

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

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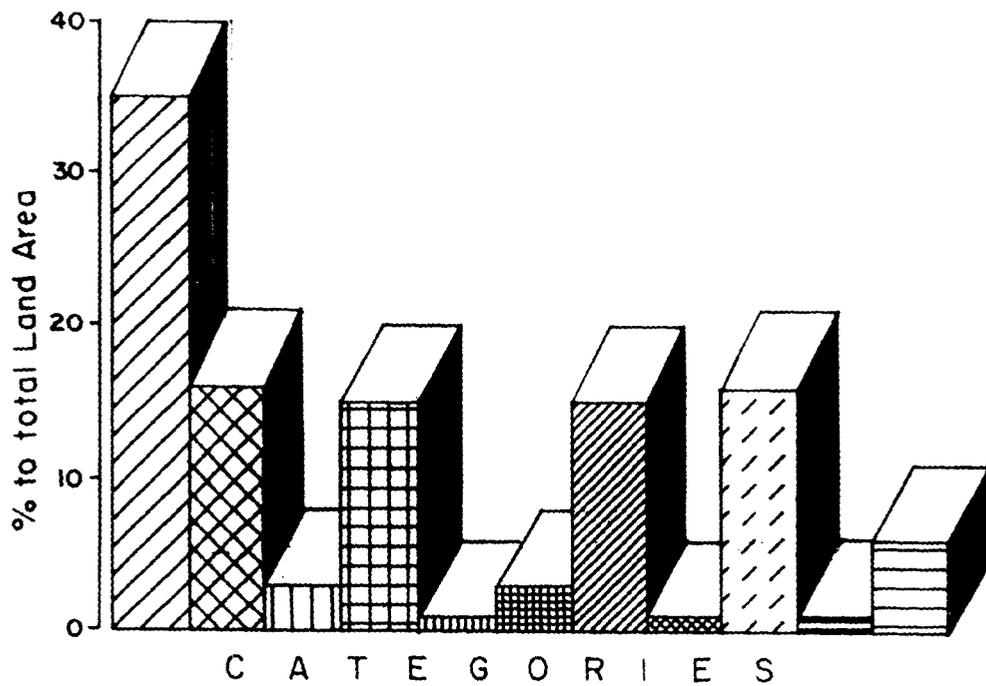
single city or a relatively small number of cities. As a result, there has not developed a generally accepted and formalized landuse classification system, although attempts in this direction have been made recently (Northam, 1975).

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 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



I N D E X

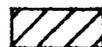
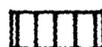
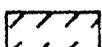
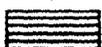
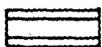
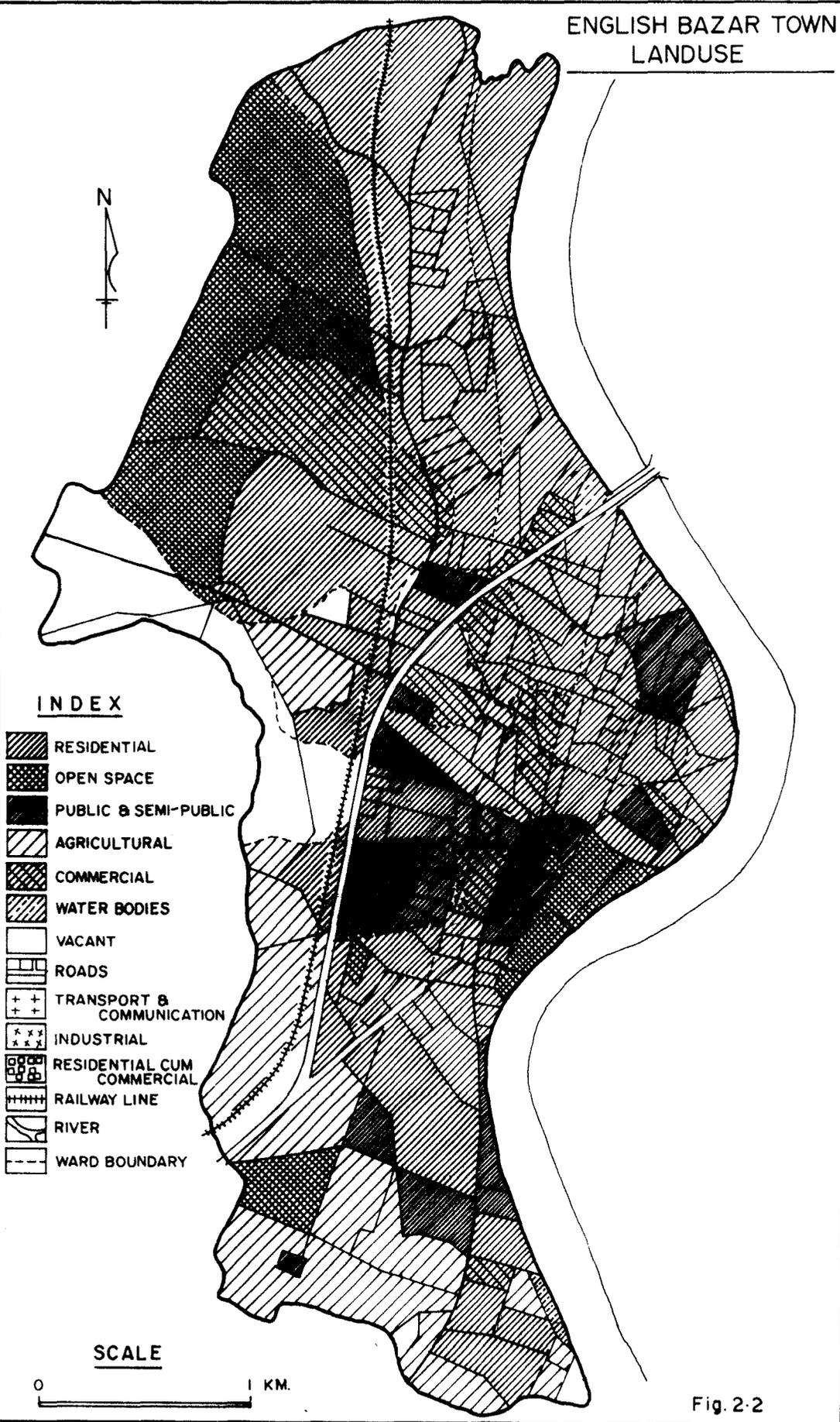
- | | |
|---|--|
|  Residential |  Mixed use Residential cum Industrial |
|  Commercial |  Streets & Roads |
|  Industrial |  Open Space |
|  Public & Semi-Public |  Agricultural |
|  Transport & Communication |  Vacant |
|  Mixed use of Residential cum Commercial | |

Fig. 2-1

ENGLISH BAZAR TOWN
LANDUSE



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

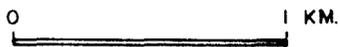


Fig. 2-2

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 ties 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 land use 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 land use 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 land use 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 is 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 :

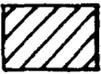
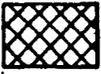
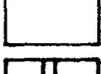
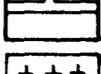
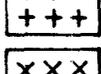
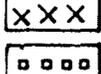
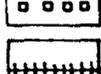
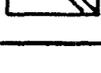
1. Four Residential Zones
2. One Commercial Zone
3. Two Agricultural Zones
4. Three Public and Semi-Public Zones
5. Two Transport and Communication Zones.

