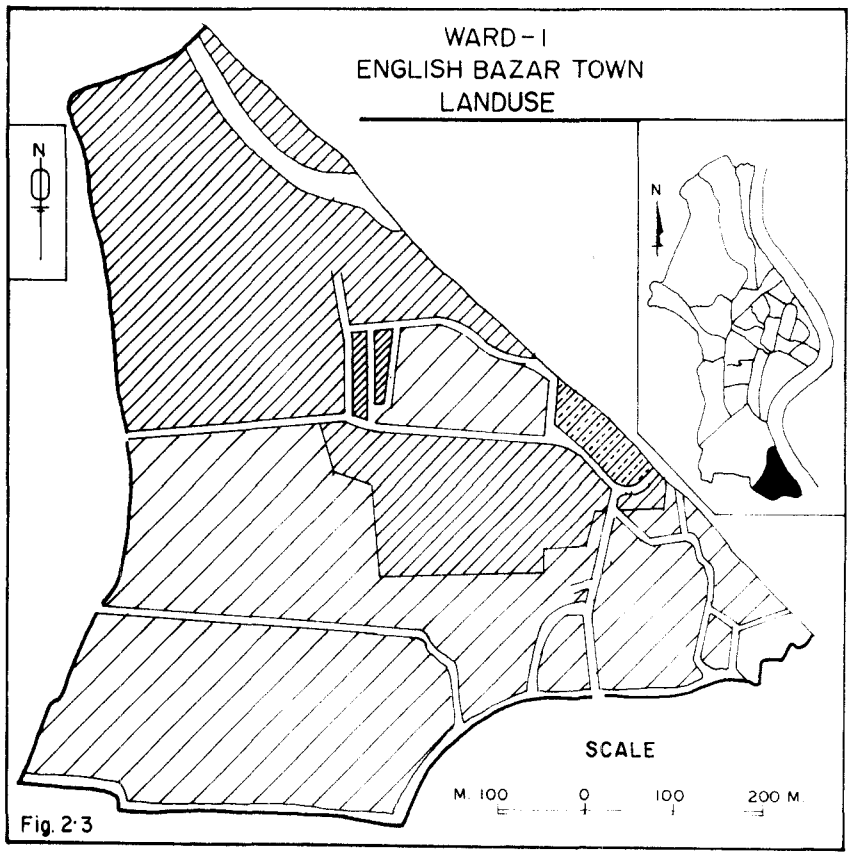
**1. Residential Zones :** About 53.7% of total lands are devoted in residential uses which is distributed in all the wards unevenly. From Fig. 2.3 it is found that the residential use has developed from east to south west mainly in between the N.H.-34 and Railway line. The area in western part of the river Mahananda have more residential use than the northern. It is interesting to note that inspite of the location of the Mokdumpur, the residential use in this earlier settled part is less. But in the later periods the orientation of railway line and railway station and direct roadway link with Calcutta were the greater attraction for residential purpose in the west of Mahananda river. However, the residential areas of the town can be grouped into :

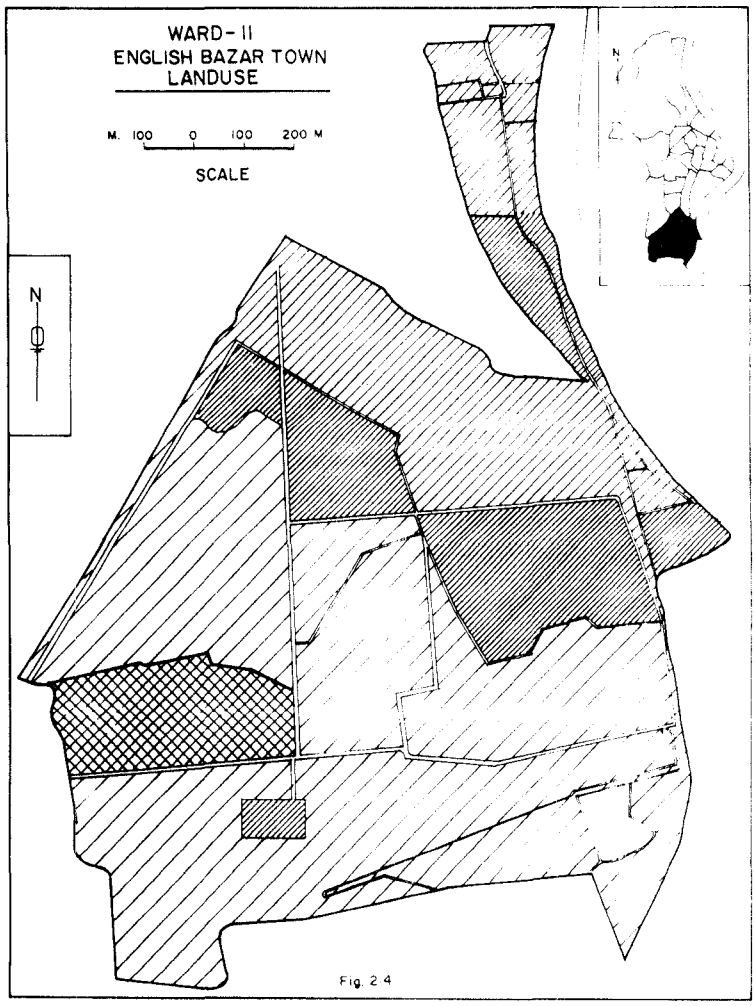
**Zone 1 :** It is located in the west of river Mahananda and extended upto the municipal boundary to the west and in this zone than the others as it is lying around the CBD i.e. Sukanta More as well as the market centre. In this zone, among 4 wards, have less than 60% lands under residential use and these are lying along the river Mahananda. Other 5 wards having more than 70% lands under residential use lie just in the southern part of the town.

**Zone 2 :** It is located in the south-west corner of the town as well as in the

# INDEX

- RESIDENTIAL
- OPEN SPACE
- PUBLIC & SEMI-PUBLIC
- AGRICULTURE
- COMMERCIAL
- WATER BODIES
- VACANT
- ROADS
- TRANSPORT & COMMUNICATION
- INDUSTRIAL
- RESIDENTIAL CUM COMMERCIAL
- RAILWAY LINE
- RIVER


WARD - I
ENGLISH BAZAR TOWN
LANDUSE
N
N
SCALE
M. 100 0 100 200 M
Fig. 2·3


WARD - II
ENGLISH BAZAR TOWN
LANDUSE
M. 100 0 100 200 M
SCALE
N
N
Fig. 2·4

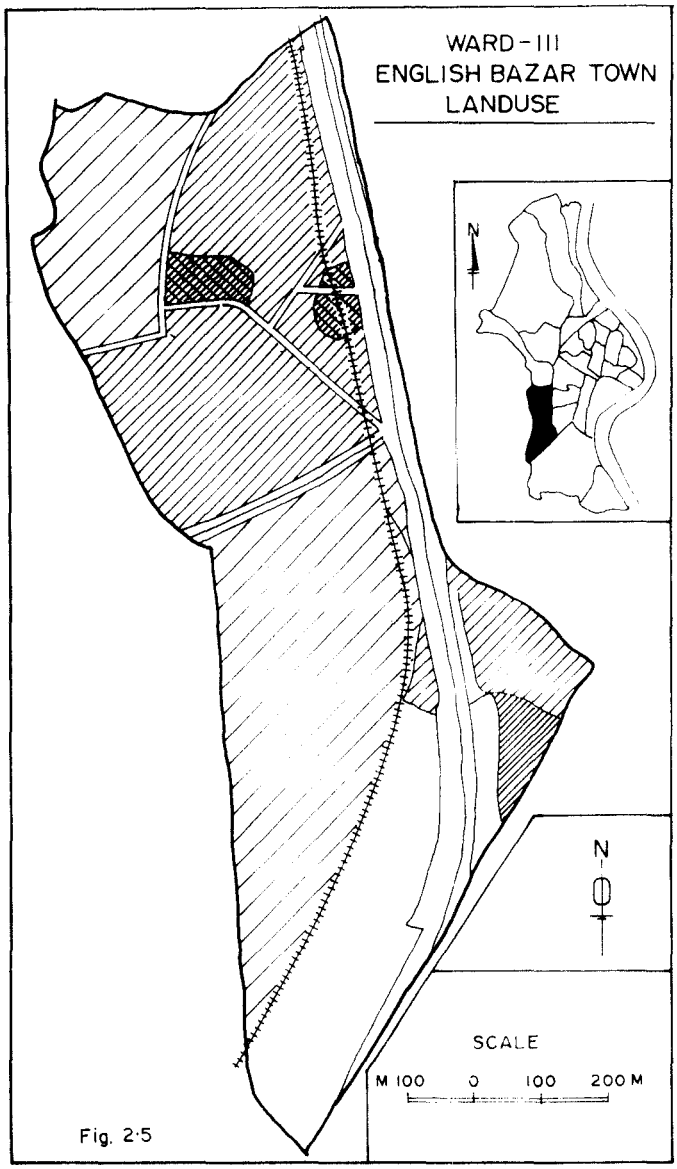

WARD-III
ENGLISH BAZAR TOWN
LANDUSE
N
N
SCALE
M 100 0 100 200 M

Fig. 2·5

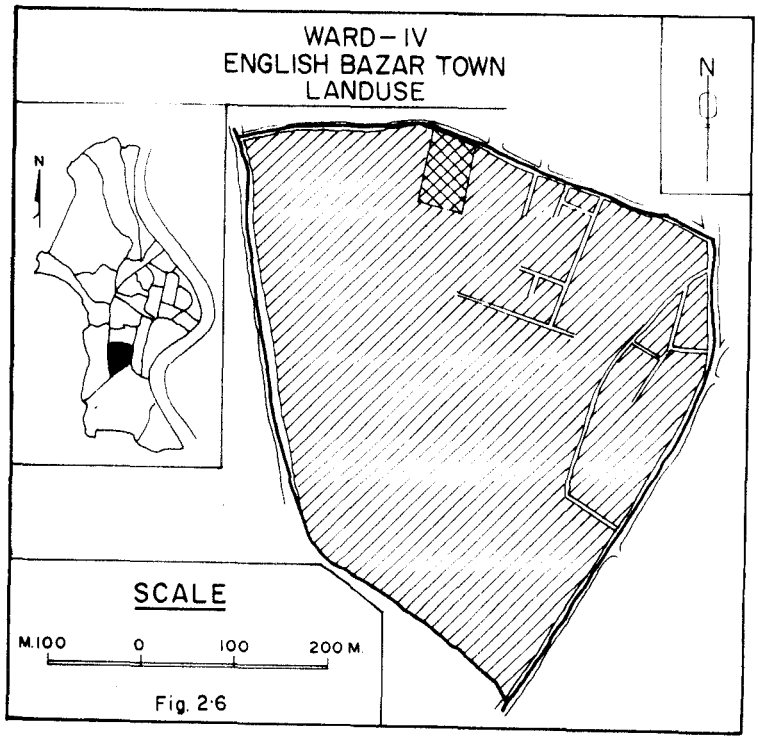

WARD-IV
ENGLISH BAZAR TOWN
LANDUSE
N
N
SCALE
M.100 0 100 200 M.

Fig. 2·6

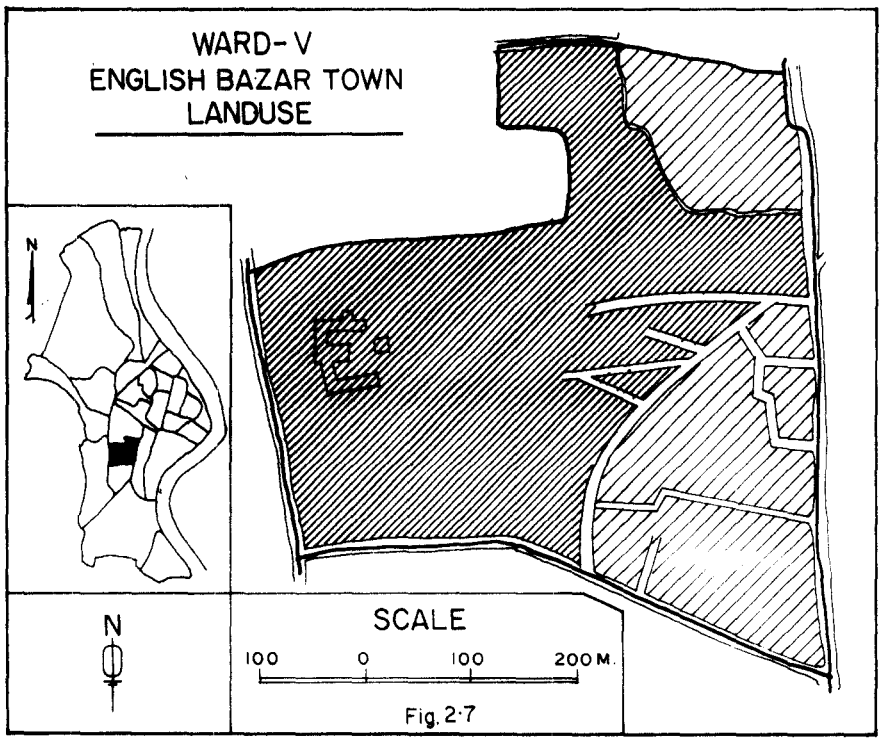

WARD- V
ENGLISH BAZAR TOWN
LANDUSE
N
N
SCALE
100 0 100 200 M.

Fig. 2·7

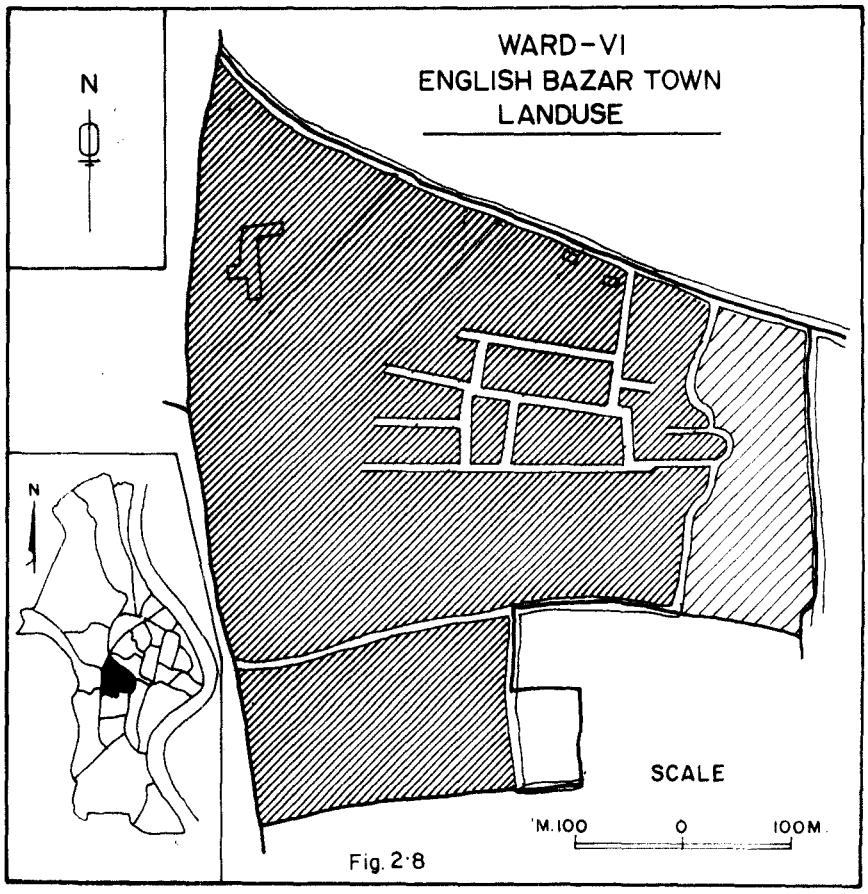

WARD-VI
ENGLISH BAZAR TOWN
LANDUSE
N
N
SCALE
M.100 0 100M.

Fig. 2·8

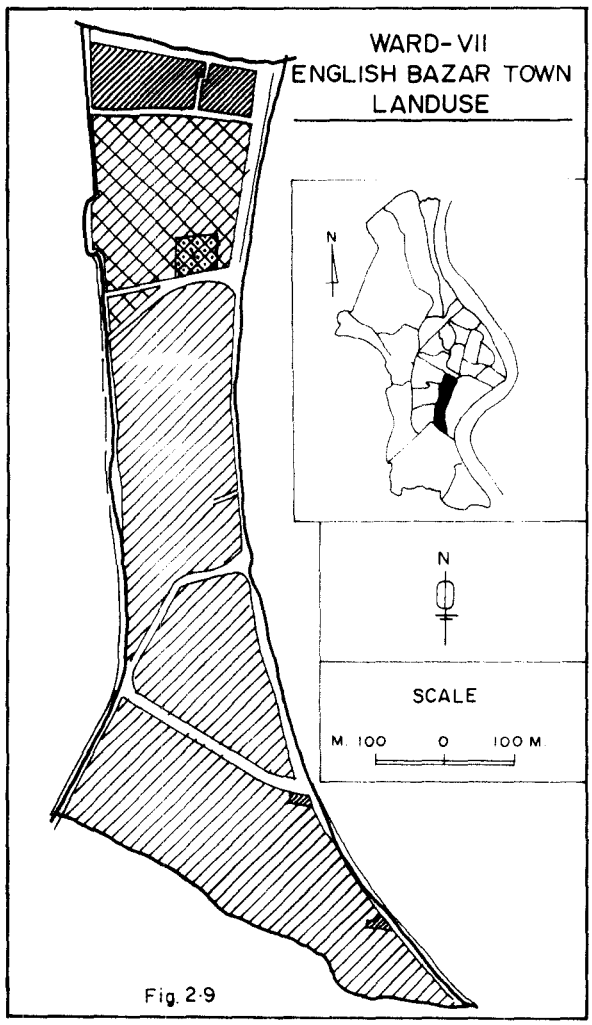



Fig. 2·9

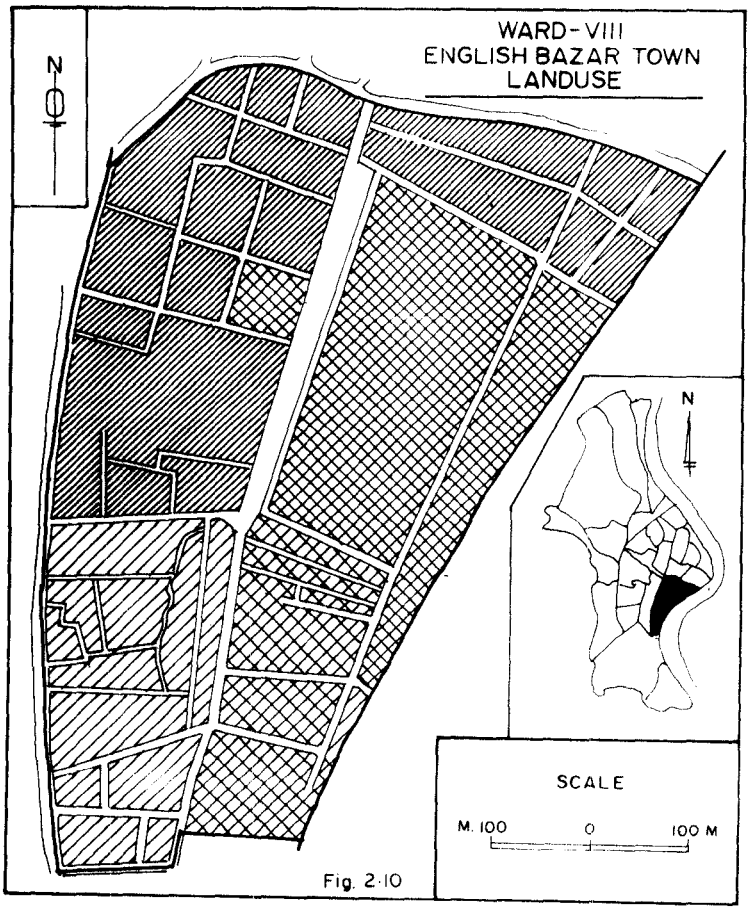



Fig. 2·10

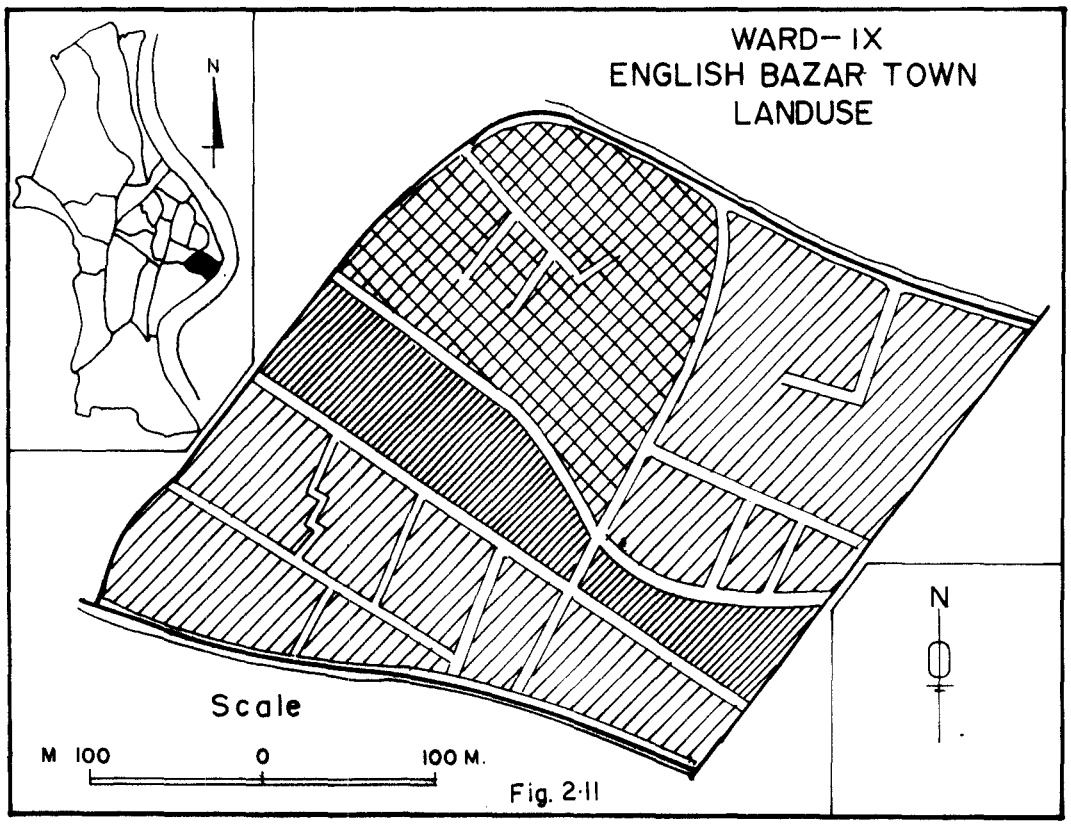


Fig. 2·11

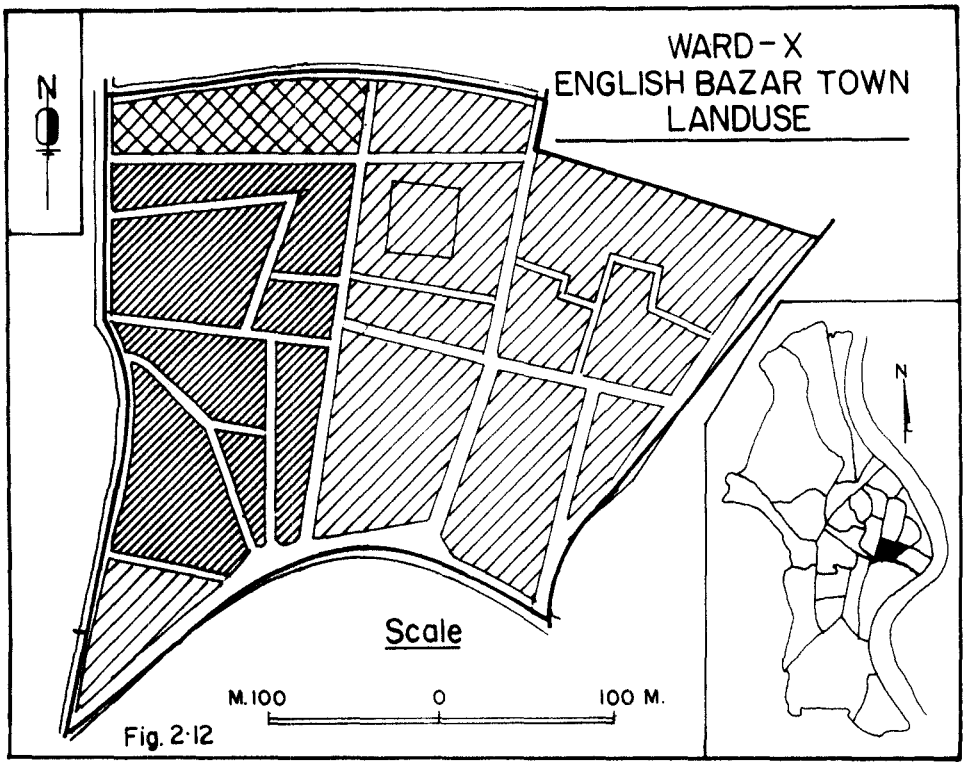


Fig. 2·12

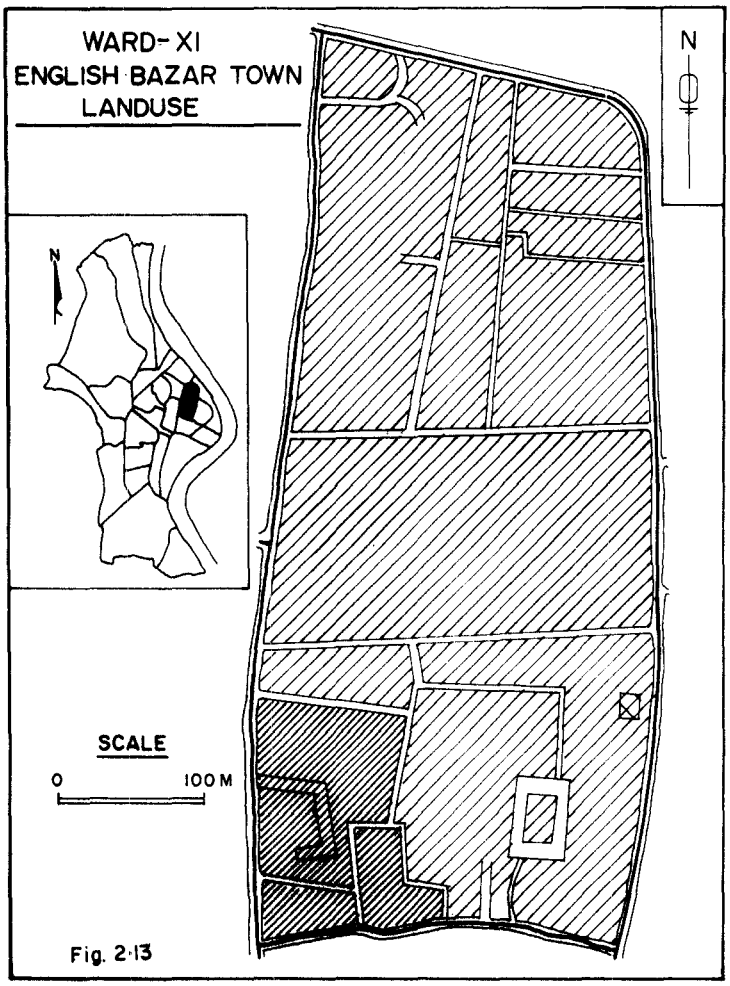



Fig. 2·13

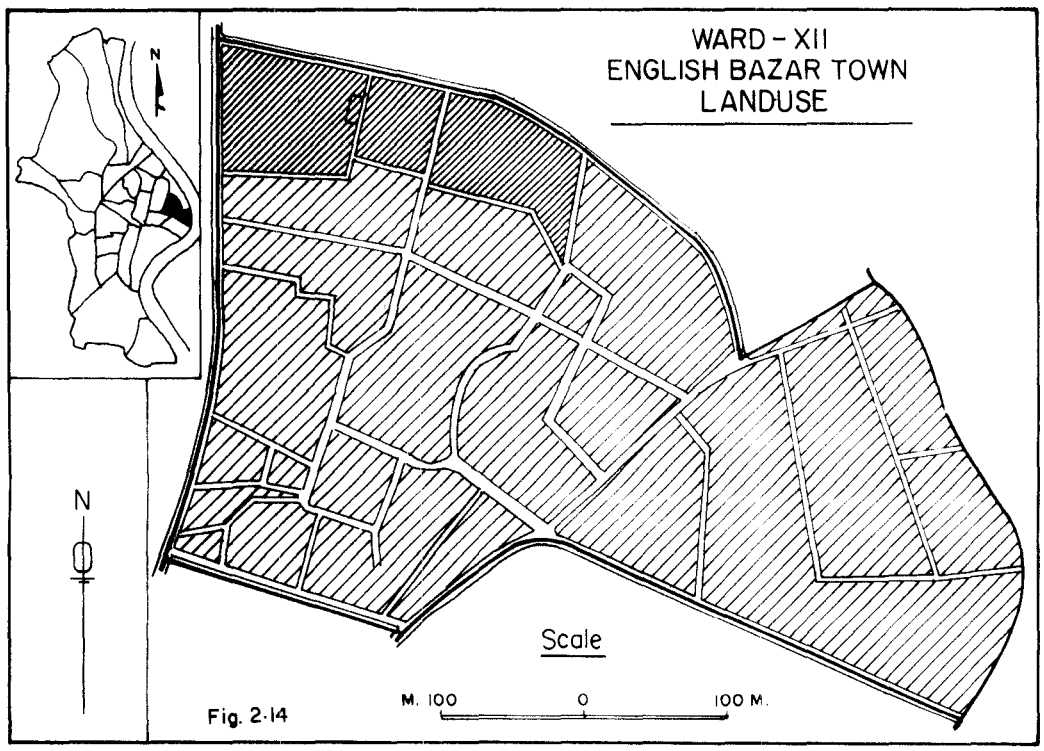



Fig. 2·14

southern part of the Railway line and is extended upto municipal boundary. Out of 4 wards 3 are located near the CBD having 70-80% residential use but the other one (XVIII) with low residential concentration is located on the periphery of the town.

**Zone 3 :** It is located in the northern part of the town, extending from north of station road upto northern tip of the municipal boundary. This zone is interrupted by other types of land uses and consists of wards XIX, XXII and XXIII having 51% area occupied by residential landuse. Due to favourable condition. Government housing in ward XXIII and Government quarters in ward XXII have increased its percentage of residential uses though these wards are located far away from city centre and on the periphery of the municipal area.

**Zone 4:** It is spread our the southwestern part of the town where imprint of development is less than other parts of the town. This zone is not a compact one and segregated in pockets mainly by the agricultural activity. Out of 4 wards 3 have 20-30% area under residential use whereas the other one represents only 10%. Very low concentration of this category is due to backwardness as well as lack of urban amenities.

**2. Commercial Zone :** Commercial landuse in the town is quite important. It shares 8% land area of the town. In spite of its importance planned commercial areas have not developed distinctly in English Bazar. There are two pockets of commercial centres of different sizes in English Bazar.

The commercial use (5%) is extended in linear form in the central part of the town along the main thoroughfares viz. Rabindra Avenue, Netaji Subhas Road and Rathbari Road. The commercial area along Rabindra Avenue commonly known as Bihitra Bazar is spread in ward X and XI. Shops of groceries, fish and meat, green vegetables, clothes etc. are located here. Along the Rabindra Avenue and Rathbari various types of shops like restaurants, sweet meat shops, hotels, book stalls, studios etc. are dominant. Other isolated pockets of such landuse are found in various parts of the town. However, ward VII has about 10% of its total land area engaged in this landuse. Railway station area also shows commercial activities in a limited scale like rice retail shops. Two unauthorised daily markets of vegetables and fishes are found here.

**3. Residential Cum Industrial :** The percentage in this type of landuse is very negligible (0.5%). It is found only in 3 wards and is concentrated in the southwestern part of the town. Its maximum percentage (3%) is in ward I.