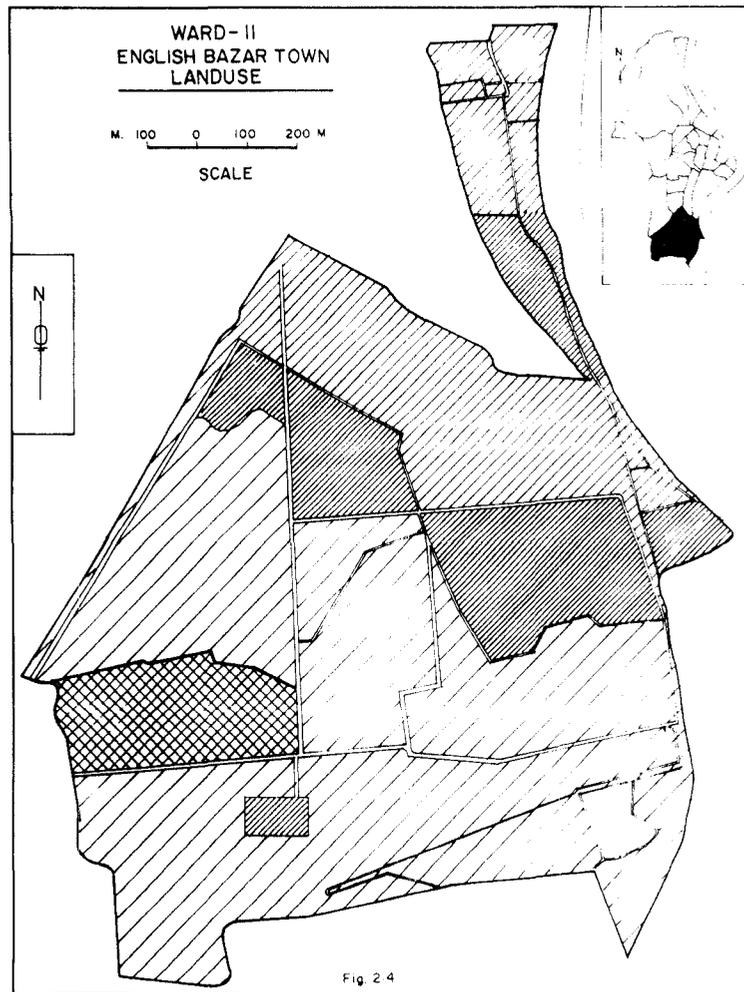
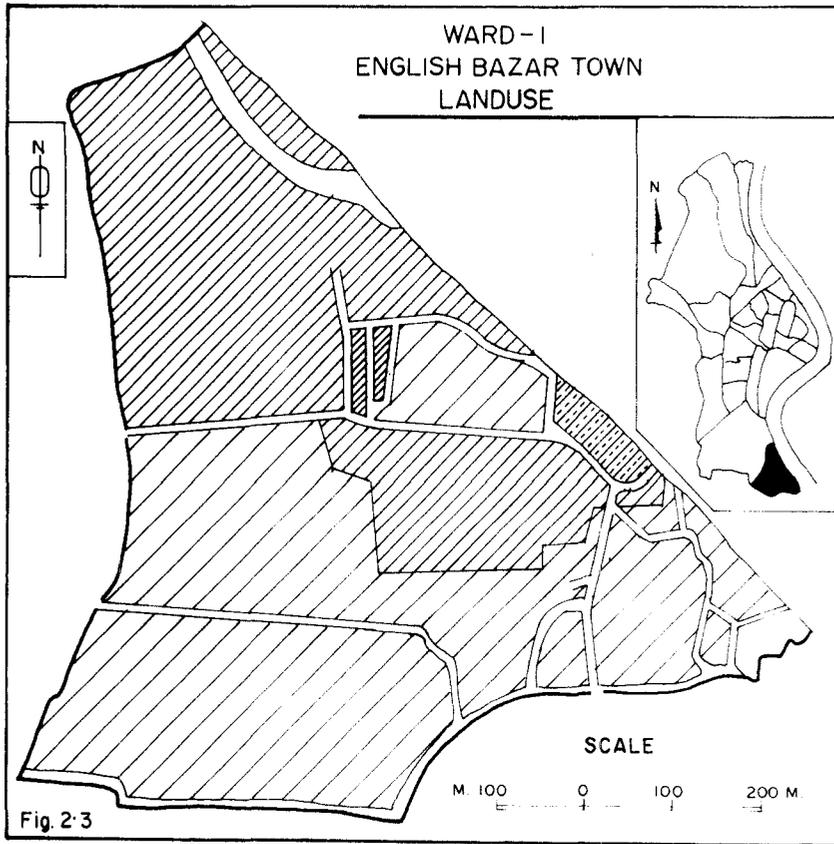
1. Residential Zones : About 53.7% of total lands are devoted in residential uses which is distributed in all the wards unevenly. From Fig. 2.3 it is found that the residential use has developed from east to south west mainly in between the N.H.-34 and Railway line. The area in western part of the river 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 :

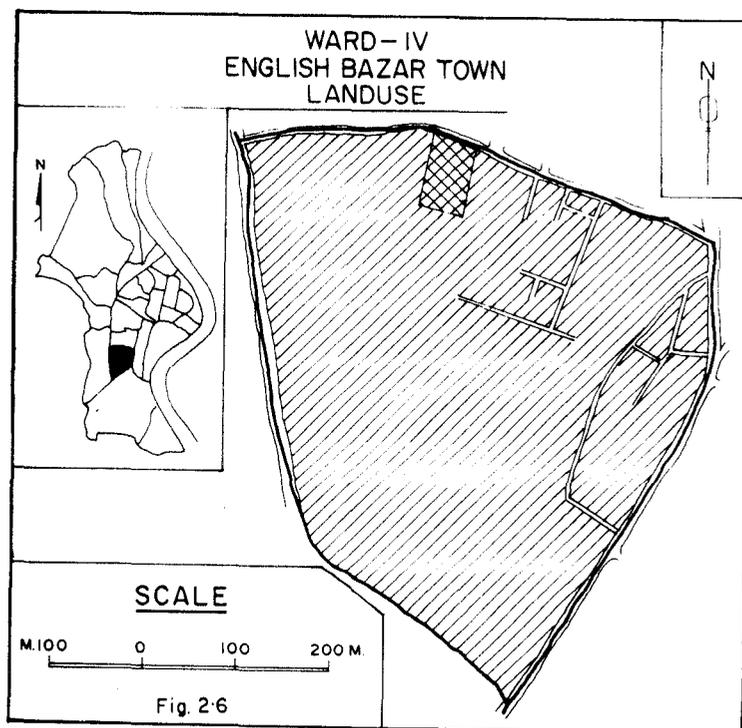
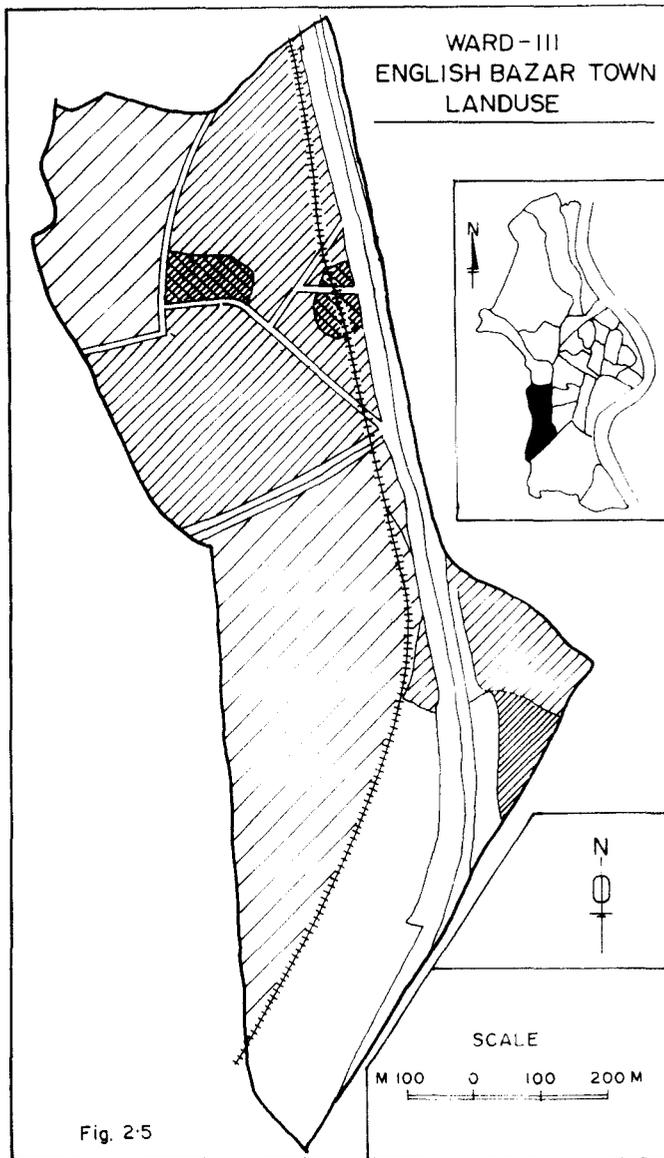
Zone 1 : It is located in the west of river Mahananda and extended upto the municipal boundary to the west and in this zone than the others as it is lying around the CBD i.e. Sukanta More as well as the market centre. In this zone, among 4 wards, have less than 60% lands under residential use and these 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.

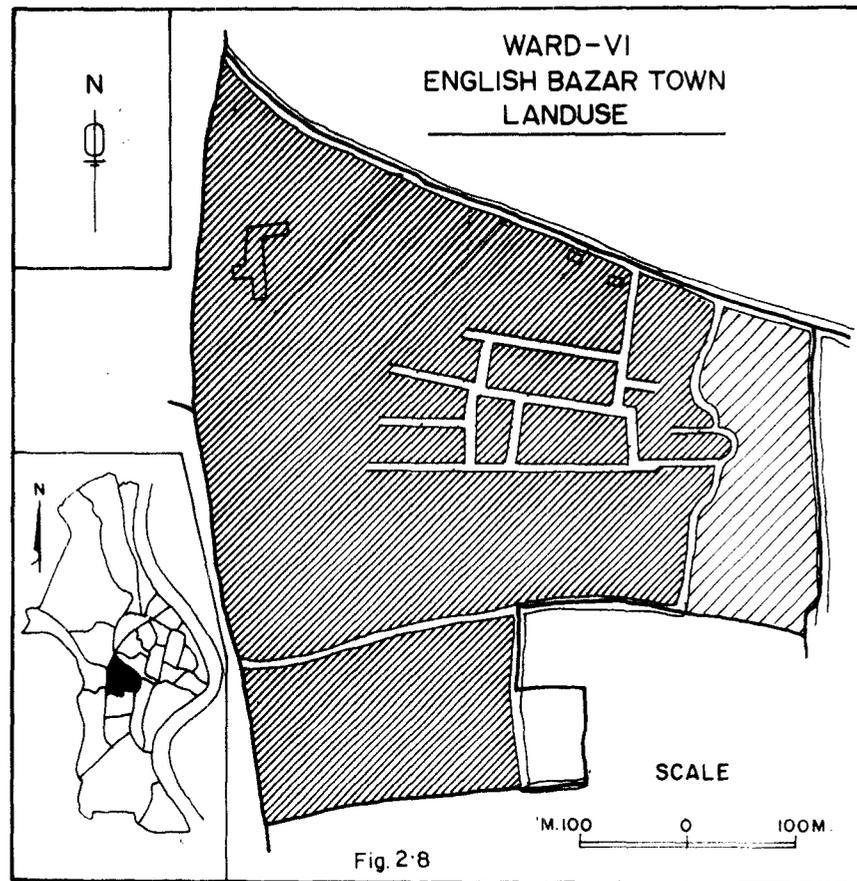
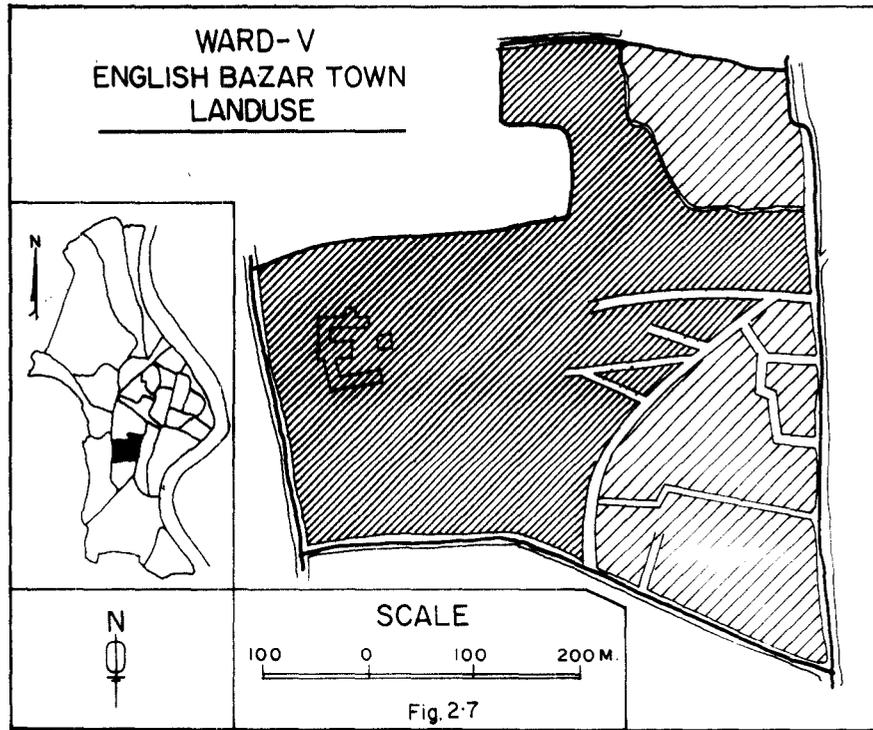
Zone 2 : It is located in the south-west corner of the town as well as in the