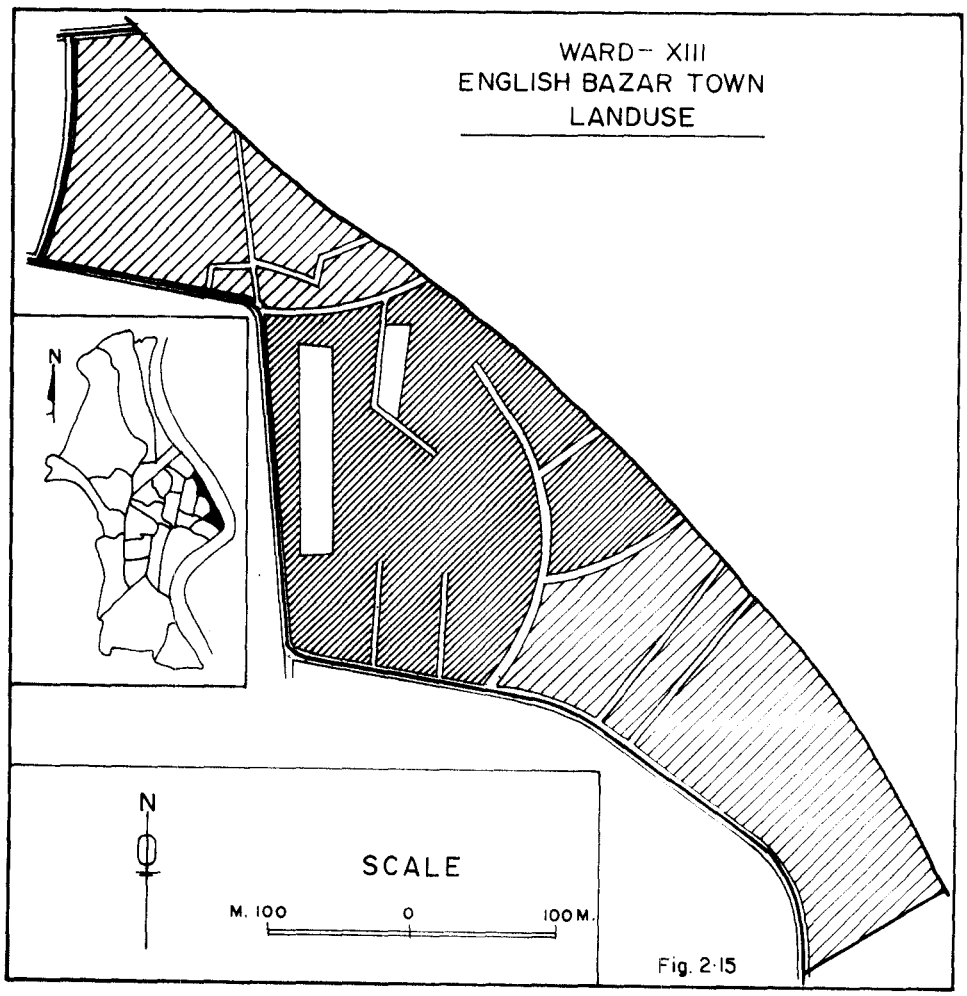



Fig. 2·15

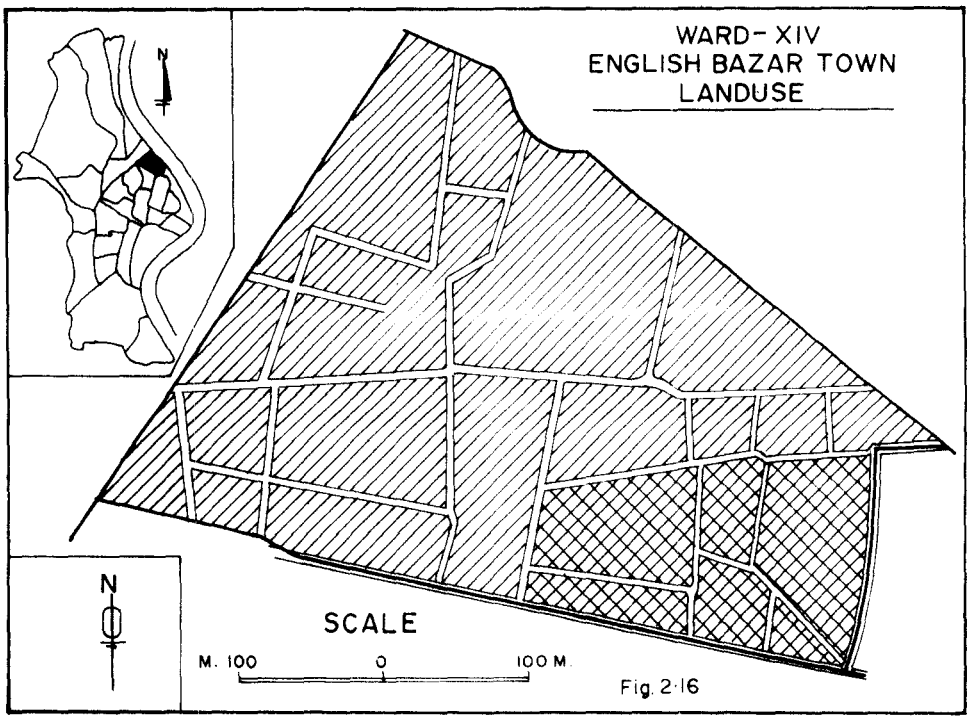



Fig. 2·16

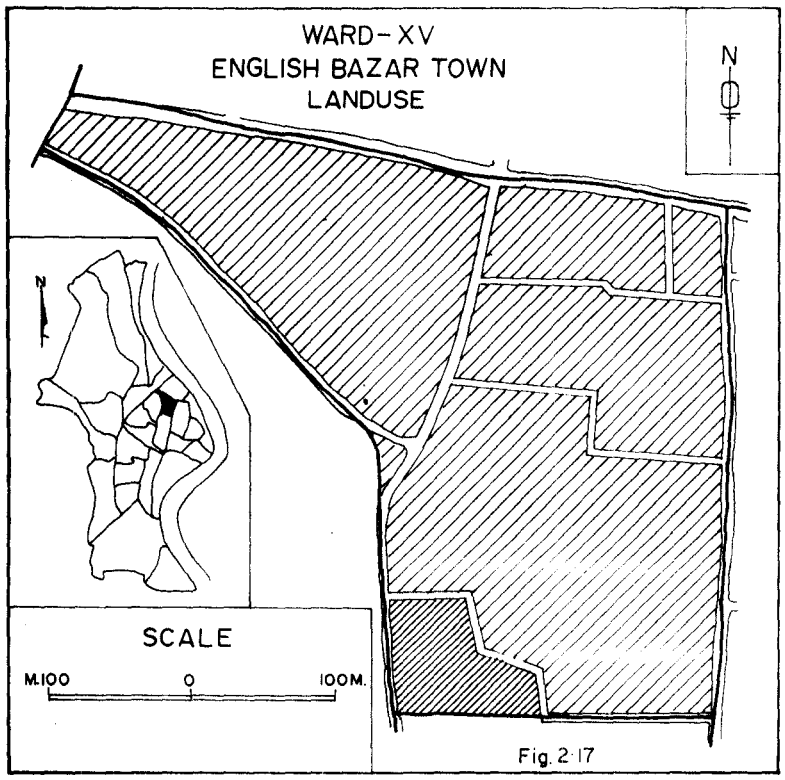


Fig. 2·17

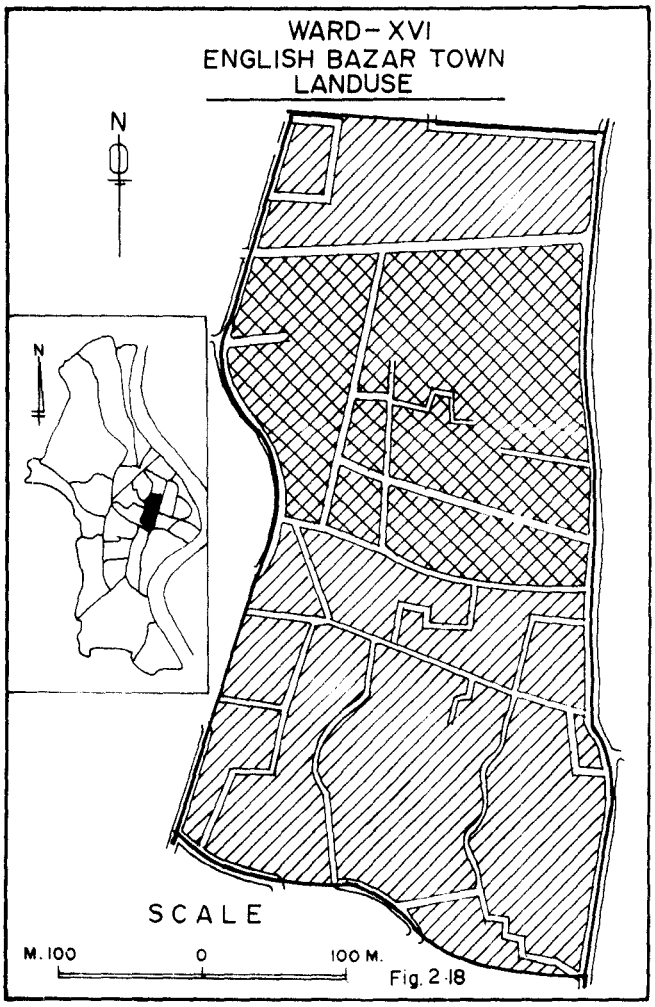


Fig. 2·18

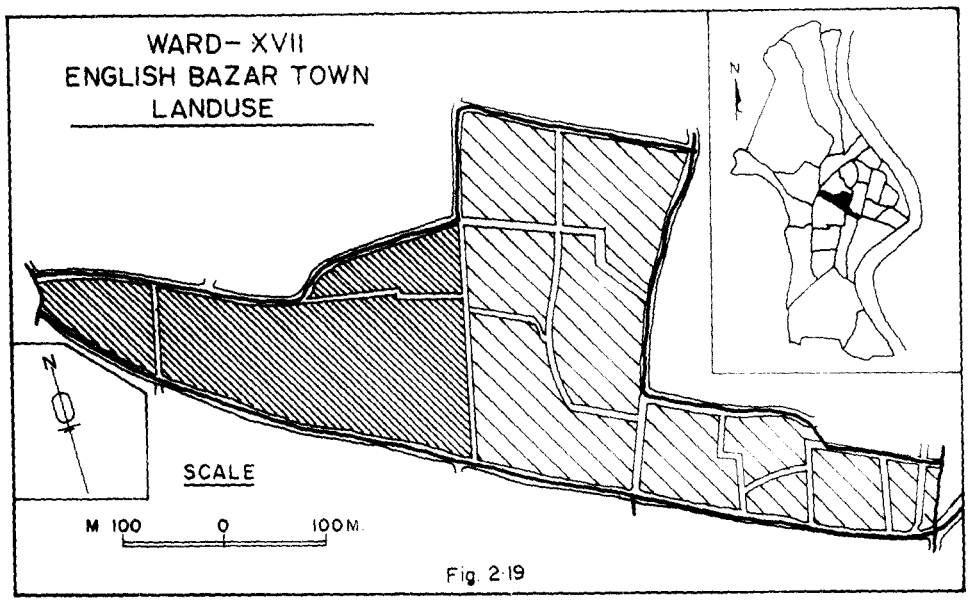



Fig. 2·19

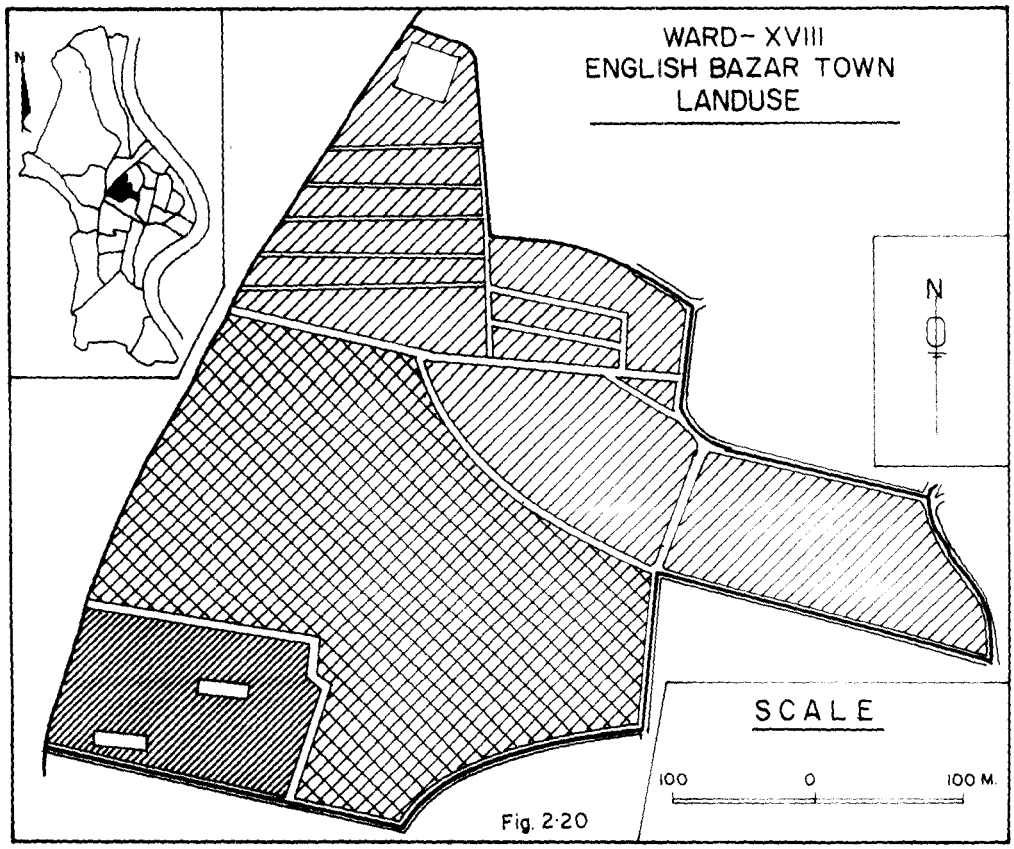



Fig. 2·20

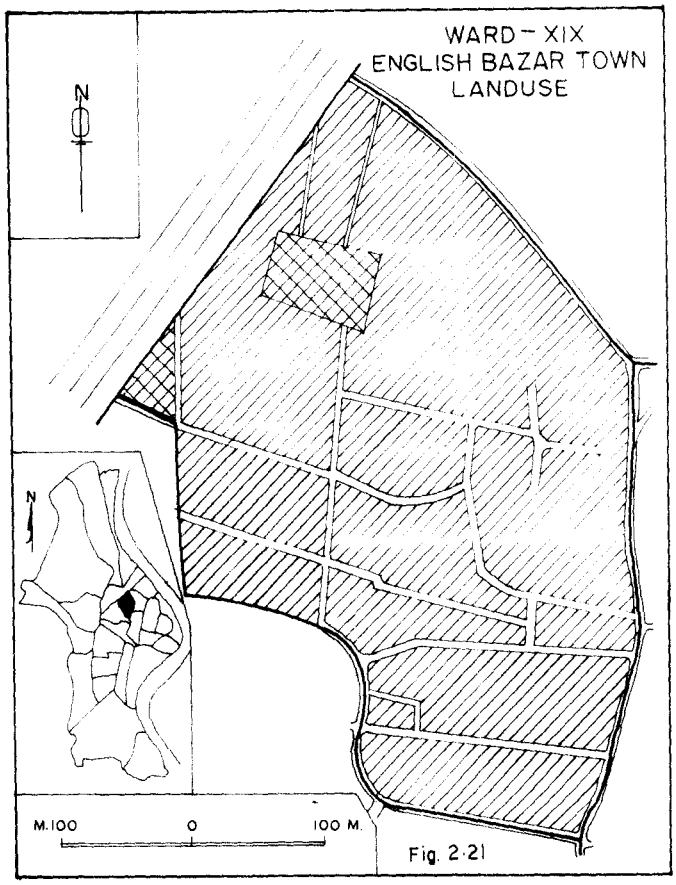


Fig. 2·21

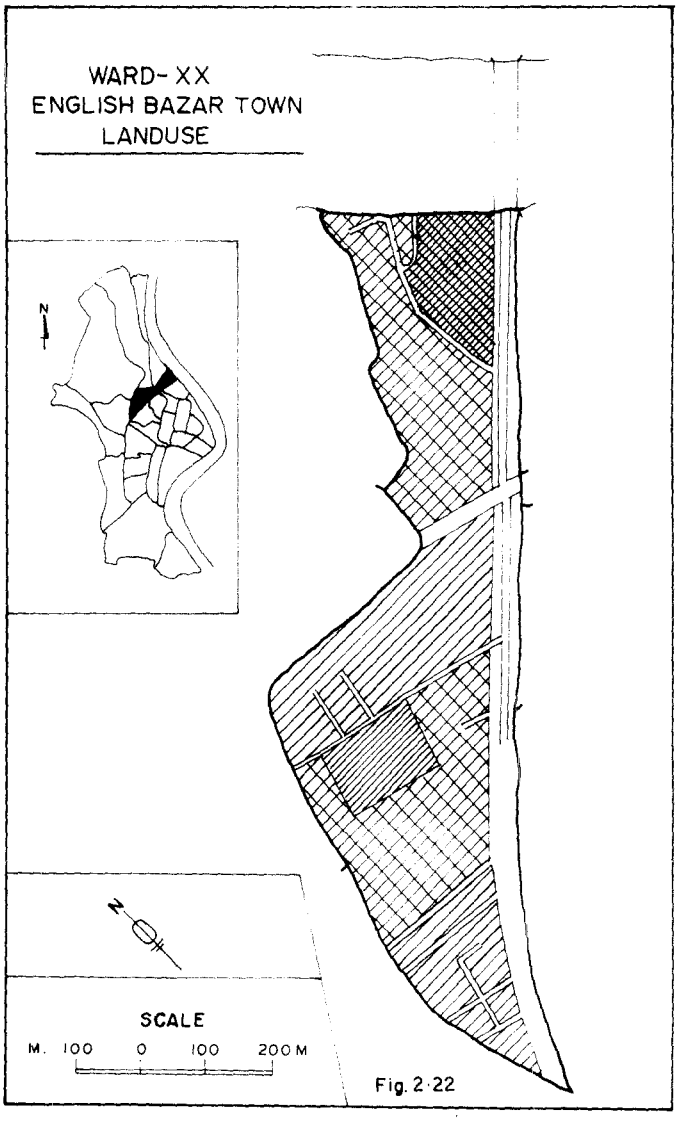


Fig. 2·22

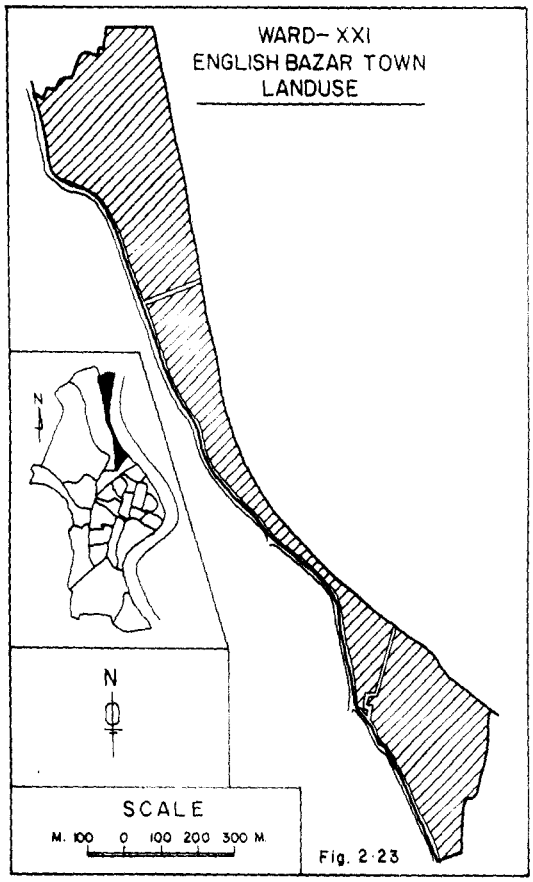



Fig. 2·23

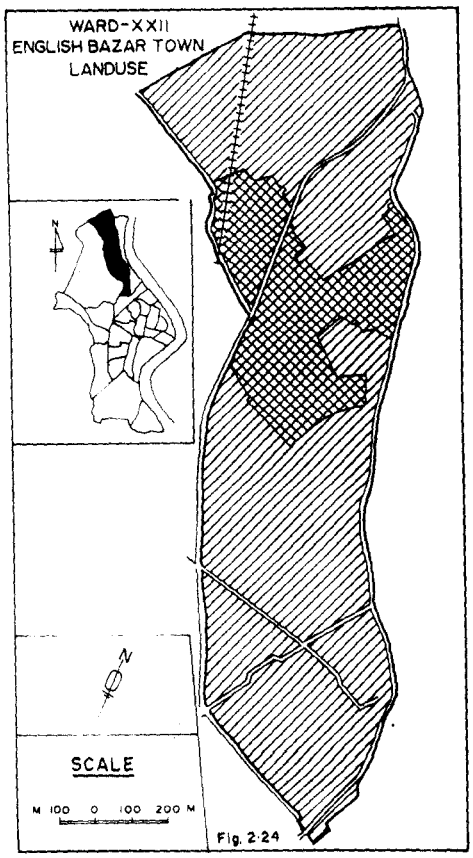



Fig. 2·24

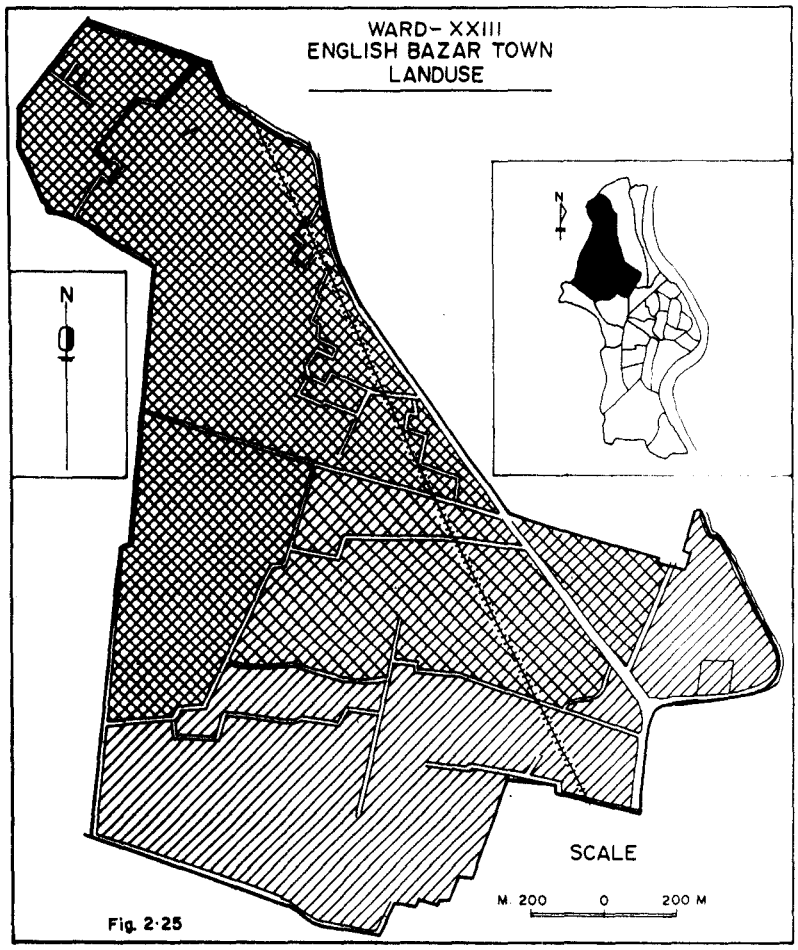



Fig. 2·25

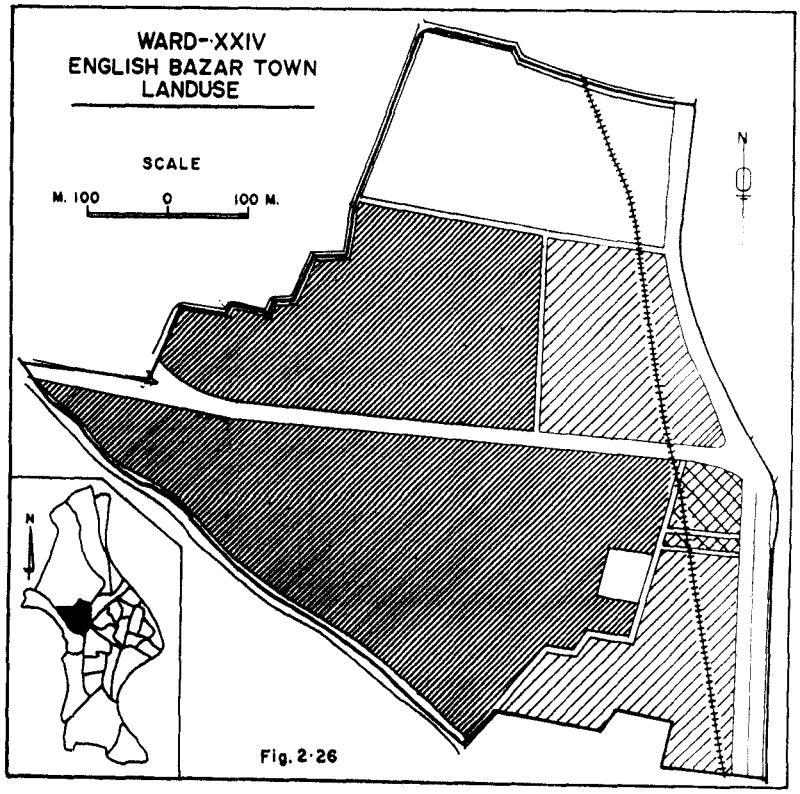



Fig. 2·26

**4. Agricultural Zones :** The agricultural zones (16%) are located in the periphery of the town. The southern one consists of 4 wards of which wards I, records the maximum concentration (75% land of the ward) of agricultural uses. Other 2 wards like II, III have 30-40% and ward XIV has comparatively low percentage (25%) of land under this use. In this zone agricultural landuse is intensified by the absence of all urban amenities. The northern zone has 3 isolated pockets of agricultural uses. These pockets include the wards XXI and XXII and respectively having 45% and 35% of agricultural uses.

**5. Public and Semi-Public Zones :** As this town acts as District Headquarters of Malda it has a recognisable percentage of public and semi-public landuse which has its main concentration in the south-eastern part of the town. Three zones of it are :

**Zone I** is located near the Railway station and consists of wards XXI and XXII sharing respectively 15% and 25% land of these wards. Important State and Central Government offices are located in this zone.

**Zone II** Another important zone of this category is lying in the eastern tip of the town as well as in the east of river Mahananda. This area is a part of wards VI, VII and occupy 14% area of the wards. In spite of its odd location, it possesses some most important State Government offices.

**Zone III** is located almost in the central part of the town. This zone consists of wards XI and XII having percentage of 3 and 4 respectively to the total area of these wards. Important feature of this zone is the location of Malda Sadar Hospital and Jail. Except these zones, some other offices and educational institutions are found scattered in the town.

**6. Transport and Commercial Zones :** This function covers 3.5% land area of the town. There are two distinguishable zones of Railways viz. (a) Malda Town Station and (b) Old Malda Station. There are 3 bus stands in the town. The percentage of land which is used as roads is only 5% of the total area. Most of the wards have the same percentage to the town's average. The main road of the town is N.H.34 and many lanes like spinal cords connecting it at right angle. Among other roads are N.S. Road, B.S. Road, K.J. Synal Road, Gour Road, Station Road etc.

On the basis of the street pattern the town can be divided into two well marked zones. Most of the lanes and by lanes in the west of N.H. 34 road have east-

west extension. These are more in number in densely populated part of the town. But roads are less in other parts of the town and these are extended north-south direction in this sparsely populated and undeveloped area. Here the streets are very narrow, not even 2 mts. in width in many sections, and zig-zag in nature.

**7. Open Spaces :** The percentage of open space is 2% in the town. In 8 wards, open space is not available. Only in 4 wards 2-3% of their land are devoted to open space.

**8. Vacant Places :** Besides these uses, another important share of use of land though having no use viz. vacant land, is distributed scatteredly all over the town away from the CBD and especially in the east of the river Mahananda. These lands may be regarded as the provision of future changes of uses of land in the town. More than 20% land in ward I are lying vacant as marshy area. Wards I, II, III, XXII, XXIII and XXIV record more than 25% land as vacant.

## 2.4. CHANGES IN LANDUSE

The segregation and aggregation of different functions in a city are the result of a long period of evaluation. The change in urban landuse is, therefore, an important aspect of landuse study. Within the last 50 to 80 years, the main urban functions viz. residential, commercial and institutional had experienced a high growth. In other functions, no marked changes are noticeable, although the industrial function has increased to a limited extent. This expansion has led to a decrease in fallow, barren and arable lands.

The spatial structure of the town is the resultant of three forces of attraction and integration of dispersion and disintegration and of spatial differentiation (Dickinson, 1964). The first two forces generate vertical growth and horizontal expansion. The third force results into the segregation of buildings, persons and activities. With the age and growth of urban landscape, the spatial structure also changes in consonance with the landuse. Any change in economic and social conditions, caused either by political or natural forces, also brings about a remarkable change in the landuse pattern. Sometimes these changes are 50 adverse that they start posing problems of various kinds instead of facilitating urban functions (Singh, 1980).

The town under study are developing by functional movements and growth of the built-up area within and outside the municipal limits. These functional

movements represent the impact of different social dynamics governed by a number of developmental factors noticed during different periods. Three main urban functions i.e. residential, commercial have experienced maximum growth. In other functions no remarkable changes are noticeable although the industrial functions have also improved the town. High demand of residential areas is primarily responsible for the increase in built-up area of a town. Hence, this function experiences the highest rate of growth as compared to others. Remarkable changes have occurred in the residential landscape of the town during the last few years. In the town, there is no remarkable change in landuse except in residential areas which is extended beyond the municipal boundary in southwestern corner along the Gour Road and north-western corner near of the Station Road. All urban land-uses develop at the expense of either open space or vacant space. Hence the rate of decrease in open space as well as vacant place are equal to the rate of increase in other urban functions combined. Naturally, vacant places has the tendency to decrease at a faster rate than any other single urban use.

The changes can be summarised as; (i) The build up area occupied by residences increased by transferring vacant areas; (ii) Most of the single storey buildings have become two or more storeyed; (iii) The congestion increased as the developed land are occupied by the residential use without following the municipality norms; (iv) Many slums have grown up in the vested lands, (v) Out ward growth or marginal development took place mainly for residential purpose along the fringe area; (vi) River banks are occupied by unauthorised shops; (vii) The Government lands and vested lands have been devoted to several purposes; (viii) More roads and lanes came out and many of them are encroached by unauthorised commercial activities; (xi) Percentages of multipurpose functioning lands have increased and (x) More areas have been devoted to garbages and industrial activities.

The future landuse pattern of the town may be estimated on the basis of the trends of changes and estimates of future population. If the urban area remain unchanged till 2001 A.D. The residential and commercial functions are expected to cover a higher percentage of land than of present.

## CONCLUSION

From the discussions of landuse in the town, residential shares the major areas in the town. A considerable percentage is devoted to agricultural in English

Bazar. The share of streets, vacant lands, transport and communications and industrial landuses all are high in the town. Commercial areas in the town have been surrounded by residential zones where as public and semi-public offices are scattered in all over residential as well as commercial areas.

Studying the landuse pattern in the town, the different landuse zones like residential, commercial, transport and communication, agricultural are found. All four residential zones are not contiguous and are separated by other landuses due to lack of proper planning and implementation of standard landuse practice which is used in some other towns in India. Both transport and communication zones are located at different places in the town and this is due to the lack of wide space for accommodating so many buses and trucks in one place. Other landuse patterns are of negligible importance that is due to their low percentage and low level development. A considerable percentage of landuse is devoted to agriculture rural character because a part of this town is still prevailed at the commercial uses of land are found in a place where main retail and wholesale trading are dominated. Shares of other landuses in the town are considerably small and these are scattered all over the town.

During the last few decades changes of landuses took place and some landuses like commercial, residential as well as public and semi-public have been experienced a higher growth rate than other landuses. On the other hand, areas under vacant lands, parks and playgrounds have been reduced due to pressure of population in the urban landuses.

# CHAPTER THREE

## URBAN AMENITIES AND THEIR DISTRIBUTION

## INTRODUCTION

Man, a social creature, for his living and existing requires some social facilities and scope for cultural activities especially when he is in an urban society. Though the need of amenities for different communities are not uniform, the civic amenities generally express a common style living. In the urban centre municipal authorities try to deliver all types of urban amenities and utility services to the town dwellers but creation of full-fledged urban society is a far cry. Still, the minimum urban amenities which are though essential for the urbanities such as piped water supply, street lights, sanitary and conservancy services are restricted to limited parts of the towns. "Lure of amenities" availability boost the rush of people from smaller towns or semi-urban areas in big cities and towns, where it causes congestion.

The town insufficiency of availability of data and information from disadvantages in bringing out the exact picture of the existing of such service and intensive field survey was carried on at different offices and wards of the municipality to fill up the shortage of information. This chapter deals with housing and living condition of the city dwellers, their family sizes, education and health, and financing agencies. Moreover, other socio-economic facilities like communications and transport, retail services, major industries and other urban amenities have been discussed separately.

## 3.1. INSTITUTIONAL AMENITIES

### 3.1.1. Transport

#### 3.1.1a. Roadways

Owing to the continuous influx of the people. English Bazar town is very much congested. Construction of foot paths and widening of roads are required all over English Bazar town. As such Rs. 2 crores is immediately required to ease the position. It should be mentioned that N.H.34 crossing through this town is now in a very bad shape. Unless it is widened and land the traffic congestion (Plate -1) and accidents will recur.

English Bazar Municipality is located at the intersection of N.H.34 with S.H.-10 (Plate-2) and the N.H. 34 itself acts as the movement spine within the municipal areas, which is in turn, connected with a number of feeder roads and sub feeder roads, forming the entire road network upto the river Mahananda towards its east and railway tracks on its west (Fig. 3.1). As per available information, the total length of the existing roads of English Bazar Municipality is 196.95 kms. The break up of which is given in Table 3.1.

**Table 3.1:** Length of different types of Roads,

| Type | Length in kms | Percentage to total |
|---|---|---|
| Black - top | 47.90 | 24.32 |
| Brick - paved | 69.83 | 35.48 |
| Kutcha | 79.22 | 40.20 |
| | **196.95** | **100.00** |

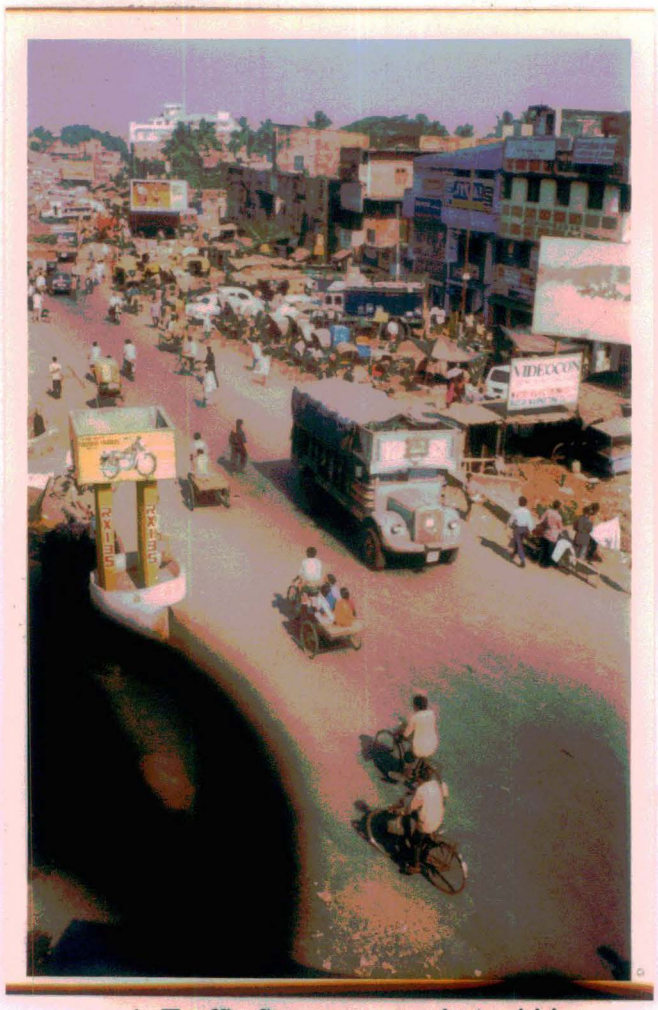
Though the feeder roads and sub-feeder roads with NH-34 form the road network, feeder roads cannot be considered as arterial roads by virtue of width, shape and condition. Road geometrics and geometry of intersections are very poorly designed and are not at all suitable for a healthy and free movement of the traffic. It is also felt that with increasing urbanisation vis-a-vis increasing vehicular traffic, level and volume of these roads are totally inadequate. With NH-34 as the main movement spine within the town, the local traffic are mixed with highway traffic, jeopardizing the traffic network both of the town as well as that of the Highway. The efficient and optimal use of the flyover is restricted due to a lack of planning and the absence of uniform and regulated volume of traffic.

### 3.1.1b. Traffic / Transportation and parking facilities

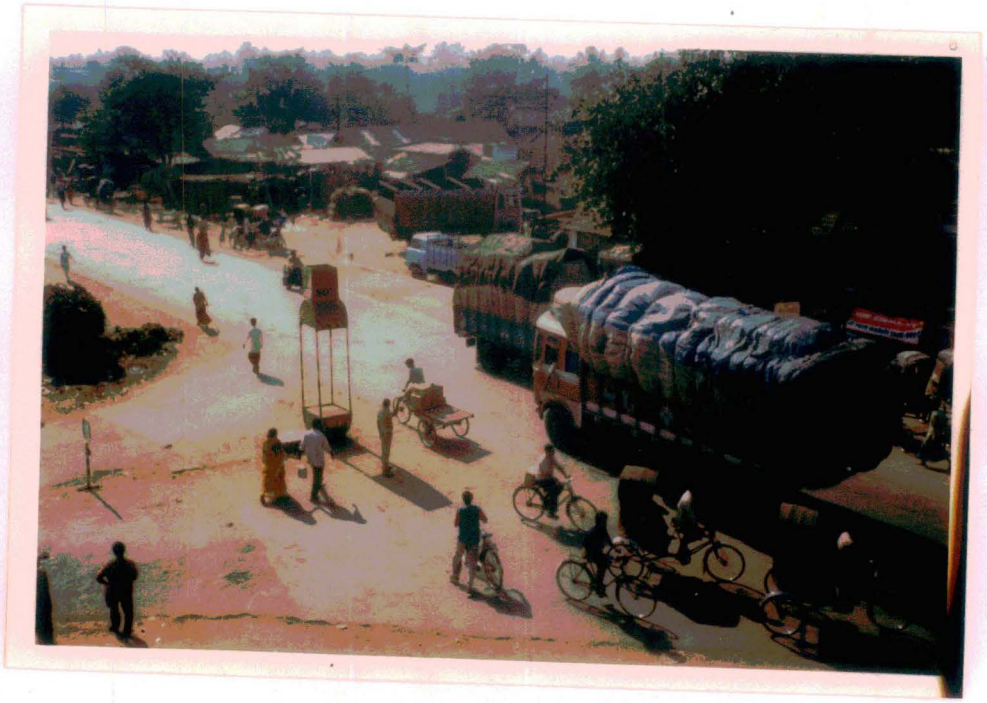
As per available information, the vehicular population of the district registered with RTO, Malda as on 28.2.95 is given below.

**Table : 3.2:** Numbers vehicles in different services.

| Sl. No. | Category of Vehicle | Number of Vehicles |
|---|---|---|
| 1 | Bus / Mini Bus | 201 |
| 2 | Taxi / Mini Taxi / Pvt. car / Jeep etc. | 1485 |
| 3 | Truck / Mini truck / Trailor / Delivery Van etc. | 2157 |
| 4 | Auto Rickshow / Motorcycle/ Scooter etc. | 9799 |
| 5 | Other like Tanker, Ambulance etc. | 34 |




1. Traffic flow on a road at midday



*2. A view of road crossing with NH34 & state highway*

ROAD NETWORK AND PARKING LOTS FOR VEHICULAR TRAFFIC

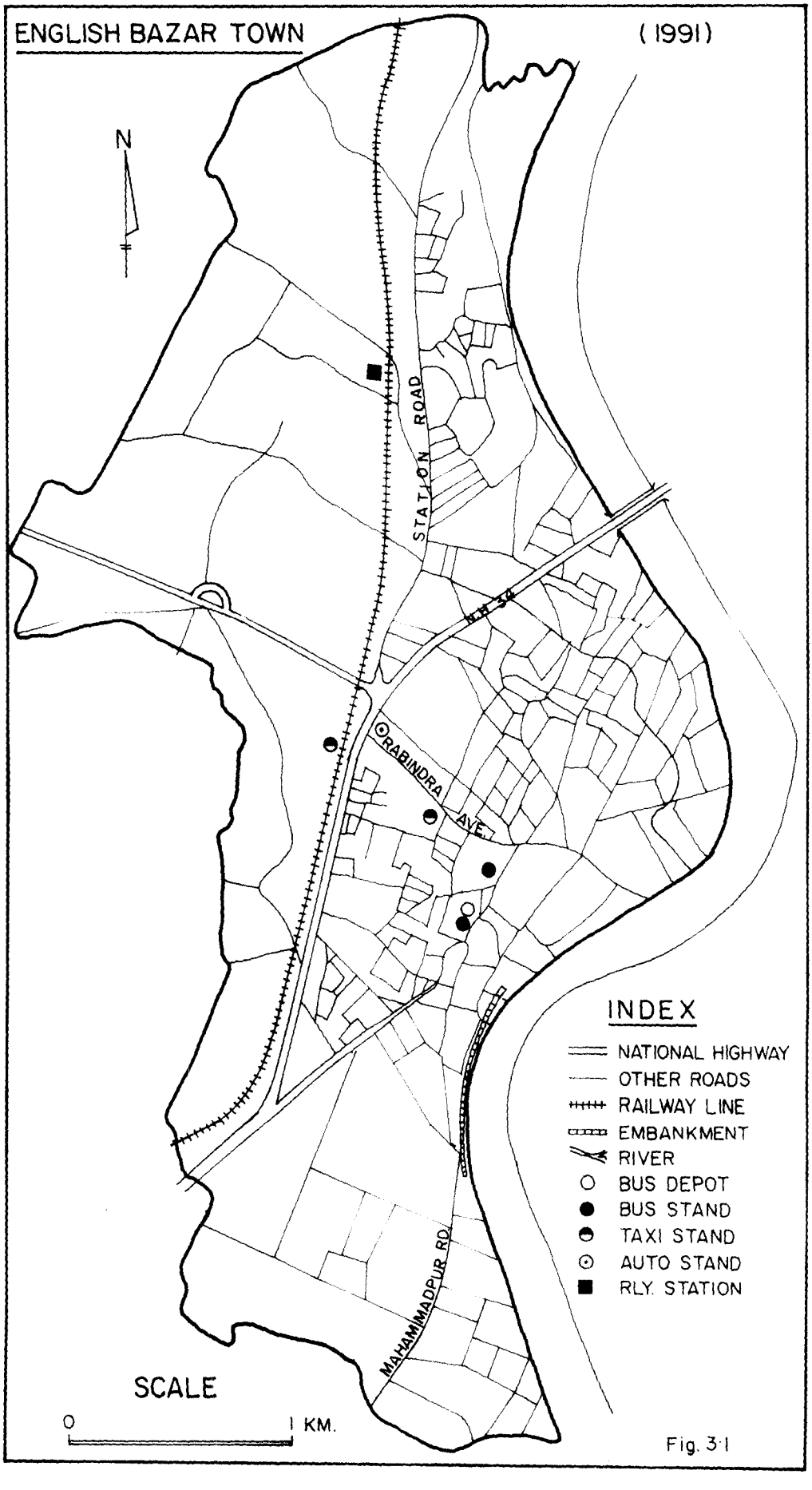



Fig. 3·1

Needless to say, the majority of the above vehicles ply through English Bazar Municipality, it being the nerve centre of the entire district. These apart, there are a huge number of registered and unregistered slow moving vehicles like rickshaws, hand driven carts etc. plying regularly at the heart of the town, constituting a nuisance and menace to the traffic besides compounding the traffic problems. (Plate 3,4).

With the growth of population coupled with the explosion of vehicular population, particularly of the registered and unregistered slow moving vehicles, the traffic problem becomes magnum in town area, which leads to delay and congestion, hapazard and inadequate parking, noise pollution, high operating costs etc. It is worth mentioning that there is a very small air strip adjacent to the town which permits landing and take-off facilities for small planes. There was a Vayodoot service thrice a week. In the perspective of rapid urbanisation of the town coupled with the increasing volume of trade and commerce as well as industrial activities in Malda in general and English Bazar Municipality in particular, necessary modification / augmentation of the airstrip is required.

### 3.1.1c. Bus services from English Bazar Town

One salient feature emerges from the table 3.2 is that the frequency of bus services is not uniform on all the routes radiating from the town. The highest frequency of bus services is observed along English Bazar-Farrakka, English Bazar - Manikchak, English Bazar - Nalagola, English Bazar - Balurghat and English Bazar - Raiganj routes. It is logical to conclude that the area located within the high frequency distance of bus services is under a great pull of the urban agglomeration.

English Bazar is situated almost on the midway between North and South Bengal. As a result a large number of buses, originating from different places, ply via this town, making it generally a compulsory halt for refuelling or services. Apart from a large number of buses, a fleet of private taxies ply regularly on the following routes carrying daily commuters. (Plate -5).

**Table 3.3. :** Taxi services from English Bazar to important villages.

| Name | No. |
|---|---|
| English Bazar - Kaliachak | 42 |
| English Bazar - Gajol | 30 |
| English Bazar - Manikchak | 30 |
| English Bazar - Bulbulchandi | 40 |

3.Flyover to avoid trafic congestion at Rathbari More

4.Private taxi stand

It is not possible to calculate the actual volume of the daily movement of passenger on different routes from and to the town as correct data are not maintained by the different organisations. Besides, most of the buses carry double or about triple of their actual seating capacity. Anyway taking the seating capacity of each bus, it is estimated that more than 5,000 passengers travel daily on one-way.

**3.1.1d. : Railway**

As the English Bazar town serves as the gateway to the North-Eastern region of India, it has good rail connections with different parts of the country. The office of the Divisional Railway Manager of Malda Division of Eastern Railway is located here. The Eastern Railway connects Malda with Calcutta and even with Delhi and Madras. The North Frontier Railway which originates here maintains railway communication with the North-Eastern States of India. The district also has a railway link with the neighbouring Bangladesh.

There is a city Booking Office in the English Bazar town. Double railway lines are available between Mahananda Bridge to English Bazar town station and between Gour Malda to Chamagram Station. Computerised reservation facility with direct link with Calcutta and Siliguri needs to be installed immediately at the City Booking Office and Malda Town Railway Station.

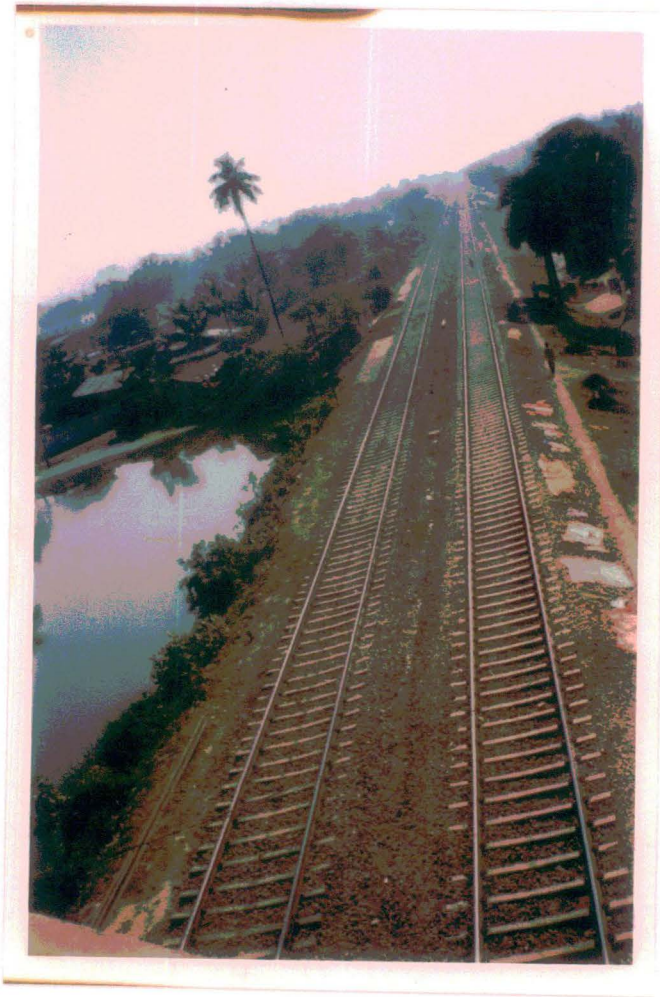
English Bazar is well served by the Eastern railway. A railway station situated at Jhaljhalia, 2 km from English Bazar, connects three lines to Katihar, Barharwa and Sealdah (Plate-6).

Station : Malda town (1981-82), Daily outward passenger : 1,269, Daily inward passenger 892.

### 3.1.2. Education

Education has the growing quality of a living organism (Smith, 1962). A complete and generous education fits a man to perform justly. Skilfully and magnanimously all the offices, both private and public, of peace and war. Education gives people a sense of independent judgement and power to distinguish between good and evil. The future growth of society depends on the investment in education at present. Formal schooling is a good index of a population's educational attainment. So, education one of the important needs of life, is a key factor for the rapid development of a town. Knowledge is linked with literacy and formal education system. The spread of value and attitude can most effectively be

5.Rickshaw stand Rathbari More



6. Railway line with connects NJP / Calcutta/ Delhi

achieved through education (Ghosh, 1985). The town has large number of primary and secondary schools, degree colleges, teachers' training college, Polytechnic institute.

The educational facilities available in English Bazar Municipality are shown in Table 3.4.