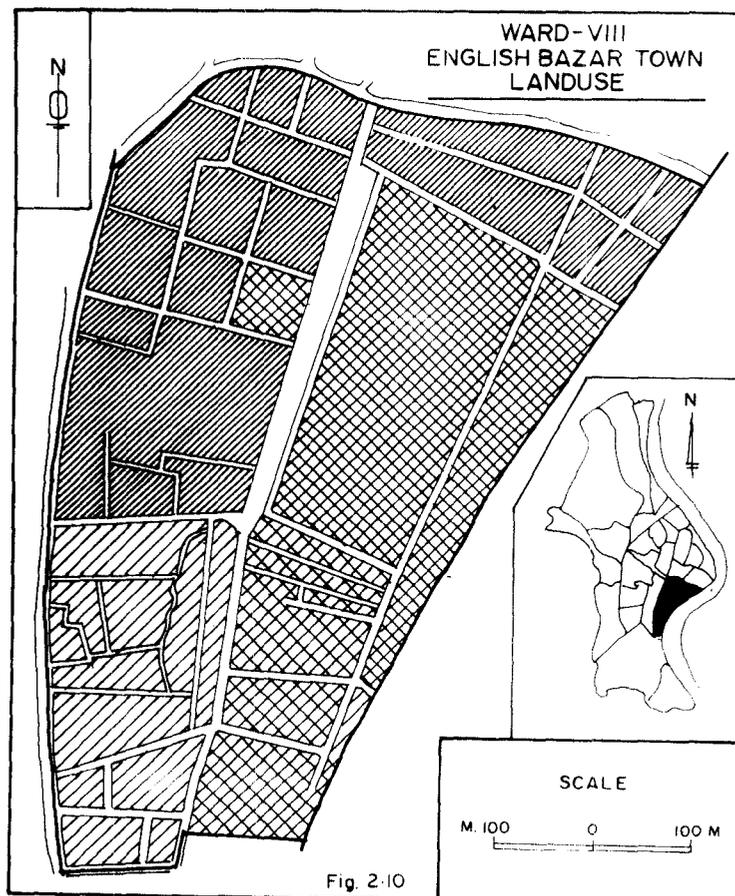
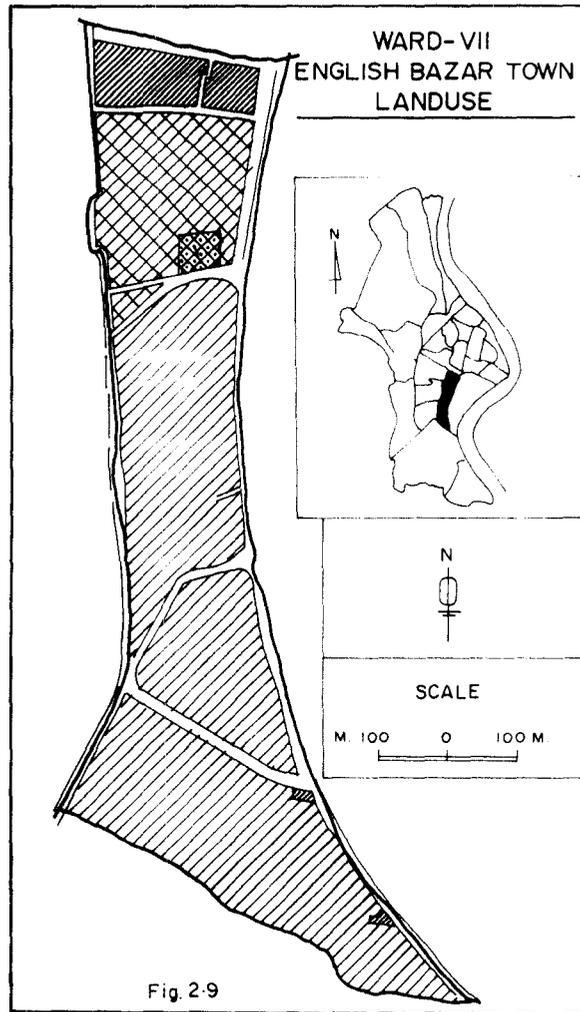
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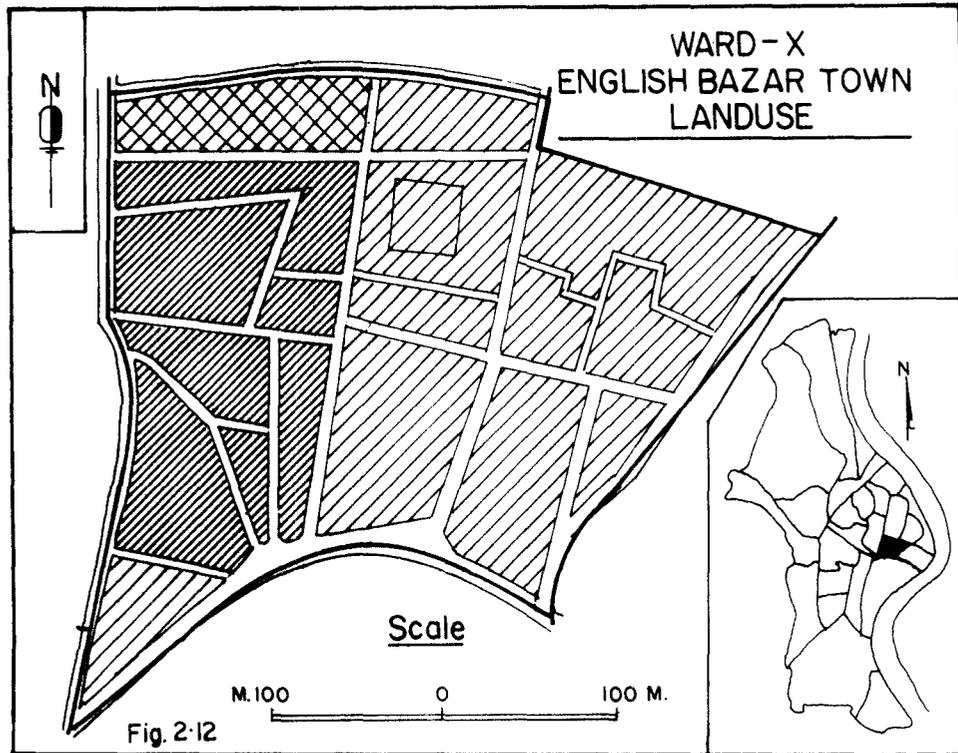
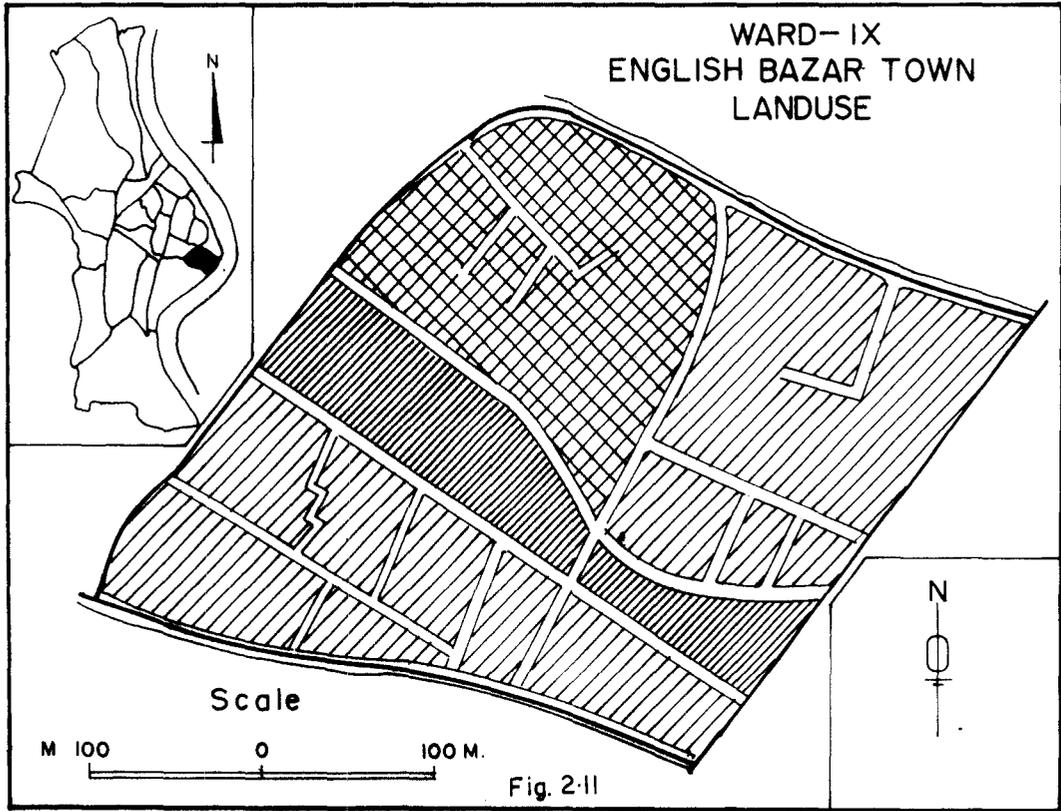
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	RIVER

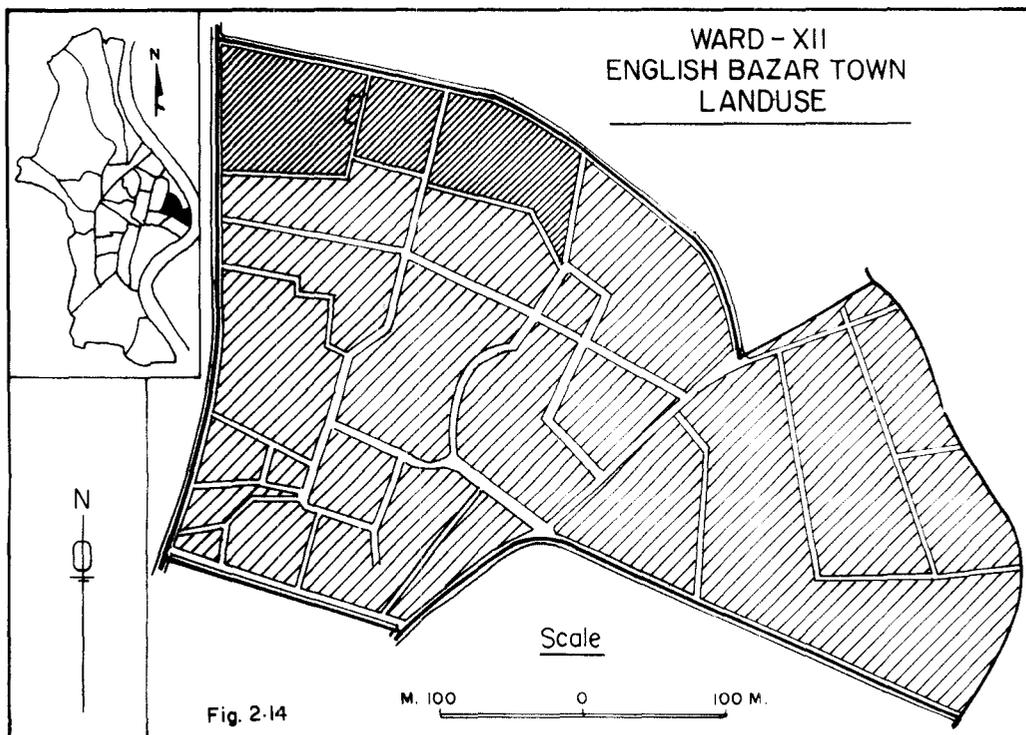
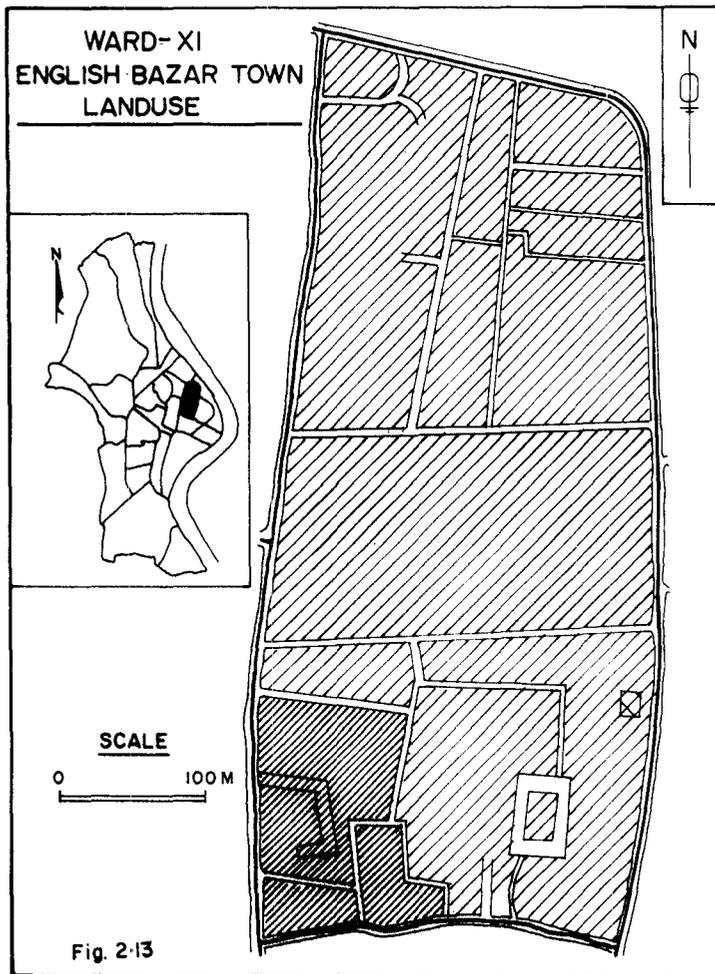












southern part of the Railway line and is extended upto municipal boundary. Out of 4 wards 3 are located near the CBD having 70-80% residential use but the other one (XVIII) with low residential concentration is located on the periphery of the town.

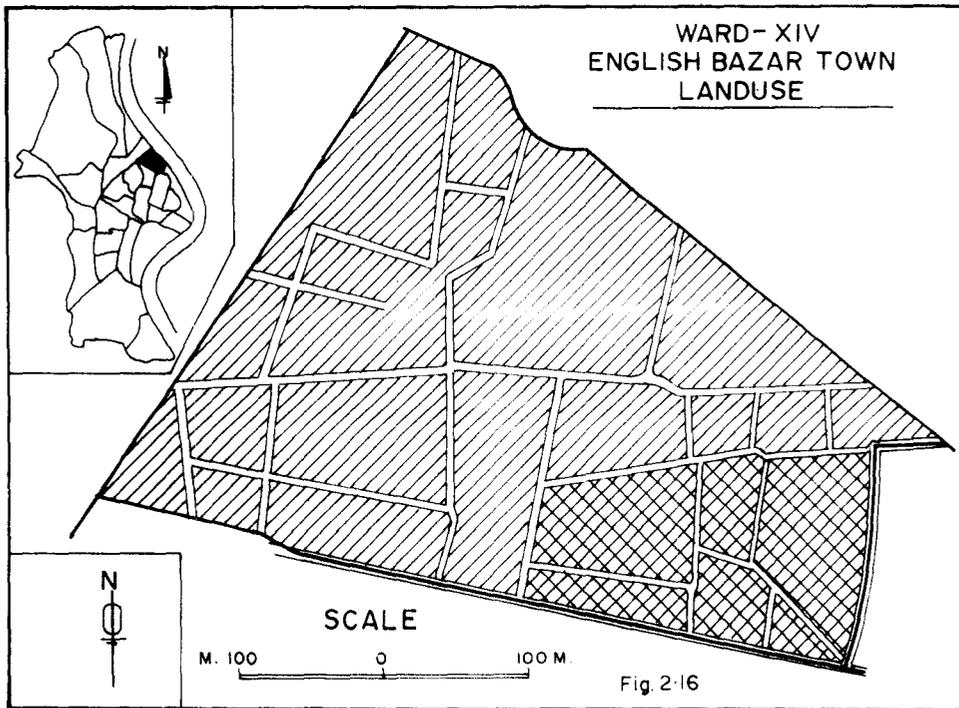
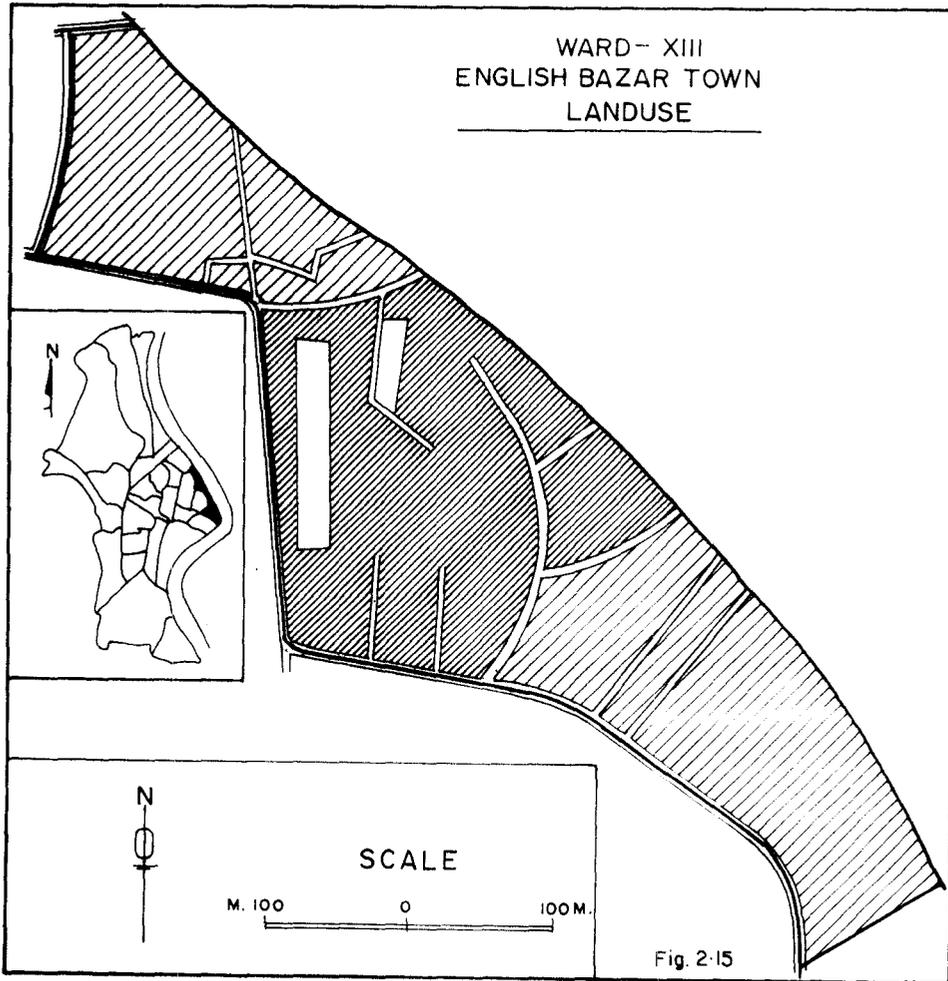
Zone 3 : It is located in the northern part of the town, extending from north of station road upto northern tip of the municipal boundary. This zone is interrupted by other types of land uses and consists of wards XIX, XXII and XXIII having 51% area occupied by residential landuse. Due to favourable 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.