**Table 3.4.** : Educational facilities and their number.

| Sl. No. | Description | No. | No. of students | Remarks |
|---|---|---|---|---|
| 1. | Primary School | 91 | 10,212 | 87 are managed by the Board, Government of West Bengal, While 4 are managed by EBM |
| 2. | Jr. High | 7 | 6,976 | — |
| | High | 14 | 8,163 | — |
| | Higher secondary | 27 | 1,029 | — |
| 3. | Degree College | 2 | 5,903 | — |
| 4. | Teachers Training College | 1 | 240 | — |
| 5. | I.T.I. | 1 | 169 | — |
| 6. | Indira Gandhi National Open University | 1 | 130 | — |
| 7. | Polytechnic | 1 | 150 | Polytechnic is under the proposed extended area of EBM. |

In the town, there are 91 primary schools having 10,212 students. These schools are spread-over in all the wards located within the easy reach of children. The Higher Secondary education is also carried on in the colleges. On the whole, the facilities to obtain the secondary education compared to Higher Secondary standard in the town is very meagre. As the average infrastructure of the colleges is not fully satisfactory, students of higher secondary courses prefer to get admission in Higher Secondary Schools than in Colleges. (Fig. 3.2).

In view of the ever increasing growth of population coupled with a high rate of migration / emigration, the existing educational facilities fall for short of requirements and need through upgradation.

DISTRIBUTION OF EDUCATIONAL INSTITUTIONS (1991)

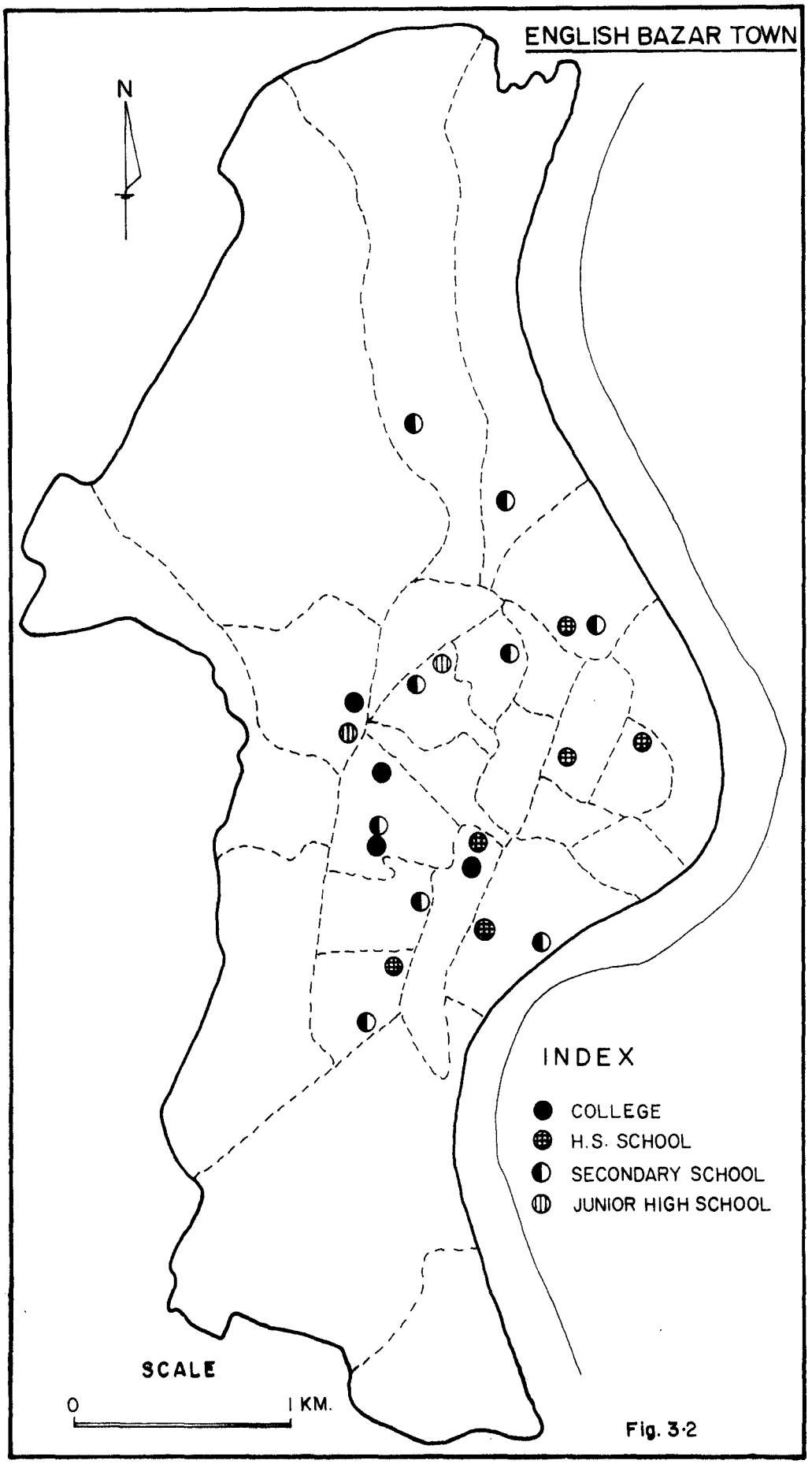



Fig. 3·2

### 3.1.3. Health

Health facilities as presently available in English Bazar Municipality are from the following source are (Table 3.5).

**Table 3.5. :** Number of beds in different health services.

| Sl. No. | Hospital / Health centre | No. | Approximate Bed Capacity |
|---|---|---|---|
| 1. | District Hospital | 1 | 629 |
| 2. | Primary Health Centre | 1 | 15 |
| 3. | Subsidiary Health Centre | 1 | — |
| 4. | Nursing Homes (Private) | 8 | N.A. |

Although the existing medical facilities are basically adequate for the present population of English Bazar Municipality, the pressure of population from outside is so high that these facilities are grossly inadequate. Moreover, the existing health infrastructure lacks in providing special health care and as a result, cases demanding such care have to be performed or referred to Calcutta. As for as animal treatment is concerned, the existing veterinary services are also inadequate compare to the requirements.

### 3.1.4. Drainage or sweage system

The drainage system of the town is in improvised form, No scientific drainage system has been developed, it is necessary to draw a comprehensive plan after proper survey of the town and outlet of all liquid pollutants should be drained out through Lakshmipur Drainage System. The liquid pollutants mainly lead to seven main outfalls of the town to surface (Fig. 3.3) drains which are pucca or Kuchha. Pucca drains cover a length of 8.50 km. The depth of pucca drains varies from 5.00M to 0.09M and width varies from 3 M to 1 M. The whole drainage system of Malda Town is most unscientific and need to be overhauled throughly. A Master plan for improvement of drainage system is necessary but for maintaining and improvement of the present drainage system, an immediate of Rs. 3.00 crores is to be required.

#### 3.1.4a. Liquid waste

All sorts of liquid wastes mainly lead to seven outfalls of the town without any treatment through surface drainage, which are either pucca or kucha. Pucca drains cover a total length of 16.87 kms. while kucha drains cover a length of 8.5

# DRAINAGE MAP
# (ENGLISH BAZAR MUNICIPALITY)

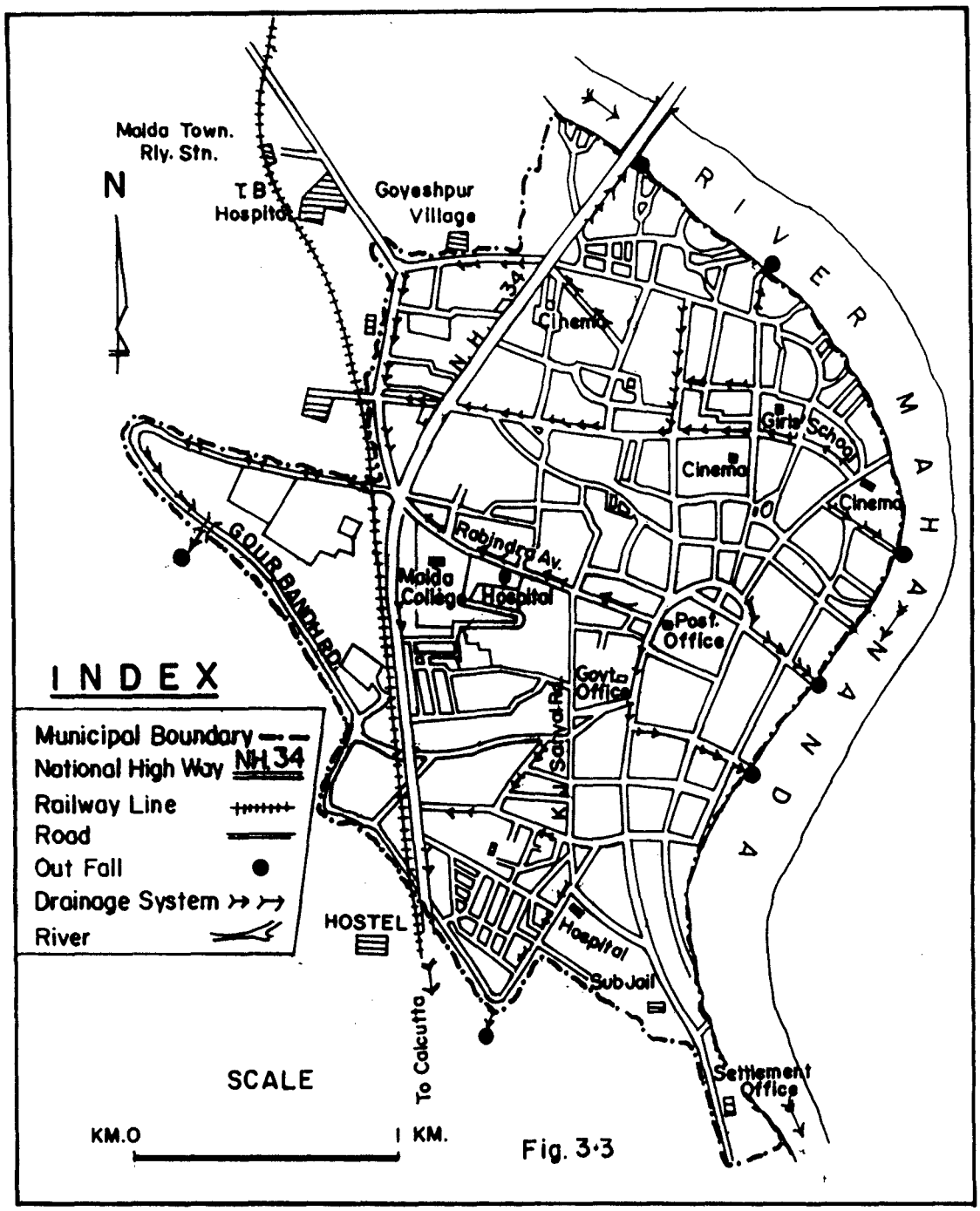



Fig. 3·3

kms. Seven out falls of English Bazar town through which liquid wastes are being disposed to the river Mahananda which ultimately leads to the river Ganges are as follow:

(i) at Fulbari to river Mahananda

(ii) at Baluchar to river Mahananda

(iii) at Mission Ghat to river Mahananda

(iv) at Gayeshpur to river Mahananda

(v) at Sarju Prasad to river Mahananda

(vi) at D.S.A. to river Mahananda

(vii) at Nurbahi to Bhatia Lakh and partly to Ganga through a linked canal during rainy season.

As such, no scientific drainage system is existing in the town. (Plate-7) It is necessary to draw a comprehensive plan after proper survey of the town and outlet of all liquid waste shall be drained out through Lakshmipur drainage basin which has already been approved and preliminary work has started. These apart, there are presently 3500 service latrines which need to be demolished and replaced by sanitary latrines.

#### 3.1.4b. Solid waste

Regarding solid waste, trenching ground has already been located near Malda Aerodrome for dumping purpose. (Plate-8).

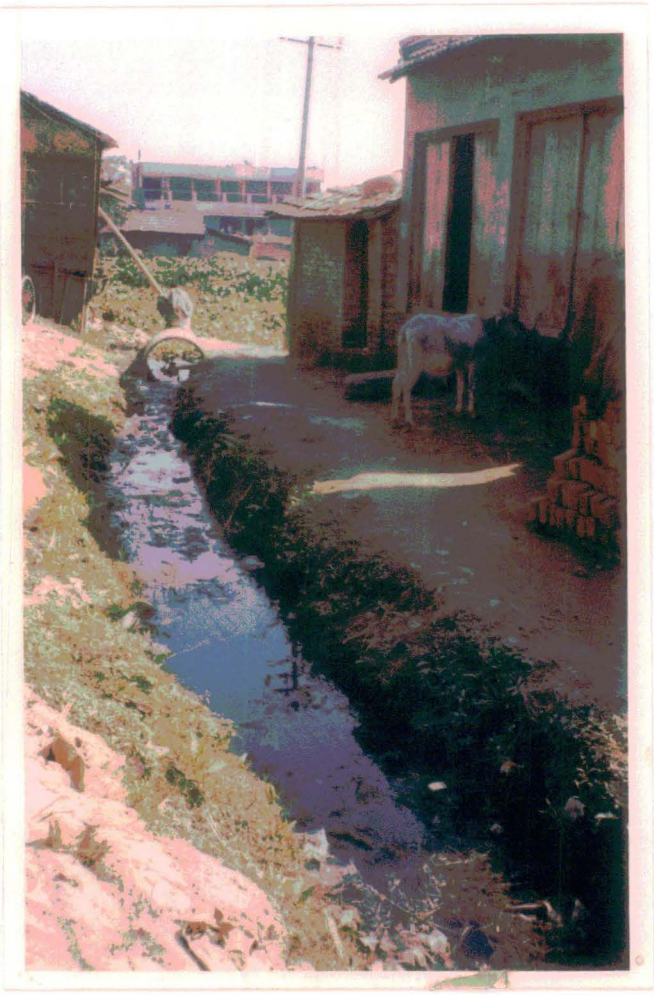
#### 3.1.4c. Treatment and Recycling of liquid and sold wastes

Sewarage treatment plants, power plants with solid waste / recycled waste as a raw material and adoption of other echo-friendly measures are also required to be set up.

### 3.1.5. Electricity and Street Lighting

The requirement of electricity of English Bazar Municipality (EBM) area is presently met by Purnea sub-station which is about 140 kms. away from the town. The power available at present is not sufficient to cater to the requirements of the English Bazar Municipality area. The problem of low voltage which is due to the long distance between Purnea sub-station and English Bazar Municipality area is a common menace to the town, involving constant hazards to the commercial / industrial activities etc. Measures for the augmentation of the Purnea sub-station have already been taken up.

7. Kancha drain and heaps of garbage in a slum



8. Outlet of a drain of to a pond

### 3.1.6. Water Supply

The present requirement of water supply is met from underground sources. The underground water is in general of good quality at an average depth of 120m. The water thus available is potable and does not require any treatment as such. At present 23 deep tubewells in addition to 657 hand tubewells form the present water supply network of English Bazar Municipality.

The scarcity of potable water is significant compared to the standard requirement of 135 litres per head per day, water is supplied to the extent of only 62.5 liters per head per day. It has been further observed that due to scanty rainfall over the years, the ground water table has received to a considerable depth. It is apprehended that in the near future these tabewells get dried up & water may not be available at all. There is a perennial source of water from the river Mahananda and intake structure may be constructed at about 5 kms. from the town. But it is observed that due to continuous siltation on the eastern bank of the river every year, the course of river is moving more and more away from the town. So it may be necessary to extend section line every year to draw water. This is a difficult task involving cost and constant maintenance and may not be techno-commercially viable.

A water supply project of Rs. 88 crores has been sanctioned to draw water from the river Ganges to combat menace of arsenic pollution in ground water. The pipeline of this project is expected to come upto Bagmari-Ferozpur at a distance of about 6 kms from English Bazar town. It is proposed that water shall be drawn from this source of Ferozpur and supplied to the town.

### 3.1.7. Water connection

Water connection makes the most basic necessity of a household. More or less water connection provided by the municipality is available all over the town. The maximum number of residential houses are connected with water lines. Besides, they have their own tube well, well, pumpset etc. In three wards viz. XXII, XXII, and XXIV, there is no municipal water connection. In these wards, the residents have their own tubewell, well, pumpset etc. for the supply of water for domestic use.

The supply of drinking water in English Bazar town is made with deep tubewells only. While the requirement of water per capita is 200 liters per person per-day. This municipality is being able to supply only 62.50 liters per person perday. English Bazar Municipality has 23 deep tubewells and 657 hand tubewells,

through which drinking water is supplied to the residents. Owing to the scarcity of rain during the preceding years supply of drinking water was inadequate. If this trend continues, deep tubewells will fail to cater the needs of the peoples. So the pipeline proposed to be drawn from the river Ganga to Sujapur (in the Arsenic Scheme) may be drawn up to English Bazar town so that drinking water as required by the people of the town may be supplied from that source. In the meantime six overhead tanks to push up have to be constructed. The pressure of water so that water may be supplied to the area. Where water supply in not yet done. The newly extended areas which covers 8.50sq.km. should be provided with water. As such five deep tubewells are to be installed and distributing pipelines is to be laid. To implement the programme, in a moderate estimate Rs. 4.00 crores are required for construction of six numbers over head tanks and Rs. 3.00 crores are required for installation of deep tubewells and lying pipe lines.

### 3.1.8. Fire Services

The fast growth of population along with rapid pace of urbanisation have resulted in an increase in the potential residential, institutional, assembly, business, mercantile, industrial and storage hazards over a period of time. These factors demand a sound and self-sufficient safety management in English Bazar Municipality is presently totally inadequate.

### 3.1.9. Parks and Play Grounds

English Bazar town is acutely in dearth of parks. At the accepted standard of one neighbourhood park for every 10,000 population, the town requires 3 parks spatially distributed over the municipal area. At present, District park on the bank of river Mahananda near court compound is one of the pleasure. The town has another park near the Malda Town station in Jhaljhalia. But these parks owing to their location at the extreme north-western part of the town, the public need is not served adequately.

The town has 18 clubs registered with Malda District Sports Association. Most of these clubs are soccer clubs. The Malda Town club stadium though not yet been completed in structure is the only centre for exhibition matches and sports meet of the town. The stadium is not adequate to meet the need of the town and one more stadium will be required in near future to meet the growing demand of the sports clubs. The town has other two new stadiums one is Hussain sha

Indoor Stadium and other is Lakhansen Outdoor Stadium which is situated near Malda Town Railway station. (Fig. 3.4).

### 3.1.10. Recreations

The scope of recreation is limited to a few cinema halls, drama houses, parks and a stadium. There is 1 public auditorium and the total number of cinema halls are only 4. As per the accepted standard the town needs a few more cinema halls and auditoriums without delay (Plate-9). In English Bazar town is rich in public Libraries. There are at present 15 Government sponsored and 8 non sponsored public Libraries in the town.

### 3.1.11. Crematorium

In English Bazar town, there is one crematorium which is located on the bank of Ganga river at Sodullapur and it is equipped with two burning pyres. The muslim burial ground is situated close to Aerodrum which is very poorly maintained.

### 3.1.12. Communication

#### 3.1.12a. Postal Services and Tele Communications

At present there is a head post office supplemented by 10 sub-post offices in the existing English Bazar Municipality. So far as telecommunication service is concerned, the exchange are old and obsolete and all the telephone lines are auto-manual (Plate-10). Upgradation and extension of postal & communication services is required considering the level of urbanisation English Bazar Municipality area in future years.

**Table 3.6 :** Wardwise distribution of Post Office in different wards.

| No. of Post Office | Location of Ward No. | Total No. |
|---|---|---|
| One | II, V, VI, IX, XI, XIV, XVI, XX, XXI. | 9 |
| Two | VIII, XVIII, | 2 |
| Post office cum Telephone Exchange | VIII, | 1 |
| **Total** | | **12** |

Head post office is located in ward VIII. The postal delivery is made 2 time daily and the clearance from head post office is hourly but from sub-post offices 2 times only. At present command population per post office is 10,000 approximately. So the postal service is not satisfactory in the town.

9. Modern auditorium

10. Front view of CentralTelephone Exchange.

IMPORTANT SOCIO-ECONOMIC FUNCTIONS (1991)

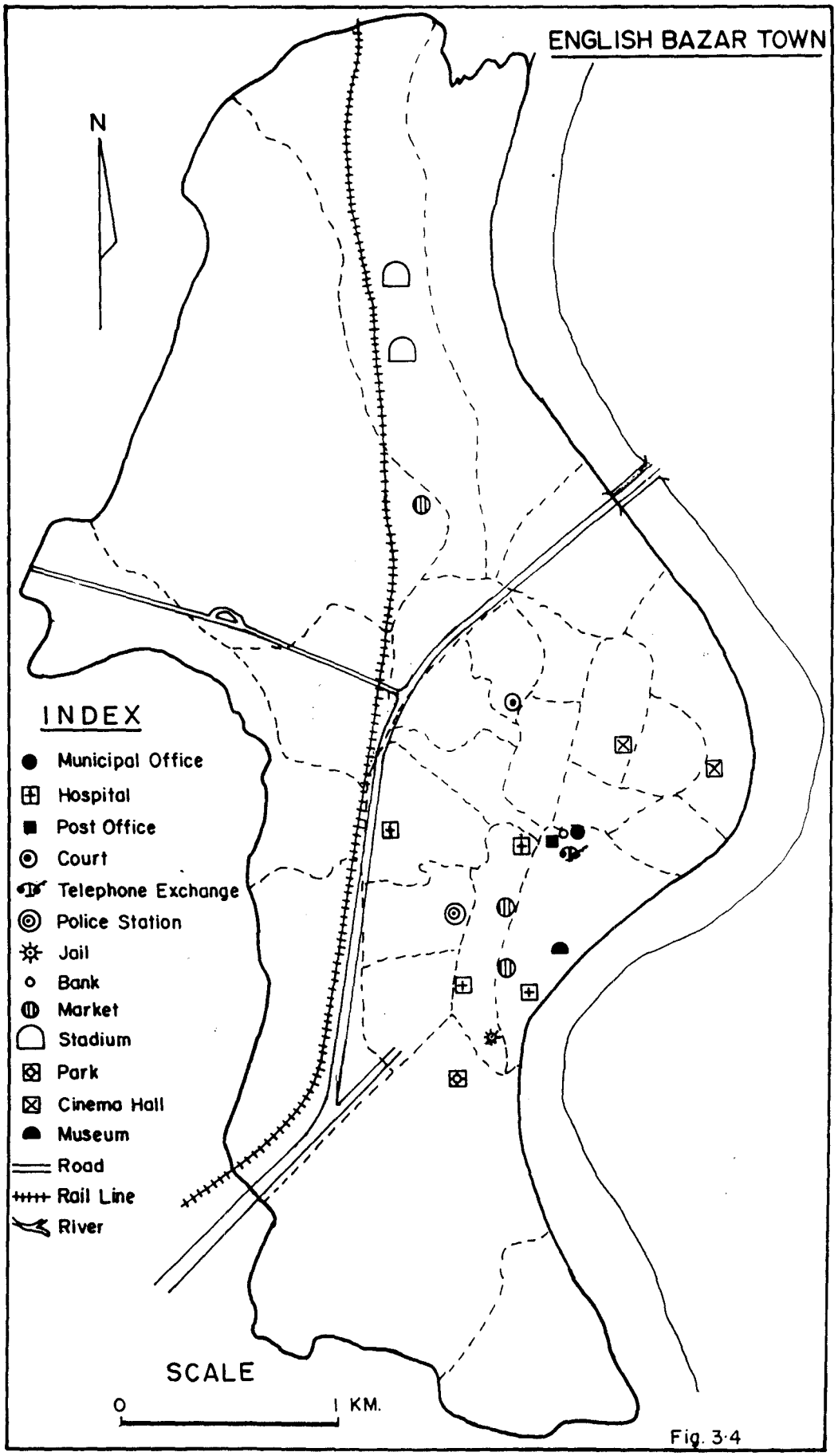



Fig. 3·4

The number of telephones has been increased from 3200 to 6000 during 1981-1991 and at present this number has become 10,000. So, 30 lines are available for 2000 persons.

### 3.1.12b. Finance

The financial agency is one of the most important to determine the level of economic development. The economic development of any town is closely linked with the banking activity carried on within in and the banking is an important index of economic development. The financial agencies available in English Bazar town are shown in Table 3.7.

**Table 3.7 :** Banks and the account holders nos.

| No. of Bank | No. of Accounts/ offices | Annual Financial Transaction (in crore) |
|---|---|---|
| 14 | 1,74,237 | 2,476.06 |
| L.I.C. of India office | 2 | |
| Any other source : | | |
| Peerless saving | 1 | |
| Private saving co. | 10 | |
| Post office sub | 12 | |
| Post office head | 1 | |

In English Bazar, out of 14 banks 9 are Nationalized. Among these, State Bank of India is the largest having 2 branches and total 130 employees followed by United Commercial Bank with 76 employees. The 6 non-nationalised banks are Indian Overseas Bank, Gour Gramin Bank with 2 branches,Co-operative Bank with 2 branches, and U.B.I. Altogether 500 employees are working in these banks. Central Bank of India is also the lead bank. The command population per bank is about 4000 persons. All the banks are concentrated in CBD. The Regional office of State Bank of India which is lying was N.H.34 (ward XXI). The main office of State Bank of India which is situated in ward VIII near head post office. There is no bank in the western part of the town. The wards I, II, XXIII, are not getting the easy accessibility of banks.

## 3.2. DEMOGRAPHIC CHARACTERISTICS

### 3.2.1. Housing

Plot size as well as housing forms very important as well as largest component in a city structure. These not only have significant impact on the social and economic life of the city, but also make the total city image and its social and cultural life. The studies of plot sizes in a town reveal the land-man ratio, land values as well as stage of development of the urban centre. Living conditions in the residential areas are inter-related with the houses, plot sizes and environment. In order to understand and identify the problems, it is essential to examine the living conditions. The qualitative aspect the living environment covers study of living areas in terms of structural conditions, standards of services. relationship of housing areas and work centres, availability of amenities like education, health and recreation, availability of services like water supply, drainage and transport facilities, while quantitative aspects covers tenure status, housing shortage etc.

As per 1991 census there were about 26,000 buildings (23,000 residentials and 3,000 office buildings). About 35% of the urban population in this town live in slums without access to basic infrastructure facilities.

Infact, the growth in housing facilities has failed to keep pace with population increase (The population increased by 28 times during 1869-1994, where as English Bazar Municipality area increased by about 2.6 times during the same period), resulting in a rise of "Privacy Index" as also proliferation of urban slums and squatters. As indicated earlier, the average density of population is 12,694 persons per $km^2$, which itself is very high compared to any standard norm. It may be worth mentioning that towards the western and southern parts of the town, population density is low, where as the same is much higher than the average density as indicated in the heart of the town. This is the vital parameter for designing / planning housing facilities for the town as a whole.

### 3.2.2. House types

From the sample survey made in English Bazar Municipality mainly three type of residential houses are found one storied, two storied and three storied building. These three types of houses are very unevenly distributed over the English Bazar Municipality. On the whole 53.1% of the total number of residential houses are English Bazar Town. Thus, there is a sharp difference between one storied and two and three storied buildings. About 40.2% are being two storied buildings

and only 6.7% of the total residential buildings of are three storied buildings. The Table 3.8 gives a clear picture of house type in the town.

**Table : 3.8.** Number of storied in different types of houses

| Type | Number | Percentage of total |
|---|---|---|
| One storied | 255 | 53.0 |
| Two storied | 193 | 40.3 |
| Three storied | 32 | 6.7 |
| **Total** | **480** | **100.0** |

### 3.2.3. Floor of the Houses

In the town there is a wide variation in the types of floors. Most of the cases the floors are cemented. But kuncha floor is also observed in the houses built in the peripheral areas of the town and the extreme corner of the southern boundary. According to the data available, in English Bazar the highest proportion of the residential houses are made of cemented floors which is 72.5% of the total and the lowest percentage of houses has the kuncha floors which represents 1.67% of the total. The table 3.9 represents actual percentage of floor type.

**Table 3.9 :** Nature of floor in houses.

| Type | Number | Percentage to total |
|---|---|---|
| Cemented | 348 | 72.5 |
| Kuncha | 8 | 1.6 |
| Mosaic | 84 | 17.5 |
| Partly mosaic and cemented | 40 | 8.4 |
| | **480** | **100.0** |

These, however, highly interesting to note that 17.5% of the residential houses floors which definitely a sign of affluence. In most of the cases the new buildings those are constructed have mosaic floors comparatively in the older buildings that constructed earlier have red and black cemented floors. Besides about 8.33% of the houses are partly mosaic and partly cemented floors. This type of

floors are generally found in two storied and three storied buildings where the ground floor is constructed with cement and remaining two floors are mosaic.

### 3.2.4. Floor Space

One of the most important indications of living standard of people is the actual floor space available in the houses they live in English Bazar. The actual size varies widely of the total number of houses surveyed. Nearly 0.83% has floor space ranging between 501-700sq.m. It means that a very small number of houses in under this category.

Table 3.10 shows that the majority houses surveyed have a floor space ranging between 701 and 1500m$^2$. Out of them again the largest number has a floor space from 1001 to 1500. Thus, almost 65% of the total houses surveyed belong to the medium group and the number of houses decrease with increasing area of floor space.

This further necessary to note in this connection that there is only one house with a floor space of 501-700m$^2$ and this happens to be the smallest while the largest floors found in the case of two houses exceed 400sq.m which is any consideration is very large. Of course in the case of large floor space, the houses are invariably more than one storied, and used by more than one occupants that is inhabited by a number of families.

**Table : 3.10:** Size of floor space in m$^2$.

| Size of Floor space in m$^2$ | Number | Percentage to total |
|---|---|---|
| <500 | 4 | 0.83 |
| 501-1000 | 128 | 26.67 |
| 1001-1500 | 184 | 38.33 |
| 2001-2500 | 52 | 12.83 |
| 2501-3000 | 48 | 14.70 |
| 3001-3500 | 12 | 2.50 |
| 3501-4000 | 12 | 2.50 |
| >4000 | 8 | 1.64 |
| | **480** | **100.00** |

### 3.2.5. Wall of the Houses

In house types, the walls make an important feature where materials used for its construction vary. In English Bazar two types of walls are found in the town.

These are brick walls and walls made of mud and brick. Most of the houses are constructed with brick using cement and sand while the second category used mud as a building. We get an idea that brick wall accounts for 91.67% of the residential houses in the urban sector which is much higher than the other type of walls. The later is representing 8.33% to the total.

### 3.2.6. Roof of the Houses

In English Bazar Table 3.11 shows various types of roofs are found in the residential houses. Different types of materials are used for the construction of the roofs (Plate-11). Such as concert roof, tile roof, corrughated sheet roof and roofs constructed using concrete and wooden beams across are observed in the town. However the highest percentage of roofs that is 87.5% of total are found to be made of concrete spread all over the town. This type of roof called R.C.C. roofs represents over 87% of the total. In comparison, other types taken an unimportant place, being much less popular than the concrete roofs.

**Table 3.11. :** Types of Roof in the houses

| Types of roof | Number | Percentage to total |
|---|---|---|
| R.C.C. | 420 | 87.50 |
| Tile | 12 | 2.50 |
| Corrugated sheet | 8 | 1.67 |
| Concrete and wooden Beams | 40 | 8.33 |
| | **480** | **100.00** |

Roofs belonging to other types generally associated with the poor income group are found in the extreme south of the town besides occurring in scattered fashion in many other parts.

### 3.2.7. Family Size

In the study area, number of the person living in a family is widely at variance. For instance starting from 1002 heads in a family. The size goes, upto above ten heads. The family consisting of 3 to 4 persons is a common rule immediately followed by the families consisting or 5 to 6 heads. These two groups together represents nearly 73% of the total families.

*11. A view of common place roof of a modern building*

**Table 3.12 :** Family size and their percentage.

| Persons / family | No. of families | Percentage to total |
|---|---|---|
| 1-2 | 12 | 2.50 |
| 3-4 | 178 | 36.67 |
| 5-6 | 170 | 35.82 |
| 7-8 | 68 | 14.17 |
| 9-10 | 8 | 1.67 |
| > 10 | 44 | 9.17 |
| **Total** | **480** | **100.00** |

The lowest percentage is 1.67 where the number of persons in the family is 9 to 10. The percentage decreases with increase, in the number of persons in a family. Thus 14.17% of the families have 7-8 persons and 9.17% of the families have more than 10 heads. It may thus be observed that, on an average, the size of the family is large and in many cases the size is very large for an urban area.

### 3.2.8. House Ownerships

In English Bazar Municipality three types of ownership of houses are observed.

1. Houses lived in by the owner.
2. Houses partly used by the owner and partly rented.
3. Rented houses.

In the first category that of owned houses, the land lord lives in his or her own house. In the second type both the land lord and the person rented to live in the same house. The third type indicates that the house is for only renting purpose. According to data available through sample survey, the Table 3.13 gives an idea about the distribution pattern of owners of houses in English Bazar town.

**Table 3.13 :** House system in English Bazar Municipality.

| Type of house | Number | Percentage to total |
|---|---|---|
| House used by owner | 376 | 78.33 |
| Owner and rented houses | 88 | 18.34 |
| Rented | 16 | 3.33 |
| **Total** | **480** | **100.00** |

It thus reveals that the largest percentage of the residential houses are used by the owners for living purpose. In 78.33% of the residential houses, people live in

his or her own house. This is the quite natural where people have settled in the town. The majority of the people seen to be permanent settlers having built their own houses. It is also a trade centre. In comparison, houses used by the owners for his living and partly rented have taken second place representing 18.33% of the total residential houses, of the town. It is really surprising to note that rented houses comprise a very small section representing only 3.33% of the total residential houses. People who are mainly Govt. service holders or engaged in such activities staying for a short time stay in the rented houses.

### 3.2.9. Occupations

A study of the occupational character of each of the family head reveals that they can be grouped into five broad categories on the basis of data collected. This is given in the following Table 3.14.

**Table 3.14 :** Occupational patterns and their percentages.

| Type of occupation | Number | Percentage to total |
|---|---|---|
| Service | 276 | 57.50 |
| Business | 152 | 31.67 |
| Retired servicemen | 44 | 9.17 |
| Service & Business | 4 | 0.83 |
| Professional service | 4 | 0.83 |
| | **480** | **100.00** |

It may be observed that the largest number of people is engaged in services which amount to 57.5% of the total, followed by businessmen and retired persons. As a matter of fact, the first two groups together represents almost 89% of the total employed people. The occupational character of the urban residents is clearly revealed by the data shows that it consists of two basic types, namely service and business. The greater importance of the first further reveals the fact that as the administrative head quarters of the district, a large number of public as-well-as offices have spring up have giving employment to the largest section of earning people. At the same time the importance of trade and commerce is brought out by the high percentage of people involved in such activities.

### 3.2.10. Bed Rooms in the Family

The living amenities in the residential houses make an interesting study in regard to the standard of living of the urban residents. For the purpose the number of

the bed rooms available in the residential houses has been taken for consideration Table 3.15.

**Table 3.15 :** Number of bed rooms in different ranges.

| Range of Bed Rooms | Number | Percentage to total |
|---|---|---|
| 1-2 | 152 | 31.66 |
| 3-4 | 212 | 44.17 |
| 5-6 | 68 | 14.17 |
| 7-8 | 44 | 9.17 |
| 9-10 | 4 | 0.83 |
| | **480** | **100.00** |

The number of bedrooms in a house depends on the total floor space and the number of persons in a family. It is evident from table 3.15 that the largest number of houses has 3-4 bed rooms. Which in terms of percentage it works out 44.17% of total inhabited residential houses. The range is however, every wide beginning from 1-2 rooms and inversion to 9-10 in certain instance. Houses having 1-2 rooms take the second place in percentage (31-67%) of the total and houses consisting at 5 to 6 bed rooms came next to it. It is worth mentioning that more than 9% of the houses have 7-8 bed rooms, which is really a very high figure though in such cases one has to consider the fact that more than one family live in such houses. The number of bedrooms rises to 9 to 10 in only one of the houses surveyed for this purpose.

### 3.2.11. Drawing rooms

In the town there is a sharp difference between the number of drawing rooms Table 3.16.

**Table 3.16 :** Numbers of house with drawing rooms.

| No. of Drawing room | Number of houses with drawing room | Percentage to total |
|---|---|---|
| Nil | 88 | 18.83 |
| One | 304 | 63.34 |
| Two | 84 | 17.00 |
| Three | 12 | 0.83 |
| | **480** | **100.00** |

Table 3.16 presents data on the number of drawing rooms available in a residential

house in English Bazar. It is seen that the highest number of houses representing 63.39% of the total have one drawing room. Nearly 17.50% of the houses have two drawing rooms while more than 18% of the residential houses do not have any drawing room. But residential houses with three drawing rooms are very rare which again shows the cases where the house is divided into a number of portions for renting out.

### 3.2.12. Houses with Dining room

The English Bazar the majority of the residential houses comprising 56.67% have one dining rooms. Table 3.17 presents the actual data on the availability of dining rooms.

**Table 3.17 :** No. of houses with Dining room.

| No. of Dining room | Number | Percentage to total |
|---|---|---|
| Nil | 116 | 24.17 |
| One | 272 | 56.67 |
| Two | 92 | 19.16 |
| | **480** | **100.00** |

Table 3.17 furnishes data in respect of dining rooms and it shows that about a quarter of the total houses surveyed do not have this facility Residential houses having two dining rooms represents 19.17 percentage of the total number. The houses having no dining rooms or space for that purpose usually use the kitchen for dining.

### 3.2.13. Houses with Store Room facility

Among the other facilities making living comfortable is a store room for keeping study materials of the family. It is observed that store room is not present in many of the houses, comprising about 32.50% of the residential houses.

**Table 3.18 :** Number of houses with store room.

| Type of occupation | Number | Percentage to total |
|---|---|---|
| Nill | 156 | 32.50 |
| One | 280 | 58.33 |
| Two | 40 | 8.34 |
| Three | 4 | 0.83 |
| | **480** | **100.00** |

Table 3.18 gives on information about 58.33% of the houses have only one store room and less than 9% has more than two store rooms. Three store rooms make a rare case, representing only 0.83%. Normally, where the building is two storied or three storied, the number of store rooms increases.

### 3.2.14. Houses with Kitchen facility

One of the most important basic facilities of a residential house is kitchen which if not separated from the bed rooms will given rise to many problems including that of health. However, the majority of the houses (63.33%) are equipped with one kitchen and almost 32% of the houses have more than one kitchen.

**Table 3.19 :** Number of houses with kitchen.

| No. of Kitchen | No. of Houses with Kitchen | Percentage to total |
|---|---|---|
| Nill | 20 | 4.17 |
| One | 304 | 63.33 |
| Two | 152 | 31.67 |
| above two | 4 | 0.83 |
| | **480** | **100.00** |

But there is no kitchen in over 4% houses which indicates the low standard of living for the people occupying those houses.

### 3.2.15. Houses with Bathroom

Bathroom makes another basic necessity. In English Bazar, five categories of houses are found in terms of availability of bathroom. The most important fact regarding this is that there is no house without a bathroom though the number varies widely from 1 to 5.

**Table 3.20:** Number of houses with bathroom

| No. of Bathroom | No. of houses | Percentage to total |
|---|---|---|
| 1 | 192 | 40.80 |
| 2 | 212 | 44.17 |
| 3 | 32 | 6.67 |
| 4 | 36 | 7.53 |
| 5 | 4 | 0.83 |
| | **480** | **100.00** |

According to table 3.20 about 40% of the houses surveyed has one bathroom and the number increases to two for each house (44.17% of the surveyed houses.) The number of houses is decreasing with number of bathroms and there is at least one house among the 120 surveyed which has 5 bathrooms. It may, however be mentioned in this connection that houses having more bathrooms generally consist of more than one flats. On the whole, the living condition, as revealed in the survey, is not very poor except in the case of those having no separate kitchen or dining room.

### 3.2.16. Houses with Latrine services

Latrine problem isone of the most important problems in the town. The sample study was made for finding at distribution of latrines Table 3.21.

**Table 3.21:** Number of latrine per residential house.

| No. of Latrines | No. of houses with latrines | Percentage to total | Number of wards |
|---|---|---|---|
| 1 | 144 | 40.00 | 20 |
| 2 | 272 | 56.67 | 3 |
| 3 | 20 | 4.17 | 1 |
| 4 | 40 | 8.33 | 0 |
| 5 | 4 | 0.83 | 0 |
| | **480** | **100.00** | **24** |

Table 3.21 shows the position of latrine in the residential houses in English Bazar. There is a great variation in availability of latrine in the houses of each ward. The largest number of houses comprising 56.67% of them have 2 each. It increases to 3 and 4 for another 4.17% and 8.33% of the houses respectively. About 30% of the houses however have one latrine each where as at least 0.83% of the houses have 5 latrines. This heartening to note that there is not house without a latrine (Plate-12). The type of latrine a clear picture emerges from the following table 3.22.

**Table 3.22 :** Type of the latrine and their percentage.

| Percentage | No. | Percentage to total | Total ward |
|---|---|---|---|
| Sanitary | 416 | 86.67 | 17 |
| Comod system | 40 | 8.33 | 2 |
| Service Previes | 26 | 5.00 | 5 |
| | **480** | **100.00** | **24** |

12. A view of toilet

13. Siltation on the river Mahananda

From Table 3.21 it is visualised that about the type of latrines in the town. More or less sanitary latrines are more common than the other types existing in almost 86.67% of the total residential houses. It is well built and of Indian type. Next to this type is the comode which is of English type. This represents 8.33% of the total 120 sample residential houses of the town. Mainly this type of latrine is observed where the number of latrine in a house is more than one. The number of service privies are still found in about 5% of the total residential houses.