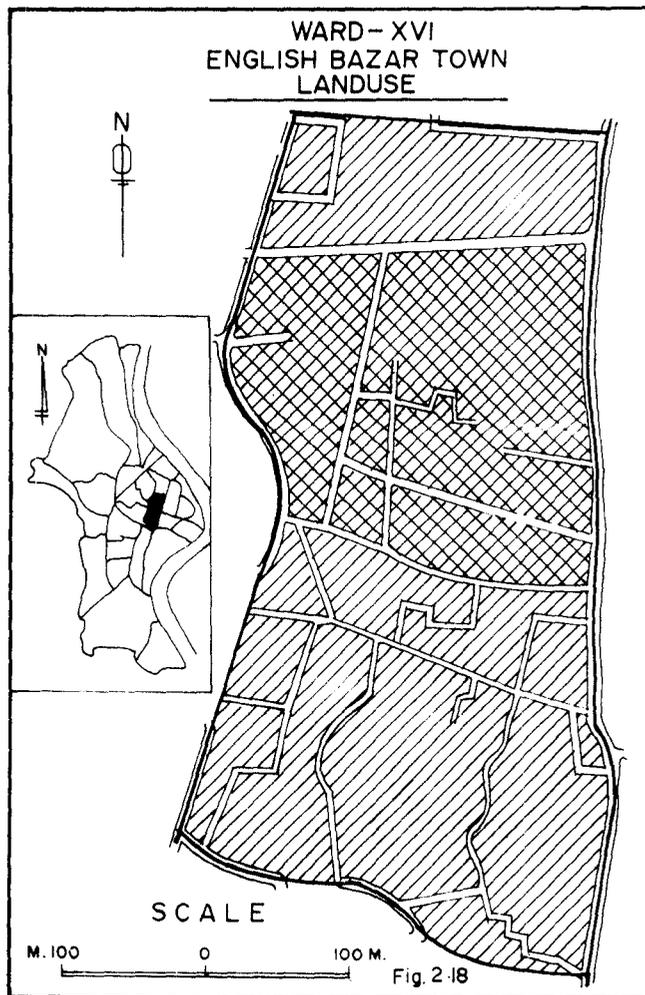
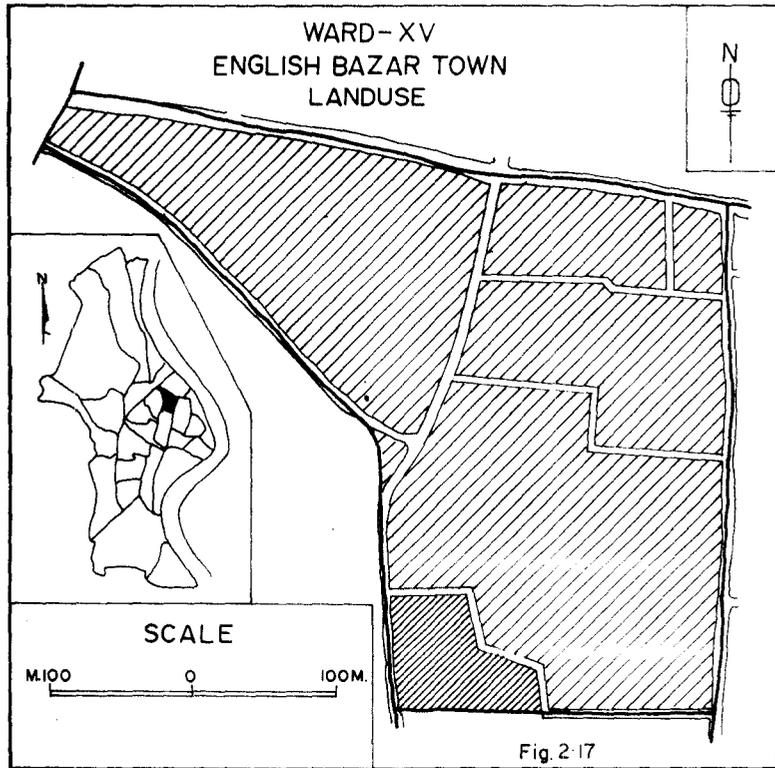
Zone 4: It is spread our the southwestern part of the town where imprint of development is less than other parts of the town. This zone is not a compact one and segregated in pockets mainly by the agricultural activity. Out of 4 wards 3 have 20-30% area under residential use whereas the other one represents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

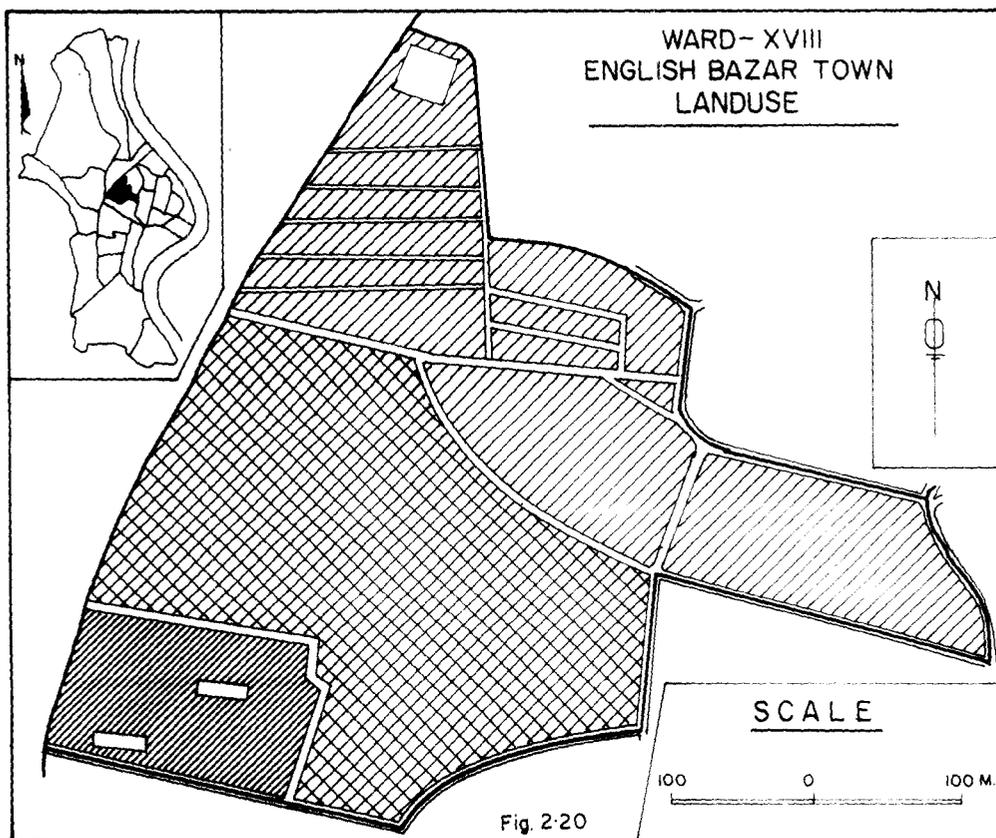
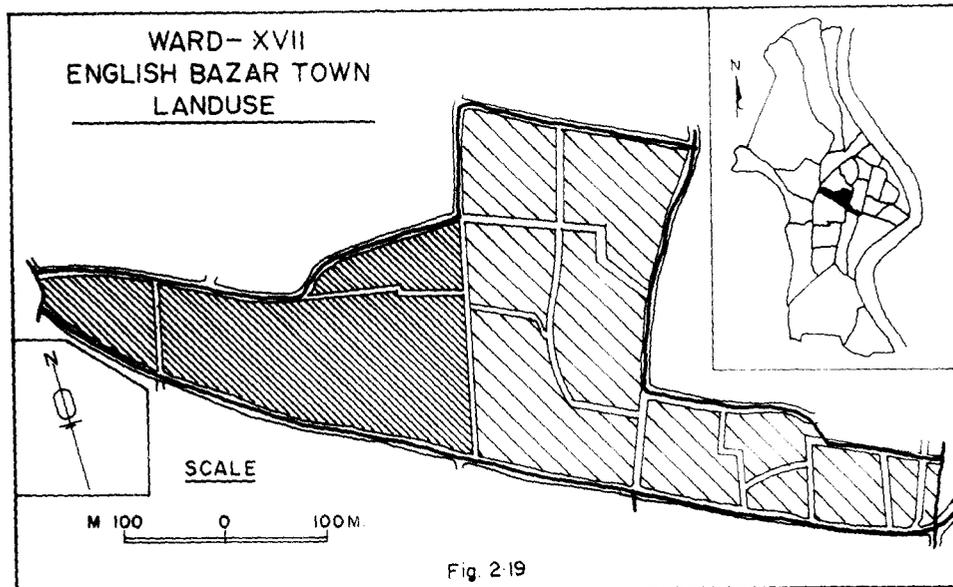
2. Commercial Zone : Commercial landuse in the town is quite important. It shares 8% land area of the town. In spite of its importance planned commercial areas have not developed distinctly in English Bazar. There are two pockets of commercial centres of different sizes in English Bazar.

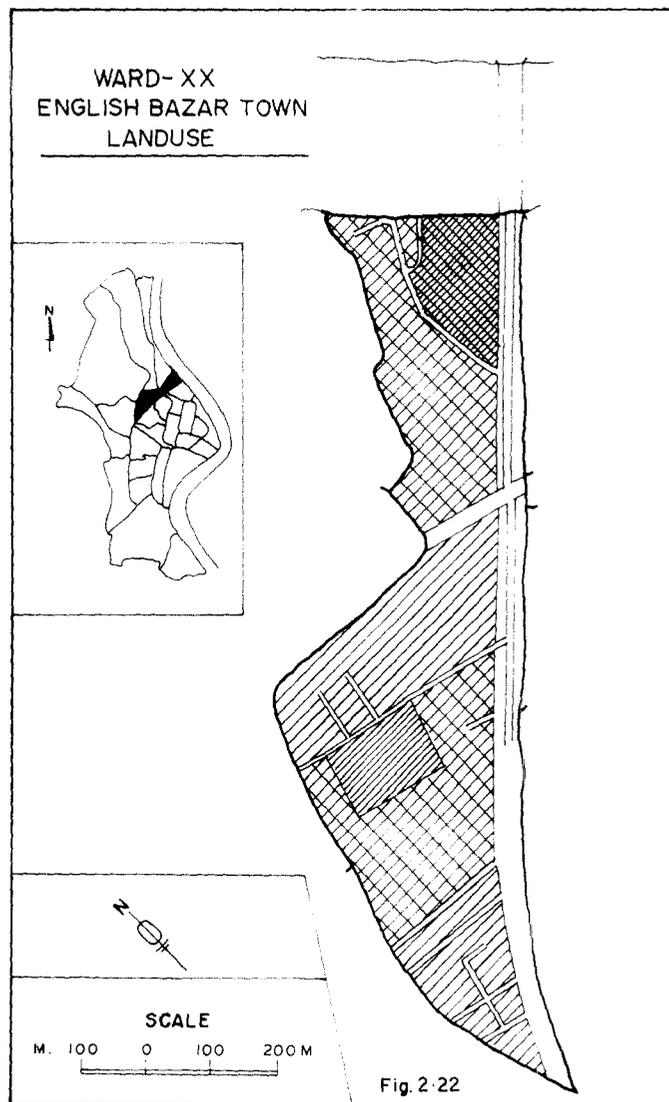
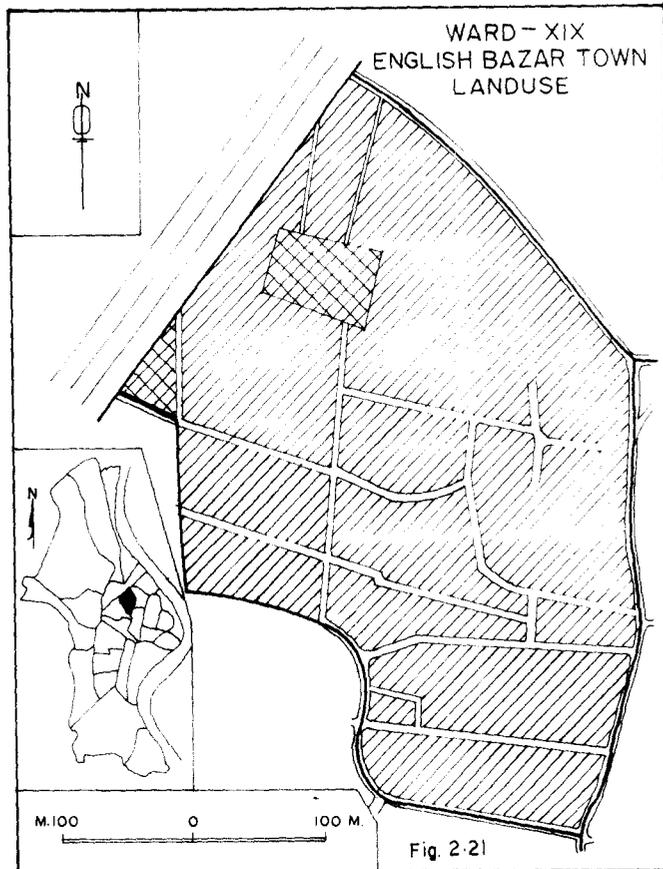
The commercial use (5%) is extended in linear form in the central part of the town along the main thoroughfares viz Rabindra Avenue, Netaji Subhas Road and Rathbari Road. The commercial area along Rabindra Avenue commonly known as Bihitra Bazar is spread in ward X and XI. Shops of groceries, fish and 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.