## CONCLUSION

The foregoing discussion reveals that the socio-economic functions of the town under study are not satisfactory and can not arise much hope. The development of English Bazar town though has its start with the beginning of the present century. the socio-economic e.g. education, health, finance, transport and other urban amenities have limited growth and those somehow feed the inhabitants of the town and adjacent areas. But its march late and population growth rates in the town during the last few decades were so high that the amenities in the town became in sufficient for the dwellers of the town. The town suffers from problems of transport and communication, health services, drinking water supply etc. Some of these problems have become acute as the town has to feed its adjoining areas as well as neighbouring districts. In the town sewerage system is unsatisfactory as well as unhealthy. no proper garbage clearance is done and proper garbage pits on the roadsides are absent.

In English Bazar Municipality 9240 number of holdings are occupied with building. Where as 5110 holdings are with water connection 937 holdings are with service privies 1180 holdings are with vacant land and ponds. In English Bazar, houses are mainly one storied with cemented floor, brick walls and concrete roofs maximum houses are constructed with 1000 to 1500sq. ft. where people live in their own houses with three to four and five to six family member. Head of the family is mainly service holder and businessman. Mainly houses are furnished with three to four bed rooms, one drawing room one kitchen, two bathrooms and latrine (Sanitary type). It is noticed that each and every house has connected with electricity Maximum number of residential houses are connected with water lines.

# CHAPTER FOUR

# MAJOR PROBLEMS

## INTRODUCTION

The area and population of an urban centre increase with the urbanisation of the region. This advancement is the factor for assembling of less advance people who try to utilize the amenities made for the urban dwellers and thus many problems are generated. India and many other developing countries are suffering all the problems of urbanisation, often they have population desnities much higher than many western cities. Due to population pressure on the one hand and the marginally improving living standards on the other, the demands for urban services are steadily increasing. The gaps between available urban infrastructure and their demand among the public have been increasing continuously due to resource constraints. There is inequitable distribution of available services among different segments of population and poorer sections. They comprise nearly half of the total urban population and hardly participate in the benefits of the available urban services. Thus, each and every town is facing the problem of deficit and uneven distribution of urban amenities. The town under study has many of such problems some of which are very acute and need attention for identification. The chapter deals with such problems which were identified at the time of field study. These problems can be grouped into physical, socio-cultural, institutional, economic and infrastructural ones. However, in reality, they occur simultaneously in complex interrelations. (Jana, 1980) However, historical background of the town has also played for its backwardness.

## 4.1. PHYSICAL PROBLEMS

English Bazar is situated on the left bank of the river Mahananda.The general appearance of the past of the area is that of a low-lying plain, sloping gently towards the south presumably in which the river flow. The north-eastern part of the district having characteristics of the barind is an undulating country interspread with ravines.

### 4.1.1. Land Barrier

River Mahananda has bifurcated the Malda Town with its 20mt. wide and 6.4km. long stretch and act as a physical barrier creating problems. Mahananda bridge

on the river is the only way used for the movement from the eastern part. But the bridge always suffers from traffic jam which creates delay in the movement. At times of the traffic jam over the bridge, the only alternative is to cover a longer path to reach to the northern part of the town from its southern part.

### 4.1.2. Stagnation of water and Drainage

As the neighbouring areas except the west are higher than the basin. it suffers from poor drainage system. At the time of floods, heavy siltation occurred on the bed of the river. So, agricultural lands are remained submerged with water for a long period and damage major crops. Moreover, communication systems get disrupted totally and affected the drainage intern. The basin is one of the flood-prone areas of the district and flood occurs almost every year. The town is elongated in a north-south alignment along the National Highway 34 and the main river Mahananda (Plate-13).

Floods are common in the region. Some of these are very devastating in nature. Sometimes, a huge amount of crops, animal falks and human lives have been lost in natural calamities. One such flood recently (1978) occurred in the town. The whole English Bazar town remained under water for 15 days. Lakhs of people were homeless and thousands of cattle were washed away is the district. All agricultural crops were damaged and lakhs of people spent their days standing on knee-deep water. The nature of devastations and its other effects can be realised from accompanying photographs. Some times, cultivation of crops is delayed and the production is less. The agricultural operations are also affected by natural calamities.

Principal causes of the floods are : (i) The Mahananda basin suffers acute problem of drainage disposal resulting in stagnation of water for a long period and a little amount of rain at that time causes floods. (ii) Intensive and concentrated rains with short period is responsible for floods in the basin. The rate of down pour exceeds the rate of disposal because of low grading and (iii) Some times floods occur due to heavy discharge of water from barrages of river like Kalindi and Ganga.

Among the natural calamities cyclones are the frequent features in the period during which the S-W Monsoon current prevails. Agricultural operations are also affected by natural calamities. Some of these are very devastating in nature. Some times, a huge amount of crops, animal falks and human lives have been lost in natural calamities.

Farmers in the town very much depend on the Monsoon which is the primary source of water for the cultivation of crops. But monsoon is sometimes uncertain and late in arrival and affects the agricultural operations resulting in low area and production. On the contrary, the agricultural operations are also affected by heavy and concentrated rains which create stagnation of water in the fields and floods.

## IMPACT OF THE FLOOD - 1995

The general rainfall of Malda district is low in comparison to other districts of West Bengal. In 1995 at the onset of monsoon the rainfall was fairly good and wide spread. People were very happy on the prospect of good crop. But from 25.09.95 and onwards there was unprecedented heavy rainfall which inundated whole English Bazar town. All roads were under knee deep to chest high water. The estimated rainfall between 25.09.95 and 28.09.95 was 770m.m. which is an all time record of English Bazar, Most of the mud built houses have been grounded. Some old brick built houses have been collapsed. Electricity and water supply system were disrupted. Out of 23 pump houses, fifteen pump houses were inundated by flood water, resulting in damage in machineries. However, with the initiative of West Bengal State Electricity Board Employees and employees of Water Works Deptt. water supply was resumed fully within two days. With the help of district administration, English Bazar Municipality undertook relief operation vigorously. Marooned were rescued and sheltered in schools, colleges and temporarily erected shelters with polythene. Dry foods were provided and "atta", wheat and rice are being distributed among flood victims. The loss of municipal properties are in-repairable unless Government comes out with generous help to this municipality. On a primary assessment it revealed that all roads were damaged. Drainage system has totally collapsed. Markets have been damaged. With the inundation of pump houses the machineries incurred heavy damages. The municipal vehicles are also damaged. For restoration work the require amount is as follows :

**Table 4.1 :** Tentative cost of Restoration following items (1995)

| Sl.No. | Description | Tentative cost of restoration |
|---|---|---|
| 1. | Roads | Rs. 84.66 lacs |
| 2. | Drain | Rs. 23.90 lacs |
| 3. | Culvert | Rs. 22.50 lacs |
| 4. | Markets | Rs. 24.80 lacs |
| 5. | Water works | Rs. 21.26 lacs |
| 6. | Vehicles | Rs. 1.76 lacs |
| 7. | Electricals | Rs. 0.66 lacs |
| 8. | Sanitation | Rs. 6.05 lacs |
| 9. | Municipal school buildings | Rs. 1.23 lacs |
| 10. | Parks | Rs. 1.20 lacs |
| | | **Rs. 188.02 lacs** |

A part of this have been received from Govt. so the complete work could not be done properly.

**Flood - 1998**

In 1998 eight out of 25 wards of English Bazar Municipality is under the grip of flood. Preliminary estimate upto 09.09.98 is given Table 4.2. (Plate-14).

**Table 4.2 :** Tentative cost of Restoration following items (1998).

| Sl. | Description | Damaged caused | Tentative Cost of Restoration |
|---|---|---|---|
| 1. | Road | 5.0 K.M. | 15.0 lacs |
| 2. | Drains | 2.5 K.M. | 9.5 lacs |
| 3. | Community latrine | 30 Nos. | 3.0 lacs |
| 4. | Tubewell | 20 Nos. | 1.5 lacs |
| 5. | Street light | 20 Poles | 1.0 lac |
| 6. | Mud houses | 400 Nos. | 5.0 lacs |
| | | | **35.0 lacs** |

14. Flood - 1998

## 4.2. INSTITUTIONAL PROBLEMS

### 4.2.1. Landuse Problems

Landuse is a burning problem, throughout the country and more so in the vicinity of urban areas, where land has been over used and misused, at the same time the pressure of population on the land has been increasing. There are two problems concerned with landuse viz. intensive use of the land so as to achieve maximum possible profit and changes in landuse from rural to urban which involves the actual loss of land from a particular landuse that should permissible only after estimating the net loss in terms of its production and exploring the possibilities of its compensation. It is essential to examine the historical and intercessional growth of these towns and class of towns as influenced by sites and situations, pattern of change in urban landuse with an estimate for the future, relationship existing between the morphology and landuse and lastly landuse planning (Ataullah, 1985).

An attempt has been made to study the various categories of landuse together with locational and historical background. Various functions which the town perform have been studied in relation to urban population for the determination of problems created by man to meet their certain requirements. The residential areas cover the majority of the land area in the town with a CBD at the centre. Like most of the towns in the country, the town under study has similar landuse characteristics and mixed pattern.

Comparative figures for various uses also reflect the inconsistency of distribution of quantum of land under various uses. Higher utilization rate can be achieved by vertical development particularly for residential area. Apart from these facts, this town suffers from disparities in terms of densities, amenities and service. These inconsistencies need to be minimized in the future development of them on the basis of Development Plan, which should spell out the proposals in this respect.

### 4.2.2. Inter-relationship of Different Uses

The landuse pattern, which has presently emerged, is an outcome of successive decisions both conscious and unconscious, formal and informal taken during the past. The outcome is reflected through the existing landuse pattern. Even a glance of the existing landuse map gives an impression that land-use pattern evolved till this date is not satisfactory. Like all other Indian cities, the city centre is the main hub of multifarious activities. Many activities have found their places

in this hub even though they do not form compatible relationship with commercial, residential and other uses in the areas. The saw mills and timber godowns are located at eastern part of the city along with State High way (N.H. 34), but in close proximity of the residential areas as the essential requirements for saw mills and timber godowns, railway siding and proper accessibility from the regional roads are common there.

### 4.2.3. Incompatible Landuse

A detailed land-use survey together with studies in respect of traffic, living conditions etc. have reflected some land-uses as incompatible. The basic considerations for identifying these uses have been performance characteristics of land-uses, nature of industries and workshop, traffic hazards, incongruous nature of the use with the surrounding areas.

### 4.2.4. In efficient Landuses

Some of the Government offices, educational institutions and others are functioning at places which are not suitable for these activities. Moreover in some cases the land which is at present utilised by them can be utilised much more efficiently for other uses. Some landuses which are considered as inefficient are : whole sale fish trading at Netaji market, Potato and Onion whole sale market of Netaji Market. Again Govt. and private offices, Rail hospital, slums are located on railway lands.

### 4.2.5. Selection of Norms and their Application

For allocating appropriate proportions of land to different uses, the norms selected are based on Webster (1958), supplemented by Indian standard. Normally Webster standards have been followed, but variations have been allowed keeping in view the needs of the towns and their neighbouring regions.

The main problem of residential area is lack of space and over-congestion around the CBD. In developing countries, the cities are facing a problem of over-crowding which is the result of the high intensity of residential landuses. Overcrowding again is reflected in the densities of houses and households (Yadav, 1979). According to Webster, in the average city about 49% of the developed area is in residential use. The India standard for this use is also the same. In English Bazar town it is 53.7% and is above the average. The greatest problem or short-coming in this use is very high density in some areas of the central zone. As a result of uncontrolled sprawl and unplanned development, such high densities

have come to exist at the cost of proper road widths and essential civic amenities. There are many pockets of slum and blighted areas. The other shortcoming of this use is its mixture with industrial and commercial uses at the centre of all the towns.

In commercial areas, the establishments have encroached residential houses. The problems in importance arising out of this use is its mixture with residential use in the city centre and the presence of godowns and wholesale markets there. that is leading again to traffic congestion and insanitary conditions. The most important and common deficiency in commercial landuse is its unbalanced distribution, which is the result of its unplanned growth. People living far away from city centre have to travel a long distance to purchase even the articles of day-to-day use. By encouraging regional shopping centres, this short-coming may be overcome easily.

By any standard the town under study lag far behind others in respect of industrial landuse. An average percentage of developed land devoted to this use is only 4 to 6 in the town and 10 to 15% according to Webster standard for an average city. The low percentage of such use recorded by the town under consideration is because of lack of resources and absence of raw materials needed for large industries. The industries are scattered every where including in the commercial and residential zomes. The major shortcomings in industrial landuse are the small amount of land devoted to this use and its mixture with residential and commercial landuses.

On an average 5-6% area of the town in devoted to public and semi Public landuses, This should be at least 16-22% keeping in view of Indian standard. The problem of ill-distribution and shortage of space are also observed. The institutions are distributed very unevenly and usually at misfit sites. The educational zone in the town, situated at congested locality at city centre, is likely to face greater problem of space in near future. The main problem of this use is that the educational and medical institutions are distributed unsuitably which reveal misuse of land. Administrative offices lie either at the centre of the town or are scattered hapazardly. Thus, there is a need to develop a secondary administrative zone.

Urban landuses expand at a cost of open space. So, if the municipal areas of the town are not extended, open space will decrease continuously. The low percentage of open space in the town under study points to the fact that the

town will become very congested. An unhappy consequence is also seen that park space is not only inadequate but poorly distributed. In theory, an effort should be made to distribute these public areas over the city in accordance with the population pattern, but in practice political and market consideration often cause spatial inequalities and major amount of park land is found in one or two holdings. The general planning standard for parks and playgrounds space is given as a ratio of hectare to population unit. This ratio is one hectare of park-playground area to each 250 persons, although few communities have realized this standard. On an average 28.1% of the developed areas of the central city is devoted to streets (Bertholomew. 1955).

The expected future landuse and population projection for the year 2001 show that the town, which is and congestions will be rising in future. If the urban area is not extended and different landuses are not allocated properly, the landuse pattern will be very unbalanced and irregular. Coming to the congestion of the town, the central areas are already congested and need thinning out. The population estimate for the year 2001 shows that the population is expected to increase by 15 to 20 percent. This is bound to add to the congestion of the town enormously.

An increase in population will have a direct effect on the expansion and congestion of residential areas. The rate of house construction is not likely to keep pace with that of population. Hence, the pressure of population of houses will also increase rapidly. This is likely to result in the creation of more slums. Thus, proper planning for development of balanced land uses is needed in the town. This will help in checking the irregular distribution of different functions and in providing good civic amenities to the urban inhabitants.

## 4.3. ECONOMIC PROBLEMS

It is necessary to note that town dwellers play an import role in establish and running the functions which are part and parcel of urban life. Their actions and decisions virtually control employment, income, levels of demand and prices of commodities an well as aspects of economic life of the town. Again, their drive for achievement does not lead one into socially useful activities or project. Instances are not uncommon in which absence of their conscience are observed that lead their in to their success in crimes These motives inherent among a section of people in English Bazar town lead to quiet growth of smuggling, deforestation as well an vices like smuggling gang fight, local hoodlum. They engaged in selling smuggling goods which are brought from Bangaladesh and

Nepal. This town has grown up unplanned and spread hapazardly. The result is the present urban miss, too many students in the school, too much sludge for the sewarage, too many trucks on the road, too many sicks in the hospitals, too much crime for the police and too many commuters for the transport.

Still, there is the hope, in such an increasingly hazardous and complex society, that the social and economic fluidity can be maintained against the chaotic forces that challenge it. It is still the market place for goods and ideas, the focus of contractual society, the mirror for emulation, the meeting place of diversities and the centre of culture.

### 4.3.1. Socio-economic Problems

The other problems constitute the medical, educational, administrative, recreational etc. The main problem associated to these functions is their uneven and unscientific spatial distribution in the town. Generally, the institutions of the respective group are established without giving proper consideration to the need and potentiality of the surrounding areas. For example, the hospital in the town is confined to same particular area which makes other parts unattended and untouched by the medical facilities. Likewise, the distribution of education centres too have very uneven distributional pattern. It is found that often the students have to come after kilometres of walk to a part of the city where these facilities are available in a limited surroundings. Generally the administrative functions are located in highly scattered manner causing great inconvenience to the public. Most of them are situated in rented houses in the residential areas. Again most of them are away from the bus routes.

Schools and college have students more than their capacity and area centres of continuous, problems. These institutions have an uneven distributional pattern in the town under study. They are almost confined to the western part of English Bazar Municipality. Lack of industrial training institutes to train the local people in various work e.g. carpentry, electrician, smithy, welding etc. to meet the growing demands and local needs is a chronic problem. The infrastructure in many primary schools is very poor. Children in some primary schools still use to sit on the floor. The medical and health facility in the town are far from satisfactory. The Government hospital functions with several mismanagement and is very dirty. Not only that, some of the departments in Malda Sadar Hospital are now remaining closed due to several short comings. Insufficiency of beds and vehicles are the other noteworthy problems of the hospital. The post and telegraph services are very poor and unevenly distributed in the town. Infact, about 60% population

15.Front view of town hall

enjoy this facility comfortably and others are situated at a distance of more than 2 km. from their nearby post office. The extension of postal services is needed with a view to enhance the development process in all areas in recent years.

### 4.3.2. Socio-Cultural Problems

**4.3.2.a. (a) Population Pressure :** High density of population per $km^2$ shows that the pressure of population in the town is comparatively high. The percentage of population engaged in Govt., Semi Govt. job is increasing year after year thereby resulting in high pressure of population.

**4.3.2.2 (b) Concentration of Backward Population :** About 18.5% of the total population of the town belong to backward classes. Of which 15% are scheduled castes and 5% are scheduled tribes. These minority groups of people in urban areas are very often found to settle in most under developed localities. Owing to their low income and poor standard of living, they prefer to reside in old blighted residential area where livelihood is less costly.

**4.3.2.3. (c)Inadequate Educational Facilities :** Among the different qualities of population, literacy perhaps is the most important. A low degree of literacy is an obstacle to economic growth. The most basic minimum measurement of educational status is the degree of literacy. But it is very difficult to measure the degree of literacy in accurate terms. Schools and College have students more than their capacity and are centres of continuous problems. These institutions have an uneven distributional pattern in the town under study. They are almost confined to the whole part of the town.

#### 4.3.2.4. Problem related to trade and commerce

The whole sale markets of food grains and fishes are located at the heart of the city which attracts heavy traffic movement throughout the day. It involves with considerable amount of loading and unloading of carriage vehicles, packing and transhipment of goods to different modes of vehicles. Due to insufficient space inside the shops or godwans foot paths are used as storing place which force the pedestrians to walk on the streets. The centrifugal force exerted by the old established business core led to high congestion of shops along very narrow roads in the heart of the city. This type of development has led to overflow of traffic which is an unsuitable atmosphere for customers. The worn-out and old type of residences in the commercial core have almost marred the look of the area. Some problems have cropped up in trade and commerce in English Bazar. The main problems are : (i) congestion, (ii) lack of space, (iii) pressure on

residential houses, (iv) poor communications within the town and (v) the monopoly in some trading items by the traders. These problems not only hinder the development of the town but also the environmental and living conditions of the people. Poor people are driven away from their place of residence to other areas or are compelled to live in odd conditions.

## 4.4. ENVIRONMENTAL PROBLEM

(A) **Problem related to living condition**

(B) **Lack of community facilities**

The combination of elements of environmental are directly aiding the living of the good lives. With the growth of population in the city and the various activities by the people, the environment becomes gradually crippled due to the non-availability of renewed resources and is served with inadequate elements of environment. "Solid Waste" now is used internationally arise from domestic, trade, commerce, construction activities. It comprises countless different materials in relation to the physical characteristics of the city refuse. The problem is aggravated by the rag pickers whose economy depend on city garbage as they screen out and collect the marketable elements from the garbage which includes clothes, metals, glass, plastic etc. They are also the cause to spread garbage on the streets.

There are potential risks to health and environment from improper tackling of solid waste, Firstly, it directly affects the field workers. Secondly, the accumulated garbage is the breeding ground of disease reactor, flies and rats. The area-pollution is caused by the germ generated from the garbage. Uncontrolled and unorganised city waste not only creates ugliness of the city but more seriously transfers the polluted materials to air and water. The river water and sub-surface water are vulnerable to the pollutant which is used by the consumers and there by creating intestinal diseases. With high moisture in the climate of the city and with the rain, garbages get into the gully pits which not only chokes the drainage system but also gets purified. The materials also create environmental pollution when silt is lifted disposal of these wastes is a major problem for the town. Garbage and rubbish tend to be dumped, and converted into land fill at the minimum distance commensurate with public opinion. As long as the procedure removes the refuse and as long as the disposal site is not a health hazard and does not offend aesthetic values too greatly, the operation is considered successful. However, the side effects on health, the atmosphere, the soil, water bodies and the appearance of the landscape may be considerable especially in terms of pests, smoke, dust, odours, blowing paper and polythene, water pollution

and increased lorry traffic. Each particular kid of waste has particular disposal problem, bricks and building stone being useful full-material for example, but all the rubbish tend to be dumped together. Other methods of solid waste disposal offer opportunities to sort and recover waster.

In many cases the dump sites are located indiscriminately where land could be obtained for this purpose. In some such dumps the refuse is piled as high as equipment will permit, while, in others it is periodically levelled and compacted. Burning of wastes to reduce their volume has been a common practice, but is now often not allowed by air pollution control regulations. Generally, little is done at open dumps to prevent the nuisance and health hazards associated with such dumps.

The river Mahananda in English Bazar town carry raw sewage created by the people. These form potential pollution fields in the town. The system of waste disposal followed created disease risks through insects and micro-organisms. Pit systems adjacent to the household in many cases are used as the latrine in some wards. Bucket systems for individual household as a part of municipal 'night-soil' collection system is used in the town. These system may lead to contamination of ground water especially during the rainy seasons. Often, due to insufficient land for proper waste disposal, materials are discharged directly into the nearest water course. Such as situation thus become very conducive to the spread of disease such as cholera, typhoid and dysentery. This is particular is likely to occur in squatter settlements where crowding and lack of money to make better provision make the risk of disease highest and its impact the most severe (Douglas,1983).

### 4.4.1. Slum Problem

Compared to other problems, the one associated with slums has assumed serious proportions in the town. Due to overcrowding in a very small tracts of land, unhygienic conditions; filthy surroundings; lack of proper lighting, roads and drinking water, much shush pools as breeding grounds of mosquitoes, these habitations look like veritable hell. In such surroundings crime, vices, diseases and illiteracy consistently show higher incidence of their occurrence. They also abound in mental disorders, alcoholism, immorality, heinous crimes etc. So, study of this problem related to living conditions, occupations and amenities has become necessary. Many factors responsible for the growth of slums in the town are: (1) absence of adequate housing facilities (2) poor wage for the

16. Congested houses in the slums (Buraburitala)

17. Congested houses in the slums (Gorapir)


*18. A view of slum in Buraburitala*

temporary unskilled labourers (3) high value of land due to commercial importance. (4) population explosion as well as unemployment (5) vested interests (6) negligency of the Government.

### 4.4.1a. SLUM DWELLERS

The growth of slums is another important feature of this town. The municipal area of English Bazar is divided into 24 wards. In this spatial distribution most of the slums are confined to certain wards while other wards are free of them. In seven wards, there is no slums. These wards represent economically the best parts of the town. The percentage slum dwellers can be seen from Table 4.3.

**Table 4.3 :** Percentage of Slum dwellers to total in the wards.

| Percentage to total | Category | No. of total Wards |
|---|---|---|
| < 10 | Very low | 8 |
| 11-20 | Low | 3 |
| 21-30 | Moderate | 4 |
| 31-40 | High | 1 |
| > 40 | Very high | 1 |
| **Total** | | **17** |

In terms of the number of slum families living in respective wards, a size classification has been made. The study shows that there are 86 families living in slums of ward IV, Similarly ward XII have 44 and XVII 2% slum families, respectives. In wards XVIII,XX, and XIX have 53 families each and in ward XXII-40 has slum families. Actually slums have grown up outside of the developed urban areas. There the availability of land is very low which keeps the price high with a high standard of living.

The number of slum families has increased in ward III, XIII and XXI each consisting 118, II and 119 families. The number increases further in ward I, II, VII, VIII, IX with 321, 250, 336, 362, 301 families respectively. The wards are situated in south eastern part of the municipality. Here ward II is mainly covered with paddy field, wheat fields and mango gardens. In ward VII, slum families are found in the southern portion, while in ward VIII they are mainly found near the Mahananda river. On the river bank slum families are highly concentrated on the Bundh road. They have also grown on the burning ghat road, in Baluchar I and Baluchar II which belong to ward IX.


*18. A view of slum in Buraburitala*

Ward XXII has 523 slum families concentrated and they are in Talipukur, Bishghar coloney and along the Rail line. After 1983, this area came under the municipality which contains a number of mango orchards. Ward XXIV has 1888 slum people and they have concentrated in this remote part of the town. But now town has been extended to cover this ward. Slum families are found here in Buraburitala and Ghorapir south. From the analysis it has been seen that the slum families are very unevenly distributed in English Bazar Municipality.

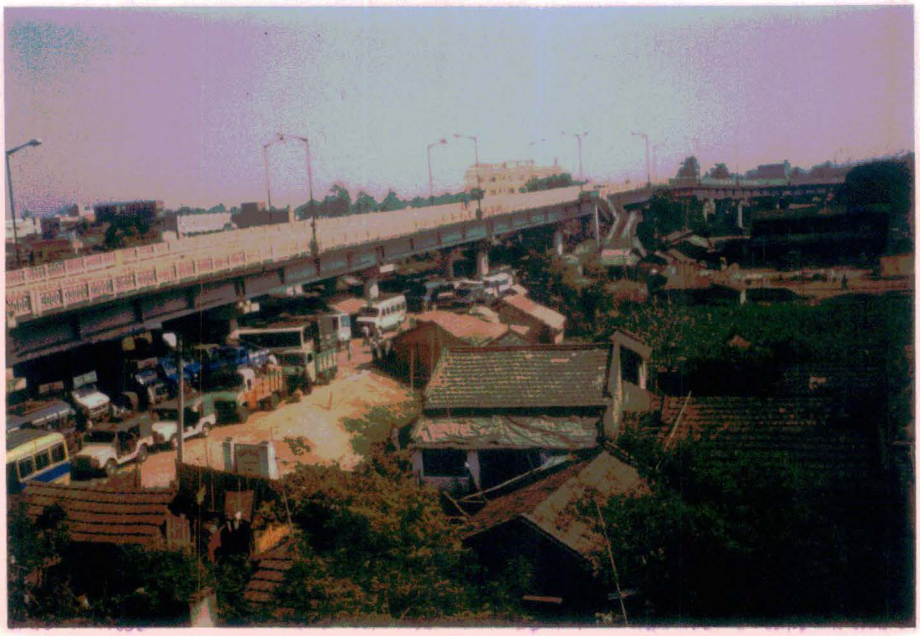
The number of people living in the slum in English Bazar vary widely from the lowest of 137 persons to the highest 9441 persons between different wards. According to the data available, ward XVII has the lowest number of 137 persons which is mainly a market area. The number increases slightly, ranging between 204 and 431 people in wards XXII, XII, XVIII, XIX and IV. Among which first and the last ward have the lowest and the highest number of persons living in slums. The number increases further in wards XXI, XIII, III and VII with a variation of 548 to 681 heads.

It is however, in wards II, I, VIII, IX and XXIV that slum population is still larger ranging from 1296 to 9441 heads. The last one having the highest record for the town number of slum family and its population.

**Table 4.4. :** Distribution of wards according to percentages of slum dwellers.

| Percentage of slum dweller to total | Category | Ward No. | No of Ward | Percentage to total no. of |
|---|---|---|---|---|
| Nil | - | V,VI, X,XI XIV,XV,XVI | 7 | 29.17 |
| <10 | Very low | III,XII,XVII,XVIII XIX,XX,XXI,XXII | 8 | 33.33 |
| 11-20 | Low | IV, VII, XIII | 3 | 12.50 |
| 21-30 | Moderate | I, II, VIII, IX | 4 | 16.66 |
| 31-40 | High | XXIII | 1 | 4.17 |
| >40 | Very high | XXIV | 1 | 4.17 |
| **Total** | | **24** | **24** | **100.00** |

Slums are found along the river bed of Mahananda as well as along the railway tract in the town. These have grown up on public lands, belonging to the Municipality, the State Irrigation Department or the Railway Authority. It is noticed that six out of seven migrant families came from outside the state of West Begnal



19. A view of slums under the flyover

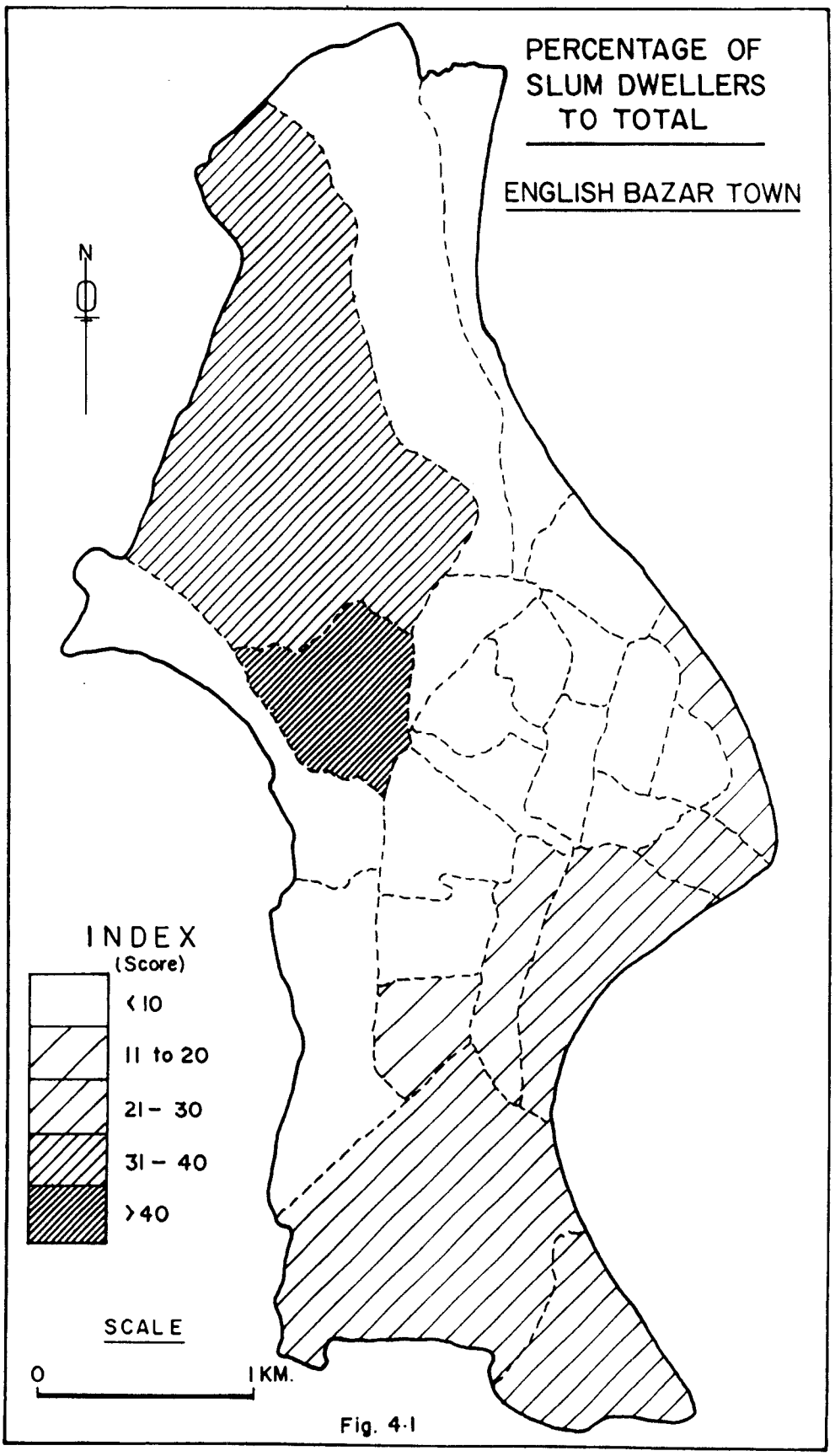

PERCENTAGE OF
SLUM DWELLERS
TO TOTAL
ENGLISH BAZAR TOWN
N
INDEX
(Score)
< 10
11 to 20
21 - 30
31 - 40
> 40
SCALE
0
1 KM.

Fig. 4·1

and more than one-third from the adjoining state of Bihar, 1/3 from Bangladesh and remaining 1/4 from other states like U.P. Orissa and Nepal. Hardly one out of seven migrant families came from the same district. About two-thirds of the migrants came from Bihar and Bangladesh. The reasons for migration are the attraction of better employment, rehabilitation, social discrimination, indebetedness, better quality of life as well as other causes.

### 4.4.1.b. DEMOGRAPHY IN THE SLUMS

**(i) Living Condition :** The houses in the slum have presented a poor picture. It is found that 94.3% of houses in the slums are kuncha, 2.6% semi-pucca and remaining 3.1% are pucca (Plate 15,16). The kuncha houses are not only prone to fires but it is also impractical to electrify such houses. As per survey, 68.3% of the houses are just one room structure. Hardly 14% of them have separate kitchen space. The poor residential situation of slums also deteriorates the living condition of residential areas adjacent to them. Inadequacy of space force the slum dwellers to sleep on the street pavements as well as under the shades of shops.

**(ii) Occupation :** The occupational pattern of the inhabitants of the slums reveals that 80% of the total working force are daily earners and are engaged in very low level of work. Remaining force do not perform a job of low standard. As a whole, people here belong to low income group. Over 40% of them has a monthly income of less than Rs. 200/- and only 10% have Rs. 600 or above. The low earning of the working force compel them to earn by illegal sources such as liquor making or some other work. The activities form constant headache of the administrative authorities as well as people living adjacent to the slums.

## 4.4.2. SOCIO-ECONOMIC CONDITION IN SLUMS

**4.4.2a. Education :** From the information of various agencies it is found that 25% children attend school. The overwhelmingly majority children are kept away from school for various reasons. Particularly the guardians of the majority children in the slums prefer to engage their kids in earning money than to send them to schools. No doubt this practice encourages social pollution and degradation.

**4.4.2b. Health :** The economic condition of 90% of the households have compelled them to avail the services of Government hospitals and dispensaries for treatment. Among the slum dwellers only 25% use to go for inoculation or vaccination of their children. The unawareness of the slum dwellers about the health preservation lead to extravagant habits. As such, the slums are affected by diseases that spread in epidemics which also affect the men residing nearby.

20. Grazing place in a residential area causing poor hygienic condition

**4.4.2c. Water supply :** Among the total households in the slums, 80% depend upon the neighbouring ponds. Another 12% of the households use water from handpamps and remaining 8% fetch water from the near by municipal taps. Thus, the sunkwell is the major source of water supply to the slums. As a consequence of high concentration of population, in the slums occasional acute shortage of drinking water is prevailed. Because the water table of the sunkwell fall in dry period. As a result, many people depend on the existing sanitary wells. In such cases, they collect water from the roadside stanposts. But the number of stand posts is inadequate compared to demand.

**4.4.2d. Sanitation :** Among the total households in the slums, 75% defecate in the open spaces, 18% use their own toilet, 3% use community latrines and 4% make use of other modes. Unhealthy sanitation system is highly detrimental to the environmental condition of the locality.

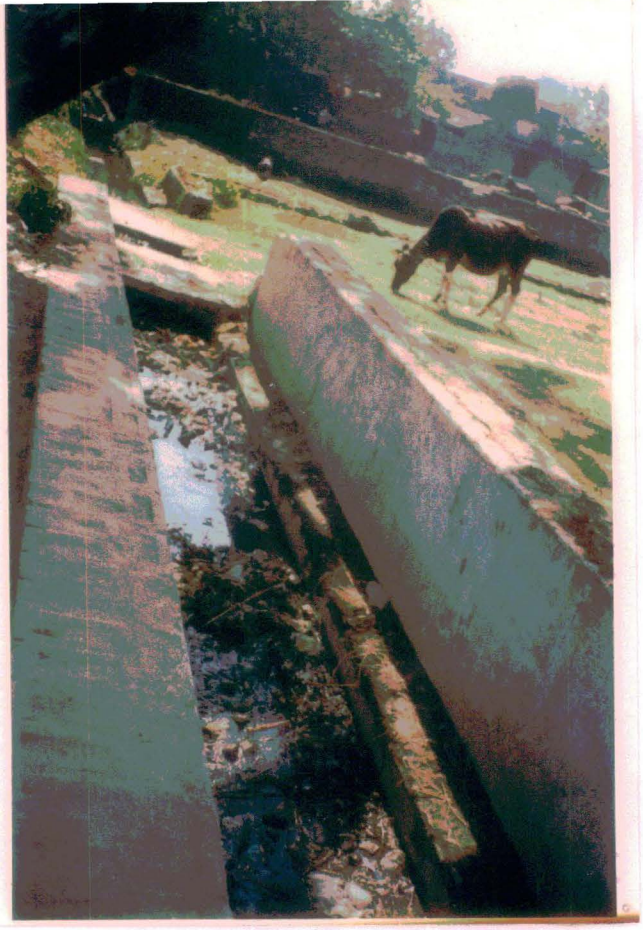
## 4.5. OTHER PROBLEMS

### 4.5.1. Drinking water Problem

It is, really astonishing that there is no proper organised system of water supply to the inhabitants of the English Bazar town till today. The main source of water in the town is the private wells. There is a cry for purified drinking water and P.H.E. with its limited water supply system serves a little percentage of the total need. Only 10% of the area are provided with protected water supply. Again, the supply of water having proper treatment are not equitably distributed all over the town.

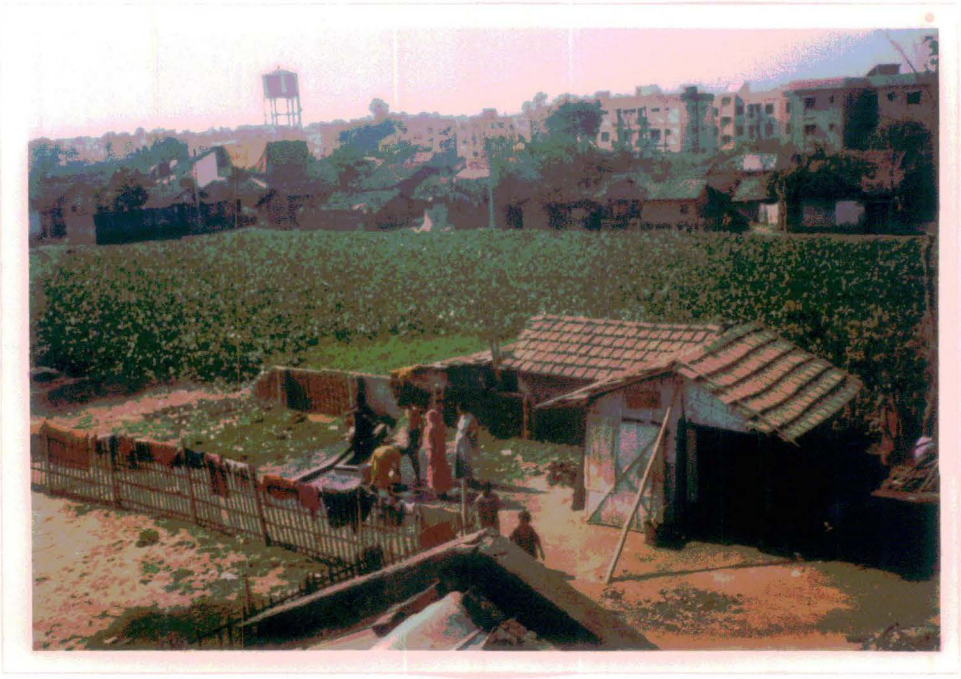
The actual available water to the citizen is far below the per capital demand. There are also considerable leakage from the old distribution mains, wastage by the consumers, constant flow of water from street standposts etc. In addition, there are some hydraulic deficiency where distribution of water is unequal, and some people are getting more water whereas other areas suffer from shortage. Again there is not a single tap having the stop-cock resulting in continuous flow of water during the supply.

Since availability of suffer water is less, under ground water is required to be supplied. Due to presence of iron in the water, the under ground water is not as clear as one likes it to be. As such there is certain degree of public apathy in accepting this water. During the summer months, fresh water becomes scarce. Long queues of buekets are to be seen at water standposts to procure water. Pumping of water from the river becomes irregular as the water level of the river lowers and the river shrinks. Many wells are seen almost dried up.



21. A portion of a drain in the town

22. Housing complex in the town



23. Pond with water hygienic in the central part of the town.

In the town, ward V and VI have been suffering from scarcity of drinking water for a long time. To meet the need, some wells have already been dug. But most of them remain out of order for a couple of months in every year. A water project was formulated for the first time during the British rule in 1943 to cater to the demand of ten thousand persons. Later, with an increase of population in the town, 3 reservoirs were constructed in 1976 by P.H.E. But the entire area of I-XII wards are still deprived from sufficient drinking water.

### 4.5.2. Transport Problem

Transport always plays a dominant role in directing the urban form and the structure of the town. The growth of any town, its trade and commerce, are intimately dependent on its transport network. But in India, urban transport in many cities have reached crisis proportion and English Bazar is no exception to it. Among all the problems, this town face at the moment, traffic and transportation problems which have become most acute and the point of greatest concern for every deweller. English Bazar town since its origin in the last century has a continuous flow of immigration with an increase of population, number as well as types of vehicles are on the rise. The roads do not follow any definite pattern and create a maze like network which imposes great hindrance to the mass transit system. The most aggravating traffic and transport problems of this town are highlighted as follows :

1. The major roads are concentrated in the heart of the town only where the commercial activities are restricted.

2. Narrow roads are incapable of both ways heavy traffic and cause frequent traffic congestions. The crisis aggravates owing to the encroachment of the footpaths. The hawkers and vendors and the mushroom growths of urauthorised shops have narrowed the roads. Further, in the central commercial area, loading and unloading operations by different transport agencies and car parkings on the road cause traffic jam. Hapazard parking of trucks along the roads narrow down the width of the roads in different parts of the town. Every day 3000 loaded heavy vehicles are passing through this town and more than 40% stay for the considerable time for different reasons. Moreover, more than 500 local trucks park inside the town on and along the roads.

3. Within the town, rickshows, autos, vans are the public transport and these slow moving vehicles create traffic jams. About 10 thousand rickshows play in the town daily.

4. Such severely damage prone nature is a common feature of majority of the roads in the town. Along the station road, in its various sections, formation of deep trenches are very common.

Since Independence, traffic on this road though increased, no improvement or extension of the road has been made so far. Formation large and deep hollows especially in the approach of Mahananda bridge are noticed and these have been increasing in extent. Moreover, majority of the roads such as Manaskamana Road, Station Road, B.S. Road, K.J. Syanal roads, in the town are narrow and meandering. As such vehicles along these roads are not able to move easily. Traffic jam and congestion are also noticed at Rathbari More. Infront of State bus stand, parking of the buses and rickshaws make the real width of the road narrow.

5. People of the town become confused about the authority as well as liability of some roads of the town. Most of the main through fares and roads are not maintained by the respective departments and they try to escape their responsibility taking the opportunity of peoples ignorance about the actual authority to English Bazar.

6. English Bazar town station condition are not so good. In 1984 Malda town station had been the Divisional Headquarters of Eastern Railway. The size and height of the town railway platform have not been extended. As such the railway passengers are compelled to face problems on boarding the trains. As a consequence, accidents take place frequently. In addition the Malancha Pally level crossing located outside the town cause long queque of vehicles.

### 4.5.3. Electricity Problems

The electricity system in these town is not at all satisfactory. Everyday many complaints are received from the people regarding failure of lights. Due to short of voltage and load-shedding, the illuminating of lights has been a great problem. About 30% of street lights in the town are remained disorder. More street lights are required to meet the demand for public safety. But maintenance of street lights is extremely poor. In many cases the light posts are without lamps for a considerable period of time and the civic administration do not care about their duties in this respect. In fact, the existence presence of street lights helps to a great degree to check the undesirable activities or accidents. But as the authority is not so much concerned about this, the anti-social activities or crimes at nights are increasing day by day in the town. The sufferings due to the absence of


24. Modern bus terminus on central part of English Bazar Town

street lights, increase greatly during the rainy season and the roads become death-traps for poor condition.

As a matter of fact, a vast area of the town remain in darkness which is detrimental to public safety. In slum areas like Buraburitala, Ghorapir, Mission ghat, etc. extension of street lights are essential and State Electricity Board is requested to extend the street lights in those areas. But State Electricity Board could not do the needful in the matter. More over, the services of the S.E.B. in maintaining the existing arrangements of the street lights are not satisfactory.

### 4.5.4. Drainage and Sewrages Problems

The drainage system of this town is in improvised form. No scientific drainage system has not been developed, it is necessary to draw a comprehensive plan after proper survey of the town and outlet of all liquid pollutants should be drained out through Lakshmipur drainage system. The whole drainage system of English Bazar town is most unscientific and need to be overhauled throughly. While necessity of drainage master plan for improvement of drainage system but for maintaining and improvement of the present drainage system, an immediate of Rs. 3.00 crores should be made.

Seven out falls of Malda town, through which liquid wastes are being disposed to the river Mahananda which ultimately leads to the River Ganges are as follows:

(i) at Fulbari to river Mahananda
(ii) at Baluchar to river Mahananda
(iii) at Mission Gaht to river Mahananda
(iv) at Gayeshpur to river Mahananda
(v) at Sarju Prasad to river Mahananda
(vi) at D.S.A. to river Mahananda
(vii) at Nunbahi to Bhatia Loke and partly to Ganga through a linked canal during rainy season.

As such, no scientific drainage system is existing in the town. It is necessary to draw a comprehensive plan after proper survey of the town and outlet of liquid waste shall be drained out through Lakshmipur drainage basin which has already been approved and preliminary work has started.

In the town, the river embankments and the N.F.Railway track form the main drainage barriers. Even after a medium shower extensive areas in almost the entire town become water logged and it is a very common incident. The principal water-logging and drainage congestion areas are :

25. Existance of road and drain in a close view which causes danger to the pedestarin

*26. Bank crosing by river Manananda*

(a) Court area is a basin like area lying near the embankments of river Mahananda, without any drainage point. The badly water logged pockets are areas in the hospital and hospital quarters and near Central Jail.

(b) The north eastern part of the area between the river Mahananda and Railway line upto Old Malda bridge has a little adverse slope. The northernly drains are not able to carry storm run-off, So the entire rainfall flows in the south, following the natural ground slope and results in water logging in the area and further south.

Regarding solid waste, trenching ground has already been located near Malda Aerodrame for dumping purpose. Sewarage treatment plants, power plants with solid waste / recycled waste as a raw material and adoption of other eco-friendly measures are also required to be set up.

### 4.5.5. Problem of Conservancy

The conservancy service is not sufficient compared with total population of the town. Sometimes lack of responsibility of the authority in removing garbage from the road side and keeping the drains clean are noticed. The absence of good conservancy services has made the town quite, unhygienic. The drainage condition is very poor because of the absence of provision for adequate drainage in the town. The dirty water flows directly to the streets from the houses resulting in most undesirable conditions for the roads and the residents. As the conservancy services can be treated an essential services to make town life health their, it is questionable how far the actual progress has been mode by the municipality in tune with the increase of population in these towns?

Service latrines still forms a predominant method of waste disposal. The recently constructed houses generally provide for septic-tanks, but these are not built to be adequately water proof. The location of the tanks in relation to the wells often makes them potential sources of contamination of drinking water. Garbage disposal is equally inadequate, there being only a few dustbins. As a result, heaps of refuse can be found everywhere by the main roadside. Removal of the garbage also is not regular. The burning ghats are situated on the riverside and in crowded area leading to various problems.

Domestic waste water contains organic and inorganic matter in suspended, colloidal and soluble states in varying proportions. Various constituents of waste water are potentially harmful to the environment or to public health of the town. The unauthorised slaughter house in the residential area is creating

environmental pollution. Scarp from these slaughter houses is thrown on the roadside as well as in the drains. This kind of activity causes bad smell and pollutes the air of those residential areas.

### 4.5.6. Problems related to living condition

This problem is the most gigantic and speedily increasing in magnitude because of continuous increase in population and comparatively slow pace of newer establishments. This has led to congestion, lack of space, over crowding and emergence of slums and blighted areas. One of the major reasons for the lack of space can be attributed to the undersirably large space owned by the private buildings or palacial abodes accommodating comparatively a sparse density of population. Low income groups often corresponding with the lower castes add to the growth of slums and congestion in the residential units developed with higher density of population. The sad plight is further increased by the dirty and unhygienic conditions in the low income group areas. At the time of field survey it was found that walls of two adjacent buildings are almost touching each other due to lack of control and reluctance of the local body over building by-laws and construction activities. This has led to abnormally high residential density within the municipal area.

### 4.5.7. Lack of community facilities

Open space which usually are used by the town-dwellers as park and playground in the town is limited. Moreover these parks and playgrounds are the meeting places for the public as well as for holding festivals and other social activities. Existing parks are not adequate and at the same time located in the odd areas of the town so sometimes dwellers of the localities cannot avail. The opportunity from the open spaces. The number of auditoriums and public halls are very few compared to the high demand of the town dwellers. As a result, staging of shows or cultural functions have been delayed for lack of dates from the authorities, Clubs, libraries and cinema halls are not many in the town. But due to lack of infrastructructural facilities, libraries and clubs services with the help of member subscription. Cinema halls and other cultural facilities are very limited compared with the high demand from not only the town dwellers but also from neighbouring inhabitants.

## CONCLUSION

Though the rivers are helpful for the city as well as the dwellers of it, some-times they create various physical problems for the city's development. The town under study has such type of problem and in some places of the town it creates acute traffic problem as well as delays the development. The low concentration and high pressure of population, problems like slums low standard of living and insufficient urban amenities have come to surface as inevitable reasons for low level of development. As a result, the people from its surrounding areas are reluctant to come to the town for services and stagnation in the development of the town.

From the analysis of the landuse it is evident that the town under study have had a hapazard and unbalanced development and need a sound planning for restructure, reconstruction and reorganisation of landuses. There is an immediate need to control and for regulation of the landuse pattern for avoiding future misuse of the land and providing of future course of action programmes for healthy urban life.

From the analysis of different socio-economic problems it can be concluded that English Bazar has inadequate socio-economic functions compared to population of the towns of other districts. Due to insufficient space and allocation of area for shopping centres, a number of problems like traffic Jam, environmental disorder, overcrowding etc. have been created. Lack of proper transport facilities have profound influence on other activities. They are also suffering from inadequency of major roads as well as from narrow and unmetalled roads and unplanned road network. The narrow bridges on the river Mahananda inside the town and large number of slow-moving vehicles as well as trucks and buses complicate the transport systole within the town. Moreover, due to heavy rainfall, low maintenance of the roads and lack of management of traffic accelerate the problem. Railway Gate-5 in the town creates traffic jam for long hours on the major road very frequently.

Lack of proper water supply in the town use of well water are highly detrimental to the health of dwellers of the town. The town has surface drainage and sewarge systems and poor conservancy system which creates unhygienic conditions for the town dwellers. Lock of electricity on the streets has been a great concern of public safety, undesirable activities, accidents, anti-social activities or crimes in the town.

Environmental problem needs special attention and from the study it can be noted that living condition of majority of the town dwellers are far below the

normal standard. In the highly dense residential area and slums, shortage of drinking water, latrine, open space, proper roads and poor socio-economic amenities are the major characteristics of low level of development. High rate of immigration in the town creates various social and economic problems. A proper plan for the development of the town including their socio-economic functions and their proper distribution in the town are urgently needed. Before suggesting some plans review of earlier strategies and their implementation in the town is necessary.

# CHAPTER FIVE

# SPATIAL AND FUNCTIONAL GAPS IN THE TOWN

## INTRODUCTION

It is already established that the town is lacking in socio-economic and other infrastructural facilities. So it is essential to determine the functional gaps in the town to formulate planning for development. (i) to asses the functional gaps and (ii) to determine the spatial gaps for balance development. Prior to the suggestions for meeting such gaps, it is necessary to determine the spatial and functional gaps with respect to area and population served by the selected functions. It is already noticed that command areas and command population of higher order functions different regression lines have been calculated and have shown in the following :

| | | | |
|---|---|---|---|
| | Ye | = | 0.0001x + 12.88 |
| | Yh | = | 0.007 x + 10.13 |
| | Yc | = | 0.00007 x + 7.6 |
| | Ytc | = | 0.00003x+3.6 |
| | Yt | = | 0.0006x + 5.8 |
| | Yct | = | 0.00006x + 5.8 |
| | Yo | = | 0.00007x + 7.9 |
| | YT | = | 0.001x+53.89 |
| Where | X | = | Population |
| | Ye | = | Centrality score in Education |
| | Yh | = | Centrality score in Health |
| | Yc | = | Centrality score in Communication |
| | Ytc | = | Centrality score in Trade & Commerce |
| | Yt | = | Centrality score in Transport |
| | Yct | = | Centrality score in Construction |
| | Yo | = | Centrality score in Other functions |
| | YT | = | Total centrality score of functions. |

The scattered diagrams showing (Fig.5.1&5.2)population and centrality scores of each function revealed that a poor relationships exists in the case of education, constructions as well as other functions whereas poor negative relationships exists in the case of health,communication,trade and commerce. High negative

SCATTERED DIAGRAMS SHOWING
RELATIONSHIP BETWEEN POPULATION AND a. EDUCATION
b. HEALTH, c. COMMUNICATION, d. TRADE & COMMERCE

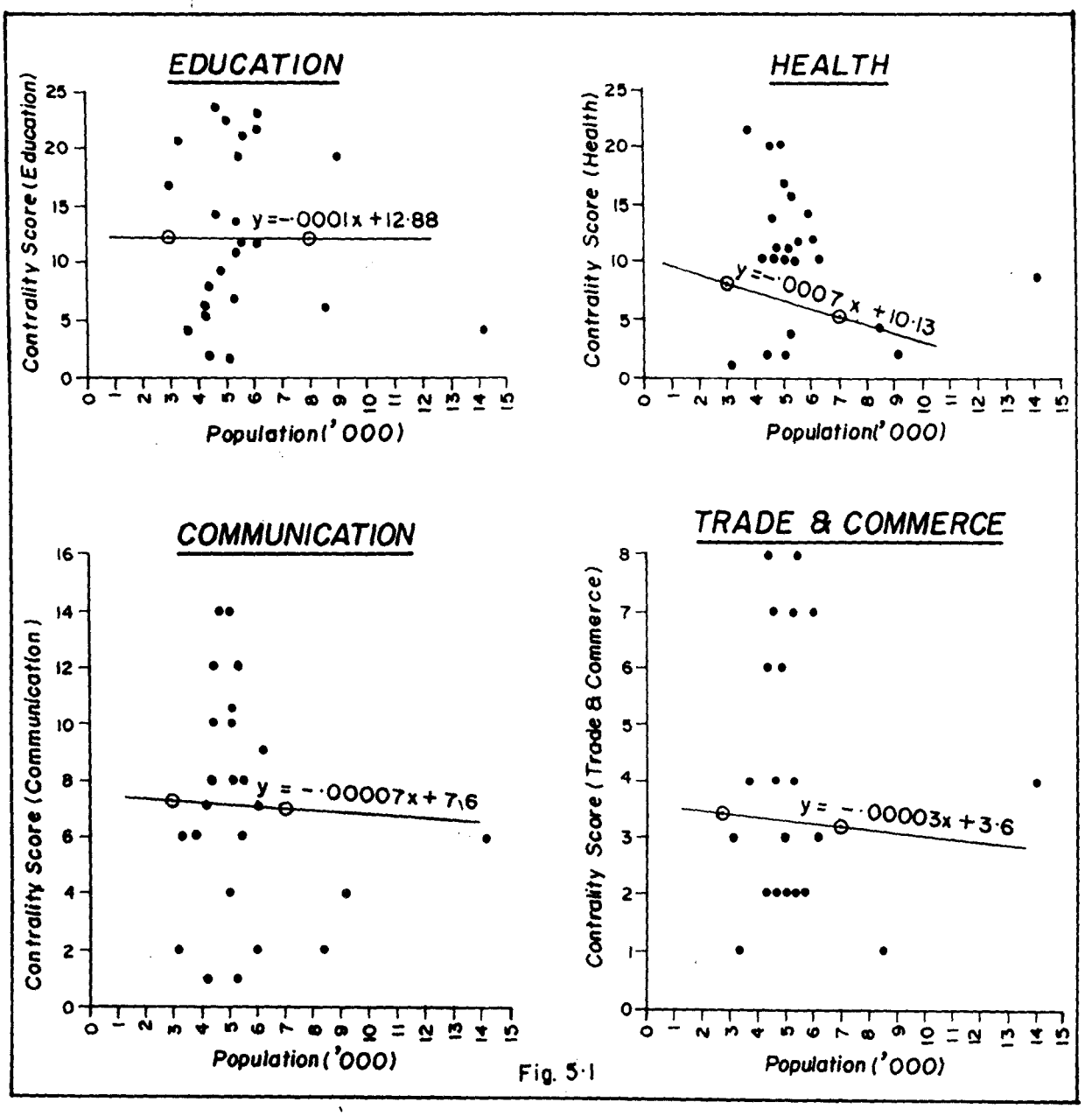



Fig. 5·1

# SCATTERED DIAGRAMS SHOWING RELATIONSHIP BETWEEN POPULATION AND a. TRANSPORT, b. CONSTRUCTION, c. OTHERS, d. TOTAL

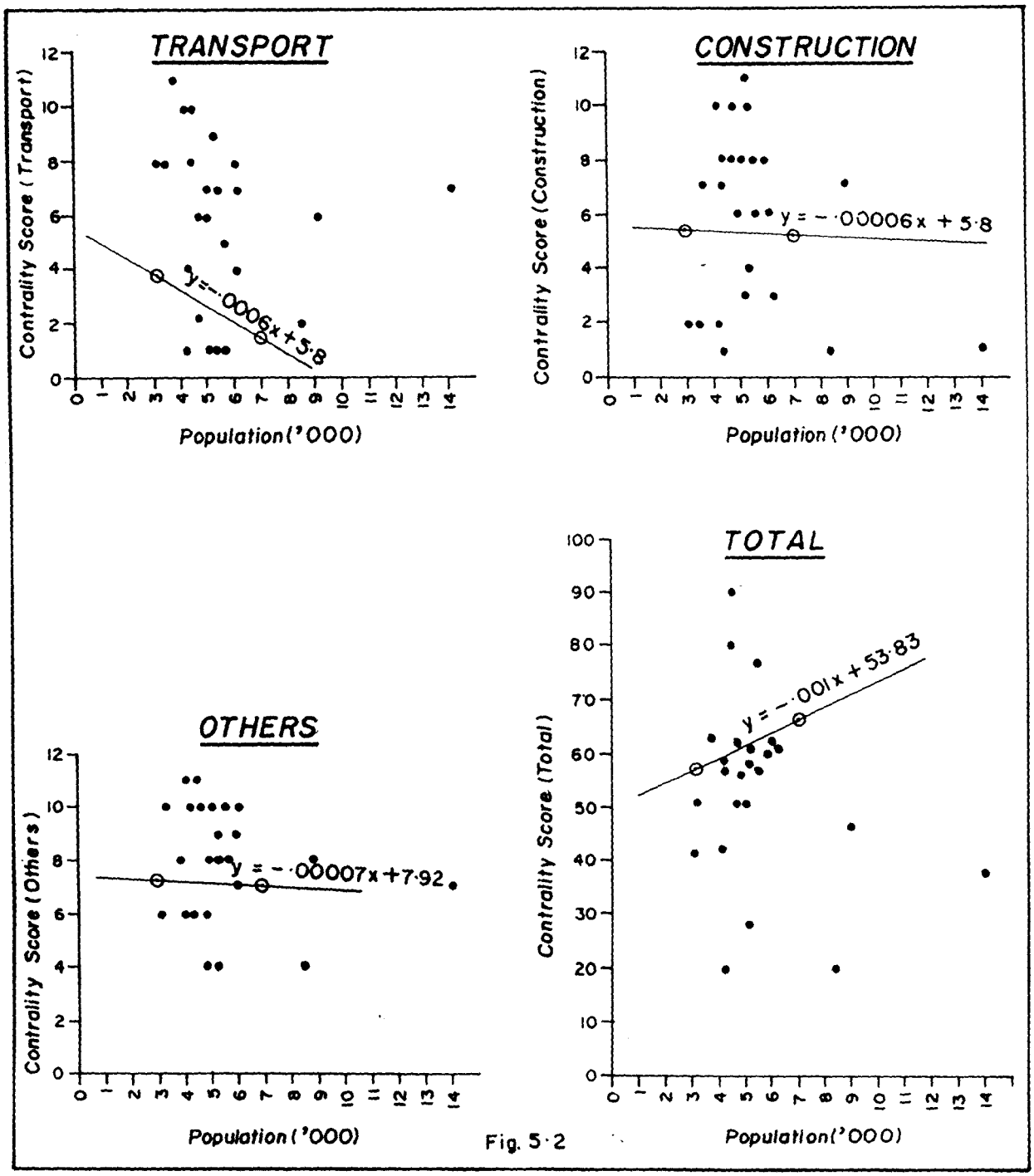



Fig. 5·2

and positive relationship are found in the case of transport and total centrality score of the functions of the town.

It can also be confirmed from the values of each and individual diagram. The poor relationship is may be due the uneven distribution of different functions and various of poulation sizes in individual ward in the town. It is natural that the functions grow with demand which is very high in the town but the number of functions and their levels flactuate from ward to ward. In the town as in other town too poor planning and hapazards growth without considering the nature of location and level of utilization by the dwellers. As a result, a spatial gaps for each functions has been found in the town and it is evidence from the nature of relationship and R-values.

## 5.1. FUNCTIONAL GAPS

With the help of these equations, expected functional score (E) in each category have been calculated in respect to observed scores (O) and the functional gaps in each ward have been assessed. To determine the level of functional gaps in the wards these gaps (O-E) have been grouped into 5 broad categories like (1) very high, (2) high, (3) moderate, (4) low and (5) very low in the both positive and negative values on the basis mean and standard deviation. These functional gaps in each ward is to be helpful for selecting future functions in appropriate places to desire level.

### 5.1.1. Education

With the help of equation Ye=-.0001.x+12.88 the functional gaps in education have been assessed and grouped. According to the level of functional gaps in education, the percentages of ward have been given table 5.1.

**Table 5.1.:** Functional gaps (Education).

| Functional gap (O-E) | Category | No. of Ward | Percentage to total |
|---|---|---|---|
| - 10 to -5 | Negatively high | 6 | 25.0 |
| - 5 to 0 | Negatively low | 3 | 12.5 |
| 0 to 5 | Positively low | 5 | 20.8 |
| 5 to 10 | Positively Moderate | 6 | 25.0 |
| > 10 | Positively high | 4 | 16.7 |
| **Total** | | **24** | **100.0** |

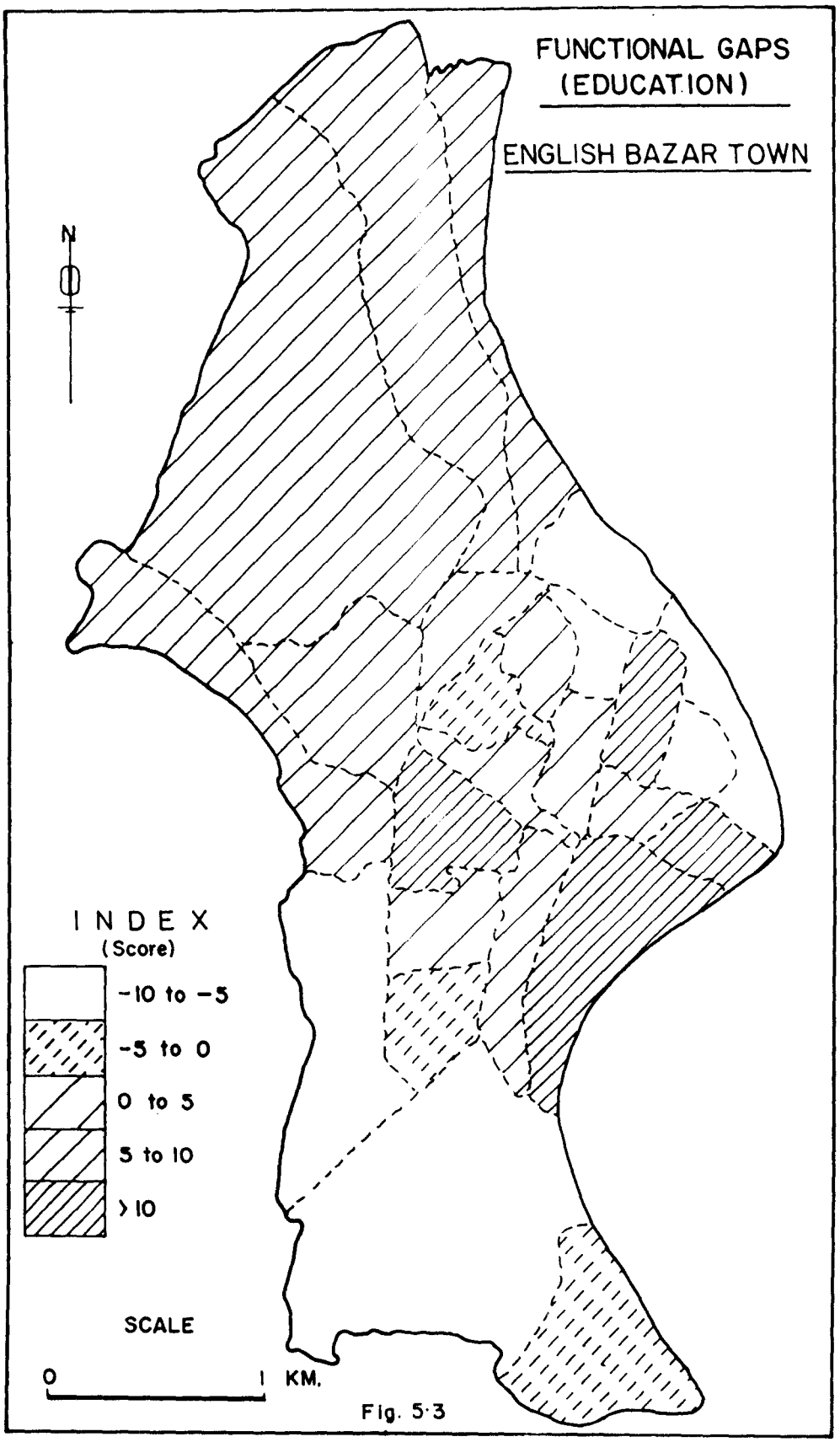

FUNCTIONAL GAPS
(EDUCATION)
ENGLISH BAZAR TOWN
N
INDEX
(Score)
-10 to -5
-5 to 0
0 to 5
5 to 10
> 10
SCALE
0
1 KM.

Fig. 5·3

It is revealed from table 5.1 that one out of 24 wards has poor education facilities compared with its total population. In the town, 15 wards out of 24 have better facilities compared with the total population. The educational facility in the town is uneven. The educational institutes are mainly concentrated in wards IX, VIII, XI, and VI. The population are also mainly concentrated in these wards because of the concentration of large number of service facilities like market, hospital, banks, post offices etc. Negatively high category wards are II, III, XII, XIII, XIV and XV. The main cause of negatively high category of these wards is the lack of educational facility. Negatively low category of educational facilities are found in wards I, XVIII, and IV. Besides, all these wards are situated along the bank of river Mahananda which is a low lying and newly developed area. Positively high educational gaps are found mainly in the side north and northwestern part of the town. These wards are also situated along the periphery of the town and far from the main shopping area. As population is low so the education facility is high.

### 5.1.2. HEALTH

With the help of equation Yh=-.0007x+ 10.13. the functional gap in health services have been assessed and grouped. The level of functional gap in the wards. as shown in table 5.2.

**Table 5.2.:** Functional gaps (Health).

| Functional Gap (O-E) | Category | No. of Ward | Percentage to total |
|---|---|---|---|
| - 10 to - 5 | Negatively low | 1 | 4.2 |
| - 5 to 0 | Negatively high | 5 | 20.8 |
| 0 to 5 | Positively low | 7 | 29.2 |
| 5 to 10 | Positively moderate | 8 | 33.3 |
| > 10 | Positively high | 3 | 12.5 |
| | | **24** | **100** |

It is revealed from table 5.2 that 6 out of 24 wards have poor health facilities compared with the total population of the respective ward. These wards is located in northern, southern and western parts of the town. Whereas the health facilities in 18 wards out of 24 are better compared with the total population. It may be due to their locations nearness to the District Hospital or the size of population is lower compared to the other wards those have low health facilities.

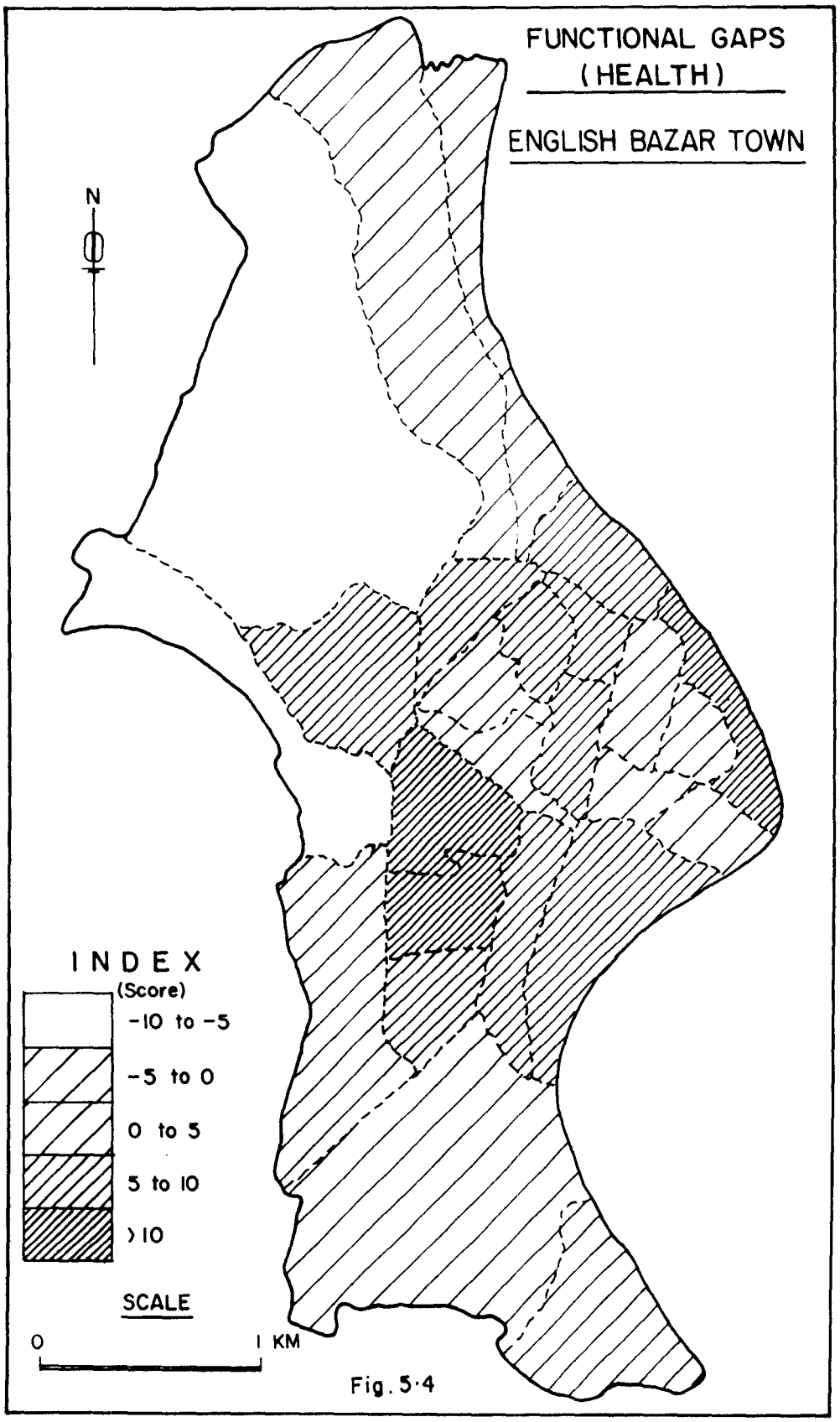

FUNCTIONAL GAPS
(HEALTH)
ENGLISH BAZAR TOWN
N
INDEX
(Score)
-10 to -5
-5 to 0
0 to 5
5 to 10
> 10
SCALE
0
1 KM

Fig. 5·4

Out of 18 wards 8 have been placed in positively low category and 6 wards have been placed in positively moderate category. Only 3 wards have been placed in positively high category. It is also noticed that only 1 ward has been placed in negatively low category in compared with 6 wards have been placed in negatively high category. In conclusion it may be said that the health facilities in these wards of the town though it is not adequate but better in terms of population size as well as demand for health facilities.

### 5.1.3. COMMUNICATION

With the help of the equation Yc = -0.00007x+7.6 the functional gaps of communication have been assessed and shown in Table 5.3.

**Table 5.3. :** Functional gaps (Communication).

| Functional Gap (O-E) | Category | No. of Ward | Percentage Total |
|---|---|---|---|
| - 10 to - 5 | Negatively low | 1 | 4.5 |
| - 5 to 0 | Negatively low | 6 | 25.0 |
| 0 to 5 | Positively low | 8 | 33.0 |
| 5 to 10 | Positively Moderate | 6 | 25.0 |
| > 10 | Positively high | 3 | 12.5 |
| | | **24** | **100.0** |

It is revealed from Table 5.3 that 7 out of 24 wards have poor communication facilities compared with the total population of the respective wards. All these wards in the western and southern parts of the town where as, the communication facilities is 17 wards out of 24 are better compared with the total population. It may be due to nearness to the NH34 or the size of population is lower compared to the other wards those have low communication facilities. Out of 17 wards, 8 have been placed in positively low category and 6 wards have been placed in positively moderate category. Only 3 wards have been placed in positively high category. It is also noticed that only I ward has been placed in negatively low category in compared with 6 wards those have been placed negatively high category.

In conclusion it may be said that the communication facilities in majority of wards though are not adequate but better in terms of size of population as well as demand for communication facilities.

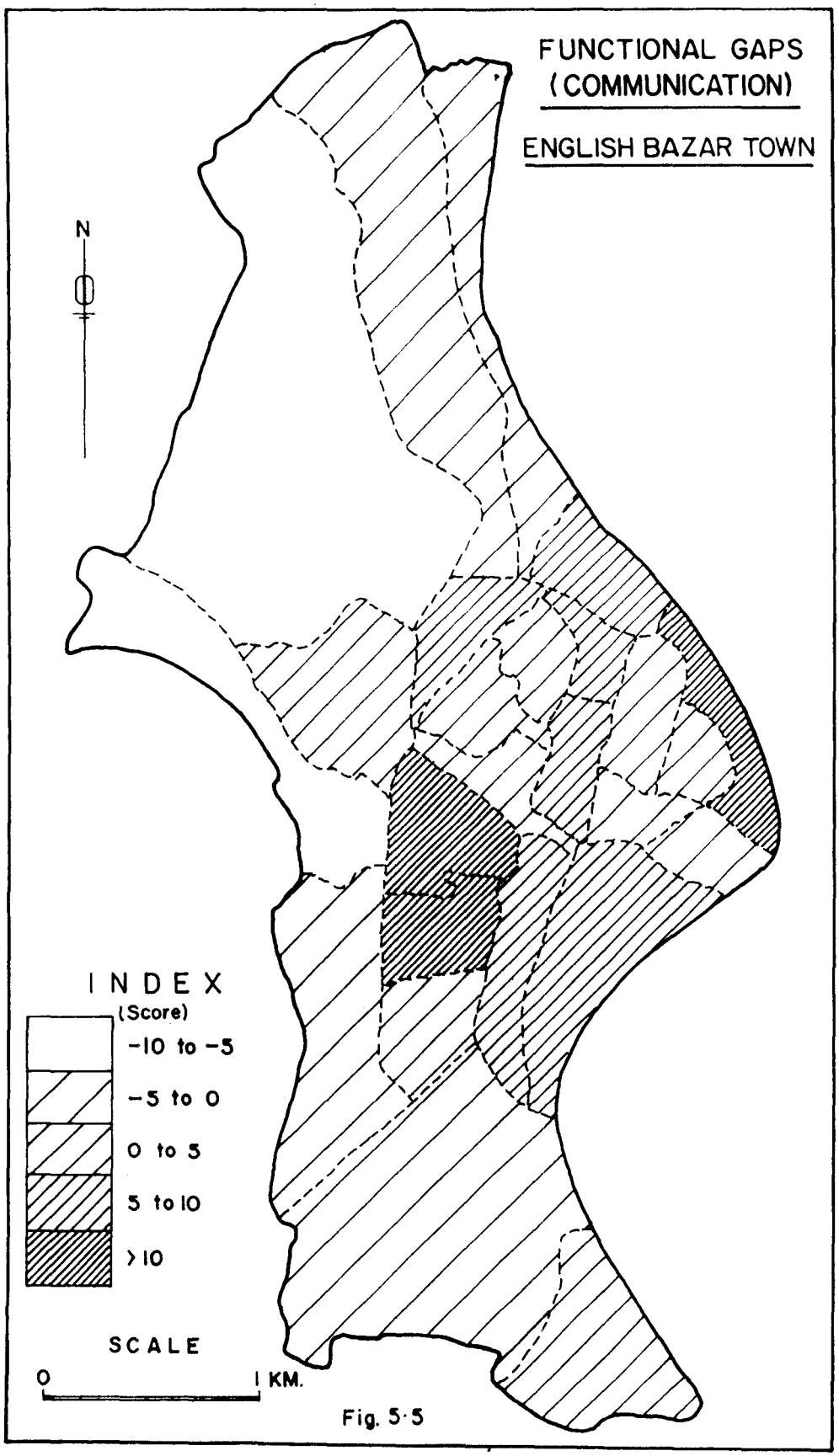

FUNCTIONAL GAPS
(COMMUNICATION)
ENGLISH BAZAR TOWN
N
INDEX
(Score)
-10 to -5
-5 to 0
0 to 5
5 to 10
> 10
SCALE
0
1 KM.

Fig. 5·5

### 5.1.4 Trade & commerce

With the help of equation Ytc = -.00003x+3.6 the functional gaps in trade & commerce have been assessed and grouped. (Table 5.4).

**Table 5.4.:** Functional Gaps (Trade & Commerce)

| Functional gap (O-E) | Category | No. of Ward | Percentage to total |
|---|---|---|---|
| -5 to 0 | Negatively high | 10 | 41.7 |
| 00 to 5 | Positively low | 12 | 50.0 |
| 5 to 10 | Positively moderate | 2 | 8.3 |
| | | **24** | **100** |

It is revealed from Table 5.4 that 10 out of 24 wards have poor trade and commerce facilitated compared with the total population of the respective wards. Because in all these wards I, II, III, X, XI, XXII etc. trade and commerce facilities are lower compared to average of the town where as the trade and commerce facilities in 14 wards out of 24 are better compared with their total population. It may be due to nearness to the market compared to the other wards those have low trade and commerce facilities.

Out of 14 wards 12 have been placed in positively low category and 2 wards have been placed in positively moderate category. It is also noticed that only 10 wards have been placed negatively high category. In conclusion it may be said that the trade and commerce facilities though it is not adequate but better in terns of population as well as demand for trade and commerce facilities.

### 5.1.5. Transport

With the help of equation Yt = -0.0006x+5.8, the functional gaps in transport have been assessed and grouped (Table 5.5).

**Table 5.5. :** Functional gaps (Transport)

| Functional Gap(O-E) | Category | No. of Ward | Percentage to total |
|---|---|---|---|
| - 5 to 0 | Negatively high | 5 | 20.8 |
| 0 to 5 | Positively low | 10 | 41.7 |
| 5 to 10 | Positively Moderate | 9 | 37.5 |
| | | **24** | **100.0** |

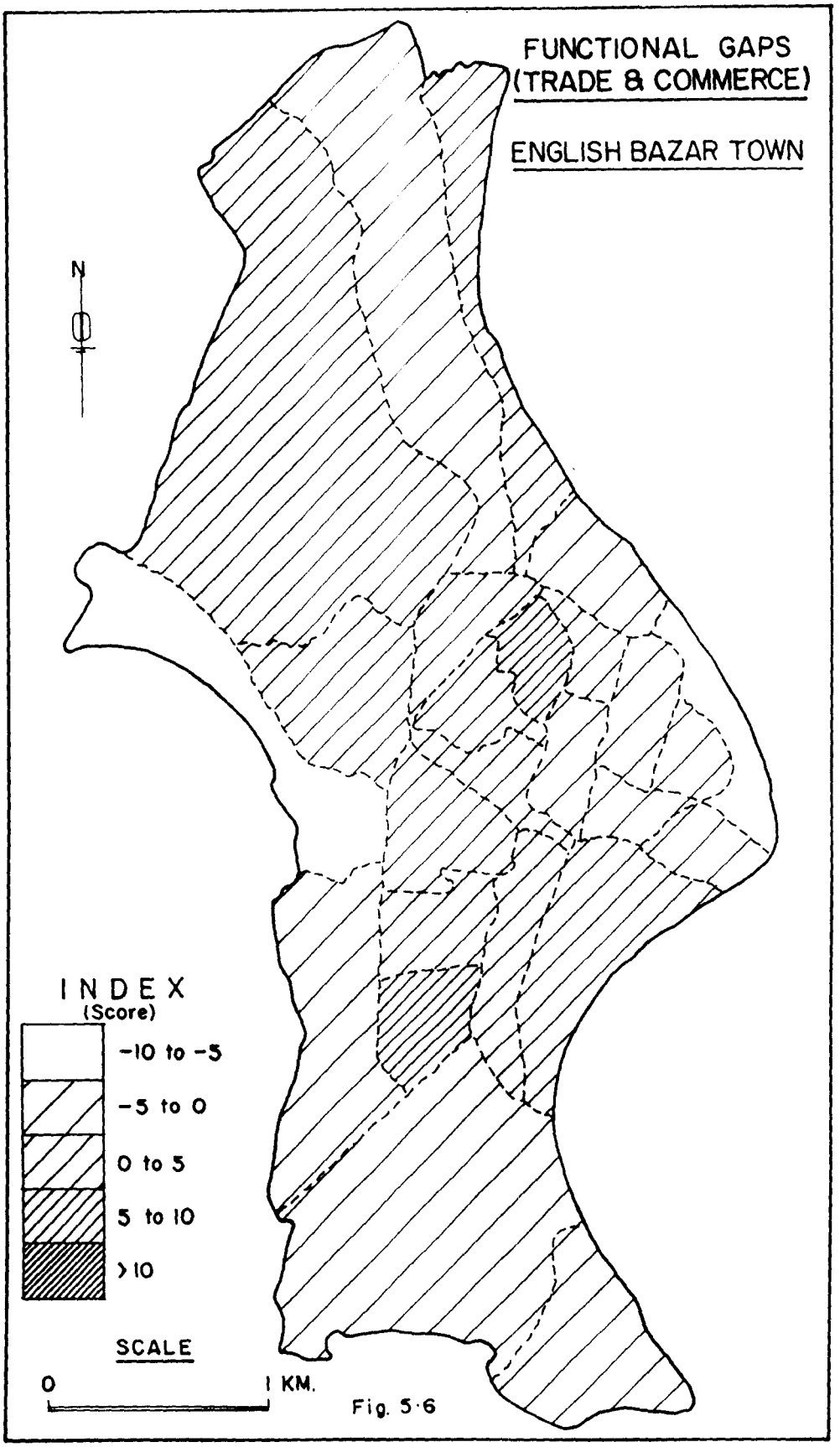

FUNCTIONAL GAPS
(TRADE & COMMERCE)
ENGLISH BAZAR TOWN
N
INDEX
(Score)
-10 to -5
-5 to 0
0 to 5
5 to 10
> 10
SCALE
0
1 KM.