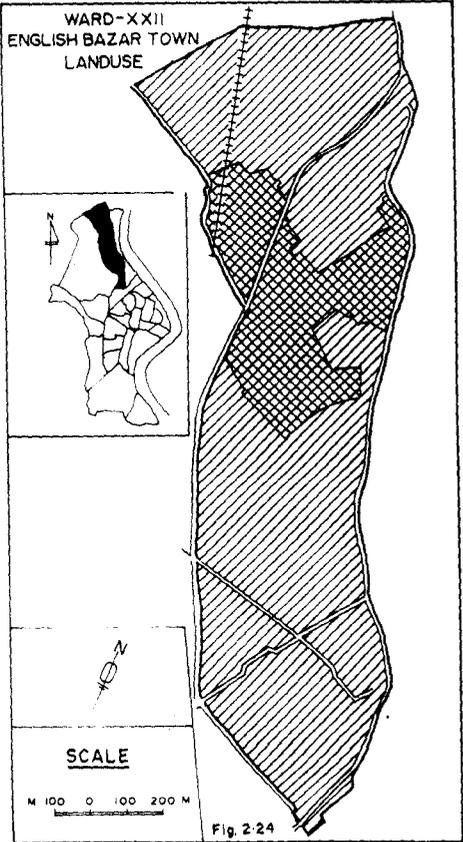
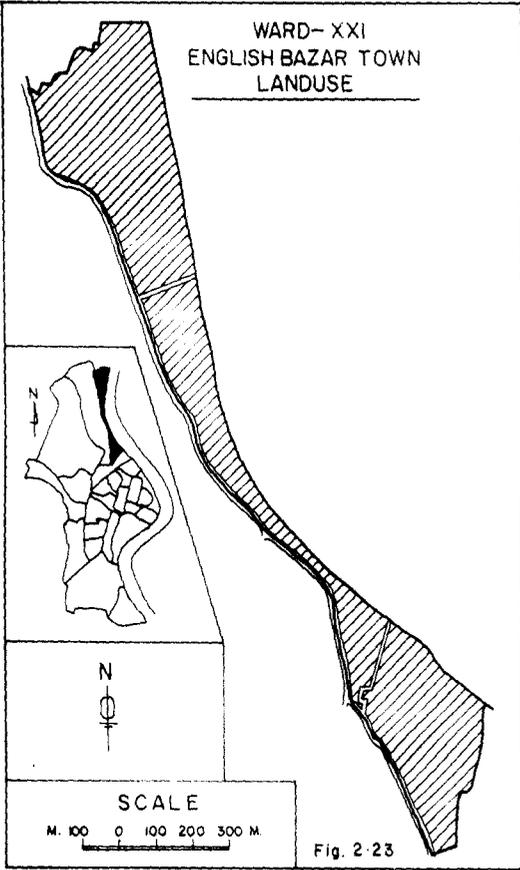
3. Residential Cum Industrial : The percentage in this type of landuse is very negligible (0.5%). It is found only in 3 wards and is concentrated in the southwestern part of the town. Its maximum percentage (3%) is in ward I.

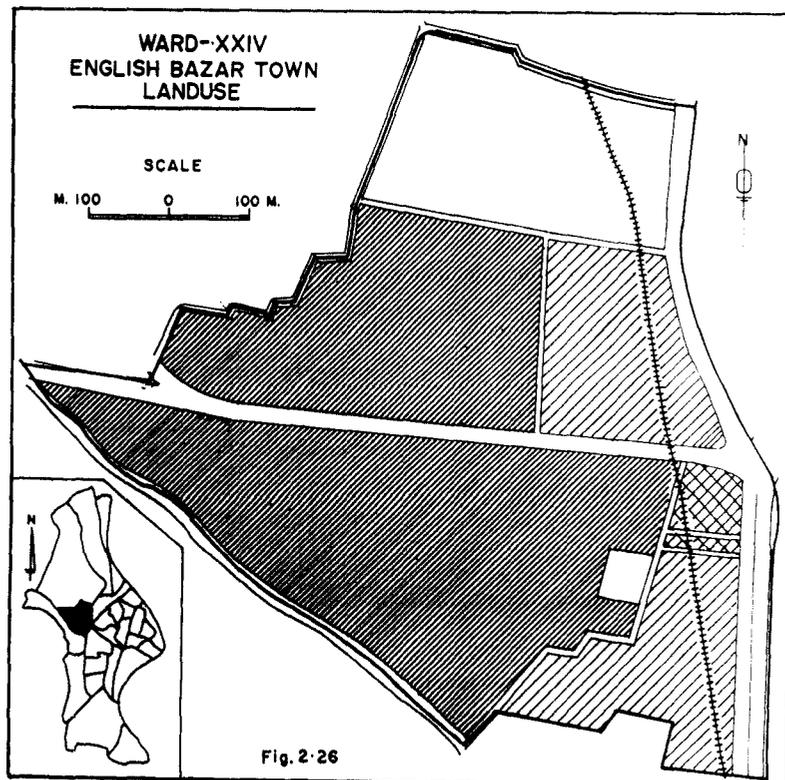
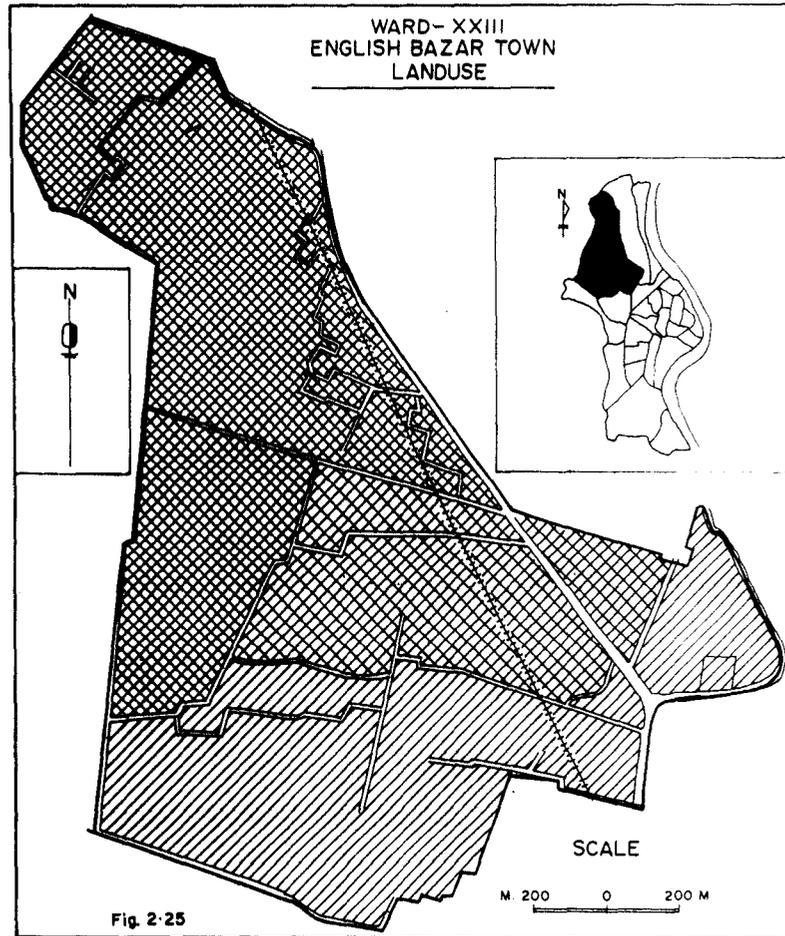












4. Agricultural Zones : The agricultural zones (16%) are located in the periphery of the town. The southern one consists of 4 wards of which ward I, records the maximum concentration (75% land of the ward) of agricultural uses. Other 2 wards like II, III have 30-40% and ward XIV has comparatively low percentage (25%) of land under this use. In this zone agricultural land use 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 land use 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 so 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.