Fig. 5·6

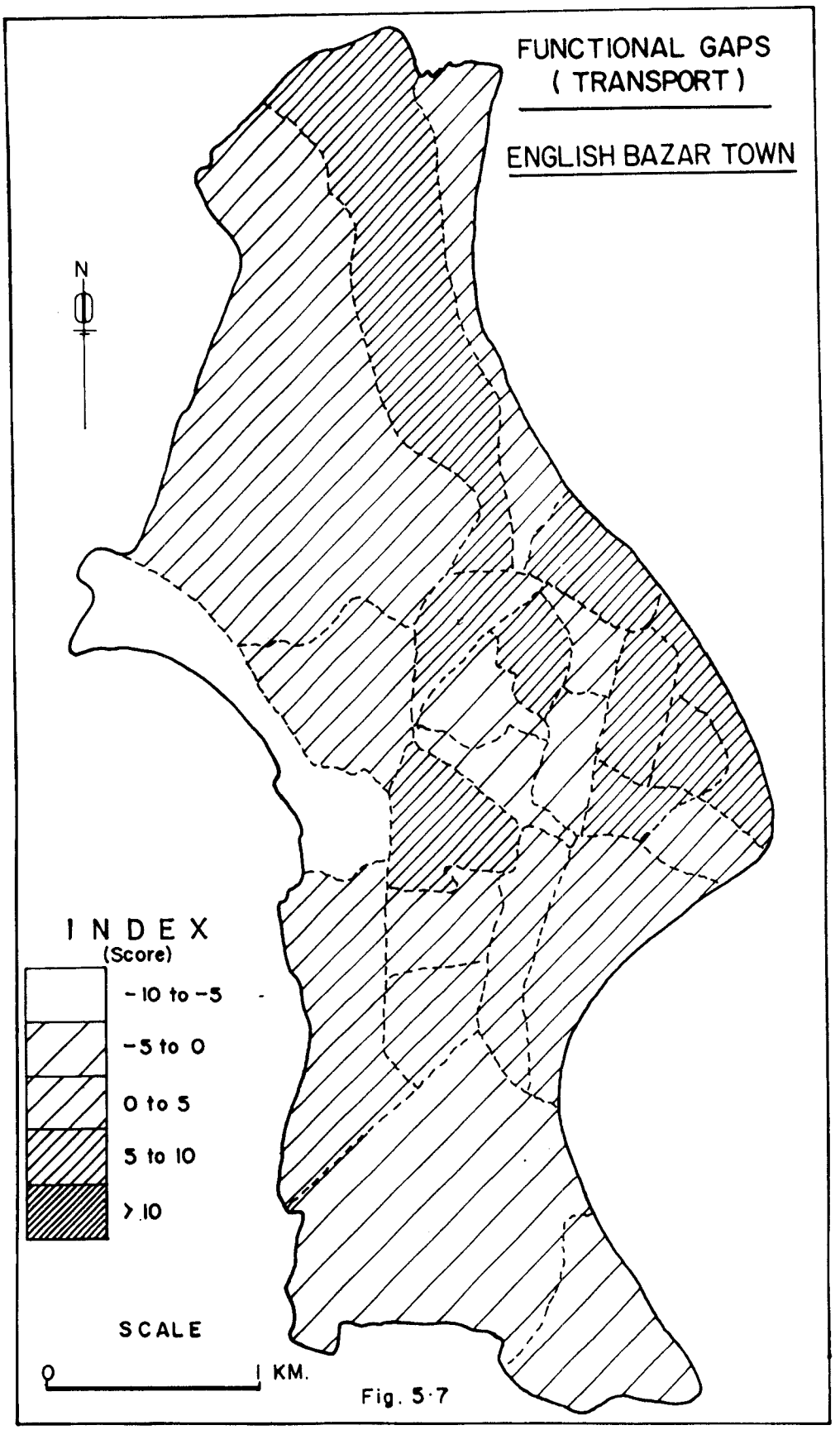

FUNCTIONAL GAPS
( TRANSPORT )
ENGLISH BAZAR TOWN
N
INDEX
(Score)
-10 to -5
-5 to 0
0 to 5
5 to 10
> 10
SCALE
0
1 KM.

Fig. 5·7

It is revealed from Table 5.5 that 5 out of 24 wards have poor transport facilities compared with the total population of the respective wards. These wards are I,II, XVI, XVII, and XVIII because these are located in remote areas of the town. Whereas the transport facilities in 19 wards out of 24 are better compared with the total population of these wards. These wards are located near the main roads and communication lines. Moreover these wards are situated near the NH 34 and the size of population is lower compared to the other wards those have low transport facilities. Out of 19 wards 10 have been placed in positively low category and 9 wards have been placed in positively moderate category. Only 5 wards have been placed in negatively high category.

In conclusion it may be said that the transport facilities in the town is not adequate in terms of population as well as demand for transport facilities.

### 5.1.6. CONSTRUCTION

With the help of equation Yc = -.00006x + 5.8 the functional gaps have been assessed and grouped. (Table 5.6).

**Table 5.6 :** Functional gaps (construction).

| Functional Gap (O-E) | Category | No. of ward | Percentage to total |
|---|---|---|---|
| - 5 to 0 | Negatively high | 5 | 20.8 |
| 0 to 5 | Positively low | 9 | 37.5 |
| 5 to 10 | Positively Moderate | 10 | 41.7 |
| | | **24** | **100.0** |

It is revealed from table 5.6 that 5 out of 24 wards have poor constructions facilities compared with the total population of the respective wards. These wards situated in south-western portion of the town and are far away from the main city centre. Whereas the constructions facilities in 19 wards are better compared with the total population of these wards. These wards are located very near to the city centre where more constructional work are made. Out of 19 wards 9 have been placed in positively low category and 10 wards have been placed positively moderate category. It is also noticed that 5 wards have been placed in the negatively high category.

In conclusion it may be said that the constructions facilities is not adequate but better in terms of population as well as demand for construction facilities.

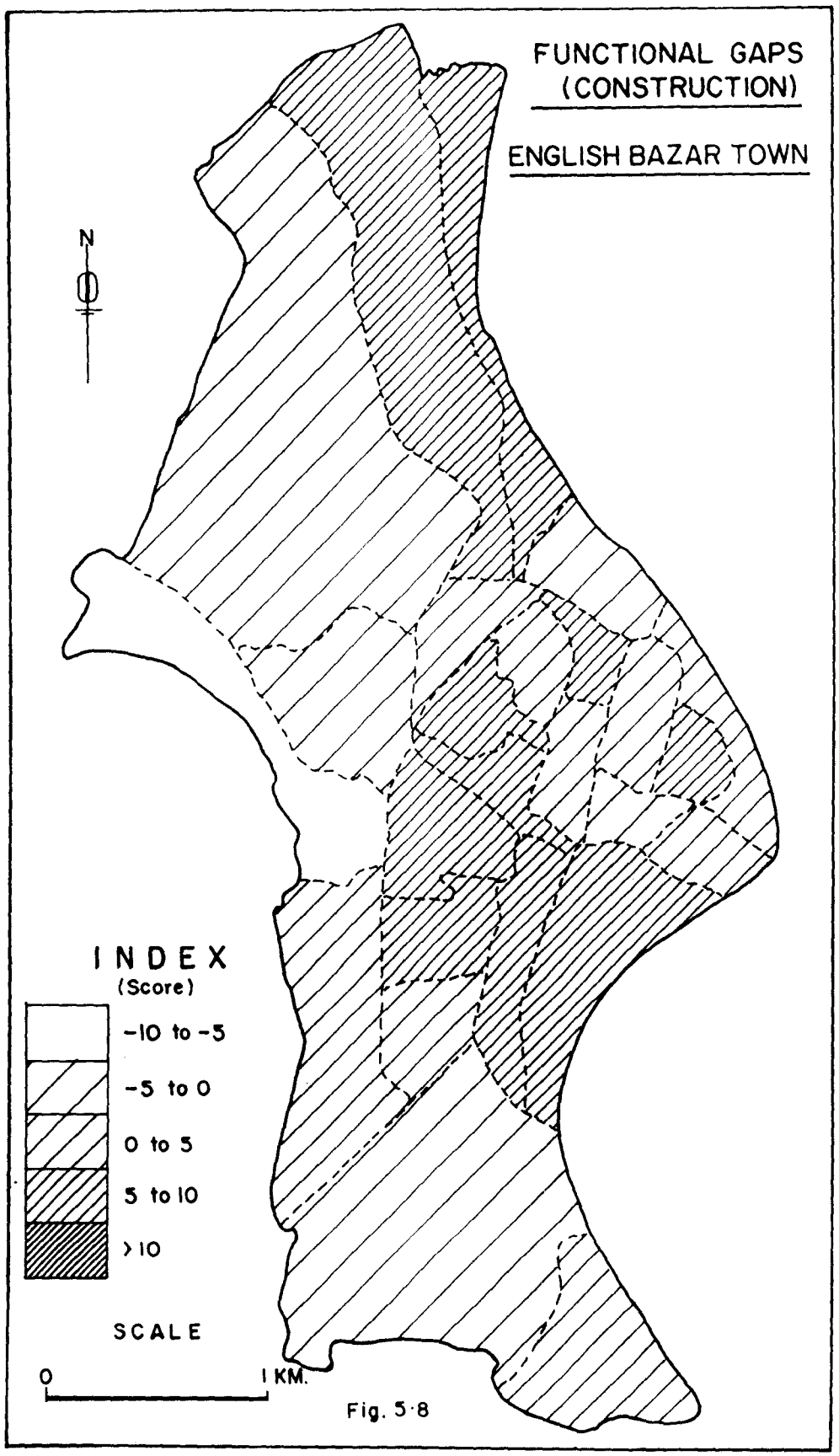

FUNCTIONAL GAPS
(CONSTRUCTION)
ENGLISH BAZAR TOWN
N
INDEX
(Score)
-10 to -5
-5 to 0
0 to 5
5 to 10
> 10
SCALE
0
1 KM.

Fig. 5·8

### 5.1.7. OTHER AMENITIES

With the help of equation Yo = -.0000 7 x + 5.8 the function gaps have been assessed and grouped. (Table 5.7).

**Table 5.7.:** Functional gaps (others)

| Functional Gap (O-E) | Category | No. of Ward | Percentage to total |
|---|---|---|---|
| - 5 to 0 | Negative high | 6 | 25.0 |
| 0 to 5 | Positively low | 18 | 75.0 |
| | | **24** | **100.0** |

It is revealed from Table 5.7 that 6 out of 24 wards have poor other facilities compared with their total population. These wards are I, II, III, XIV, XIV and XVIII. Other facilities in 18 wards are better compared with the total population. All these wards are be located in good location and having low size of population compared to the other wards.

In the town, 18 wards have been placed in positively low category and 6 wards have been placed in negatively high category. In conclusion it may be said that the others facilities it is not adequate but better in terms of population as well as demand for others facilities is concerned.

### 5.1.8 TOTAL CENTRALITY SCORE OF FUNCTIONS

With the help of equation YT = -.001 x + 53.89 the functional gaps have been assessed and grouped (Table 5.8).

**Table 5.8.:** Functional gaps (Total).

| Functional Gap (O-E) | Category | No. of Ward | Percentage to total |
|---|---|---|---|
| < - 10 | Negatively low | 3 | 12.5 |
| - 10 to -5 | Negatively high | 2 | 8.3 |
| - 5 to 0 | Positively low | 3 | 8.3 |
| 5 to 10 | Positively Moderate | 5 | 20.4 |
| > 10 | Positively high | 9 | 37.5 |
| | | **24** | **100.0** |

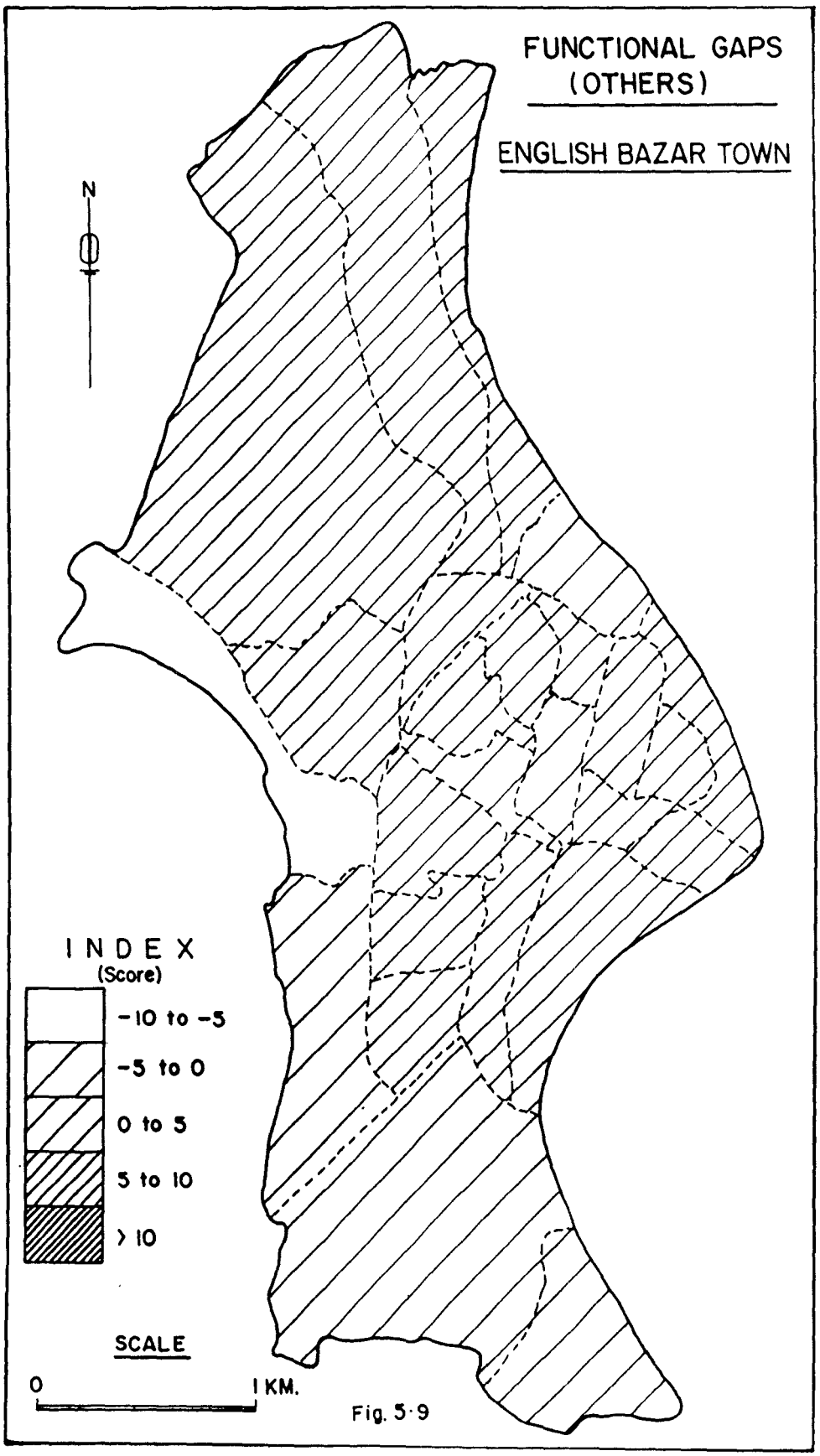

FUNCTIONAL GAPS
(OTHERS)
ENGLISH BAZAR TOWN
N
INDEX
(Score)
-10 to -5
-5 to 0
0 to 5
5 to 10
> 10
SCALE
0
1 KM.

Fig. 5·9

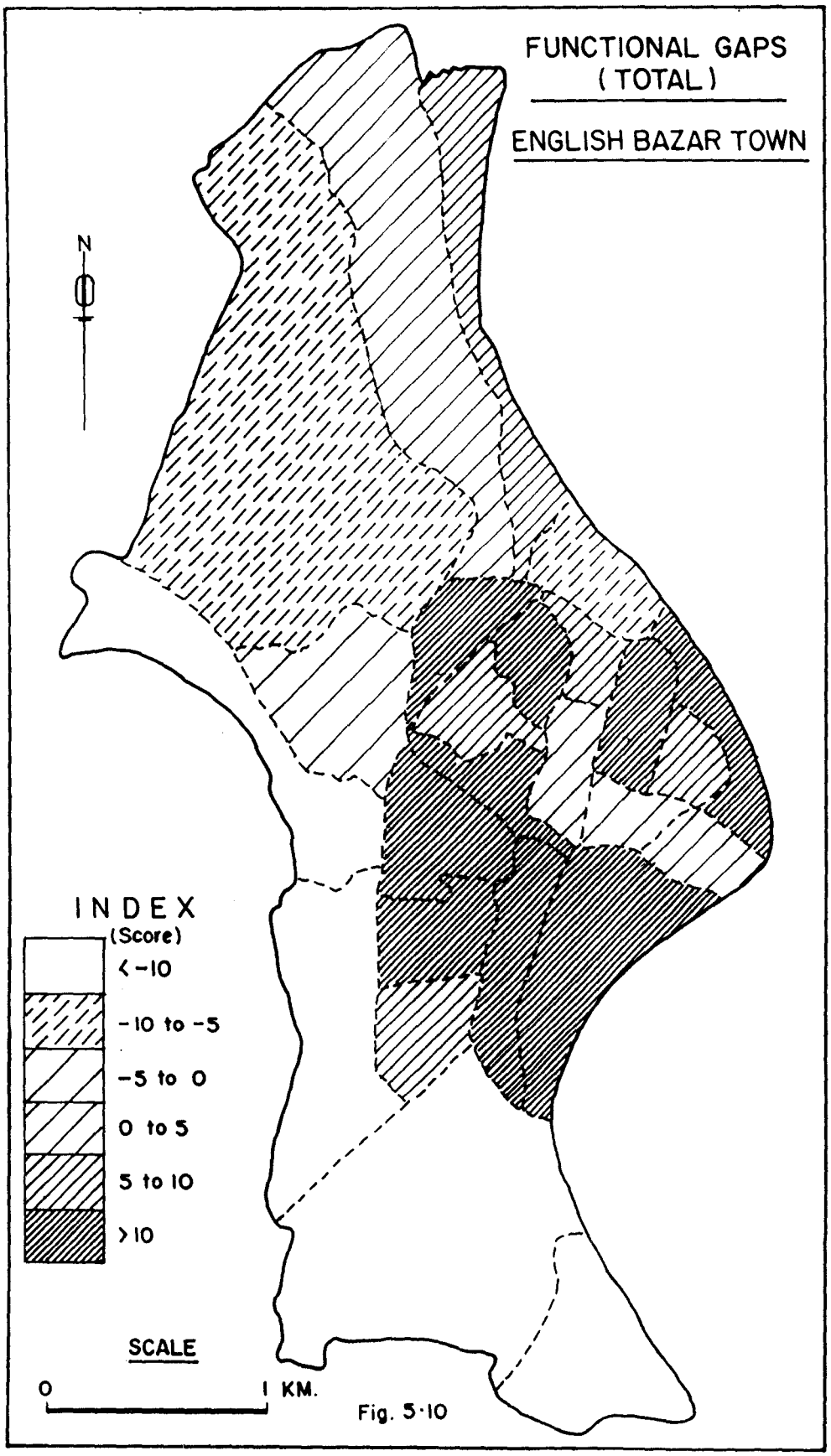

FUNCTIONAL GAPS
( TOTAL )
ENGLISH BAZAR TOWN
N
INDEX
(Score)
< -10
-10 to -5
-5 to 0
0 to 5
5 to 10
> 10
SCALE
0
1 KM.

Fig. 5·10

It is revealed from Table 5.8 that 7 out of 24 wards have poor, functions compared with the total population of the respective wards. These wards are located in the western and southern parts of the town and are backward and have poor infrastructure. In the town, 17 wards have better functions compared with the total population of these wards. These wards have a large number of different functions compared to their population size. Out of 17 wards, 3 have been placed in positively low category and 5 wards have been placed in positively moderate category. Only 9 wards have been placed in positively high category. It is also noticed that 3 wards are in negatively very low category.

In conclusion it may be said that the education, health, transport, communication, trade and commerce facilities are not adequate but better in terms of population as well as demand for these facilities.

## CONCLUSION

From the discussion it is visualised that the majority of wards in the town have low centrality scores in functions for poor infrastructure. The number of existing functions in these wards and their distribution are haphazards. As large number of population are dependent on central functions those are inadequate for such a large area. The functional gaps in the wards are wide. Consequently, the town is remained backward infrastructurally. To develop the town, these spatial and functional gaps have to be filled up by setting up new functions in the appropriate places in the wards. By developing the wards functionally all round development of the town can be possible. Consequently, the size of population dependent on functions are mostly large, so the standard of availability of functions is low in the wards specially for poor infrastructure in majority of wards.

Existing educational facilities and health services are inadequate for such a large population. Educational institutions have low infrastructural facility due to lack of students are qualified teachers. Health centres have neither sufficient medicines nor qualified doctors. Other socio-economic facilities in the town are poor and inadequate as compared to demand. Inadequate transport facilities increases the price of the consumer goods to retailers and decreases the price of local products. By increasing new functions town is to be developed functionally and it can be possible by suggesting Master Plans for its development.

# CHAPTER SIX

# DEVELOPMENTAL STRATEGIES

## INTRODUCTION

In the previous chapter, problems faced by the town under study have been discussed and the factors for stagnation in development are analysed. In this chapter different developmental plans formulated by different agencies in the past have been outlined and reviewed. Examining these plans a new strategy for the development of the town is suggested considering the present problems envisaged by the town and their adjoining areas.

## 6.1. EARLIER STRATEGIES

The English Bazar town and its neighbourhood have been growing at a very fast rate since 1940's though not in a planned way. The haphazard growth has brought about all the evils of unplanned urbanisation in the town. For the rectification of the situation, the State Government set up Malda Planning Organisation in 1954. The Malda Planning Organisation was entrusted to prepare an interim Development plan by 1955 as well as a Comprehensive Development plan by 1957 to provide a foundation for the organised development of the town and to ensure basic civic services and amenities.

### 6.1.1. Interim Development Plan

The interim Development Plan of English Bazar was designed for an area of 13.25 $Km^2$ leaving a large portion of area covered by Government establishments beyond its boundary. It was decided that the area would be zoned in general manner and the whole area would be called English Bazar IDP area. The initial plan was formed to serve 'mouzas' of English Bazar Police Station. The plan area had 3 broad sectors viz. the exiting town and its urban environs, the urbanising area to the south and west and the area proposed for new development to the east of Mahananda river. This division was made with a view to have the phasewise development.

The plan was designed for an estimated population of about 2 lakh persons and design was governed by some growth generators in the area, the most important of which are. (i) The English Bazar town Railway station, (ii) Malda College and Women's College, (iii) Air-drome and urban growth in its adjoining areas and

(iv) the nodal position of English Bazar for road transportation. The plan had the assurance to serve the various purposes : (1) It provides an immediate yardstick against which development decisions can be measured (2) It serves as a Government agencies or private enterprises, (3) It provides the basis for initiating broad landuse controls throughout the planning area, (4) It allows the continuing research programmes to be focused upon plan objectives. (5) It presents in a comprehensive manner, the plan concepts for review and decision to other Government agencies, private enterprises and the general public and (6) It points out the most pressing problems of the area and recommends courses of action for their immediate solution.

The Mahananda forms the physical constraint to the development of the town. The IDP realised the need for the link up of the north-western and western parts with the Malda Town Railway Junction. This would not only make provision of road link, would enhance the economy of the town. Thus the physical constraints might be minimised. It would also permit some radial growth to the east from the nucleus of the town.

The plan gave stress on intensive urban uses of land and proposed much enhancement of land area under residential, commercial and industrial uses. In the plan, some new commercial areas and some new residential areas were proposed. It also suggested some administrative and recreation centres. The plan allocated 93 hect. of land for building of roads and proposed some new ring roads and overpasses. To eliminate the bottlenecks in the road system, some arterial and link roads were proposed. Some roads were recommended for their widening.

In this plan additional 3 reservoirs to be suitably located as per population density and demand for water were recommended. Recommendations for the suitable interconnection of the distribution mains were also made with the hope to maintain the operation at the time of shut down of other sources. The plan had the provision for the gradual replacement of service latrines by community septic tanks in the urban areas. It also suggested stagewise introduction of sewarage and development of underground sewers before commencement of construction of buildings. A sewage disposal site in the east-south-east of old Malda Railway station proposed. An integrated system of open storm water drains was recommended for construction and the Mahananda River was the obvious drainage outfall for the municipal area.

### 6.1.2. Comprehensive Development Plan

It was intended that the Interim Development Plan should be followed by a Comprehensive Development Plan (CDP) which deal in greater length with the urban area and spell out phased programmes for public utilities and services. The Comprehensive Development Plan prepared by English Bazar Planning Organisation was not a departure from the I.D.P. but only detailed enlargement of its basic features. The plan not only was based upon the expectations of the local population and the physical, social and economic constraints of the local situation, the objective were related to the nation and the region of which it is a part. The main objectives of the plan were (i) to develop an urban environment in English Bazar, (ii) to ensure the maximum utilization of natural and man made resources, (iii) to promote an orderly and dynamic growth of the areas economy, (iv) to develop an efficient and adequate infrastructure, (v) to create a strong machinery for effective plan implementation and sustained development and (iv) to establish and develop public participation and strengthen local self government.

The actions proposed in the CDP were primarily concerned with the investments in the basic facilities. Attention was also given to further stimulate industrial growth in the town. The recommendations of the CDP are (1) Extension of municipal area, (2) new residential area with provision of adequate water, transportation and waste disposal facilities; (3) construction of some new link roads, (4) formation of a new town centre, (5) construction of multistoried buildings to increase the residential density, (6) improvement of roads, drains, level crossing and traffic congestions (7) some secondary recreation centres, parking space for vehicles, unloading and loading and terminus for buses and (8) formation of some industrial zones. The plan also proposed some changes about the physical land content in the I.D.P. and emphasised the provision of new areas to be linked with the old for the expansion of the town.

#### 6.1.2a. Transport

English Bazar or the most important transportation centre for the north-eastern India demands a modern circulation system. The plan in this regard has recommended (1) optimum use of existing transportation system through improved traffic operation and control; (2) for improved existing transportation facilities widening or realignment of roads, provision of parking area for vehicles, footpaths and crossings, bus stops etc. for pedestrians and (3) development of new roads and other transport facilities.

### 6.1.2b. Central Area Plan

The plan emphasises the need for central area with good transportation linkages. This area is to be enclosed by Mahananda river in the east, Malda town station in the north, English Bazar Jail in the south. The establishment of this centre will act as a strong stimulus for enhancing the town's importance and provide residential facilities to the new entrances to the town in the years to come.

### 6.1.2c. Housing

The plan recommends immediate action to relieve the acute housing shortage in Malda and to meet the rising needs of it by implementing programmes combining slum improvement, development of low-cost plots, provision of skeletal and other self-help housing and construction of variety of pucca houses. The plan believed that such a combined approach only would be able to solve the housing problem in English Bazar that affects most of the income groups. Some of the principles accepted in the face of the housing problem recommended by the plan were : (i) Government investment should be devoted to basic environmental improvements, (ii) Attention should be concentrated on a raid expansion in the quality of basic living accommodation, (iii) Governments approach should be use its small available resources in the mobilization of the large pool of resources available of the people themselves, (iv) Government must offer a variety of housing programmes, (v) Effective mobilization of resources for housing and (vi) Housing programmes should be relatively easy to administer.

### 6.1.2d. Community Facilities

The plan recommended improvement of the existing community services and facilities in the town. As the land within the built up area has become both costly and scarce, the facilities can be combined to effect savings in space. Through such combination of uses optimum use of land can be active. In the field of education the plan suggests an atmosphere of equal opportunity for all children which will ensure every pupil a place in school and the ultimate aim is to provide free and compulsory education to all children in 6-14 age group by 1986. It also recommended a gradual increase in the percentage of enrolments. In case of higher secondary education the target suggested by 1986 is 40%. It was suggested that the number of free government school be increased at a fast pace. At the Higher Secondary level the technical and vocational education are paid utmost importance.

The plan suggested to increase the number of hospitals with additional beds to

provide smooth and free health services to the people inside and outside the town. It also recommended some beds for special type of disuses. It proposed some openspace and recreation centres at the appropriate places.

### 6.1.2e. Public Utility Services

The public water supply system, drainage arrangement, hygienic disposal of wastes - these three basic public utility services are the most pressing problems in English Bazar. The future of the town will to a great extent be determined by how well and how soon these services are extended. The plan urges prompt consideration of the water supply problem of the town. It suggests that the English Bazar water supply scheme of 1.65 m.g.d. should be taken up immediately for execution and the preparation of comprehensive water scheme (25 m.g.d.) integrating the interim scheme should be commend.

### 6.1.2f. Drainage

For planning the drainage system the English Bazar has been divided into a number of drainage basins in consideration with the existing topography, the proposed future landuse and facilities for storm water disposal. Those basins are; (1) Central drainage basin (2) North drainage basin, (3) North-eastern (4) South-eastern, (5) western, (6) south-western drainage basins. The plan also recommended a network of open brick and mortar, storm water drains which should be maintained and kept free to carry rain water to suitable outlets. While the overall drainage programme in the town used to be extended in stages, priority should be given to improve the condition of the Buraburitala area.

### 6.1.3. Outline Development Plan

With effect from 1.4.1980 the West Bengal Town and Country (Planning & Development) Act, 1979 has been extended over all the areas of English Bazar Police Station in the Malda District. Under section 31 of the Act, English Bazar Development Authority was entrusted with the responsibility for the preparation and enforcement of development plan (Outline Development Plan) for the aforesaid areas.

The purpose of the O.D.P is essentially to design a broad frame work for integrated and orderly development of the various functions of the city by a rational allocation of the residential, commercial, industrial, public and semi-public areas and open spaces. The plan may also direct short-term action programme for the physical improvement of the community and its environment based on a careful study of various socio-economic and physical factors. Some

objectives of the plan were : (i) formulation of the policy for the improvement of physical environment, (ii) to express relationship between general proposals for the development and general use of land in neighbouring areas. (iii) to contain matters which may be prescribed or direct by the State Government. The plan will also consider : (a) the broad proposals of the development authority about the uses of plan. (b) allocation of areas for different landuses, (c) provision for better urban facilities, (d) regulations to control the structure.

Since the partition of India, the town experienced tremendous organic expansion and brought vast tracts of rural areas surrounding the township within its urban fold. Owing to the absence of legal control the town has assumed forms of isolated and disorganised landuses. To guide and control this hapazard development, the ODP is introduced.

**6.1.3a. Recommendations of O.D.P.**

1. The role of ODP area has essentially been one of consumer oriented small and cottage industries scattered over the township though a vague concentration of industries is marked in Mokdampur area. The plan proposed a number of industrial units in the neighbouring areas of the town mainly based on engineering and electricals.

2. The commercial importance of Malda Town of pre partition days has been surged to Bangladesh. To overcome the present situation the plan recommended some new commercial areas in different parts of the town.

3. In the face of increased population also by 1991 and 2001 the plan has suggested for the development of some areas for the residential of the increased population.

4. Similarly the plan also has pleaded for the formation of an administrative complex to accommodate 84 scattered state and central government establishments which are now run at privately rented houses in the town.

5. For augmenting the drinking water supply the plan proposed a comprehensive pipe water supply by P.H.E. Department. It also recommended increase of number of standposts.

6. The existing drainage system of English Bazar is insufficient. Extensive water logging in the entire town becomes a fact even offer a medium shower. The Municipal Engineering Dept. has proposed a comprehensive drainage scheme, implementation of which will help to contain the water logging to a

large extent. As the Pirojpur trenching ground creates pollution the plan has suggested that the present location of the trenching ground be shifted from the urban area to the area near Air Field where the sanitation processing should be done scientifically. It also has recommended for improvements of collection and disposal system of night soil.

7. Proposals have been made in the O.D.P. to develop the low lying areas along river Mahananda to open green and tourist lodge on the higher parts in the middle of the low lying areas. It has also proposed a sports complex in the Mission Road area. The enforcement of the above proposals can be made through enforcement of landuse control and of building rules.

### 6.1.4 Review of Earlier Plans

For an integrated development English Bazar along with its adjoining areas has been offered with three plans so far. But none of them has been accepted by any Government in its total and for the solution of the growing problems of the town no satisfactory measure has been taken. The interim Development plan for English Bazar had so many promises for the development of the town and its adjacent areas but it is really painful that a very few of them were carried out. In addition the English Bazar Planning Organisation failed to do anything in the field of basic plans and master plans. The main emphasis of C.D.P. was to increase the basic facilities and to stimulate agricultural growth in Malda town. It also stressed on housing, recreation centre, public utility services for their proper improvement. But due to various reasons the plan's proposals could not be implemented in the town. Most of the proposals were cost oriented and did not create generation to the public and the Govt. organisation. So the plan could not be succeeded though there were many promises for the development of the town. To compensate and supplement the two earlier plans. The ODP was formulated in view of development of English Bazar town and their adjoining areas. Major thrust of this project was to accommodate more people in future. So it stressed on development of residential, shopping, roads, industries and other civic amenities. But due to various draw backs the plan proposals could not be succeeded for the benefits of the people.

All the plans though made sincere thinking about a much larger area than their nucleus, the town is not paid due gravity. However, some mini programmes for English Bazar are undertaken E.B.D.A. since 1980. The works so far has been made are widening and renovation of some roads within the town, construction of English Bazar Taxi stand at K.J. Syndal Road, construction of burning ghat, construction of private bus stand, some stages for cultural performances and so on.

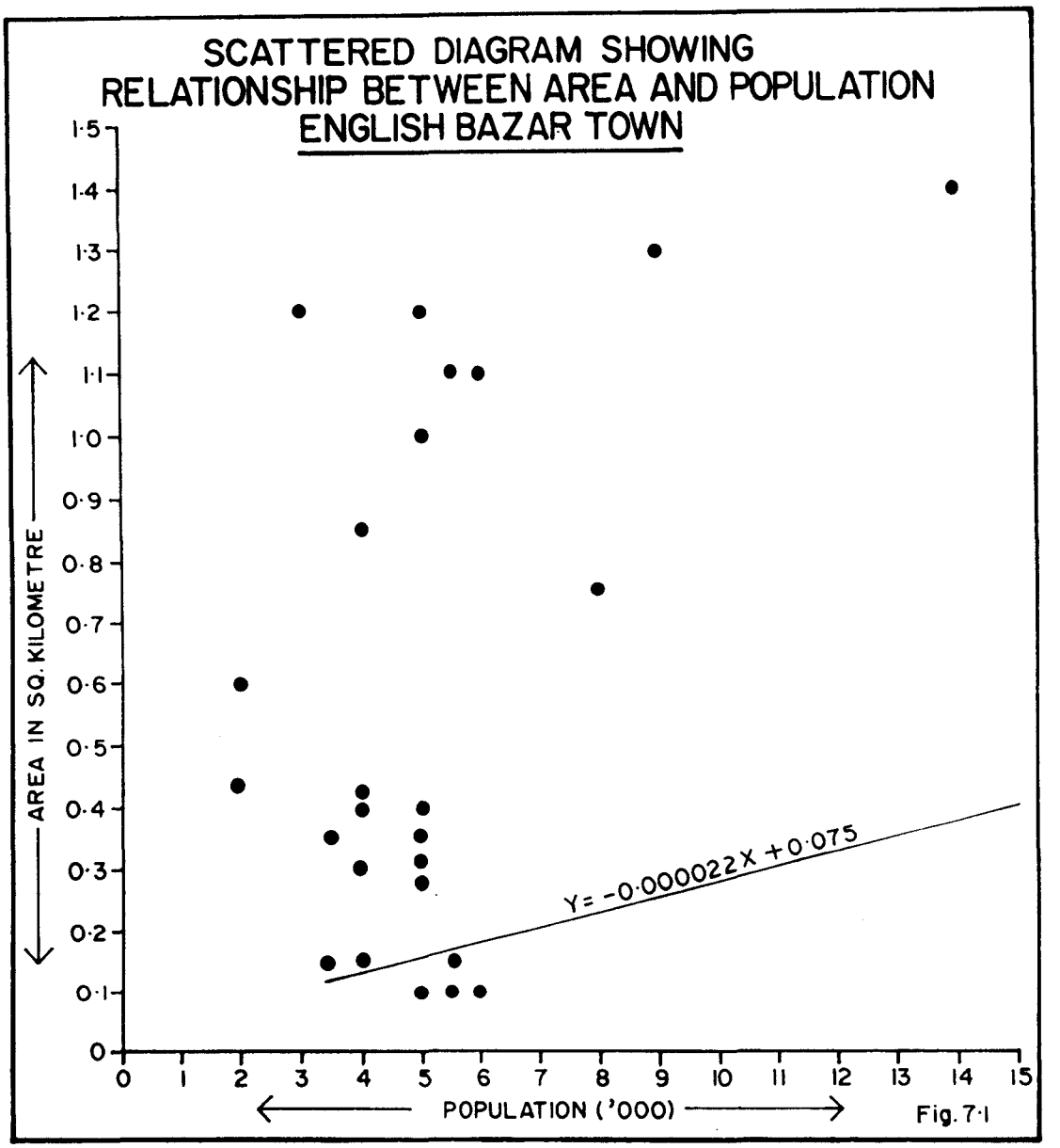

SCATTERED DIAGRAM SHOWING
RELATIONSHIP BETWEEN AREA AND POPULATION
ENGLISH BAZAR TOWN
AREA IN SQ. KILOMETRE
1·5
1·4
1·3
1·2
1·1
1·0
0·9
0·8
0·7
0·6
0·5
0·4
0·3
0·2
0·1
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
POPULATION ('000)
Y = -0·000022X + 0·075

Fig. 7·1

Under these circumstances to dissipate the pressure of the chronic problems in the town of the region. Planned measures should be adopted on an emergency scale. No doubt, more areas are to add to the town in future and some desired strategies are to be followed. Those strategies are appended here after in this chapter.

## 6.2. DESIRED STRATEGY

It is apparent from the preceding analysis, that the town is confronted with a variety of chronic problems, which can be solved only by evolving suitable strategy in a planned way. Only through planning, an attempt can be made to solve the problems of the town. For the planned growth, on integrated approach for urban development is required. The need arises to prepare a Master plan which may provide the general guidelines for urban development. This will help to provide viable solutions for the different problems confronting the town.

### 6.2.1. Residential Area

As the residential area happens to be in the largest component of the urban fabric in the town, its problem of obsolete dwelling, congestion, overcrowding and insanitary conditions require urgent consideration. Truely a better living environment with less land per dwelling has become an essential ingredient of town planning, keeping in view the social and economic background of the town the following measures have been proposed for the improvement of their residential areas :

(i) unplanned construction of dwellings in various sections of the town should be stopped through proper municipal legislation. Obsolete and delapidated buildings, occurring mostly in the older parts of the town specially in makdampur, have to be demolished and modern buildings should be constructed in their place by providing financial assistance, at a reasonable rate of interest, to the house- owners.

(ii) formation of small town planning unit is suggested so that it could assist the municipality in town development.

(iii) Urban land ceiling should be implemented without any further delay. In this way, the surplus urban land could be acquired for the development of residential complexes, particularly for people in the middle and lower income groups. The layout plan, allocation of plots, and approval of building plans have to be made by the town development authorities which could also supply building materials at approved rates.

(iv) Low-lying, marshy and waste lands could be declaimed for development of residential colonies and other uses. In doing so, due consideration has to be given to the economy of space, provision of public utility services and the expenditure involved and

(v) It is proposed that the slum dwellers, at present residing under unhygienic conditions in the densely populated parts of the town may be rehabilitated at the alternative sites on the outskirts of the town and the slum-cleared areas can be developed into into parks and playgrounds.

One of the urgent problems facing the town is the acute shortage of housing. In planning for achieving self-sufficiency in housing a correct estimation of the housing requirements should form the very first step. The next step for this purpose should be to formulate a national housing policy with fruitful socio-economic objectives. The social attitudes embodied in the social environment must be taken into consideration and proper weightage should be given to the same. It is a fallacy to think that the housing problems will be solved merely by building a few million dwellings. What is needed is to solve suitable housing standards for different income groups and family sizes and to adhere to the standards without housing them. It is also necessary to see that the maximum standards of housing & neighbourhood designs are adequate to ensure healthy living of even the lowest income facilities. Fulfilling the qualitative needs of the housing is as important as fulfilling the quantitative needs. It is also noteworthy that the housing standards should be judged in relative terms rather than absolute ones.

### 6.2.2. Commercial Centre

The population explosion and increase in the sizes of towns have resulted in the phenomenal growth of commercial activities particularly in the larger town. This has caused an overlapping of the functional landuses. A proposal has been made to shift the residences to other places and the space vacated may be utilized for construction of shops, show-rooms and other commercial establishments. This can be done by persuasion, legislation and provision for financial assistance. The wholesale and retail trade may also be separated so as to case congestion. Big godowns and warehouses may be established either close to railway station or at entry points of important roads into the towns, where ever ample open space is available which will provide cheap and convenient storage facilities. This congestion in the CBD where some of the

warehouses are at present located, can be relieved. Pavement shops need not function in the commercial core of the town and further encroachments on the roads has to be stopped. Provision for municipal market, selling general merchandises and perishable goods has to be made in each word. This will also contribute to the easing of congestion in the central Business area. There is also on urgent need for developing suburban markets to cater for the needs of the expanding towns. For giving some proposals it is essential to study some urban areas in this country. As for example.

In Delhi, the business structure of Connaught Place has a planned pattern. The location of almost all the shops in the ground floor is the clear testimony of the idea that the shops may have easy access to the customers. Further, the important proportion of the commercial area is mainly given on first and second floors which again speak to the planning oriented construction. The specialised functions on the radial roads, availability of the open spaces in the connaught circus Road, residential occupation on higher floors all the planning oriented aspects.

Similarly Sector 17 of Chandigarh in Haryana has the planned structure of commercial, administrative and recreational establishments. The shops are distributed in the three distinct blocks comprising about 53 shops devoted to a variety of items. The upper floors are used for Govt. offices. The administrative function of the city proper is almost centred in this sector grouped in two localities (Plate-27).

Recently there has been a healthy change in the business structure of Indian cities by establishing super markets (Plate-25). The main aims of the super markets are to enhance the retail sale of commodities, to check the black marketing, the lower down the prices and to cater for the variable needs of average people at one place. The average class of people has been greatly facilitated by such markets. Thus it can be concluded that the chance and whim of business communities, have produced a complicated, hotch-potch and problem passing outlook and situation in this particular aspect of our urban activities. But by the present norm of planning it may look ahead in the future change of the locations, set-up and behaviour of its business from in the city morphology. The present intensified complex CBO may not continue. It is expected that secondary CBDs along the outer rings associated with new townships will surelyemerge. Further the role of sectional business centres, isolated stores clusters and planned organised business areas may remain the same, though some modifications and multiplications are bound to occur with

27. A view of District Collectorate of English Bazar


28. A front view of Deshbandhu market

the change in the public taste and technology which are recently coming ahead. It is also expected that the wholesale and specialised markets may be rejuvenated in their spirit and pattern with the changes in their locations and types.

### 6.2.3. Industrial Structure

Industrial structure has a significant importance in the overall appraisal of the cities. While the business areas tend to be centralised in the CBD, modern industries have started emerging in the outer portions of the city and thus help not only to the balanced development of landuse but also the population and other urban activities. Industries play significant role in the city's economy as they provide the basic export channels for earning money. In reality. most of the prosperous cities, today are industrial.

A land mark change in the industrial setup is marked with the concept of Industrial Estates or organised industrial districts. The main objective for the development of such 'estate' is regarded as a solution form any of the economic ills and urban problems arising out of the inner locations of industries. Further these development are made in order to provide scope for the development of village enterprises and means of rehabilitation for displaced persons. These organised industrial areas, mostly located and developed on the outskirts of cities have produced a significant planned road pattern and similar building designs.

The planned industrial areas in Ludhiana in Punjab and Chandigarh where the ring road patter in the case of former and gird road patter in the later are obvious. Almost all the industrial units have the easy access both of rail and road to suit their necessities of market and the supply of raw materials. The provision of yards and godowns beside the railway line, in ease of Chandigarh, is the additional facility to the developing industrial units. They are also characterised with the industrial and residential colonies and business facilities to accommodate and fulfil the needs of the working class.

The policy of Town and Country Planning if properly executed, will certainly bring forth such industrial & economic bases around the metropolitan centres. The idea of satellite towns, the reservation of rural lands and agricultural belts and the aim of rural-urban integration will surely fulfil the urban-policy of decentralisation, with the result of the differences between village and towns will narrow down and a continuous industrial belt will develop. This has already happened in the Calcutta industrial region. Whatever be the aims and objectives of our industrial policy, one cannot assert with confidence that this policy has

actually brought about decentralisation and diversification of industries leading to deconcentration of population of big cities and the development of small towns.

Barber (1969) has observed that object of industrial planning is to provide suitable space and facilities for industry and to integrate industry into the community in such a manner that it will thrive and result in economic advantages to the community, with minimum adverse effects. Keeping this in view, the household industries may be retained in the residential areas but both the small and large scale noisy and otherwise unsuitably located industries have to be shifted to the areas so allocated for the purpose. Industries emitting objectionable dirt, fumes, odours and noise have to be sited for from the residential areas, so that the pollulants may not endanger the health of the town-dwellers. Establishments of the industrial estates has been suggested for this purpose.

### 6.2.4. Morphology of Other Functions

Almost other morphological functions. i.e. administrative, educational, medical, recreational and other social & cultural the most significant is the administrative. During British period the civil lines distinctively separated from the old indigenous parts were remarkably laid out most in the outskirts of the city. Age of construction, the prevailing architectural planning models and pattern, and demands as well as needs for planned space utilization have caused differential patterns in the morphology of the administrative units. The size of the administrative area emerged according to the functional hierarchy which ranges from the national capital to the block administrative centres through the state, district and tahsil headquarters, etc. It is true that most of the administrative zone lying in the civil lines present the British pattern. The clustering of the courts and government offices in the unplanned layouts with huge massive building structures asserted by the temporary sheds of lawyers, clerks and others with canteen hutments and small open spaces retain the same old strains of pressure. On the other hand, planned administrative zones with their attractive layouts, symmetrical building designs with planned parks and open spaces differ morphologically form those of the unplanned areas. Some of the general morphological characteristics of National Capital (New Delhi) and State Capitals scattered grand buildings, with sufficient of pen space and parts on planned from of roads and buildings produce a magnificent picture of the administrative area of Chandigarh, i.e. sector No. 1. Physically different Bhubaneswar from Chandigarh, has produced the planned administrative units mainly concerned with administrative purposes.

Parks, playground, open spaces and parking places accompanied with wide

metalled roads are the main features of the area. Recently, numerous organised office areas are emerging to accommodate the scattered offices and to avoid the hotch-potch amalgamation of administrative centres. Therefore, some of the cities have developed a separate planned office area in the outer-zone. These areas comprises the planned buildings of new style with open spaces, wide road. parks & playgrounds. The building pattern is sufficient to accommodate the required needs of the particular office. As for example kanpur has developed an important office area in the west of Pandoonagar. In Delhi, Indraprastha Estate, almost are and half km. South of Delhi Gate has recently been developed as a centre for Government offices (Draft Master plan for Delhi 19 ). It is suggested that various administrative offices in the town should be located as for as possible, in one area so that these can render better services. The administrative area, in fact, needs planned development so that new attractive structures may be constructed with extensive set-backs and parking facilities and laws. Such an claborate landscape can be had only on the outskirts of these towns.

### 6.2.5. Education Institutions

Educational institutions catering to the needs of higher secondary schools and higher level education, occur in various parts of these towns. But more primary and nursery schools are required at suitable locations in the residential areas of both the towns to meet the growing demands. High schools should be located, preferably close to the main road. Special attention has to be given towards the privately engaged high schools which usually suffer from lack of facilities founds and suitable stuff. The poor infrastructure in some of the schools must be developed. Measures have to be taken to improve the academic facilities available in degree colleges which fill the gap between the school and the university education. The location of one college (i.e. Malda College) in the central residential area has been responsible for creating a lot of congestion. A more rational use of the existing space is suggested by shifting the college premises to more specious area on the periphery of the town. These urban centres have to develop educational zones with district morphological structure and their distributional pattern should be caused differentiation of its various parts as well in order to fulfil the social and cultural needs. These have played an important role in determining the mode of city life.

### 6.2.6. Medical Service

Every city should have a medical zone is insufficient considering the total population and extension of the city. The older medical establishments are situated

in the congested of the cities whereas the newer ones should develop in the open areas preferably in the new extensions of the cities. The morphological difference between the two can be very will assessed with the unplanned and planned aspect. The recent trend of enhancing medical services in the cities are opening a new chapter by establishing specialised services such as sanitoriums, eye clinics, maternity centres etc. in the open surroundings, away from the city proper. These medical units, though small, are sufficient to attract for growth and expansion of the city attracting business and residential establishments and other activities related to medical services. For example in Varanasi a district medical zone is found in B.H.U. which comprises of Sir Sundar Lal Hospital, a Medical College, Nursing School, Anatomy Section, Medical College Library and number of medical shops at lank etc. As such all the needed comforts and necessities of patients are available in a short reach of this zone.

These is an urgent need for having a female hospital, equipped with maternity home, in the town. The size and facilities available in these hospitals should be such as to provide satisfactory services to the population. Care has to be taken in the selection of site for the specialised regional hospital. For example T.B. Hospital, and Veternity Hospital have to be located essentially on the outskirts of the town. Provision for the treatment of Polio. Malaria, Venercal and quarantine diseases etc.. is highly desirable. These units need sensitive, sophisticated and modern instruments. Needless to mention, the ambulance facilities will also enhance their efficiency.

### 6.2.7. Transport Facilities

Indeed, the efficient mobility within the town is essential for the continued vitality of the multitude of activities that the town must support. In can be possible with the help of a well designed network of roads and streets. As far as possible the widening of the existing roads and streets, removal of encroachments on the pavement of shopkeepers and check on unauthorised parking of rickshaws and other vehicles will go long way towards increase in traffic mobility. There is also need for providing suitable sites for parking of vehicles. The construction of carriage ways with footpaths on both the sides of main roads is urgently needed. At present, this traffic passes through congestion. Observance of traffic rules and restriction on the movement of heavy vehicles during peak business hours will also help in relieving the pressure. The planning of a comprehensive road system will solve the present traffic problems. A Master Plan will make provision for all kinds of road systems.

### 6.2.8. Parks and Playgrounds

Cities suffer from improper arrangement and insufficient provision of parks, playground and open spaces. The recreational and hobby centres, the entertainment and amusement activities of the urbanities take forms either as commercial or as public and mass entertainment bases. In the unplanned areas of the cities the morphology of the parks and playgrounds is not very charming because of the poor maintenance and lack of aesthetic sense among the public in using them. The artificial lakes developed in some of the newly planned cities or the neighbourhoods have gained much more significance in recreational activities. Parks and playgrounds may be developed for which a suitable vacant land is desirable. with a view to maintaining the physical and mental well-being of town-dwellers. (Goetsch, 1969).

## CONCLUSION

English Bazar Town, though did not have any effective urban plan has recently been provided with O.D.P. The ODP area of English Bazar extends over 13.25 $km^2$. The plan has focused that the projected population in English Bazar Town in 2001 will be 2,50,000, 71% of which will be total working force. The economic growth of the ODP area cannot substantiate the population growth.

The sectoral employment pattern of the ODP area in English Bazar reveals that the urban areas have primarily tertiary services, people of the peripheral rural areas have not yet adopted non-agricultural pursuits to improve their economic conditions.

English Bazar Municipality has taken many programmes for the development of the town, mostly connected with improving the living conditions of the urban residents, water supply, sanitation, transport, parks and playgrounds.

# CHAPTER SEVEN

# DEVELOPMENT AND PLANNING

## INTRODUCTION

Planning is an active modern discipline engaging many professional group in which Geographers role is unique. The remark "Planning of a city needs not only the skill and assistance of engineers and architects. but also the help of geographers is quite right (Sing, R.L. 1964). From the previous discussions and analysis it is quite clear that the town awaits some concrete plans and suggestions for its future development. In addition, it urgently need some improvements and corrections in its existing plans.

The common approved measures adopted to decentralise the population of the town are the development of communities and neighbourhood units as well as of satellite town. In order to have a proper development of a growing strategic town like English Bazar an expert plan is essential. Numerous problems of different magnitude in English Bazar found in the forms of appalling congestion, acute shortage of housing, traffic congestion, unsatisfactory health and medical services, undesirable uses and misuses of urban lands and lack of civic amenities. In order to solve these short comings and the problems, application of these plans viz. I.D.P., C.D.P. and O.D.P. are essential but these long term schemes require many years to do that will involve the expenditure of crores of rupees. Some additional suggestions have been cited and it advisable that the surgical treatment and immediate action should be applied in the town for their improvement.

## PRINCIPLES OF PLANNING

For an well guided plan for the future the following principles must be followed :

(i) All the development areas should be tied into an integrated system and allowed to expand in an orderly manner.

(ii) The urbanisation of the area should not threaten the basic normal resources like mango, paddy etc. in the region.

(iii) The urban growth should also protect the peripheral activities e.g. brick fields. These after exhaustion of their producing capacity should be converted to other intensive urban uses.

(iv) All the major roads must be considered multipurpose, serving not only local needs but also the needs of intra-area transportation as well as transportation from the area to the outside region.

(v) Due to shortage of finance, to achieve the goals and objectives phased improvement and rehabilitation programmes over a long period of time are to be done.

(vi) The plan should try to eliminate the obnoxious nuisances in the present urban structure.

(vii) The plan must accelerate the growth in the weaker sectors and recommend development of a balanced economic base.

(viii) The desired levels in the standards of services and in the living environment can be obtained immediately.

(ix) Provision of time for the development and building of new urban areas in stages should be made. So that the expansion can be related to the fiscal capacities required to provide adequate urban services. The expected future functions and population projection for the town, which is already facing many problems, are bound to face many more such problems covering anomalies and congestion arising in future. If the town areas are not extended and different functions are not extended and different functions are not allocated properly, the landuse pattern will be very unbalanced and irregular.

In this chapter, different methods like mathematical model fitting, economic projection and past trend growth have been tried and finally a possible solution is arrived at.

## 7.1. POPULATION DEVELOPMENT

### 7.1.1. Area and Population

In fact, though the area of the wards has been determined on the basis of administrative purpose but the actual size of the ward should be on the basic of population, so that the facilities in each ward can easily be assessed for the purpose of sectoral development.

$$Ya = -0.000022x + 0.075.$$

To show the relationship between area (a) and population (x) in each ward, scattered diagram has been drawn and the regression line between area and population of the wards, has been shown on the diagram (Fig.7.1).

From the diagram it is observed that the area and population of the wards in the town are positively correlated. More over there is a tendency to increase the population keeping the area constant due to high rate of growth of population With the help of the regression line, the differences (O-E) between observed values (O) and their expected values (E) have been calculated to determine the population potentialities in different wards.

### 7.1.2. Planning for Residential Area

Before planning the residential area in an urban centre the following elements deserve careful consideration :

The percentage of residential use should be brought down to 30% of the developed area which is the standard laid down by Lewis Keeple. The need to develop new housing colonies in the outer fringe and in suburbs is obvious. For purpose of re-development on the principles of neighbourhood planning, the existing residential areas are to be divided into several neighbourhood colonies. They should be developed on an average gross density of 24,7000 persons per $km^2$ while the new residential areas would have an average gross density of 13,600 persons / $km^2$. The outer sectors and fringes are proposed to be devoted to new residential communities. New residential colonies with neighbourhood facilities, are proposed to be developed. Each colony is proposed to have a small shopping centre, an middle school or high school, and a small dispensary to meet the local demand. There is need to check further construction of houses in the high density areas. The slums in the western area need clearance and re-housing. For the development of residential neighbourhood at the city fringe the following guidelines should be considered :

(i) The existing city limits should be redrawn or extended to a reasonable extent for the development of satellite neighbourhoods.

(ii) Sites for creation of such townships should be carefully selected for some definite size of city dwellers.

(iii) The existing rural enclaves (Slums or busties) should be rebuilt, remodelled, renovated and renewed, so that further over crowding and congestion may not increase.

(iv) Satellite neighbourhoods should be made for all low, medium and high income groups people separately and

(v) All reighbourhoods should be interlinked with the parent city and cheap means of communication should be introduced to reach to and from the central city.

The integrated urban Development plan for English Bazar town has been proposed major residential development programmes considering housing being pressing need. The structure plan has proposed the development of major residential neighbourhoods at satellite township in Jhaljhalia area.

State Government envisages that the housing facilities should be mainly provided by the Housing Board. The PWD funds may be available from sources other than central assistance under IUDP. Municipality has shown keen interest in providing housing for weaker section and low income group families and it has proposed for development of about 1.0 hectare of land on trenching ground which is in its possession.

The possibility of growth of population in the wards has been considered by studying of population distribution and growth in indifferent wards. The growth possibility is more in northwestern and southeastern parts of the town. The organising housing estates of State Government and Central Government including the satellite Housing Schemes of the State Government contribute only marginally to housing accommodation requirements. To make provision of housing for the projected population, residential areas should be exploited by private individuals, statutory bodies and organised housing co-operatives. The building rules should be enforced strictly by a single agency like Govt. organisation to prevent irregular and unauthorised building constructions within the municipal area and in the proposed new locations.

In the new areas on the periphery as well as in the contiguous parts of the town, where housing development can be made, the houses are needed to be constructed at a moderate cost and those areas must be provided with rational and economical layouts. Areas of low-lying nature may be developed for low cost mass house construction along with all necessary amenities. The problem of improvement of housing condition with the built up area especially in some localities is more complicated than constructing new building communities. Unless and until alternate accommodation are made, large-scale removal or reconstruction of buildings in those areas are out of question. As such development of new areas has become inevitable.

However, a large-scale programme of subsidised public housing as a method of solution of housing problem in the town is impracticable. As the urgency of the need in other emergency purposes as well as necessity for the improvement of education and public health in the town leave a relatively small amount of public

money for housing programmes, the solution of the housing problem for the inhabitants must be solved through a programme involving self-financing. To reduce the cost, new construction methods can be applied. Provision of subsidised transportation facilities from and to the outlying areas where housing can be provided at lower cost should be considered.

All these programmes will not only ease the housing problem within the built up areas, families who will move to the suburbs from the centre of the town would decrease the congestion now prevailing. The outward movement of the population would leave more space for the remaining and may act on lowering the house rents. In addition, the decongestion might facilitate the renewal of the town's deteriorated areas.

### 7.1.3. Planning for the Slums

Slums in English Bazar, one of the most important environmental problem is man's creation. Their extreme insanitation and unhealthy conditions are the vital reasons for a close review of the measures to tackle the problem. In this regards a three-tier strategy viz, preventive strategy, curative strategy and futuristic strategy will be ideal. The most crucial aspect of the preventive strategy is to reduce the flow of migrants in the town. But in any democratic country with open society like ours it cannot be done by force or coercion and only by creating right conditions and introducing schemes of incentives and disintensives could it be achieved. Some long-time measures which could slow down the flow of migration in the town are : (i) reduction in the rural-urban inequality, (ii) strengthening of the economy and improving infrastructure and social services of the rural hinter land within the district. (iii) effective dispersal of job opportunities, and (iv) creation of rural growth centres as the counter magnets and development of small satellite towns.

Formation of Board for the construction of tenements, Board for the improvement of the environment and voluntary organisation are considered as the most important curative measures. In the model of Calcutta programme subsidised public housing may be made open to the slum dwellers. Attention may be paid to slum improvement rather than slum clearance of present and low income housing may be built in areas of lower land values provided the area has the facilities of the cheap mass transport. In order to achieve improvement in the condition of slum dwellers, it is necessary to concentrate on, slum improvement schemes. Such improvement schemes consists of the installation of basic sewer,

water lines & provision of water stand post, and sanitary latrines and baths. As a fuluristic strategy, abolition and clearance of the slums in the vital parts in the town should be done. Those lands would be made open spaces. These slums would be transplanted to the southwestern fringes of the town to minimise the hardship of the displaced slum dwellers in reaching their place of works in the heart of the town. It happens that slum dwellers often become afraid from the various steps taken by the municipality or by other organisation. Intensive campaign against this baseless impression should be the immediate programme of different social organisations to make a congenial atmosphere for the development programmes. Besides, provision of financial aid by the Government for the said development works need materialization.

Slum improvement is not enough to change the habits. To ensure full use and maintenance of the amenities provided, organisation of social services and social sense of the dwellers are essential. The Urban Community Development Pilot scheme as proposed by the Ministry of Health, Government of India can provide services of the slum Improvement. Such developmental programme should endeavour to attain the following objectives : (i) foster civic consciousness, (ii) bring about a cohesive social environment, (iii) encourage adaptation of traditional ways a life to present day requirements of urban communities, (iv) promote effective use of civic amenities, (v) encourage development of a programme of self-help activities, (vi) foster the welfare and economic development of the weaker sections, (vii) opening of schools within the slums to encourage the children for their education and (viii) provision of medical facilities within the slums. Special attention is to be paid for the women and children against certain deadly diseases.

The self-help activities involving hut owners include direct water and sewer connections inside hut compounds, maintenance of latrines and baths, garbage clean up, paving of lanes, promote education, establishment of community health and welfare service.

English Bazar Municipality has been undertaking the following development plans for the betterment of the living condition of the slum dwellers are : (i) improvement of the road and construction of brick pavement, (ii) construction of pucca drain, (iii) electrification, (iv) construction of ring well and well platform to check pollution water and (v) construction of community latrine.

Some on-going programmes for the poor of English Bazar town is Environmental

Improvement of urban slums, Nehru Rojgar Yojana, Self Employment Scheme for Registered Unemployed etc.

## 7.2. HUMAN RESOURCES DEVELOPMENT

To determine the potentialities for engaging more workers and to find out the relationship between total population and total workers, a scattered diagram as well as correlation has been done separately for the town. The regression line is $Y = -0.000012x+0.075$

Where Y is the expected total workers. X is the total population. Again, to identify further scope for workers engaged in secondary and tertiary activities, scatter diagrams have been drawn between total workers and (1) workers engaged in primary activities (2) workers engaged in secondary activities (3) workers engaged in tertiary activities. For assessing the potentialities in each category of workers for the town, regression lines have been drawn and expected workers have been calculated from:

$$Ys = -0.000016\,x + 0.075$$

$$Yt = -0.000011x+0.075$$

Where, Ys is the expected secondary workers; and Yt is the expected tertiary workers; X is the total workers. There are very few primary workers in the town.

**7.2.1. Total workers :** From the statistical analysis and the diagram it is observed that number of workers is more than expected only in 8 wards and these are located in the south-western part of the town. Surplus workers is due to existence of slums and Government quarters where the workers are generally more in number. On the other hand the southern sector of the town has high deficit of total workers (0<E) due to concentration of more residential areas of high and middle class population whose family size are generally large. From the analysis it can be stated that the generation of employments is urgently necessary in the town though there is a good correlation between total workers and the total population.

**7.2.2. Secondary activities :** It is clear from the statistical analysis and the diagram that there are two pockets in the town. One in western part and the other in south eastern corner, where the number of workers engaged in secondary activities are more than the expected (0>E). In both these sectors small scale industries were established. These areas have enough space and potentialities

for setting up of industrial complex with dominance of small scale industries. In other areas in the town small scale industries are insignificant due to high concentration of residential and commercial activities. So the relationship between total workers and workers in secondary activities is poor.

**7.2.3. Tertiary activities :** The statistical analysis shows that there is a very good correlationship between total workers and tertiary workers. The scatter diagram shows that it is almost saturated in all the wards. It is found that the people of the town are mainly engaged in tertiary activities specially in administrative work due to limited opportunities in getting jobs in secondary activities.

## 7.3. OTHER RESOURCES FOR DEVELOPMENT

### 7.3.1. Commercial activity

As per the socioeconomic survey report prepared by E.B.D.A. (English Bazar Development Authority) the projected number of units of retail trade in the town will be 8,889 in 2001 from 6893 in 1991. While the corresponding figures of wholesale trade are 797 and 1134 respectively. These figures are calculated on the basis of projected population of the town For such an expansion of commercial activities more and more space has to be provided in the city centre at the cost of other uses. Ware houses and godowns may be opened in the suburban areas near the railway station and along major roads in fringe area, while the sales departments might remain in the CBD. For avoiding traffic congestion in CBD and for easy reach of customers, local shopping centres have to be opened in each neighbourhood. The main commercial centre should also be provided with parking space and better transport routes even at the cost of residential use which is uneconomic there. In order to provide uniform marketing facilities for the peoples, establishment of some community and neighbourhood centres are proposed. To embellish the commercial activity in the town the following suggestions are recommended :

(i) Two more markets for daily necessities, one in ward XXIII and another in any of the wards I and XIV.

(ii) Extension and repairing of approaches as well as roads inside the existing markets.

(iv) Arrangements of proper drainage in each market and lavatory facilities must be made.

### 7.3.2. Transportation

To avoid traffic congestion created by buses, trucks and slow moving vehicles in the town, some plannings are as follows :

(i) The present state bus stand at Atul Market is to be shifted at junction of Gour Road and N.H. 34.

(ii) The entry of the slow moving vehicles (rickshaw) will be prohibited in the CBD.

(iii) By shifting the Old Jail and Treasury building a city bus terminus should be constructed there.

(iv) Long distance buses which use to move through the town should stop either of the two bus stands to drop the Malda passengers.

(v) For the movement within the town circular city bus service is suggested. These buses have their terminus near Rabindra Bhawan.

(vi) In English Bazar a Truck stand is suggested in the northens side of the town in between the two bus stands.

### 7.2.1a. Suggestion about the traffics

(a) Slow moving traffic e.g. bicycles, rickshaws, bullock carts, hand carts, cycle vans etc. predominate in the busiest part and major bulk of traffic volumes (76 percent) are either rickshaws or cycles inside the town. The present number of licensed vans is 500 though more than 1000 ply in the town. More over, the busy areas of the town should be kept free from rickshaws and other slow moving vehicles. However, stress on the town dwellers in this regard may be curbed by the introduction of the city buses.

(b) In the Central Business District car parking may be prohibited or car parking fee may be introduced like major cities in the country. This will also indirectly minimize the traffic jams in this area and may be a source of some revenue earning.

(c) A traffic cell may be formed to review the traffic problems and extensive patrolling is necessary to control the illegal encroachment of roads as well as car parking bus stops along N.H.34 are to be limited.

(d) To eliminate the problem of congestion at railway gate, the present Rly. lines through the town should be abandoned and a by pass railway line outside the town can be constructed.

(e) A good number of roads in the residential areas in the town are extremely narrow, unmetalled and poorly maintained. Improvement of the more important roads on a primary busis is proposed.

### 7.3.3. Prospects of Industrial Development

The area near Old Malda Railway Station at a distance not more than 8 km. from Malda Town Station has been acquired by the State Government for the setting up of an Industrial growth centre for medium large-scale industries. On the east of it, a narrow strip of land may be converted into residential area for the workers working in the industrial units of Old Malda.

Supply of capital needed for industrial works be met from profit eaned from mangro product industry. For the promotion of industrial development in English Bazar town early acquisition and development of industries in areas proposed earlier are recommended. The agricultural land area Malda Town Railway Station may also be converted into an industrial area for suitable items.

More-over, aluminium anodising fertilizer, plastic and spun pipes can be developed here transport industries to be proposed for near future in industrial estates, but their importance in respect of value of goods manufactured and the general impact on industrial landscape and employment in the town may be insignificant.

### 7.3.4. Public And Semi-public Utility Service

**7.3.4a. Administrative :** In view of the ever expanding government machinery, there is a need for the expansion of administrative offices in the town. The expansion of Central Government and regional offices in the town have created problem of accommodations. Municipal offices also have accommodation problem. The proposals for reorientation of different offices are :

(a) Different office building which are located wide-spread in the residential area of the town may be shifted to the vacant government buildings in ward III & IV. Vacant lands in ward XXII may be used for construction of new buildings.

(b) The F.C.I. godown and new jail are to be shifted to the fringes or in the open area of near ward I. in the south.

(b) Renovation and extension of the municipal office building as well as court building can be made. Then the Treasury will be shifted to municipality compound.

**7.3.4b. Education Facility :** In the town presently there are 72 primary schools making the ratio of 430 students per primary school which is very high compared with the infrastructure of primary schools. Taking 200 students in each primary school, which is the ideal condition. the number of new primary schools to be required in 1991 is 173. In the case of secondary schools the number of schools to be necessary in 1991 is 21. For higher secondary, the number of students will also increase. Considering 1500 students per higher educational institution, the number of such institutions should be raised from 3 to 11.

The new schools should be distributed at the appropriate places in the town where the accessibility and convenience to the children are maximum. Existing primary schools, in the town are to be developed for accommodating more children in future. More over existing secondary schools should be developed in such a way that more students may be accommodated in future. As the number of students in higher education has been increasing every year, one more higher educational institution (college) is to be established to cope up with present and future need.

**7.3.4c. Health :** In this town, the number of beds, nurses and doctors are not sufficient to give better facilities to the people of the town as well as surroundings areas. As it is a sadar Hospital, so the number of beds, nurses, and doctors should be more than the present number. But due to stagnance and retarded development of Malda Sadar Hospital, the patients from distant places come in lesser number in this hospital. So the hospital should be developed and the number of nurses and doctors should be increased to cope up with the high necessities in future.

**7.3.4d. Water Supply :** In view of its very fast rate of population and commercial as well as expected industrial growth, the town has a very grim picture of water supply the existing supply under P.H.F. Department is too far from the need. As such underground supply, in the form of domestic well system, forms the main source of water in the town. In addition, evidences are not uncommon of lowering of underground water level that project the problem in a more severe form.

The immediate task is to implement the comprehensive water supply scheme of 1980 in total as well as adoption of new schemes. The State Planning Board also advised the preparation of a water supply scheme with the Mahamanda river as source of water.

Under the changed situation habit of the people need some change so that pollution of the river water might be avoided. Open sky toilet arrangement and bathing of the domesticated animals in the river also should be stopped.

Misuse and wastage of supply water which is very common to the town must be controlled through scheduling or monitoring measures. It is the suggestion to those who depend mainly on their own well for water to dig it to a deeper water level. Construction of more number of deep tubewells might case the anticipated crises from shortage of water in the town.

**7.3.4e. Drainage Development :** To solve the drainage problem, the municipal engineering Directorate, English Bazar Municipality Development Authority and Irrigation Department have been approved for preparation of a comprehensive drainage scheme for English Bazar town with proper outfall.

When isolated schemes for solving the water-logging problem for some particular areas have been prepared, there is an immediate need for a comprehensive drainage plan for English Bazar - Old Malda urban agglomeration. Steps in this direction have been taken up by the English Bazar Development Authority as early as 1984 by inviting the expert services of Local Government and Urban Development Department through the then Minister of the department. No tangible effect of his instruction to take up the drainage plan for the area could however be seen till today though follow up measures by this Authority had from time to time been taken for preparation of such a scheme.

While suggestion a very high level persuasion preparation of a comprehensive drainage scheme for the English Bazar Planning Area, this Authority would suggest implementation of the following already prepared scheme as interim measures :

(a) The drainage scheme for Buraburibala areas prepared by the local Government and Urban Development Department.

(b) implementation of the drainage scheme prepared by the North Bengal Flood Control Commission and Malda Flood Control Committee for diversion of uppercatchment water of New Gaeshpur to Mahananda river for solving the existing water logging problem of Sarbomongola pally, Vivekananda pally, Subhaspally. In addition soil protection measures and removal of river-bed encroachment are also to be synechronized with the comprehensive drainage plan proposals.

### 7.3.4f. Suggestions about soild waste management

(1) For making the solid waste collection and disposal properly, tax collection has to be imposed.

(2) Suitable cost efficient methods of composting may be introduced.

(3) Improved pans with extra slopes may be proposed which are efficient in terms of water consumption for flushing.

(4) New ideas and technologies suitable for collection should be developed in the face of manual labour storage.

(5) Awareness about the cleanliness among the masses are to be raised.

It is seen that the system of collection and disposal of right soil needs considerable improvements.

### 7.3.4g. Open space, Play grounds and parks

To make urban living healthy, every town should have recreation open-space as per norms. The Old Greater London Plan proposals of 1944 recommended that for every 1000 population in any town there should be 4 hectares of open space, 2.4 hectors for playing fields, 0.4 hectares for park land and 3 attached to schools (Ratcliffs, 1977). The National Recreation Association of U.S.A. as well as the Chicago Regional Plan Association have suggested 4 hectares of parks and recreation space for each 100 population of city (Interim General Plan, 1966).

In English Bazar, lands devoted to the said purpose falls short of the normal standard. Thus more space would be required even for the existing population for outdoor recreation and for the increased population of future additional land in this regard would be demanded. It is suggested that every neighbourhood is proposed to have its own children corners, play fields and parks within easy reach of every home. Apart from this, a few zonal parks also are proposed in the town.

The development of a central recreation area along with a tourist lodge in the existing trenching ground of the municipality is proposed. Apart from this, lands along the river banks (mainly along river Mahanada) which do not have any development and are liable to inundation may be converted into parks and promenades though they are at far from the main residential part of the town. Setting up of a sports complex whose work has already been started in the D.S.A. (District Sports Association) area where development of aquatic sports will be made in the huge water-body is praiseworthy.

## CONCLUSION

From the discussion it is revealed that though there is a good correlation between the area and population. Though some plans for development in residential areas have been suggested in this chapter but the problems will not dissipate in the town unless plans are implemented properly and without any delay. Some slum developmental programmes have been suggested for the town where more than 31% people are slum dwellers.

Economic activities in the town is based on tertiary activities. Little scope has been generated by the secondary activities since Independence. For industrial development some suggestions and proposals have been given and new joint industrial ventures may provide better scope for employment in secondary activity. These industrial estates will not only improve the town but their hinterlands also will thus be expanded. The transport system in individual town can be solved by introducing new routes and the town can be well connected by better communication system. Other urban amenities in the town is not sufficient but some plans and proposals have been given to increase their availability to the users.

These proposals lead to need of a master plan by combining the infrastructural resources. The plan will also help to the development of the town. Thus the hinterland also can be developed. The master plan is to be framed in such a way that the future growth of population and the development of the town might take place side by side.

# CHAPTER EIGHT

## SUGGESTIONS AND CONCLUSION

English Bazar town is centre of urbanisation in North Bengal, has different rates and nature of growth. Since Independence English Bazar has been uprising and has already established its claim as the gate way of North Bengal. This vitally important strategic town along with its adjacent areas attracts streams of people by its economic and other socio-economic pull-forces. Urbanisation in this town is dependent mostly on its locational importance as the main point of transport to whole of North India. The town bases for its growth on the wholesale and retail trade as well as its transportation and other services.

The urbanisation process in the town is very rapid which is incomparable with any other urban centre in the state. Among the 24 wards in North Bengal the town ranks 3rd among the class I towns of West Bengal excluding urban agglomeration in 1991.

Among physiographical constraints, drainage and floods are very acute the area. These problems had been tackled since the eighteenth century. The committee of enquiry regarding the drainage problem in 1901, recommended the following remedies : (i) The cross-dams in the main rivers should be removed and reconstruction of them should not be allowed, save where they were really required in order to protect cultivated land. (ii) The construction of embankments should be stopped and if possible remove the embankments which are not required, (iii) Government should take charge of the maintenance. (iv) certain obstruction to drainage caused by canals should be removed (v) Certain engineering devices should be taken up for the drainage of particulars tracts.

Other remedies for good drainage are : (a) the number of cross-dams should be reduced, and these should not be built on small streams and water channels, (ii) the number of sluices in an embankment should be increased for quick removal of flood from agricultural fields.

The problems will be solved if these recommendation are carried out in the town. As regards the uncertainly and uneven distribution of rainfall man cannot control or regulate the rainfall or cyclones but man can solve the problems of deficiency and super-abundance of rainfall by alternative arrangements like storing of rain water and establishing irrigation projects. Various irrigation projects like river lift pumps and shallow and deep tubewells have been undertaken to

solve the problems. Though there is sufficient water in the rainy season, it becomes scare in the dry period. Arrangements for supplying diesel on priority basis can be made for improving irrigational facilities and lowering cost of irrigation. Some institutional problems like small and fragmented land holdings can be solved by forming co-operatives and introduction of modern agricultural machineries like tractors.

In English Bazar Municipality the total population was 13,667 in 1911 and now it is 1,76,861. The population increase is very faster rate than the other towns in the neighbouring districts. The town is situated in a N-S alinement but with an increase of population the town is spreading in the western direction. Mainly people are concentrated in wards VII, VIII, X, XIV & XVI give an idea about the housing facilities available for the urban residents. Here it is found that there are 33,011 households, out of which 27,493 are residential and 5,518 are non residential. From the data it is observed that large number of residential houses are in ward XXIV. Slums population are also growing up in the urban area rapidly. In English Bazar Municipality slum population is found in many wards but the number of slum families occupy in large number in Buraburitala and Ghorapir.

In this municipality, 9240 of holdings are occupied with buildings. Where as 5110 holdings have water connection 937 holdings have service privies. In 1180 holdings there are vacant land as well as ponds. In English Bazar, houses are mainly one storied with cemented floor, brick walls and concrete roofs. Maximum houses are constructed within 1000 to 1500 m where people live in their own houses with three to four and five to six family members. Head of the family is mainly service holder and businessman. Mainly houses are furnished with three to four bed rooms, one drawing room, one kitchen, two bathrooms and latrine (sanitary type). It is noticed that each and every house is connected with electricity. Maximum number of residential houses are connected with water lines.

Though the rivers are helpful for the city as well as the dwellers some-times they create various physical problems for the cities development. The town under study has such type of problem and in many places of the town it creates acute traffic problem as well as delays the development. The low concentration and high pressure of population, problems like slums low standard of living and insufficient urban amenities have come to surface as inevitable reasons for low level of development. As a result the town for services and stagnation of the town develops.

From analysis of the landuse it is evident that the town under study has had a hapazard and unbalanced development and need a sound planning for restructure, reconstruction and reorganisation of landuses. There is an immediate need for control and regulation of the landuse pattern for avoiding future misuse of the land and providing of future course of action programmes for healthy urban life.

Studying the landuse pattern in the town, the different landuse zones like residential, residential cum commercial, transport and communication are each in commercial, public semi public, industrial and agricultural are found. These residential zones are not contiguous and separated by other landuses due to lack of proper planning and implementation of standard landuse practice which is used in some other towns in India. Residential-cum-commercial zones are separated by residential areas and due to lack of proper commercial centres some residential houses have been transferred to commercial in a central place where commercial activities are predominated. Transport and communication zones are located in different places within the town and this is due to the lack of space for accommodating so many buses and trucks is one place.

During the last few decades changes of landuses took place and some landuses like commercial, residential as well as public and semi-public have been experienced a higher growth rate than other landuses. On the other hand, areas under vacant lands, parks and play grounds have been reduced due to pressure of population in the urban landuses.

Regarding the socio-cultural problems the growth of population can be checked by birth control which can be done by strengthening family planning programmes in the town. Unemployment problems can be partly solved by checking the high rates of poulation growth. Agro-based industries can also be established in the town having potentialities. Quick transportation and mobilisation of agricultural products are essential, ensuring good return to the cultivators. These can be done by constructing new roads in the area. Income from agriculture can be made stable by increasing multiple cropped area and supplying agricultural inputs and increasing the number of extension services.

Infrastructural deficiency like financing institutions, health services, educational institutions and others can be solved by increasing the number and order of these functions in the existing selected settlements. The spatial and functional gaps in the area can be minimised. It is submitted that the area proves to be a

complicated region requiring considerable care and attention in the matter of intensive development.

From analysis of different socio-economic problems it can be concluded that English Bazar has inadequate socio-economic functions compared to population of the town. Due to insufficient space and allocation of area for shopping centres a number of problems like traffic jam, environmental disorder, overcrowding etc. have been created. Lack of proper transport facilities have profound influence on other activities. They are also suffering from inadequency of major roads as well as from narrow and unmetalled roads and unplanned road network. The narrow bridges on the river Mahananda and large number of slow-moving vehicles as well as trucks and buses complicate the transport system. Moreover, due to heavy rainfall, now maintenance of the roads and lack of management of traffic accelerate the problem. Railway Gate-5 in the town creates traffic jam for long hours on the major road very frequently. Lack of proper water supply in the town, use of well water are highly detrimental to the health of dwellers of the town. The town have surface drainage and sewarge systems and poor conservancy system which create unhygienic conditions for the town dwellers. Poor electricity on many streets has been a great concern of public safety, undesirable activities, accidents, antisocial activities or crimes of the town.

As English Bazar has established its identity as a service town from long before, majority of people are engaged in services. The development of the town though has its start with the beginning of the present century, the socio-economic facilities e.g. education, health, finance, transport, retail services and other urban amenities have limited growth and these somehow feed the inhabitants of the town and adjacent areas. Number of shops and shopping areas in the town have increased but the number of workers engaged in trade does not have significant increase during recent years. Power supply as well as street lighting arrangements are not satisfactory in the town. More over, huge shortage of water supply is evident in the town and some areas remain dry for a considerable period of time of the year. Measures such as construction of number of water reservoirs and digging of deep tubewells have been done to meet the scarcity of weather in the town. Other community facilities also are meagre in the town compared to the population and demand.

Environmental problem needs social attention and from the study it can be noted that living conditions of majority of the town dwellers are far below the normal standard. In the highly dense residential area and slums, shortage of drinking

water, latrine, open space, proper roads and poor socio-economic amenities are the major characteristics of low level of development. High rate of immigration in the town creates various social and economic problems. A proper plan for the development of the town including their socio-economic functions and their proper distribution in the town are urgently needed. Before suggesting some plans review of earlier strategies and their implementation in the town is necessary.

Development is an indispensable factor for a nation. This may take place in the economic, financial, cultural and social and environmental sectors. In this study socio-cultural aspects have been emphasised, analysed and interpreted. English Bazar Municipality has taken up many programmes for the development of the town mostly connected with improving the living conditions of the urban residents. Such programmes include water supply and sewerage improvement. In 1981, facilities for water supply was inadequate. Later on the municipality had taken up a programme to double the supply. It was to be noted that about 20,000 people come daily to the town from outside for different purposes and they require the essential services like water, sewerage etc.

Upto 1983-84, there were 100 street taps and 70 tubewells in different parts of the town. Since then, 5 new pumps have been installed in the town. A project with a budget of Rs.1 crore 71 lakhs has been taken up for providing more water supply. Under this project, 3 large tanks with a capacity of 3 lakh gallon each has been setup along with 8 new pumps and 1,66,503m of water line have been constructed. Once this project is brought into reality, there will be no dearth of water in the city till 2001. Serious efforts are being made to fulfil the Master Plan which has been made for developing the drainage system. 25,000m pucca drain has been constructed at a cost of Rs. 4 lakhs. to drain out the excess water during the rains.

For the betterment of general health of people, a plan has been lunched to dispense with the service previes once for all. In the meantime nearly 500 service privies have been replaced by sanitary latrines.

Of late, work has started in improving the power situation. During the last few years nearly 70 new lamp posts have been constructed in different wards, and it has plan to provide more than 100 lamp posts. The dark Mahananda bridge has been illuminated by sodium light. Besides, mercury lamps, Halogen and search light are being used at different corners of the roads to meet the demand of more lighting for the residential population. A new truck stand has been set up at Ghorapir to minimize the traffic congestion on the National Highway at an

expense of more than Rs. 4 lakhs. The construction of waiting rooms, urinals etc. are nearing completion aiding further in increasing comforts for the urban residents.

Under this project the extension of roads as-well-as the extension of Netaji market has been included. Apart from this, a project for the construction of bus and taxi terminus at Kani more has also been taken up keeping in view the development of child health. The construction of parks and gardens have been started in different localities. The "Kshuriram Municipal Park" has been constructed at Kalitala, occupying an area of 15,000m An open air stage has been completed at an expense of Rs. 4 lakhs to facilitate the cultural activities of the people. A footpath has been constructed among the Rajmahal Road, and covering the half portion of Makdumpur.

From the discussion it is visualised that majority of wards in the town have low centrality scores which has been given to each function for their poor infrastructure. Number of existing functions in the wards of the town and their distribution are hapazards. As large number of population are dependent on central functions those are inadequate. Such a large functional gaps in the wards show the nature of backwardness. Consequently, the town remained backward infrastructurally. To develop the town, these spatial and functional gaps have to be filled up by setting up new functions in the appropriate places in the wards. By developing each ward functionally all round development of the town can be possible. Consequently, the sort of population dependent on functions are mostly large, so the standard of availability of functions is low in the wards specially for poor infrastructure of majority of wards. Existing educational facilities and health services are inadequate for such a large population. Educational institutions have low infrastructural facility due to lack of students and qualified teachers. Health centres have neither medicines nor qualified doctors. Other socio-economic facilities in the town are, poor and inadequate as compared to demand. Inadequate transport increase the price of consumer goods to retailers and decreases the price of local products.

English Bazar town, though did not have any effective urban plan has recently been provided with O.D.P. The ODP area of English Bazar extends over 13.25km$^2$. The plan has focused that the projected population in the town in 2001 will be 2,50,000. Of which 71% will be total working force. The economic growth of the ODP area cannot substantiate the population growth. The sectoral employment pattern of the ODP area in English Bazar reveals that the urban

# DEVELOPMENT PROPOSALS FOR ENGLISH BAZAR MUNICIPALITY

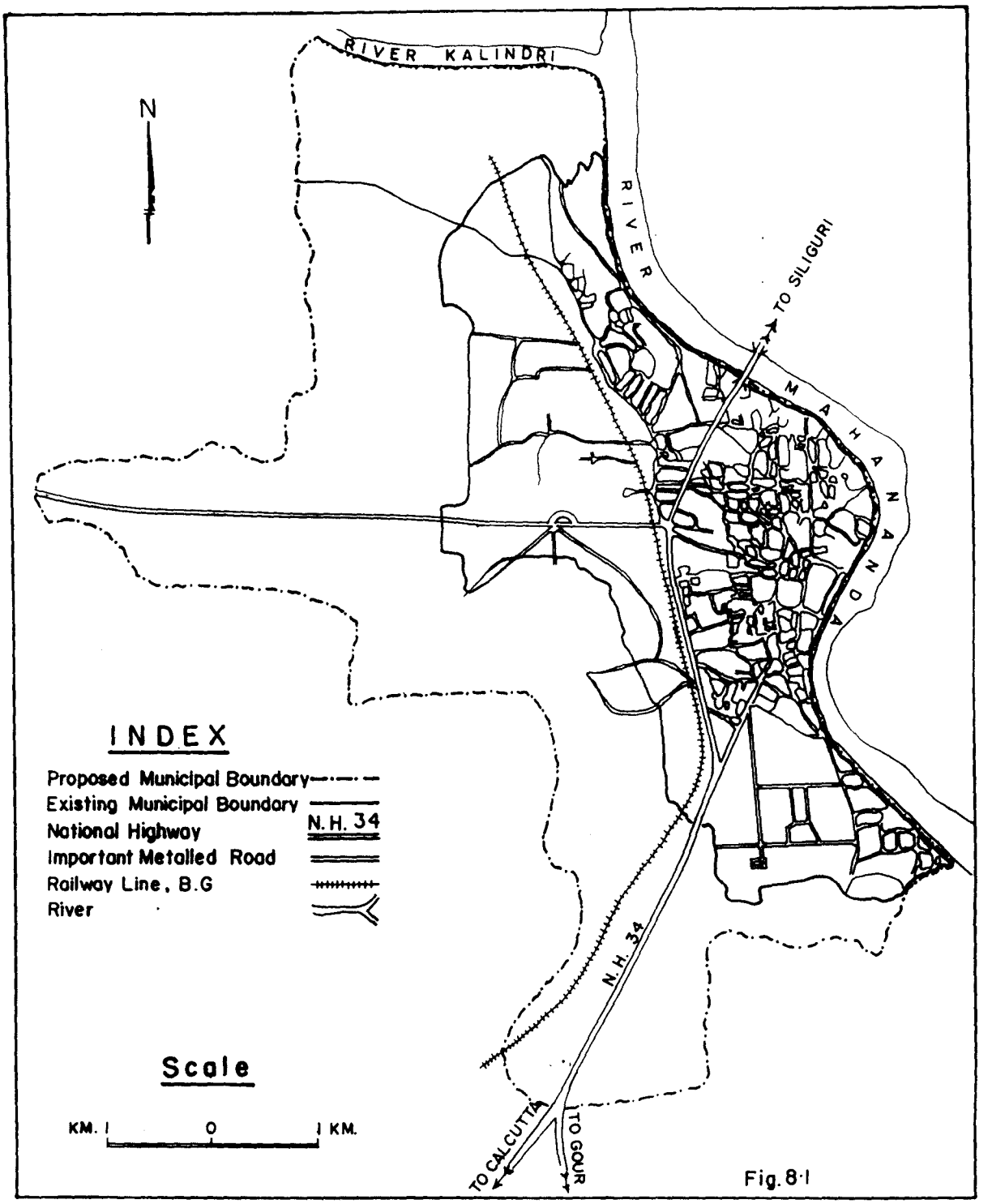



Fig. 8·1

area have primarily tertiary services, people of the peripheral rural areas have not yet adopted non-agricultural pursuits to improve their economic conditions. English Bazar municipality has under taken many programmes for the development of the town, mostly connected with improving the living conditions of the urban residents. water supply, sanitation, transport, parks and play grounds. Some slum developmental programmes have been suggested for English Bazar. More than 36% of its people are slum dwellers. Economic activities in the town are based on tertiary activities. Little scope has been generated by the secondary activities since Independence. For industrial development, some suggestions and proposals have been given and new joint industrial ventures will provide better scope for employment in secondary activity. The transport system in individual town can be solved by introducing new routes and the town can be well connected by better communication system. Other urban amenities in the town is not sufficient but some plans and proposals have been given to increase their availability to the users.

The return from the soil of this belt is not at all satisfactory. So scientific chanalization of future industrial and commercial infrastructure with allied residential areas is planned along the National Highway 34 in order to realize a complementary city growth combining English Bazar to other towns. The vast land along this way along with other infrustructural facilities available within a satisfactory radious might change this agricultural belt to a prosperous in agriculture cum industrial belt in the coming years.

These proposals lead to need of a master plan by combining the infrustructural resources. Thus the hinterland also can be developed. The master plan is to be framed in such a way that the future growth of population and the development of the town might take place side by side. Above all, more programming and planning would not serve any purpose and by implementing proper plan in no time the town might be put on the way of real development. The comparative analysis of growth, functional characteristics as well as prospects of the town has dealt with aspects of urbanisation of a small area of North Bengal. There are much more potential areas in the region which need further research which will enable the region to emerge from a backward to one as an advanced prosperous region. (Fig. 8.1).

# REFERENCES


- **Ahlmu H.W.** (1928) : The Geographical Study of Settlements; Geographical Review, Vol-18.

- **Allen B.C., (1963)** : Gazetteer of Bengal and North-East India. Mittal Publications. Delhi-110035.

- **Alexander, J.W. (1954)** : "The Basic And Non-Basic Concept of Urban Economic Functions' Economic Geography, Vol-30.

- **Atawllah, Md. (1985)** : Urban Land : Its use and Misuse, Amar Prakashan, Delhi.

- **Aurousseau. M. (1921)** : "The Distribution of Population, A Constructive Problem" The Geographical Review. The American Geographical Society,New York. Vol.11.

- **Bagchi K.** and **Jana M.M. (1974)** : The crop combination and spatial pattern of land utilization in lower silabati basin; Geographical Review of India, Vol-36, No.4.

- **Baxter R** and **William. I. (1978)** : Population Forecasting and Uncertainty at the National & Local Scale, Pergamon Press Ltd., Headington Hill Hall, Oxford.

- **Bende Asha** and **T. Kanitkar (1978)** : Principles of Population Studies, Himalaya Publishing House, New Delhi.

- **Berber J.B. (1969)** : Industrial Land Planing Urban Planning Guide, W.H. Claire (Ed.) ASCEM. and R.M.O.-49.

- **Bertho Lomew. H. (1955)** : Landuses in American cities, Harvard University, Press, Cambridge.

- **Berry B.J.L. et al (1970)** : Geographic, Perspective on Urban systems, Prentice Hall, New Jersey.

- **Bhattacharya. A. (1977)** : Population Geography of India,The Geographical Review of India, Vol. 40. No.-2.

- **Bhattacharya. A. (1977a)** : Human Migration through the ages, The Calcutta Review, New Series. Voll-III. No.1.

- **Battacharya B (1979)** : Urbanisation in North Bengal. Vol.10 No.1&2.

- **Bhardwaj S.M. et al (1975)** : Occupational Structure of Scheduled caste and General population of Punjab.N.C.J.I.,Vol. XXI.

- **Breese. G. (1963)** : Urban Development Problems in India. Annals of the Association of American Geographers. Vol.53.

- **Burges E.W. (1925)** : The Growth of the City: The City, Robert E.P. et. al (Ed.) University of Chicago Press. Chicago.

- **Chandna R.C. (1988)** : A Geography of Population Concepts; Determinants and Patterns, Kalyani Publishers. New Delhi.

- **Chaping F.S. (1957)** : Urban Landuse Planning, New York, Harper.

- **Clark. J. I. (1977)** : Population Geography, Pergamoon Press Ltd. New Delhi.

- **CLark. W.A.V. (1967)** : The Spatial Structure of Retail Functions in a New Zeland City. New Zealand Geographer, 23, New Zealand.

- **Colling. M.P. (1965)** : Field work in Urban Areas; In Frontiers Geographical Teaching, R.J. Chorley and P. Haggett (Ed.) London, Methuen.

- **Dauglas I. (1983)** : The Urban Environment, Edward Arnold Ltd.,London.

- **District Census Hand Book (1971)** : Series -22, West Bengal, Malda District, AnalyticalReports, Census tables and Administrative and Developmental Statistics, Directorate of Census Operations West Bengal, Calcutta.

- **District Census Hand Books (1991-1981)** : Village and Town-wise Primary Census - Abstract, Malda District.

- **District Plan (1993-94)** : Malda District, Govt. of West Bengal,Calcutta.

- **Garnier. J. Beanjen (1966)** : Geography of Population. Longman, London.

- **Ghosh. B.N. (1985)** : Fundamentals of Population Geography,Sterling Publishers. Private Ltd., New Delhi.

- **Goetsch. H.A. (1969)** : Community Facilities Planning. ASCEM, and R.M.O.-49

- **Gowda. K.S.R. (1972)** : Urban and Regional Planning. Mysore, Prasaranga.

- **Hall R.H. (1975)** : Occupations and Social Structure Prentice Hall.Inc. Englewood cliffs. New Jersey.

- **Hartshorne. R. (1937) :** The Nature of Geography, Lansaster, Pennsylvania.

- **Hooker. J.I. (1969)** : Himalayan Journals (Reprint edition), Today and Tomorrow's Printers and Publishers, New Delhi.

- **Hoyt. H. (1939)** : The Structure and Growth of Residential Neighbourhoods in American Cities, Federal Housing Administration, Washington D.C.

- **Hunt. A. J. (1952)** : Techniques and Values of Urban Landuse Survey. Indian Geographical Journal Silver Jubliee Souvenoir. Vol-1.

- **Hunter W.W. (1974)** : A Statistical Account of Bengal. D.K. Publishing House, Delhi.

- **Jana. M.M. (1975)** : Decennial Growth and Functional Characteristices of Urban areas in Midnapur District : Geographical Review of India. Calcutta Vol.37. No. 4.

- **Jana, M.M. (1987)** : Distribution and Growth of Population in Hugli District, Geographical Review of India. Vol. 49, No.1.

- **Jana, M.M. (1990)** : Population Planning and Regional Development in India.Chugh Publications, Allahabad.

- **Jana, M. M. (1991)** : Urbanisation Towns of Sikkim Annals National Association Geographers, India.

- **Jana, M.M. (1996)** : Characteristics and Classifications of Towns in North Bengal. G.R.I., Vol. 55. No. 4.

- **Jana, M. M. (1996)** : Population Planning in Sikkim. Annals, National Association of Geographers, India. Vol. 16. No 1.

- **Kar, N.R. (1960)** : Urban Literachy and Central Functions around Calcuttas, Land Studies, Series. B Lund.

- **Mather. A.S. (1986)** : Landuse, Longman Group, U.K. Ltd. London.

- **Misra R.P. (1978)** : Million Cities of India, Vikas Publishing House Pvt. Ltd., New Delhi.

- **Majumdar. S.C. (1943)** : Rivers of Bengal Delta, Calcutta University, Calcutta.

- **Mondol R.B. (1982)** : Land Utilization Concept Publication Company, New Delhi.

- **Northam R.M. (1979)** : Urban Geography. John Wiley And Sons, New York.

- **Pathak C. R. (1973)** : Integrated area development, Geographical Review of India, Calcutta, Vol. 35, No. 3.

- **Planning Commission Govt. of India (1969)** : Guidelines for the Formation of District Plan, New Delhi.

- **Prasad. R. and Ram R.B. (1977)** : Scheduled Caste and Scheduled Tribes in Urban Set-up of Bihar (1961-71), Memeographic Research Centre. Patna University, Patna.

- **Proudfoot. M.J. (1937)** : City Retail Structure, Economic Geography. Vol-13. New York.

- **Rao. M.S.A. (1970)** : "Urbanization & Social change : A study of Rural Community on a Metropolitan Fringe" New Delhi, Orient longman.

- **Rama Kumar R. (1986)** : Technical Demography, Wiley Eastern Limited, New Delhi.

- **Ratclifs. J. (1977)** : Introduction to Town and Country Planning Hutchin Son and Co., London.

- **Saha. P. (1989)** : Some Characteritics of Occupation in Siliguri Town, The Geographical Memoir, vol. I No. I. The Association of North Bengal Geographers.

- **Sarikwal, R.C. (1978)** : Sociology of Growing Town, Ajanta Publication, Delhi.

- **Scott. P. (1970)** : Geography and Retailing Hutchinson, University Library, London.

- **Siddiqui. F. (1979)** : Survey of Research in Geography ICSSR. Allied Publishers Pvt. Ltd., New Delhi.

- **Singh. A.K. (1985)** : Population and Settlement in U.P. A Geographical Analysis. Inter-India Publications. New Delhi.

- **Singh. H.H. (1972) :** Kanpur : A Study in Urban Geography, Indrani Devi, Banaras Hindu University. Varanasi.

- **Singh R.L. (1964)** : Bangalore : An urban Survey. Tara Publication, Varanasi.
- **Singh V.R. (1970)** : Landuse Patterns in Mirzapur Banaras Hindu University, India.

- **Singh, J.P. (1980)** : Urban Landuse Planning in Hill Areas. A case Study of Shillong, Inter-India Publications, Delhi-110035.

- **Singh Ramdayal (1980)** : Population Structure of Indian Cities, Concept Publishing Co., New Delhi.

- **Smailes A.E. (1953)** : Geography of Towns Hutchinson University, Library London.

- **Smith T.L. (1948)** : Population Analysis, McGrow Hill Book Co., New York.

**Smith. W.O.L. (1962)** : Education, Penguin Books, Hermondsworth

- **Stamp L.d. (1962)** : The land of Britain,Its use and Misuse, London, Longman.

- **Taneja. K.L. (1971)** : Morphology of Indian Cities, R.L. Singh (Ed.) Silver Jubliee, Publication, National Geographical Society of India, Varanasi.

- **Thirlwall. A.P. 91987)** : Studies in Population and Economic Development, The Population Problem, B.N., Ghosh (Ed) Deep and Deep. Publication, Delhi.

- **Thomas S. S. (1961)** : Towards and Expanded Central Place Model. The Geographical Review, No. 51.

- **Trewartha. G.T. (1972)** : A Geography of Population, World Pattern, Pergamon Press, Jhon and Sons, New York.

**Turner, R. (ed. 1962)** : "India's Urban Future, Bombay, Oxford University Press. London.

- **United Nations Bureau of Social Affair 91968)** : Urban Rural Population Distribution and Settlement Pattern in Asia : Their Relation to Development Policies, Calcutta.

- **Vink, A.P.A. (1975)** : Landuse in Advancing Agriculture, Berlin, Heidelberg, New York.

- **Vining R. (1955)** : A Description of Certain Special Aspects of An Economic System, Economic Development & Cultural Change,No.3.

- **Wakeley R.F. (1961)** : Types of Rural and Urban Community Centres in Upstate, New York : Ithaca, Micro Group,Bulletin,No.59.

- **Webster. D.H. (1958)** : Urban Planning and Municipal Public Policy, Harper and Brothers, New York.

- **Webb. J.W. (1955)** : Basic Concepts in Analysis of Small Urban Centres of Minnesota Annals of the Associationof America Geographers, Washingtong, vol-49.

- **Weiner, A.M. and Hoyt. H. (1945)** : "Principals of Urban Real Estate," New York.

- **Yadav. C.S. (1979)** : Landuse in Big Cities. Inter India, Publications. Delhi.

# APPENDIX - I

**Workers and their percentages in different workers in English Bazar Town (wardwise) 1991.**

| Ward No. | Total population | Total workers | Primary workers | Secondary workers | Tertiary workers |
|---|---|---|---|---|---|
| I | 5354 | 1463 | 218 | 194 | 1008 |
| II | 4320 | 1165 | 175 | 107 | 878 |
| III | 8586 | 2289 | 149 | 305 | 1462 |
| IV | 4326 | 1119 | 68 | 98 | 952 |
| V | 4697 | 1497 | 50 | 92 | 1346 |
| VI | 4526 | 1339 | 65 | 86 | 1395 |
| VII | 5698 | 1711 | 85 | 133 | 1482 |
| VIII | 6160 | 1617 | 77 | 104 | 1428 |
| IX | 5071 | 1344 | 6 | 171 | 1165 |
| X | 3417 | 911 | 15 | 113 | 773 |
| XI | 6220 | 1633 | 54 | 465 | 1105 |
| XII | 4211 | 1091 | 33 | 156 | 896 |
| XIII | 3832 | 1068 | 22 | 271 | 775 |
| XIV | 4452 | 1204 | 31 | 214 | 954 |
| XV | 5011 | 1228 | 27 | 263 | 936 |
| XVI | 5522 | 1466 | 45 | 208 | 1185 |
| XVII | 4957 | 1159 | 23 | 99 | 1035 |
| XVIII | 5253 | 1447 | 16 | 211 | 1204 |
| XIX | 5342 | 1356 | 93 | 167 | 1088 |
| XX | 6156 | 1662 | 40 | 208 | 1403 |
| XXI | 5503 | 1296 | 41 | 243 | 949 |
| XXII | 9165 | 2412 | 42 | 404 | 1954 |
| XXIII | 7307 | 1963 | 186 | 194 | 1513 |
| XXIV | 14117 | 4163 | 244 | 567 | 3318 |
| | **140861** | **37582** | **2088** | **5075** | **30348** |

# APPENDIX - II

Area, Population, and Density of Population in English Bazar Town ( Wardwise) 1991

| Ward No. | Area in km² | Population | Males | Females | Density of population/ Km² |
|---|---|---|---|---|---|
| I | 0.310 | 5352 | 2835 | 2517 | 17264.52 |
| II | 0.364 | 4320 | 2209 | 2111 | 11868.13 |
| III | 0.709 | 8103 | 4523 | 4063 | 11428.77 |
| IV | 0.398 | 4315 | 2274 | 2052 | 10841.71 |
| V | 0.207 | 4590 | 2309 | 2386 | 22173.91 |
| VI | 0.398 | 4448 | 2286 | 2238 | 11175.88 |
| VII | 0.155 | 5606 | 2975 | 2723 | 36167.74 |
| VIII | 0.139 | 6036 | 3202 | 2988 | 43424.46 |
| IX | 0.103 | 5023 | 2633 | 2438 | 48766.99 |
| X | 0.157 | 3345 | 1776 | 1639 | 21305.73 |
| XI | 0.209 | 7123 | 3200 | 3020 | 34081.34 |
| XII | 0.178 | 4152 | 2092 | 2119 | 23325.84 |
| XIII | 0.359 | 3785 | 1940 | 1892 | 10543.18 |
| XIV | 0.124 | 4462 | 2324 | 2148 | 35983.87 |
| XV | 0.370 | 4997 | 2570 | 2441 | 13505.41 |
| XVI | 0.139 | 5522 | 2855 | 2667 | 39726.62 |
| XVII | 0.315 | 4872 | 2538 | 2419 | 15466.67 |
| XVIII | 1.230 | 5335 | 2680 | 2555 | 4256.10 |
| XIX | 1.010 | 5312 | 2746 | 2596 | 5259.41 |
| XX | 1.120 | 6109 | 2850 | 3707 | 5454.46 |
| XXI | 1.110 | 5482 | 2838 | 2665 | 4938.74 |
| XXII | 1.340 | 11322 | 4811 | 4354 | 8449.25 |
| XXIII | 1.230 | 7233 | 3725 | 3582 | 5880.49 |
| XXIV | 1.470 | 14117 | 7309 | 6808 | 9603.40 |
| | **13.25** | **140861** | **71,504** | **67,700** | |

# APPENDIX - III

Total Scheduled Castes and Scheduled Tribes Population (19991)

| Ward No. | Scheduled Caste | Percentage of Scheduled Caste population | Schedule Tribes | Percentage of Scheduled Tribes population |
|---|---|---|---|---|
| I | 516 | 9.64 | 119 | 2.22 |
| II | 608 | 14.07 | 120 | 2.78 |
| III | 1677 | 19.53 | 03 | 0.03 |
| IV | 188 | 4.35 | 11 | 0.25 |
| V | 218 | 4.64 | 14 | 0.30 |
| VI | 466 | 10.30 | 23 | 0.51 |
| VII | 611 | 10.72 | 49 | 0.86 |
| VIII | 1161 | 18.85 | 202 | 3.28 |
| IX | 610 | 12.03 | 142 | 2.80 |
| X | 72 | 2.01 | 05 | 0.15 |
| XI | 201 | 3.23 | 10 | 0.16 |
| XII | 139 | 3.30 | 06 | 0.14 |
| XIII | 258 | 6.73 | 16 | 0.42 |
| XIV | 615 | 13.75 | 06 | 0.13 |
| XV | 244 | 4.87 | 03 | 0.06 |
| XVI | 359 | 6.50 | 00 | 0.00 |
| XVII | 752 | 15.17 | 09 | 0.18 |
| XVIII | 121 | 2.30 | 15 | 0.29 |
| XIX | 83 | 1.56 | 08 | 0.15 |
| XX | 509 | 8.27 | 08 | 0.13 |
| XXI | 1630 | 29.62 | 22 | 0.40 |
| XXII | 1099 | 11.90 | 209 | 2.28 |
| XXIII | 633 | 8.67 | 165 | 2.26 |
| XXIV | 1646 | 11.66 | 110 | 0.78 |

# APPENDIX - IV

**Percentage of Literacy rate (1991)**

| | | | Literates | | | |
|---|---|---|---|---|---|---|
| Ward No. | Male Population | % of Male population | Female population | % of Female population | Total population | % of Total population |
| I | 1670 | 58.91 | 1182 | 46.96 | 2852 | 53.29 |
| II | 366 | 28.79 | 654 | 30.98 | 1290 | 29.86 |
| III | 1567 | 34.65 | 1212 | 29.83 | 2779 | 32.37 |
| IV | 1963 | 86.32 | 1659 | 80.85 | 3622 | 83.73 |
| V | 1974 | 85.49 | 1900 | 79.63 | 3874 | 82.48 |
| VI | 1979 | 86.57 | 1696 | 75.78 | 3675 | 81.26 |
| VII | 2493 | 83.80 | 1979 | 72.68 | 4472 | 78.48 |
| VIII | 1980 | 61.84 | 1130 | 38.20 | 3110 | 50.49 |
| IX | 1089 | 41.36 | 1003 | 41.14 | 2092 | 41.25 |
| X | 1385 | 77.98 | 1213 | 71.00 | 2598 | 76.03 |
| XI | 2347 | 70.34 | 2343 | 77.58 | 4690 | 7540 |
| XII | 1399 | 66.87 | 1408 | 66.45 | 2807 | 66.66 |
| XIII | 1731 | 89.23 | 1463 | 77.31 | 3194 | 83.35 |
| XIV | 1912 | 82.27 | 1618 | 75.33 | 3530 | 78.94 |
| XV | 1820 | 70.82 | 1519 | 62.22 | 3339 | 66.63 |
| XVI | 2320 | 81.26 | 1936 | 72.59 | 4256 | 77.07 |
| XVII | 1959 | 75.45 | 1444 | 59.69 | 3359 | 67.76 |
| XVIII | 1783 | 66.53 | 1471 | 57.57 | 3254 | 62.16 |
| XIX | 2030 | 73.93 | 1460 | 56.24 | 3490 | 65.33 |
| XX | 2479 | 86.98 | 1966 | 59.45 | 4445 | 72.19 |
| XXI | 1852 | 65.26 | 1324 | 49.68 | 3176 | 57.71 |
| XXII | 2738 | 56.91 | 1933 | 44.40 | 4671 | 50.97 |
| XXIII | 2550 | 68.46 | 2054 | 57.34 | 4604 | 63.00 |
| XXIV | 4104 | 56.15 | 3040 | 44.65 | 7144 | 50.61 |

# APPENDIX - V

**Types of landuse and their percentages in English Bazar Town (Wardwise) 1991**

| Ward No | Residencial | Commercial | Industrial | Public | Transport | Residencial | Streets | Open space | Agricultural land | Water bodis | Vacant land | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | 30 | 02 | - | 16 | 6 | 04 | 14 | 2 | 17 | 2 | 7 | 100 |
| II | 35 | 05 | - | 05 | 5 | 05 | 10 | 5 | 20 | 7 | 3 | 100 |
| III | 28 | 21 | 2 | 10 | 5 | 04 | 11 | 5 | 10 | 2 | 2 | 100 |
| IV | 35 | 15 | 5 | 03 | - | 12 | 10 | 7 | - | 6 | 7 | 100 |
| V | 10 | 30 | - | 10 | - | 14 | 12 | 4 | 7 | 4 | 9 | 100 |
| VI | 55 | 07 | - | 09 | 2 | 13 | 08 | - | - | 2 | 4 | 100 |
| VII | 55 | 03 | 2 | 07 | 4 | 10 | 06 | - | - | 7 | 6 | 100 |
| VIII | 75 | 01 | - | 07 | 3 | 10 | 03 | - | - | 1 | - | 100 |
| IX | 40 | 12 | - | 17 | 1 | 09 | 16 | - | - | 5 | - | 100 |
| X | 60 | 05 | 4 | 09 | - | 08 | 07 | - | - | 6 | - | 100 |
| XI | 59 | 08 | - | 10 | 7 | 07 | 09 | - | - | - | - | 100 |
| XII | 68 | - | - | 10 | 2 | 08 | 10 | 2 | - | - | - | 100 |
| XIII | 70 | - | - | 14 | 4 | 04 | 05 | - | - | 3 | - | 100 |
| XIV | 60 | 02 | - | 18 | 1 | 12 | 07 | 2 | - | 3 | - | 100 |
| XV | 07 | 13 | - | 16 | 3 | 14 | 06 | - | - | - | - | 100 |
| XVI | 20 | 02 | 3 | 14 | 2 | 10 | 04 | - | - | 2 | - | 100 |
| XVII | 35 | 12 | - | 10 | 1 | 09 | 02 | - | - | - | - | 100 |
| XVIII | 35 | 12 | - | 12 | 4 | 12 | 04 | - | - | - | - | 100 |
| XIX | 55 | 04 | 4 | 20 | 5 | 14 | 06 | 4 | - | - | - | 100 |
| XX | 60 | 05 | - | 10 | 7 | 02 | 07 | 6 | - | - | - | 100 |
| XXI | 58 | 05 | 2 | 10 | 4 | 04 | 06 | 2 | 2 | 1 | 8 | 100 |
| XXII | 50 | 10 | 2 | 14 | 2 | 05 | 04 | 4 | 5 | 2 | 6 | 100 |
| XXIII | 60 | 13 | - | 16 | 3 | 04 | 02 | - | 5 | - | 5 | 100 |
| XXIV | 61 | 15 | 1 | 05 | 2 | 04 | 05 | 5 | 4 | - | 2 | 100 |

# APPENDIX - VI

Percentage to Slum Population

| Ward No. | Total population | No. of slum family | No. of slum population | Percentage to total | No.of slum family members |
|---|---|---|---|---|---|
| I | 5352 | 321 | 1605 | 29.99 | 5 |
| II | 4320 | 259 | 1296 | 30.00 | 5 |
| III | 8103 | 118 | 594 | 7.30 | 5 |
| IV | 4315 | 86 | 431 | 10.22 | 5 |
| VII | 5606 | 336 | 681 | 12.15 | 2 |
| VIII | 6036 | 362 | 1800 | 29.82 | 5 |
| IX | 5023 | 381 | 1506 | 29.99 | 4 |
| XII | 4152 | 44 | 224 | 5.40 | 5 |
| XIII | 3785 | 111 | 555 | 14.66 | 5 |
| XVII | 4872 | 27 | 137 | 2.81 | 5 |
| XVIII | 5235 | 52 | 261 | 4.99 | 5 |
| XIX | 5312 | 53 | 265 | 4.99 | 5 |
| XX | 6109 | 54 | 277 | 4.53 | 5 |
| XXI | 5482 | 109 | 548 | 9.99 | 5 |
| XXII | 11322 | 40 | 204 | 1.80 | 5 |
| XXIII | 7233 | 523 | 2616 | 36.17 | 5 |
| XXIV | 14117 | 1888 | 9441 | 66.68 | 5 |

# APPENDIX - VII

Frequency of bus services from English Bazar

| Private Bust Service Routes | No of Trips |
|---|---|
| 1. English Bazar - Lalgola | 8 |
| 2. English Bazar - Bamongola | 2 |
| 3. English Bazar - Harischandrapur | 2 |
| 4. English Bazar - Bamongala via | 6 |
| 5. English Bazar - Golapganj | 2 |
| 6. English Bazar - Baishnabnagar | 2 |
| 7. English Bazar - Kaliachak | 2 |
| 8. English Bazar - Manikchakghat | 2 |
| 9. English Bazar - Harischandrapur | 2 |
| 10. English Bazar - Tulshihata | 1 |
| 11. English Bazar - Chanchal | 2 |
| 12. English Bazar - Ratua | 1 |
| 13. English Bazar - Khidripur | 1 |
| 14. English Bazar - Baluka Road Station | 1 |
| **Mini Bus Service Routes** | |
| English Bazar - Lalgala | 2 |
| English Bazar - Beotola | 2 |
| English Bazar - Golapganj | 3 |
| English Bazar - Baishnabnagar | 4 |
| English Bazar - Mahadipur | 5 |
| English Bazar - Ratua | 3 |
| English Bazar - Chanchal | 2 |
| **State Bus Service Routes** | |
| English Bazar - Baharampore | 2 |
| English Bazar - Calcutta | 2 |
| English Bazar - Farakka | 12 |
| English Bazar - Manikchak | 10 |
| English Bazar - Siliguri | 2 |
| English Bazar - Balurghat | 9 |
| English Bazar - Nababganj | 2 |
| English Bazar - Lalgala | 5 |
| English Bazar - Mahadipur | 5 |
| English Bazar - Pagla | 2 |
| English Bazar - Kagmari | 2 |
| English Bazar - Raiganj | 8 |
| English Bazar - Chanchal via Harischandrepur | 2 |

# APPENDIX - VIII

## Observed Centrality Score of Different Functions

| Ward No. | Education | Health | Industry | Communication | Trade and commerce | Transport | Construction | Others | Total |
|---|---|---|---|---|---|---|---|---|---|
| I | 07 | 10 | 0 | 01 | 2 | 01 | 03 | 04 | 28 |
| II | 06 | 02 | 0 | 01 | 2 | 01 | 02 | 06 | 20 |
| III | 06 | 04 | 0 | 02 | 1 | 02 | 01 | 04 | 20 |
| IV | 08 | 10 | 0 | 12 | 8 | 04 | 07 | 10 | 59 |
| V | 14 | 20 | 0 | 14 | 7 | 06 | 08 | 11 | 80 |
| VI | 24 | 20 | 2 | 10 | 6 | 10 | 08 | 10 | 90 |
| VII | 21 | 15 | 2 | 08 | 7 | 05 | 10 | 09 | 77 |
| VIII | 22 | 14 | 1 | 02 | 3 | 04 | 08 | 07 | 61 |
| IX | 23 | 02 | 0 | 04 | 2 | 06 | 06 | 08 | 51 |
| X | 21 | 04 | 0 | 06 | 1 | 08 | 02 | 10 | 52 |
| XI | 23 | 10 | 0 | 09 | 0 | 07 | 03 | 10 | 62 |
| XII | 06 | 10 | 3 | 07 | 0 | 10 | 10 | 11 | 57 |
| XIII | 04 | 21 | 2 | 06 | 4 | 11 | 07 | 08 | 63 |
| XIV | 02 | 14 | 1 | 08 | 2 | 08 | 01 | 06 | 42 |
| XV | 02 | 16 | 0 | 10 | 3 | 07 | 08 | 10 | 56 |
| XVI | 14 | 12 | 0 | 12 | 2 | 01 | 06 | 04 | 51 |
| XVII | 12 | 11 | 1 | 14 | 6 | 02 | 10 | 06 | 62 |
| XVIII | 11 | 10 | 2 | 11 | 4 | 01 | 11 | 08 | 58 |
| XIX | 13 | 11 | 0 | 08 | 8 | 09 | 04 | 08 | 61 |
| XX | 12 | 12 | 0 | 07 | 7 | 08 | 06 | 09 | 61 |
| XXI | 19 | 04 | 0 | 06 | 4 | 07 | 08 | 10 | 57 |
| XXII | 18 | 02 | 1 | 04 | 0 | 06 | 07 | 08 | 46 |
| XXIII | 17 | 01 | 2 | 02 | 3 | 08 | 02 | 06 | 41 |
| XXIV | 04 | 08 | 1 | 06 | 4 | 07 | 01 | 07 | 38 |

# APPENDIX - IX

## Expected Centrality Score of Different Functions

| Ward No. | Education | Health | Industry | Communication | Trade and commerce | Transport | Construction | Others | Total |
|---|---|---|---|---|---|---|---|---|---|
| I | 12 | 6 | 0 | 7 | 3 | 3 | 3 | 7 | 49 |
| II | 12 | 7 | 0 | 7 | 3 | 3 | 3 | 7 | 50 |
| III | 12 | 4 | 0 | 7 | 3 | 1 | 1 | 7 | 45 |
| IV | 12 | 7 | 0 | 7 | 3 | 3 | 3 | 7 | 50 |
| V | 12 | 7 | 0 | 7 | 3 | 3 | 3 | 7 | 49 |
| VI | 12 | 7 | 2 | 7 | 3 | 3 | 3 | 7 | 50 |
| VII | 12 | 6 | 2 | 7 | 3 | 3 | 3 | 7 | 48 |
| VII | 12 | 6 | 1 | 7 | 3 | 3 | 3 | 7 | 48 |
| IX | 12 | 7 | 0 | 7 | 3 | 3 | 3 | 7 | 49 |
| X | 13 | 8 | 0 | 7 | 3 | 3 | 3 | 7 | 54 |
| XI | 12 | 6 | 0 | 7 | 3 | 2 | 2 | 7 | 48 |
| XII | 12 | 7 | 3 | 7 | 3 | 3 | 3 | 7 | 50 |
| XIII | 13 | 7 | 2 | 7 | 3 | 4 | 4 | 7 | 50 |
| XIV | 12 | 7 | 1 | 7 | 3 | 3 | 3 | 7 | 49 |
| XV | 12 | 7 | 0 | 7 | 3 | 3 | 3 | 7 | 49 |
| XVI | 12 | 6 | 0 | 7 | 3 | 3 | 3 | 7 | 49 |
| XVII | 12 | 7 | 1 | 7 | 3 | 3 | 3 | 7 | 49 |
| XVIII | 12 | 6 | 2 | 7 | 3 | 3 | 3 | 7 | 49 |
| XIX | 12 | 6 | 0 | 7 | 3 | 3 | 3 | 7 | 49 |
| XX | 12 | 6 | 0 | 7 | 3 | 2 | 2 | 7 | 48 |
| XXI | 12 | 6 | 0 | 7 | 3 | 3 | 3 | 7 | 49 |
| XXII | 13 | 4 | 1 | 7 | 3 | 0 | 0 | 7 | 45 |
| XXIII | 13 | 8 | 2 | 7 | 3 | 4 | 4 | 7 | 51 |
| XXIV | 11 | 0 | 1 | 6 | 3 | -3 | -3 | 6 | 40 |

# APPENDIX - X

Functional gaps in different functions in English Bazar Town

| Ward No. | Education | Health | Industry | Communication | Trade and commerce | Transport | Construction | Others | Total |
|---|---|---|---|---|---|---|---|---|---|
| I | -5 | 04 | 0 | 03 | -1 | -2 | 0 | -3 | -21 |
| II | -6 | -5 | 0 | -5 | -1 | -2 | -1 | -1 | -30 |
| III | -6 | 0 | 0 | -3 | -3 | 1 | 0 | -3 | -25 |
| IV | -4 | 03 | 0 | 03 | 05 | 1 | 4 | 3 | 09 |
| V | 02 | 13 | 0 | 13 | 04 | 3 | 5 | 4 | 31 |
| VI | 12 | 13 | 0 | 13 | 03 | 7 | 5 | 3 | 40 |
| VII | 09 | 09 | 0 | 08 | 04 | 2 | 7 | 2 | 29 |
| VIII | 10 | 08 | 0 | 07 | 0 | 1 | 5 | 0 | 13 |
| IX | 11 | -5 | 0 | -5 | -1 | 3 | 3 | 1 | 02 |
| X | 09 | -4 | 0 | -3 | -2 | 5 | -1 | 3 | -2 |
| XI | 11 | 04 | 0 | 03 | -3 | 5 | 1 | 3 | 14 |
| XII | -6 | 03 | 0 | 03 | -3 | 7 | 7 | 4 | 07 |
| XIII | -8 | 14 | 0 | 14 | 01 | 7 | 3 | 1 | 13 |
| XIV | -10 | 07 | 0 | 07 | -1 | 5 | -2 | -1 | -7 |
| XV | -10 | 09 | 0 | 09 | -0 | 4 | 5 | 3 | 07 |
| XVI | 02 | 06 | 0 | 05 | -1 | -2 | 3 | -3 | 02 |
| XVII | 0 | 04 | 0 | 04 | 03 | -1 | 7 | -1 | 13 |
| XVIII | -1 | 04 | 0 | 03 | 01 | -2 | 8 | 1 | 09 |
| XIX | 01 | 05 | 0 | 04 | 05 | 6 | 1 | 1 | 12 |
| XX | 0 | 06 | 0 | 05 | 04 | 6 | 4 | 2 | 13 |
| XXI | 07 | -2 | 0 | -3 | 01 | 4 | 6 | 3 | 08 |
| XXII | 06 | -2 | 0 | -5 | -3 | 6 | 7 | 1 | 01 |
| XXIII | 05 | 07 | 0 | -6 | 0 | 4 | -2 | 1 | -10 |
| XXIV | 07 | 08 | 0 | 02 | 01 | 4 | -2 | 1 | -2 |

[illegible]